Environmental Assessment

Reams Solar I Energy Project
Dinwiddie, Dinwiddie County, Virginia

U.S. Department of Agriculture
Rural Utilities Service (RUS)

Prepared by:

Holocene Clean Energy on behalf of
HCE Reams Solar I, LLC
4325 Lake Boone Trail, Suite 220
Raleigh, North Carolina 27603

Prepared for:

U.S. Department of Agriculture
Rural Utilities Service (RUS)
1400 Independence Avenue
Washington, DC 20250

TABLE OF CONTENTS

TABLES

APPENDICES

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ACS	American Community Survey
ANSI	American National Standards Institute
AMSL	Above mean sea level
ASTM	American Society for Testing and Materials
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CAA	Clean Air Act
CBRA	Coastal Barrier Resources Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	Decibels
DCR	Department of Conservation and Recreation
DEQ	Department of Environmental Quality
DNH	Division of Natural Heritage
EA	Environmental Assessment
EJSCREEN	Environmental Justice Screening and Mapping Tool
EMF	Electromagnetic Fields
EMI	Electromagnetic Interference
E.O.	Executive Order
ePIX	Electronic Project Information Exchange
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
HUD	Housing & Urban Development
IPaC	Information, Planning and Conservation
LESA	Land Evaluation Site Assessment
MTBA	Migratory Bird Treaty Act
MW ac	Megawatts alternating current
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historical Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRI	National Rivers Inventory

LIST OF ACRONYMS (CONTINUED)

NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OSHA	Occupational Safety and Health Administration
RD	Rural Development
REC	Recognized environmental conditions
RUS	Rural Utilities Service
SEC	Southside Electric Cooperative
SFHA	Special Flood Hazard Area
SPCC	Spill Control and Countermeasures Plan
SSA	Sole source aquifer
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
USACE	United States Army Corp. of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
VaFWIS	Virginia Fish and Wildlife Information Service
VCRIS	Virginia Cultural Resource Information Services
VDGIF	Department of Game and Inland Fisheries
VDHR	Virginia Department of Historic Resources
VDOT	Virginia Department of Transportation
WOTUS	Waters of the United States

1.0 PROJECT DESCRIPTION

The Reams Solar Project (Project) is utility solar project which will be located on the south side of Old Vaughan Road near the town of Dinwiddie, Virginia. The Project will disturb approximately 35.7 acres of a larger, 62.6-acre parent parcel. The project area is privately owned and will be leased for the operational life of the facility. The project area is currently agricultural land and forested areas with a vacant farm and large pond, and land use in the vicinity includes agricultural lands, forestland, and scattered residences.

The Project will generate a total of 5 megawatts alternating current (MW ac) of clean, reliable solar energy when complete. The Project would utilize solar modules, mounted on a steel racking system which will be anchored into the ground using driven steel piers, to convert the sun's energy to usable power. The estimated duration of construction is 4 months, and it is anticipated that the Project will operate for a minimum of 35 years. When the operational end of the Project has been reached, the project area can be returned to its pre-construction state.

The Project would be accessed from Old Vaughan Road (Route 605). An interior road would be constructed inside the perimeter and is anticipated to be flat and will match existing grades to minimize earth work. The project area would be secured by a security fence with standard gates for emergency and maintenance vehicles.

The Project will interconnect to Southside Electric Cooperative (SEC) electrical distribution system located offsite. SEC has existing three-phase infrastructure which crosses the northwest corner of the Project's parcel boundary. The Project will utilize the existing three-phase power lines that leave the western side of the Reams substation. To interconnect into the Project, SEC will install 8 new poles within the project parcel. A new 40-foot easement will run along the north side of the parcel for 600 feet and then the south side for 800 feet. SEC would construct all necessary distribution system upgrades to interconnect the facility to their electrical system at a delivery point.

HCE Reams Solar I, LLC (Applicant) will contract with an engineering, procurement, and construction contractor to build the facility, which would include erecting the security fence, foundations, and racking system before installing the solar modules and inverters. An electrical contractor would wire the installed electrical components and work with SEC to complete the final facility commissioning. An operations and maintenance contractor would maintain the facility. SEC would construct all necessary distribution system upgrades to interconnect the facility to their electrical system at a delivery point.

1.1 Purpose and Need

United States Department of Agriculture (USDA) Rural Development (RD) is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service and Rural Utilities Service. The agencies have in excess of 50 programs that provide

financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives. The Applicant is seeking financial assistance under the Rural Utilities Service (RUS). The RUS is administered based on regulations within RD 4280 Subpart A.

The Applicant proposes to construct a 5-MW ac solar facility approximately five miles northeast of the town Dinwiddie, Virginia. The purpose of the Project is to provide a source of long-term renewable energy for rural Virginia residents.

The Applicant and their lender are jointly seeking financial assistance via the RUS to enable credit to be extended to the Project. Utilizing the loan guarantee process will allow the lender to extend credit to the Project and in turn, the borrower will be able to build a renewable energy system. The Project will provide positive economic impacts by increasing the tax base for the county. The Project will also provide long-term, emission free electricity to the local utility.

SEC is charged to provide reliable and affordable power to homes and businesses in Virginia. HCE Reams Solar I, LLC can provide reliable power to customers in Dinwiddie County at competitive rates. Additionally, Virginia residents have expressed interest in procuring clean solar power from a solar farm; however, rooftop solar is much more expensive to install and is cost prohibitive for most families due to the high upfront cost. HCE Reams Solar I, LLC solves this dilemma by providing solar power from a solar farm located within Virginia. The Applicant is responding to a regional need for an affordable, reliable, and firm supply of electric power at competitive rates to Virginia residents.

Pursuant to the National Environmental Policy Act of 1969, National Historic Preservation Act of 1966 as amended and 7 Code of Federal Regulations (CFR) 1970 Rural Development Policy and Procedures, an Environmental Assessment (EA) has been prepared to evaluate the environmental impacts of the construction of a solar farm for the review of USDA Rural Development Rural Business Service.

2.0 ALTERNATIVES EVALUATED INCLUDING THE PROPOSED ACTION AND NO ACTION

2.1 Introduction

The NEPA requires that Federal agencies describe alternatives, including the "No Action" and "Proposed Action" alternatives, in their environmental documents (see Sections 102(2)(C)(iii) and 102(2)(E) of NEPA and 40 CFR § 1502.14). In accordance with 7 CFR § 1970.13(a), the Project only needs to be evaluated with a "No Action" alternative since the Applicant is proposing to only complete a project at one specific site and no adverse environmental impacts are anticipated. The Applicant has an interconnection agreement at this specific location and a power purchase agreement to only sell power from this specific location/facility; therefore, the Project should be evaluated on the basis that No Action should occur if the Project poses adverse environmental impacts that cannot be mitigated. Both the interconnection agreement and power purchase agreement shall be provided to USDA Rural Development as part of the credit evaluation for the project.

2.2 Proposed Action Alternative

Under the Proposed Action Alternative, USDA would consider providing financial assistance to the Applicant to construct the Project as described in the Project Description section of this document. The Project will have a positive economic impact on the area by expanding the tax base in the County and would assist the Applicant and SEC in meeting the demands of its customers. The Project will also help meet national and state goals to expand the use of renewable energy.

Selection of a viable solar energy generation project site is based on several factors including:

- Quality of terrain including existing topography;
- Local transmission capacity;
- Potential conservation and environmental impacts;
- Opportunities and limitations presented by local zoning and land use ordinances and the existing land uses at and proximate to a potential site; and
- The availability of land of sufficient area for a solar facility.

The project area was selected based on proximity to an existing substation with capacity to receive power generated by the Project; suitable topography resulting in minimal grading to construct the Project; minimal tree clearing required; no wetland and stream impacts; appropriate local zoning district; and local support.

2.3 No Action Alternative

Under the No Action Alternative, USDA would not provide financial assistance to the Applicant, and the Project may not be constructed. The No Action Alternative is not responsive to the

needs of the Applicant and SEC in fulfilling the demands of its customers for affordable and reliable solar energy. Furthermore, if the Project is not constructed, the environmental benefits of adding emission free electrical generation to the utility's distributed generation system will be reduced by the absence of this Facility. Other traditional generation technologies utilize large amounts of water and typically have high levels of greenhouse gas emissions (coal-fired and combined cycle natural gas facilities). In this analysis, the No Action Alternative serves as the baseline environmental condition to evaluate the impacts of the Project.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The affected environment and environmental consequences of the Project and alternatives are discussed in this section. Also outlined in this section are mitigation measures necessary to compensate for unavoidable adverse impacts to a specific environmental resource.

3.1 Land Ownership and Land Use

This section describes an overview of the existing land use at and surrounding the project area and the potential impacts to those resources that would be associated with the Project.

3.1.1 Affected Environment

Land use is defined as the way people use and develop land, including agricultural, residential and industrial. Many municipalities develop zoning ordinances and planning documents to control the direction of development and to keep similar land uses together.

General Land Ownership and Use

According to the Dinwiddie County Assessor, the project area is privately owned and will be leased by HCE Reams Solar I, LLC for the operational life of the facility. The project area is situated in a mixed-use area between the towns of Templeton to the east and Dinwiddie to the west. The project area and the immediate surrounding area consist of agricultural lands, undeveloped wooded areas, and farmsteads. The project area is partially forestland and partially agricultural land with a pond located along the east side; conditions that date back to at least 1949. The project area is bound by Old Vaughan Road to the north, and privately owned forest and agricultural land, a park, and residences to the east, south, and west. A transmission line appears to run from north to south along the access road into the property.

Formally Classified Lands

Formally classified lands are properties administered either by federal, state or local agencies or have been given special protection through formal legislative designation, including but not limited to: National parks, monuments, historic landmarks, battlefield and military parks, historic sites and parks, natural landmarks, wildlife refuges, seashores, lake shores and trails, wilderness areas, wild, scenic and recreational rivers, state parks, fish and wildlife management areas, public lands and Native American owned lands, see Table 1.

Table 1. Formally Classified Lands

Formally Classified Land	Source	Determination of Effect
Coastal Barriers/National Seashores	https://koordinates.com/layer/20522-us-coastal-zone-management-act-boundary/ https://www.fws.gov/CBRA/Maps/Mapper.html	No Effect
National Forests	https://www.fs.fed.us/	No Effect
National Parks	https://www.nps.gov/state/va/index.htm	No Effect
National Trails	https://www.nps.gov/subjects/nationaltrailssystem/national-scenic-trails.htm https://www.nps.gov/subjects/nationaltrailssystem/national-historic-trails.htm	No Effect
Wild & Scenic Rivers	https://www.rivers.gov/virginia.php https://www.epa.gov/nepa/nepassist	No Effect
National Rivers Inventory	https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm	No Effect
National Wildlife & Refuges	https://www.fws.gov/refuges/friends/friendsLocatorMaps/Virginia.html	No Effect
National Wilderness	https://www.wilderness.net/NWPS/maps	No Effect
Federal Lands	https://www.epa.gov/nepa/nepassist	No Effect
Protected Lands & State Parks	http://www.protectedlands.net/map/ https://www.dcr.virginia.gov/state-parks/find-a-park	No Effect

A review of mapping systems from various state and federal agencies: U.S. Fish and Wildlife Service (USFWS), USDA Natural Resources Conservation Service (NRCS) Soil Mapper, the Coastal Barriers/National Seashores, the National Parks Service (NPS) in identification of National Forests, Landmarks, Parks, and Trails, Wild & Scenic Rivers and Nationwide Rivers Inventory, National Wildlife & Refuges, National Wilderness, Federal Lands and State Parks did not identify any formally classified lands in or adjacent to the project area.

3.1.2 Environmental Consequences

Under the Proposed Action, effects on land use and formally classified lands would be negligible. Construction and operation of the Project would not affect formally classified lands as they are absent from the project area and nearby surroundings. There also are no potential impacts associated with the interconnection.

3.1.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to formally classified lands.

3.2 Geology, Soils and Prime Farmland

This section describes an overview of the existing geological resources at the project area and the potential impacts to those resources that would be associated with the Project. Components of geological resources that are analyzed include geology, soils and prime farmlands.

3.2.1 Affected Environment

Geology

The project area is located in the Coastal Plain Physiographic Province and the Piedmont Physiographic Province. The Coastal Plain Physiographic Province is characterized by gently rolling to flat terrain and is underlain by a wedge of unconsolidated to semi-consolidated, predominantly clastic sedimentary formations. The Piedmont Physiographic Province is underlain by crystalline bedrock formations that exhibit a high degree of geologic complexity; in addition, the region is characterized by the bedrock being overlain by a mantle of residual soil and saprolite. The elevation within the project area ranges between ±120 to ±150 feet above mean sea level (AMSL).

Soils

According to the NRCS Web Soil Survey, the project area consists of five unique soil units (as illustrated in Table 2). The Emporia series, which makes up most of the soil at the project area, consists of well drained, moderately permeable soils that have been formed from marine sediments occurring in Coastal Plains and uplands. The soils are very deep and extend from the Atlantic Coastal Plain in Virginia, North Carolina, South Carolina, and possibly in Alabama and Georgia.

Prime Farmland

The Farmland Protection Policy Act of 1981 (FPPA) was established in order to minimize the extent of unnecessary and irreversible conversion of farmland to nonagricultural uses contributed by Federal programs. The regulation's ultimate goal was to reduce the rate and amount of adaptation of that nation's farmlands, forest lands and range lands which impairs the ability to produce sufficient domestic needs and export markets.

Upon review of the project area's Farmland Classification obtained through the Web Soil Survey, it was determined that approximately 90.3%, or 32.5 acres, of the project area are identified as prime farmland soils for Dinwiddie County while 9.8%, or 3.5 acres, of the project area is not classified as prime farmland (Table 2; Appendix IV).

Table 2. Soil Types

Map Unit Name	Map Unit Symbol	Acres	Percent	Farmland Classification
Emporia sandy loam 0 to 2 percent slopes	5A	16.8	46.7%	Prime Farmland
Emporia sandy loam 2 to 6 percent slopes	5B	5.0	13.9%	Prime Farmland
Mattaponi sandy loam 2 to 6 percent slopes	12B	5.9	16.3%	Prime Farmland
Slagle sandy loam 2 to 6 percent slopes	17B	4.8	13.4%	Prime Farmland
Uchee loamy sand 6 to 10 percent slopes	19C	3.5	9.8%	Not Prime Farmland

The NRCS defines prime farmland soils in the FPPA as soils with an adequate and dependable source for water, favorable temperatures and growing season, acceptable acidity/alkalinity level, few or no rocks, sufficient permeability for water and air, and slopes averaging zero to six percent.

Form AD-1006, Farmland Conversion Impact Rating, is used to determine whether a site is farmland subject to the FPPA. This impact is based on soil characteristics, as well as site assessment criteria, such as agriculture and urban infrastructure, support services, farm size, compatibility factors, on-farm investments and potential farm production loss to the local community and county.

Consultation with the NRCS was initiated on January 5, 2021. Allison Hammer, Area Resource Soil Scientist, assisted in the completion Parts II through V of the Form AD-1006 on January 5, 2021. The USDA-RD, as the lead federal agency, is responsible for completing Parts VI and VII of the form. The total points on the form equaled 139. Pursuant 7 CFR § 658.4 (C)(2), sites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated (reference Appendix IV).

3.2.2 Environmental Consequences

Under the Proposed Action, potential impacts include soil erosion, loss of soil productivity and the establishment of noxious weeds on the soil surface. Construction activities such as vegetation clearing, grading and trenching may also increase erosion potential by destabilizing the soil surface; additionally, soil compaction can result from the movement of heavy equipment. These impacts would be minimized using best management practices (BMPs) and short-term in nature. The Project will be constructed and operated in accordance with an approved erosion and sedimentation control plan and National Pollutant Discharge Elimination System (NPDES) Permit. A full decommissioning plan has also been submitted

and approved by the County and will be done at the HCE Reams Solar I, LLC's expense. The interconnection includes the installation of eight new power poles which only contribute a minimal amount of disturbance and would not be considered a conversion of prime or important farmland.

3.2.3 Mitigation

Best management practices (BMPs) for soil erosion and sediment control measures, such as sediment basins, temporary diversion ditches, and silt fencing around soil stockpiles, will be used to minimize the potential for increased erosion and runoff. Post-construction, the disturbed soils will be stabilized and re-vegetated in order to reduce the potential for erosion impacts during facility operations.

3.3 Floodplains

This section describes an overview of the existing floodplain resources at the project area and the potential impacts to those resources that would be associated with the Project.

A floodplain is any land area susceptible to being inundated by floodwaters from any source. Floodplains are essential to clean water, recharge of water supplies, reduction of flood risks and protection of property, human safety, health and welfare and fish and wildlife habitat. Proper floodplain management will reduce flood losses and ensure the protection of the natural resources and functions of floodplains. The relevant floodplain area to be evaluated is an area that has either a one-percent probability of flood occurrence in a given year (100-year flood) or a 0.2-percent probability of flooding in a given year (500-year flood).

Executive Order (E.O.) 11988, *Floodplain Management*, requires federal agencies to avoid actions, to the extent possible, where there are long and short-term adverse impacts associated with the occupancy or modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practical alternative. Facilities located in a floodplain may be damaged or destroyed by a flood or may change the flood-handling capability of the natural floodplain or the pattern or magnitude of flood flows.

3.3.1 Affected Environment

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 51053C0300B (effective 06/16/2011), the entire project area (to be disturbed/constructed) is located outside the Special Flood Hazard Area (SFHA) and 100-year and 500-year floodplain zones (reference Appendix V).

3.3.2 Environmental Consequences

Under the Proposed Action, there would be no impacts to floodplains as they are absent from the project area and the Project will not be located in a SFHA. Additionally, the Project will

not result in any impacts that would result in any increases to the 100-year or 500-year flood elevation or present barriers to floodway passage within the vicinity of the project area. There also are no potential impacts associated with the interconnection.

3.3.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.4 Wetlands

Federal Agencies are required to avoid, wherever possible, adverse impacts to wetlands, minimize wetlands destruction and preserve the values of wetlands, and to avoid, to the extent possible, the long- and short-term adverse impacts associated with destruction or modification of wetlands, and avoid direct and indirect support of new construction in wetlands wherever there is a practicable alternative under Executive Order 11990 Protection of Wetlands 1977. Under USDA's Land Use Policy, Department Regulation 9500-3, the Agency is responsible for assuring that Agency programs discourage the unwarranted alteration of wetlands or the unwarranted expansion of the peripheral boundaries of existing settlements. Section 363 of the Consolidated Farm and Rural Development Act (7 U.S.C. 2006e) 1990, known as the Con Act, prohibits the use of loan funds for certain purposes. Under the Con Act the Secretary of Agriculture shall not approve any loan under this title to drain, dredge, fill, or level or otherwise manipulate a wetland, or to engage in any activity that results in impairing or reducing the flow, circulation, or reach of water, except in the case of activity related to the maintenance of previously converted wetlands, or in the case of such activity that is already commenced prior to the enactment of this section. This project is not subject to the provisions of the Con Act. The Agency shall not assist in actions that would convert these lands to other uses unless there is a demonstrated, significant need for the project or there are no practicable alternative actions or sites that would avoid conversion, or if conversion is unavoidable, reduce the number of acres to be converted or encroached upon directly or indirectly.

Regulatory oversight of wetlands falls under Section 404 of the Clean Water Act (CWA) and permits are administered by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (USEPA). Section 404 established a Federal permitting program that requires anyone who is proposing to place dredged or fill material into "waters of the United States" (WOUS), which includes wetlands, to obtain a permit from the USACE.

3.4.1 Affected Environment

Soils data, USGS topographic maps, aerial imagery and the National Wetland Inventory (NWI) map were reviewed. Most soils within the project area are considered partially hydric. The NWI map depicts three freshwater forested or shrub wetlands and one freshwater pond within the project area (reference Appendix VI).

HCE Reams Solar I, LLC conducted a Jurisdictional WOTUS Delineation report to identify WOTUS within the project area in 2019 in accordance with the 1987 USACE Wetland Delineation Manual, the Regional Supplement to the USACE Wetland Delineation Manual, and the Atlantic and Gulf Coastal Plain Region (Version 2.0). A Preliminary Jurisdictional Determination from the USACE in July of 2019. The USACE responded in a letter dated September 13, 2019 confirming the delineations outlined in the Jurisdictional WOTUS Delineation report. This determination concluded that there are 6.55 acres and 427 linear feet of non-tidal wetlands within the parent parcel (reference Appendix VI).

3.4.2 Environmental Consequences

Under the Proposed Action, impacts to wetland and water resources are not anticipated. While there are delineated, jurisdictional features located within the project area, the Project has been designed to avoid these features. Short-term and minor adverse water quality impacts may occur during the construction of the Project. These impacts would be associated with soils from disturbed areas being washed by storm water into adjacent waters during rainstorm events; however, these impacts would be avoided with the establishment of site-specific BMPs and would not significantly alter water quality conditions. The Project's interconnection plan includes the installation of eight new power poles which will only contribute a minimal amount of disturbance and will not be located within or near to delineated wetlands.

Executive Order 11990 requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands and to provide opportunity for early public review for any proposals for new construction in wetlands. To meet these requirements, the Eight-Step Decision Making Process for Alternative Consideration was utilized to determine that there is no practicable alternative to wetland impacts and measures will be implemented to minimize harm to wetlands (reference Appendix VI).

3.4.3 Mitigation

BMPs and Stormwater Pollution Prevention Plan (SWPPP) will be developed and utilized during the construction phase to protect the soils and eliminate or minimize any potential erosion into any jurisdictional waters, including wetlands. When disposing of excess spoil or other construction materials on public or private property, wetlands will not be filled in or otherwise converted.

Compost filter socks, conveyance channels, sediment basins, emergency basin spillways, silt fence, silt fence rock outlets and silt fencing around stockpiles will be used as temporary measures during construction to control the flow of water. The disturbed areas will then be permanently stabilized and additional BMPs, such as silt fencing, will be utilized to accept stormwater runoff until the project area has reached its final stabilization. Additionally, ground vegetation will be maintained throughout the operational life of the facility to reduce erosion.

3.5 Water Resources

This section provides an overview of water resources at the project area and addresses water quantity and quality issues related to discharges to or appropriations from surface or ground water, ground water protection programs (e.g., sole source aquifers and recharge areas) and water quality degradation from temporary construction activities. Water quality and quantity changes can impact other environmental resources including but not limited to groundwater and drinking water supplies, threatened and endangered species, other fish and wildlife species and wetlands. Impacts to surface and/or ground water will be the Applicant's responsibility and permitting requirements, typically through state agencies, must be adhered to.

3.5.1 Affected Environment

The USEPA defines a sole source aquifer (SSA) as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend on the aquifer for drinking water. All applicant proposals that have the potential to contaminate a designated SSA or adversely affect an SSA recharge area are subject to USEPA review. Pursuant to Section 1424(e) of the Safe Drinking Water Act (Pub. L. 93-523), no commitment for federal financial assistance may be entered into for any project which USEPA determines may contaminate the SSA so as to create a significant hazard to public health. The USEPA's SSA map does not depict the project area within or near an SSA (reference Appendix VII).

The Project will be located within the Nottoway watershed (Hydrological Unit Code: 03010201). The nearest waterbody is an unnamed freshwater pond located on the eastern portion of the parent parcel. The topography of the project area is relatively flat and generally slopes downwards to the east and southeast and drains northeast off-site and eventually into Gravelly Run.

3.5.2 Environmental Consequences

Under the Proposed Action, impacts to water resources would be minimal. There are no anticipated impacts to groundwater aquifers associated with the Project. Wastewater will not be generated, and process water will not be required for construction or operation of the Project. The Project will only add minor amounts of impervious surfaces to the project area and vegetation will be maintained wherever possible throughout the operational life of the facility.

Additionally, the Project does not include any work related to water distribution and does not include the construction or removal of any water intake facilities, therefore, impacts to water quantity are not anticipated. There also are no potential impacts associated with the interconnection.

Dust suppression shall be carried out as a best management practice but not as a wastewater disposal and at a minimum to avoid illicit discharge to water resources.

3.5.3 Mitigation

Depending on local requirements, a Stormwater Management (SWM) plan may be required. SWM requirements should be requested from the appropriate County/Town office. [References: Virginia Stormwater Management Act, Virginia Code 62.1.44.15 et seq.; Virginia Stormwater Management Program (VSMP) Permit Regulations, 9 VAC 25-870-54 et seq.] Additional guidance may be obtained from DEQ's Office of Stormwater Management.

For any land disturbing activities equal to or exceeding one acre, or equal to or exceeding 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, the operator or owner of a construction project is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities (VAR10) and develop a project-specific SWPPP. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and it must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit are available from DEQ at http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx. [References: Virginia Stormwater Management Act, Virginia Code sections 62.1.44.15 et seq.; VSMP Permit Regulations, 9 VAC 25-870-10 et seq.].

3.6 Biological Resources

This section describes an overview of the existing biological resources at the project area and the potential impacts to those resources that would be associated with the Project.

Biological resources refer to the flora (plants) and fauna (invertebrates, fish, birds, amphibians, reptiles, birds and mammals) that may be found or have historically been found at the project area. Biological resources can also include rivers, lakes, wetlands, upland communities and other habitat types necessary to support local flora and fauna. Vegetation is a key habitat component and acts to stabilize soils and prevent erosion; additionally, information on vegetation can be used in evaluating potential impacts to species and habitats. Potential impacts to biological resources can be direct (project-related mortality) or indirect (displacement, degradation or loss of habitat). Effects of the proposed action on Federal and State-listed species, as well as other species of concern, and critical habitat must be addressed.

3.6.1 Affected Environment

General Fish, Wildlife and Vegetation

The project area lies within Virginia's Southeastern Plains Level III Ecoregion and Rolling Coastal Plain Level IV sub-ecoregion. The Rolling Coastal Plain is a rolling, hilly, dissected portion of the Inner Coastal Plain that is made up of sedimentary material. The potential natural vegetation consists of Oak-Hickory-Pine Forests where the dominant species include hickory *(Carya* spp.), longleaf pine (*Pinus palustris*), shortleaf pine *(Pinus echinata*), loblolly pine *(Pinus taeda)*, white oak *(Quercus alba)* and post oak *(Quercus stellata)*. Today this ecoregion is a mix of woodlands and farmlands. The project area itself is primarily open field, with small, wooded areas scattered throughout and a manmade pond just north of the project area, within the parent parcel.

Wildlife around the project area includes species that adapt well to disturbance and the presence of humans and that are typically found in rural, agricultural areas in Virginia. Examples of typical mammals found in rural, Virginia include white-tailed deer (*Odocoileus virginianus*), meadow vole (*Microtus pennsylvanicus pennsylvanicus*), northern raccoon (*Procyon lotor lotor*), Virginia opossum (*Didelphis virginiana virginiana*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), marsh rabbit (*Sylvilagus palustris*), striped skunk (*Mephitis mephitis mephitis*), eastern chipmunk (*Tamias striatus*), eastern fox squirrel (*Sciurus niger vulpinus*), black rat (*Rattus rattus*) and big brown bat (*Eptesicus fuscus fuscus*).

Listed Threatened and Endangered Species

The Endangered Species Act (ESA) is enforced by the USFWS and provides the protection and recovery of species threatened with extinction and ensures federal agencies use their authorities to further the purpose of ESA to protect and conserve endangered and threatened species. The ESA defines a federally endangered species as any species which is in danger of extinction throughout all or a significant portion of its range. The ESA also identifies habitats critical to listed species and potential mitigation strategies within these habitats. Section 7 of the ESA requires that all federal agencies consult with the USFWS regarding potential impacts that their federal actions could have to listed species.

A review of the USFWS Information, Planning, and Conservation (IPaC) database was conducted to evaluate which species have the potential to inhabit the project area. The IPaC database identified one federally listed threatened species (Table 3) in Dinwiddie County having the potential to occur (reference Appendix XIII).

Table 3. Federally Listed Species with Potential to Occur

Species	Federal Status	ESA Determination
Northern Long-eared bat *Myotis septentrionalis*	Threatened	Reliance on Final 4(d) Rule

Northern Long-eared Bat (*Myotis septentrionalis*)

The Northern long-eared bat (NLEB) is found across much of the eastern and northern

central United States. During the summer, the species roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. The bat spends the winter hibernating in caves and mines, called hibernacula. The species will typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. According to Virginia's Department of Game and Inland Fisheries' (VDGIF) NLEB Winter Habitat and Roost Trees Application, the project area is located over eighty miles from a known hibernaculum.

The Virginia Fish and Wildlife Information Service (VaFWIS) database identified fourteen state listed species that are known or likely to occur within a 2-mile radius of the project area (Table 4).

Table 4. State Listed Threatened and Endangered Species

Species	State Status	Preferred Habitat	Confirmed Observations within 2 miles
Atlantic Sturgeon *Acipenser oxyrinchus*	Endangered	Rivers and coastal waters, nests in estuaries	No
Dwarf Wedgemussel *Alasmidonta heterodon*	Threatened	Small to large rivers in clay, sand, gravel and pebble substrate	No
Yellow Lance *Elliptio lanceolata*	Threatened	Main channels of drainages down to streams as small as 1 meter across. Prefers clean, coarse to medium-sized sand and gravel substrates	No
Blackbanded Sunfish *Enneacanthus chaetodon*	Endangered	Quiet, shallow, heavily vegetated, nonturbid acidic waters of sand and mud-bottomed creeks, rivers, ponds, and lakes	No
Atlantic Pigtoe *Fusconaia masoni*	Threatened	Fast waters with high quality riverine/large creek habitat in headwaters or rural watersheds. Prefers coarse sand and gravel at the downstream edges or riffles.	No
Barking Treefrog *Hyla gratiosa*	Threatened	Tree hammocks, pine barrens, and cypress heads. Breeds near ponds and other wetland habitats	No
Loggerhead Shrike *Lanius ludovicianus*	Threatened	Semi-open country with lookout posts; wires, trees, scrub	No

Species	State Status	Preferred Habitat	Confirmed Observations within 2 miles
Migrant Loggerhead Shrike *Lanius ludovicianus migrans*	Threatened	Open countryside, short-grass pastures, weedy fields, grasslands, agricultural areas, swampy thickets, orchards	No
Little Brown Bat *Myotis lucifugus*	Endangered	Roosts in buildings, caves, trees, rocks, and wood piles	No
Northern Long-eared Bat *Myotis septentrionalis*	Threatened	Roosts underneath bark, in cavities or in crevices of both live trees and snags (dead trees), caves, and mines	No
Roanoke Logperch *Percina rex*	Endangered	Medium-to-large sized warm, clear streams and small rivers of moderate to low gradient	No
Tri-colored Bat *Perimyotis subflavus*	Endangered	Forested landscapes, often in open woods	No
Bachman's Sparrow *Peucaea aestivalis*	Threatened	Open pine or oak woods, palmetto scrub, bushy pastures	No
Red-cockaded Woodpecker *Picoides borealis*	Endangered	Groves, farm country, orchards, shade trees in towns, large, scattered trees	No

Migratory Birds

The Migratory Bird Treaty Act (MBTA) is enforced by the USFWS and makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any migratory bird or the parts, nests, eggs of such bird except under the terms of a valid permit issued.

The USFWS IPaC Report and VDIGF did not identify any migratory bird species that may be potentially affected by activities within the project area (reference Appendix XIII).

Bald and Golden Eagles

The Bald and Golden Eagle Protection Act (BGEPA) is enforced by the USFWS and makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any bald or golden eagle or the parts, nests, eggs of such bird except under the terms of a valid permit issued. The BGEPA also prohibits any activity that could cause injury to the species, nest abandonment or a decrease in productivity.

The Center for Conservation Biology's Mapping Portal depicts no eagle nests or roosts within 9 miles of the project area (reference Appendix XIII).

Invasive Species

E.O. 13112, *Invasive Species*, directs federal agencies to not authorize, fund or carry out actions believed to cause or promote the introduction or spread of invasive species unless the Agency determines that the benefits of such actions outweigh the potential harm caused by invasive species.

The Project will be located within Virginia's Coastal Plain. True North utilized the Virginia DCR's DNH to identify invasive plant species with the potential to occur within the project area. According to the Invasive Plant Species search, eighty-two species have the potential to occur within the Coastal region in areas commonly characterized as having exposure to full or partial sun and mixed moisture levels (reference Appendix XIII).

3.6.2 Environmental Consequences

Under the Proposed Action, impacts to biological communities are expected to be negligible. It is unlikely any threatened or endangered species will be affected by the Project based on the lack of suitable habitat and protected species' requirements. No designated critical habitat for federally listed species occurs within the project area nor will any be affected by the Project. In accordance with the ESA, the USFWS is not required to provide comments for projects that list the NLEB as the only species and if a review of IPaC's assisted determination key indicates that a project may rely on the Service's January 14, 2016 Final 4(d) Rule. The Project meets the criteria for reliance upon the Final 4(d) Rule and a Self-Certification letter was obtained through the USFWS Virginia Field Office Online Project Review. This letter represents the USFWS's concurrence of a "no effect" determination for the NLEB in regard to the Project (reference Appendix XIII).

The Department of Conservation and Recreation's (DCR) Division of Natural Heritage (DNH) has also confirmed that no natural heritage resources have been documented within the project area and no state listed plants or insects will be affected by the Project.

Impacts to migratory birds and/or birds of interest are expected to be negligible based on the lack of suitable nesting and foraging habitat. Also, ground mounted solar arrays pose little to no risk to migratory birds. Additionally, the solar panels proposed for use at this facility are designed to absorb the sunlight (photovoltaic panels) versus reflect the light; therefore, a reflective glare and the "lake effect" phenomenon is not a concern for this facility.

While Bald and Golden Eagles may be visitors to the area surrounding the project area, suitable nesting habitat, which includes tall, large diameter trees and preferred foraging areas including large, open expanses of water, are not present within the project area.

The potential increase of invasive species is not anticipated with the Project. Vegetation must be maintained under the panel surface in order to prevent shading which will be the

responsibility of the facility owner and will be performed on a monthly or bi-monthly basis. Given that only minor earthwork is required for the construction of the Project and no fill material is being imported, the establishment of invasive species would be insignificant.

3.6.3 Mitigation

The contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the contractor, the contractor will immediately report this evidence to the Owner and a representative of the Agency. Construction shall be temporarily halted pending the notification process and further directions issued by the Agency after consultation with the USFWS.

A time of year restriction will be implemented to prohibit any required tree removal during the NLEB pup season (June 1-July 31).

The following will be implemented:

- Use of appropriate seed mix/plants and seasonal mowing developed in consultation with the DCR;
- Development of a monitoring and control plan for invasive species;
- Planting of native pollinator plants in the buffer areas of the planned facility, and;
- Minimizing habitat fragmentation by leaving round versus long, skinny natural cover and forest land fragments; retaining connective corridors that allow significant wildlife migrations between fragments and designing the intervening landscape to benefit habitat; and natural cover as opposed to turf grass and mowed lawn.

3.7 Cultural Resources and Historic Properties

This section describes an overview of the existing cultural and historic resources at the project area and the potential impacts to those resources that would be associated with the Project.

The National Historic Preservation Act (NHPA) is intended to protect and preserve historical and archeological sites within the United States; Section 106 of the NHPA requires all Federal agencies to consider the effects of the actions and the actions they fund, permit and/or license on historic properties. The NHPA defines historic properties as any prehistoric or historic district, site, building, structure, or object included in, or eligible for listing in, the NRHP.

The NHPA also allows the Applicant to notify, engage, involve and work with Native American tribes as they proceed through the steps of Section 106 review. During the review process, consultation with any Native American tribe that attaches religious and cultural significance to historic properties that may be affected by the agency's undertakings is conducted and a

reasonable opportunity to comment on such undertakings is granted.

3.7.1 Affected Environment

The Virginia Cultural Resource Information Services (VCRIS) database identified five architectural resources and two archaeological resources within the half-mile buffer. Pursuant Section 106 of the NHPA, the Project was submitted to the Virginia Department of Historic Resources' (VDHR) Electronic Project Information Exchange (ePIX) system on June 14, 2020. In a response dated July 14, 2020, the VDHR concluded that in order to identify historic properties that may be affected by the Project, a Phase I cultural resources study be conducted within the project area.

In response to the VDHR's recommendation, Dutton + Associates, LLC (D+A) conducted a Phase I Cultural Resource Survey for the project area. The survey involved both archaeological and architectural investigations in order to confirm the presence or absence of cultural resources located within the project area, evaluate their potential eligibility for listing in the NRHP, and assess those that are considered NRHP-eligible for project effects.

D+A initiated an architectural resources survey, which identified twelve (12) architectural resources greater than 50 years of age located within the Project APE, three of which are located directly within or overlap the project area.

Of the surveyed resources, five (5) were previously recorded and seven (7) were newly recorded during this Phase I survey. The twelve resources within the Project APE and evaluated as part of this survey include single family dwellings from the mid-nineteenth to mid-twentieth century, a late-nineteenth century church, and three Civil War battlefields. Three (3) of the twelve resources surveyed were identified as Civil War battlefields (Reams Station Battlefield I & II, Hatcher's Run Battlefield, and Boydton Plank Road Battlefield) and considered potentially eligible for listing in the NRHP. D+A noted that the remaining surveyed resources do not appear to reflect any unique or significant design or historical associations, and as such, none were recommended to be potentially eligible for listing in the NRHP individually or collectively.

D+A concluded that the Project would not have an adverse impact on historic resources and did not recommend further evaluation. Their findings were submitted to the VDHR on January 13, 2021. A response was received from the VDHR concurring with the findings of the Phase I Cultural Resources Survey on February 10, 2021. The VDHR concluded that the Project will have no adverse effects on historic resources and no further investigation is warranted.

A copy of all VDHR correspondence is presented in Appendix IX.

Tribal Consultation

Upon review of U.S. Department of Housing and Urban Development's (HUD) Tribal

Directory Assessment Tool, it was determined that the Catawba Indian Nation, Nansemond Indian Nation and Delaware Nation were listed as the tribes with interest in the area.

True North Consultants (True North) sent a letter to each Tribal Historic Preservation Office (THPO) on June 12, 2020 providing notification of intent to initiate the Section 106 review process. A response from the Nansemond Indian Tribe was received on June 17, 2020 stating that they are satisfied with efforts conducted to be sure that no Nansemond historic properties or other cultural resources will likely be adversely affected. The Nansemond Indian Nation is not currently aware of any specific Nansemond cultural or historic sites within the project area, therefore, there are no objections to the Project. The Delaware Nation responded in a letter dated July 9, 2020 stating the location of the Project does not endanger cultural, or religious sites of interest to the Delaware Nation; however, should archaeological sites or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted and the appropriate agencies be contacted. A response was received from the Catawba Indian Nation on July 15, 2020 concluding that there were no immediate concerns in regards to the Project; however the Catawba Indian Nation requested to be notified if Native American artifacts and/or human remains are located during ground disturbing activity.

A copy of all THPO correspondence is presented in Appendix IX.

3.7.2 Environmental Consequences

Under the Proposed Action, no known historic properties and/or archaeological sites will be affected, as concluded by consultation with the VDHR and THPOs. There also are no potential impacts associated with the interconnection.

3.7.3 Mitigation

In the event of inadvertent discovery, a stop work order shall be issued immediately; the project engineer and RD will be notified. The Agency will issue further directions after coordination with VDHR, interested Tribes and the Advisory Council on Historic Preservation (ACHP).

3.8 Air Quality

This section describes an overview of the existing air quality at the project area and the potential impacts that would be associated with the Project.

Air quality management and protection responsibilities exist at the federal, state and local levels; however, the primary statutes that establish ambient air quality standards and establish regulatory authorities to enforce regulations designed to attain those standards are the federal Clean Air Act (CAA).

The CAA and its amendments mandate requirements for managing air quality across the nation by establishing primary and secondary air quality standards. Primary air quality standards protect the public heath, including the health of sensitive populations including people of asthma, children and older adults. Secondary air quality standards protect public welfare by promoting ecosystems health, damage to crops and buildings and preventing decreased visibility. Potential air quality effects can be short-term (construction-related) or long-term (facility emissions and increased traffic).

3.8.1 Affected Environment

Under the CAA, the USEPA has established and continues to update the National Ambient Air Quality Standards (NAAQS) for "criteria" pollutants including ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2) and lead (Pb). The NAAQS for these pollutants are listed in Table 5 and represent the levels of air quality deemed necessary by the USEPA to protect the public health and welfare with an adequate margin of safety.

Table 5. National Ambient Air Quality Standards

Pollutant		Averaging Time	Level	Form
Carbon Monoxide (CO)		8 hours	9 ppm	Not to be exceeded more than once per year
		1 hour	35 ppm	
Lead (Pb)		Rolling 3-month average	0.15 µg/m3	Not to be exceeded
Nitrogen Dioxide (NO2)		1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		1 year	53 ppb	Annual Mean
Ozone (O3)		8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	$PM_{2.5}$	1 year	12.0 µg/m^3	annual mean, averaged over 3 years
		1 year	15.0 µg/m^3	annual mean, averaged over 3 years
		24 hours	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO2)		1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		3 hours	0.5 ppm	Not to be exceeded more than once per year

The USEPA Green Book provides detailed information about area NAAQS designations, classifications and nonattainment status. Established under the CAA, the General Conformity Rule plays an important role in helping states improve air quality in those areas that do not

meet the NAAQS. These regulations require that projects in federal nonattainment areas that could be built with funding from a federal agency such as the RBS must demonstrate conformity with the applicable state or local attainment plan. The project area is not located in any Nonattainment or Maintenance Areas for the six criteria pollutants including: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter and sulfur dioxide (reference Appendix X); therefore, the project area is in conformance with the State Implementation Plan for air quality.

3.8.2 Environmental Consequences

Under the Proposed Action, impacts to air quality are expected to be minor and short-term in nature. During the construction phase, air quality impacts may result from dust generated during movement of soils and an increase in emissions from equipment and vehicles. It is estimated that during the peak construction period, there could be approximately 10-15 semi-trucks visiting the project area per day but on average, there will only be 6-7. Earth work will be completed using six skid steers and one mini excavator. A telehandler will also be utilized. Given the nature of operations of a solar facility, the Project would not contribute to air pollution nor result in a conflict or obstruction to an air quality plan. The Project would produce electricity with no direct air emissions of greenhouse gases or other air pollutants, and very low life-cycle emissions relative to traditional fossil fuels. In the long-term, there will ultimately be a small reduction in harmful emissions by reducing the energy demand from traditional fossil fuel sources in the area which would improve air quality in the region. The Project's interconnection plan includes the installation of eight new power poles which will assist in the transfer of electricity. The interconnection will not create air emissions, therefore, no potential impacts to air quality are expected.

3.8.3 Mitigation

Fugitive dust caused by the movement of construction materials and construction equipment will be controlled by adherence to the Virginia DEQ regulations and 9 VAC 5-50-60 et. seq., which governs the abatement of visible emissions and fugitive dust emissions. Measures include, but are not limited to, the following: use, where possible, of water or chemicals for dust control, installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials, covering of open equipment for conveying materials, and prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion. Land clearing wastes (vegetative debris) generated during construction should be properly managed in accordance with applicable regulations and local ordinances. Shredding/chipping of vegetative debris and reuse on-site is recommended over open burning. If project activities include open burning or the use of special incineration devices, this activity must meet the requirements under 9 VAC 5-130-10 through 9 VAC 130-60 and 9 VAC 5-130-100 of the *Regulations* for open burning. In addition, the *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning.

3.9 Socioeconomics and Environmental Justice

E.O. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, require that federal agencies, whenever feasible, maintain information of populations by race, national origin or income and will use this information to determine whether their actions have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

Additionally, the socioeconomic conditions of the project area are analyzed for any potential impacts associated with the construction and operation of the Project. Factors considered in this analysis include population, employment and income.

3.9.1 Affected Environment

The USEPA's Environmental Justice Screening and Mapping Tool (EJSCREEN) and data from the US Census Bureau were utilized to determine the possible socio-economic impacts and environmental justice impacts of minority and low-income populations for the project area and surroundings (reference Appendix XI).

According to the EJSCREEN American Community Survey (ACS) Summary Report, the total population of the project area and 10-mile radius is 45,025. The area's race makeup consists of Black (approximately 52%) and White (approximately 42%). The area's population is distributed with 6% under the age of 4, 14% from 4 to 17, 64% from 18 to 64 and 16% over the age of 65.

According to the US Census Bureau, the median household income for Dinwiddie County is $55,880 with 12.5% of individuals below poverty level.

3.9.2 Environmental Consequences

Under the Proposed Action, impacts to socioeconomic and environmental justice are not anticipated. As the Project does not include the addition of new homes or businesses, implementation of the Project would not directly stimulate unplanned population growth in the project area. Local residents would not notice a change in business or economic activity, shifts in population movement and growth, or impact on public service demands. The Project will not adversely or significantly affect low income or minority populations but will provide positive economic impacts by expanding the tax base in the County. There also are no potential impacts associated with the interconnection.

3.9.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.10 Coastal Zone and Coastal Barrier Resources

This section describes an overview of the existing coastal resources at the project area and the potential impacts that would be associated with the Project.

Coastal areas and barrier systems provide diverse and unique habitats as well as protect inland areas from hurricanes, other storms and storm surges. Heavy pressure from residential, recreational and industrial development urged Congress to enact two major laws for their protection: The Coastal Zone Management Act (CZMA) of 1972 and the Coastal Barrier Resources Act (CBRA) of 1982. The CZMA requires federal actions that are reasonably likely to affect any land or water use or natural resource in a coastal zone be consistent with the enforceable policies while the CBRA prohibits federal activities in CBRA units (undeveloped coastal barrier lands along the Atlantic, Gulf and Great Lakes coasts).

“Coastal State” means a State of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes. According to the National Oceanic and Atmospheric Administration (NOAA), Virginia’s coastal zone includes the 29 counties, 17 cities and 42 incorporated towns of Tidewater Virginia, including the Atlantic Coast watershed and portions of the Chesapeake Bay and Albemarle-Pamlico Sound watersheds.

3.10.1 Affected Environment

The project area is located over 60 miles from the coast and according to the USFWS’s Coastal Barrier Resource System mapper, the project area is not located in or adjacent to state’s coastal zone (reference Appendix XII).

3.10.2 Environmental Consequences

Under the Proposed Action, there would be no impacts to coastal resources as they are absent from the project area and surrounding area. There also are no potential impacts associated with the interconnection.

3.10.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.11 Noise

This section describes an overview of the existing ambient sound environment at the project area and the potential impacts that would be associated with the Project.

The construction and operation of the Project could create noise impacts. Certain activities inherently produce sound levels or characteristics that have the potential to create noise. There are two main categories of noise – community noise and job-related noise. Job-related noise is regulated by the Occupational Safety and Health Administration (OSHA). The other category,

community noise, refers to the combination of multiple sources of noise which may result in an overall unacceptable level for those living, working or recreating in the area especially in noise-sensitive areas including residences, schools, hospitals, churches, parks, wildlife refuges, etc.

3.11.1 Affected Environment

The project area is located in Dinwiddie County, about six miles east of the Dinwiddie city center. Ambient noise at the project area consists predominantly of rural or natural sounds, as well as manmade noise from agriculture, and local roads and highways. The project area is located in a rural area with only a few residences in the vicinity. Noise-sensitive areas are not located within the project area or nearby surroundings.

3.11.2 Environmental Consequences

Under the Proposed Action, there will be a direct, short-term increase in noise related to construction activities. According to the American National Standards Institute (ANSI), average construction sound levels range between 80-90 decibels (dBA) – this singular impact will be temporary, occurring only during daytime hours within the 4-month period. Land clearing activities will include skid steers and one mini excavator and during the first two weeks of construction, pile driving machines will be utilized. Noise related to traffic increase will also be encountered. It is estimated that during the peak of construction, approximately 10-15 semi-trucks will visit the project area per day but on average, there will only be 6-7. Post-construction, the ambient sound environment would be expected to return to existing levels. Noise from equipment (i.e., the inverter) will only be audible during the daylight hours when the panels are producing power and will likely only be heard by individuals within the perimeter fence. An annual site inspection will occur throughout the operational life of the Project along with monthly mowing activities. Consequently, the Project, and associated interconnection, would only cause temporary noise impacts and will not result in a long-term increase to the ambient noise levels of the area.

3.11.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.12 Traffic and Transportation

This section describes an overview of the existing traffic and transportation environment at the project area and the potential impacts to those resources that would be associated with the Project.

Transportation impacts include those from transport to a site, on-site and from a site. Other impacts considered are the transportation of materials to or from the Facility either during construction or during operation. Any possible changes in transportation patterns or intensity are also evaluated.

3.12.1 Affected Environment

The Project will be located near the intersection of Old Vaughan Road (State Road 605) and Duncan Road (State Road 670). Old Vaughan Road is a two-lane highway that eventually leads to Interstate 85 to the west. Virginia's Department of Transportation (VDOT) average daily traffic counts for Old Vaughan Road in 2019 is 390 vehicles. The nearest railroad line is located approximately 5 miles to the east of the project area and the nearest airport is the Dinwiddie Airport located to the north approximately six miles.

3.12.2 Environmental Consequences

Under the Proposed Action, significant impacts to transportation would not result due to the Project, given the short, 4-month duration of the construction phase and the limited number of workers and equipment required for operation and maintenance. The majority of the traffic burden as a result of the Project will occur during the construction phases – both build-out and end-of-life tear down. During these short duration phases, it is anticipated that traffic will increase slightly to account for construction personnel and equipment. It is estimated that during the peak construction period, there could be approximately 10-15 semi-trucks visiting the project area per day but on average, there will only be 6-7. During operation of the Project, there will be monthly mowing activities and an annual site inspection – a significant increase in traffic for any maintenance or inspection activities is not anticipated. There also are no potential impacts associated with the interconnection.

3.12.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.13 Visual Resources

This section describes an overview of the existing visual resources at the project area and the potential impacts to those resources that would be associated with the Project. Visual resources are the visual character of a place, both manmade and natural, that give a particular landscape its character and aesthetic quality.

As development in rural areas increases in scope and complexity, aesthetics or visual impacts may be a concern. The visual quality of an area may be affected by the introduction of new buildings or structures. Where visual impacts are identified, and avoidance of the impacted area is not feasible, efforts should be made to design, construct and operate in such a way that would minimize aesthetic impacts.

3.13.1 Affected Environment

The Project will be located in Dinwiddie County approximately six miles east of the town of Dinwiddie. The project area is currently a mix of agricultural land and woods, mimicking the surrounding properties.

3.13.2 Environmental Consequences

Under the Proposed Action, visual impacts would occur during both the construction and operation phase of the Project. During the construction stage, machinery would be present, and the project area would be cleared and graded – these impacts would be considered minor since construction would be temporary. Once the facility becomes operational, visual impacts would include the addition of solar modules mounted on a steel racking system, surrounded by a chain-link security fence. Visual impacts would be insignificant as the Project will be set back from the road. There also are no potential impacts associated with the interconnection.

3.13.3 Mitigation

No mitigation measures are proposed as there are no anticipated impacts to the resource.

3.14 Human Health and Safety

This section describes public health and safety associated with the construction and operation of the Project and the potential impacts. There is an importance in evaluating the Project's impact on public health and safety per 40 CFR Part 1508.27. The Project would require all personnel and visitors to follow the OSHA guidelines during construction and operation.

Electromagnetic Fields and Interference

Electromagnetic Fields (EMF) are associated with any electric device. Power-frequency EMFs are associated with the generation, transmission and use of electric power. Electromagnetic Interference (EMI) is the disruption to the standard operation of an electronic device created by electromagnetic fields in its vicinity. This interference can be continuous or intermittent and can vary based on the distance and field levels that are produced by the source. Effects from high-voltage electric transmission lines and substations may include interference to radio and television reception in the immediate vicinity. Linkages between EMFs and human health have been made; however, are generally considered weak.

Environmental Risk Management

Environmental risk management informs Agency staff on the proper procedures for environmental due diligence relating to hazardous substances, hazardous wastes, and petroleum waste products. If properly conducted, environmental risk management proactively recognizes potential hazards and legal and financial vulnerabilities associated with the major

hazardous materials, federal and state laws, as well as possible hazards to the human environment in compliance with NEPA.

Reflectivity, Glare or Dazzle

Reflectivity refers to light that is reflected off surfaces. The potential impacts of reflectivity are glint, glare or dazzle which can cause a brief loss of vision. According to the Federal Aviation Authority (FAA), solar energy projects introduce new visual surfaces to the airport setting, where reflectivity could result in glare that cause flash blindness episodes for pilots and air traffic controllers.

3.14.1 Affected Environment

Environmental due diligence is the process of inquiring into the environmental condition of real property to determine the potential for contamination and was conducted by the completion of a Phase I Environmental Site Assessment by Timmons in May of 2020. The report was performed in accordance with the procedures included in American Society for Testing and Materials (ASTM) E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Timmons' assessment revealed no evidence of recognized environmental conditions (RECs) in connection with the Project and concluded that further study does not appear to be warranted.

3.14.2 Environmental Consequences

Under the Proposed Action, significant impacts to human health and safety are not anticipated. There are no foreseeable health and safety risks from induced currents, electric shock, effects on cardiac pacemakers and nuisance factors, such as audible noise, potential interference with radio and television broadcast reception and electronic equipment. During the construction phase, hazardous materials such as diesel, maintenance fluids and paints would be stored and used onsite; however, the operation of the solar facility would not the use, release, or generate hazardous materials. A fuel tank will be kept within the project area and will sit on an overflow containment trap. The Project's will also include the installation of eight new power poles which will assist in the transmission of electricity. The power poles will be erected within the SEC utility easement and there are no potential impacts associated with the interconnection.

PV systems do not emit any material during their operation; however, they do generate EMF, sometimes referred to as radiation. The EMF produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat), but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. Modern humans are all exposed to EMF throughout our daily lives without negative health impact. An individual outside of the fenced perimeter of a solar facility is not exposed to significant EMF; therefore, there is no negative health impact from the EMF produced in a solar farm.

The amount of reflectivity varies among solar technologies. The Project will reduce reflectivity by utilizing photovoltaic panels which are primarily absorptive compared to concentrated solar power technologies. Lastly, the Project does not include lighting; therefore, the Project would not result in light exposure or result in light pollution or glare.

3.14.3 Mitigation

Waste generation will be managed in accordance with Federal, State and local regulations. Site safety will be managed by strict adherence to OSHA requirements. Procedures included in an emergency response plan will include management efforts, a Hazardous Operations Manual, and Spill Control and Countermeasures (SPCC) plans designed to protect workers and the public from further exposure to hazards.

4.0 SUMMARY OF MITIGATION

Mitigation and monitoring actions will be performed to reduce any impacts to the environmental resources associated with the Project. These actions are as follows:

- The Applicant shall obtain and comply with all required County, State and Federal permits.
- BMPs will be implemented, including those required by the NPDES permitting and SWPPP.
- When disposing of excess spoil or other construction materials on public or private property, wetlands will not be filled in or otherwise converted.
- Ground vegetation will be maintained throughout the operational life of the facility.
- Depending on local requirements, a Stormwater Management (SWM) plan may be required. SWM requirements should be requested from the appropriate County/Town office. [References: Virginia Stormwater Management Act, Virginia Code 62.1.44.15 et seq.; Virginia Stormwater Management Program (VSMP) Permit Regulations, 9 VAC 25-870-54 et seq.] Additional guidance may be obtained from DEQ's Office of Stormwater Management.
- For any land disturbing activities equal to or exceeding one acre, or equal to or exceeding 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, the operator or owner of a construction project is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities (VAR10) and develop a project-specific SWPPP. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and it must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit are available from DEQ at http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx. [References: Virginia Stormwater Management Act, Virginia Code sections 62.1.44.15 et seq.; VSMP Permit Regulations, 9 VAC 25-870-10 et seq.].
- The contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the contractor, the contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the USFWS.
- Tree removal will not occur during the NLEB pup season (June 1-July 31).
- The following will be implemented:
    - Use of appropriate seed mix/plants and seasonal mowing developed in consultation with the DCR;
    - Development of a monitoring and control plan for invasive species;
    - Planting of native pollinator plants in the buffer areas of the planned facility, and;
    - Minimizing habitat fragmentation by leaving round versus long, skinny natural cover

and forest land fragments; retaining connective corridors that allow significant wildlife migrations between fragments and designing the intervening landscape to benefit habitat; and natural cover as opposed to turf grass and mowed lawn.

- In the event of inadvertent discovery, a stop work order shall be issued immediately; the project engineer and RD will be notified. The Agency will issue further directions after coordination with VDHR, interested Tribes and the ACHP.
- Fugitive dust caused by the movement of construction materials and construction equipment will be controlled by adherence to the Virginia DEQ regulations and 9 VAC 5-50-60 et. seq., which governs the abatement of visible emissions and fugitive dust emissions. Measures include, but are not limited to, the following: use, where possible, of water or chemicals for dust control, installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials, covering of open equipment for conveying materials, and prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion. Land clearing wastes (vegetative debris) generated during construction should be properly managed in accordance with applicable regulations and local ordinances. Shredding/chipping of vegetative debris and reuse on-site is recommended over open burning. If project activities include open burning or the use of special incineration devices, this activity must meet the requirements under 9 VAC 5-130-10 through 9 VAC 130-60 and 9 VAC 5-130-100 of the *Regulations* for open burning. In addition, the *Regulations* provide for, but do not require, the local adoption of a model ordinance concerning open burning.
- Waste generation will be managed in accordance with Federal, State and local regulations.
- Site safety will be managed by strict adherence to OSHA requirements. Procedures included in an emergency response plan will include management efforts, a Hazardous Operations Manual, and SPCC plans designed to protect workers and the public from further exposure to hazards.

5.0 SUMMARY OF IMPACTS

Under the Proposed Action, the Project would have both short-term (temporary) and long-term direct effects – these effects are expected to be minor, insignificant, and unlikely to contribute to cumulative effects.

The mitigation measures discussed in Section 4.0 of this EA will be implemented to avoid or minimize the Project's cumulative effects to the environment.

Table 6. Summary of Impacts

Resource	Impact Analysis
Land Use	No adverse impacts
Formally Classified Lands	None present; no impacts
Geology	No adverse impacts
Soils	No adverse impacts
Prime Farmland	Approximately 33 acres of prime or important farmland being converted
Floodplains	None present; no impacts
Wetland	No adverse impacts
Water Resources	No adverse impacts
General Fish, Wildlife and Vegetation	No adverse impacts
Listed Threatened and Endangered Species	Not likely to adversely effect listed threatened and endangered species
Migratory Birds	No adverse impacts
Bald and Golden Eagles	No adverse impacts
Invasive Species	No adverse impacts
Cultural Resources and Historic Properties	No adverse impacts
Air Quality	Temporary impacts during construction; no long-term impacts
Socioeconomic and Environmental Justice	No adverse impacts
Coastal Resources	None present; no impacts
Noise	Temporary impacts during construction; no long-term impacts
Traffic and Transportation	Temporary impacts during construction; no long-term impacts
Visual Resources	No adverse impacts
Human Health and Safety	No adverse impacts

6.0 COORDINATION, CONSULTATION AND CORRESPONDENCE

Agency correspondence regarding this project includes:

- NRCS correspondence and AD-1006, regarding prime farmlands, dated June 22, 2020.
- USACE correspondence regarding wetlands and WOUS, dated September 13, 2019.
- VDHR correspondences, regarding historic properties, dated July 14, 2020 and February 10, 2021.
- Consultation was initiated with the following THPOs:
    - Nansemond Indian Nation
      1001 Pembroke Lane
      Suffolk, Virginia 23434
    - Erin Paden
      Historic Preservation Director
      Delaware Nation of Oklahoma
      P.O. Box 825
      Anadarko, Oklahoma 73005
    - Caitlin Rogers
      Tribal Historic Preservation Office
      Catawba Indian Nation
      1536 Tom Steven Road
      Rock Hill, South Carolina 29730

Copies of all communications are included in this EA.

7.0 LIST OF PREPARERS

Holocene Clean Energy:

- Davis Plunkett, Development Manager

True North Consultants, Inc.:

- Brian Mihelich, Executive Vice President
- Leslie Schroeder, Staff Consultant
- Marina Jawad, Associate Consultant

USDA Personnel:

- Michael Geiger, Environmental Protection Specialist
- James Warner, State Environmental / Civil Rights Coordinator

8.0 REFERENCES

American National Standards Institute (ANSI). October 26, 2018. How Loud is Construction Site Noise? Accessed on March 8, 2021. Retrieved from https://blog.ansi.org/2018/10/how-loud-is-construction-site-noise/#gref

Audubon. Guide to North American Birds. Bachman's Sparrow, *Centronyx henslowii*. Accessed on June 26, 2020. Retrieved from https://www.audubon.org/field-guide/bird/bachmans-sparrow

Audubon. Guide to North American Birds. Loggerhead Shrike, *Lanius ludovicianus*. Accessed on July 10, 2020. Retrieved from https://www.audubon.org/field-guide/bird/loggerhead-shrike

Audubon. Guide to North American Birds. Red-headed Woodpecker, *Dryobates borealis*. Accessed on July 10, 2020. Retrieved from https://www.audubon.org/field-guide/bird/red-cockaded-woodpecker

Federal Emergency Management Agency (FEMA). Flood Map Service Center. Accessed on July 23, 2020. Retrieved from https://msc.fema.gov/portal

National Oceanic and Atmospheric Administration, Office of Coastal Management, 2012. *State Coastal Zone Boundaries*. Accessed on June 25, 2020. Retrieved from https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf

NatureServe Explorer. Atlantic Pigtoe, *Fusconaia masoni*. Accessed on July 10, 2020. Retrieved from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.1066291/Fusconaia_masoni

NatureServe Explorer. Blackbanded Sunfish, *Enneacanthus chaetodon*. Accessed on July 10, 2020. Retrieved from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.100892/Enneacanthus_chaetodon

NatureServe Explorer. Yellow Lance, *Elliptio lanceolata*. Accessed on July 10, 2020. Retrieved from https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.110016/Elliptio_lanceolata

New Jersey Department of Environmental Protection – Division of Fish & Wildlife. Loggerhead Shrike, *Lanius ludovicianus migrans*. Accessed on July 10, 2020. Retrieved from https://www.njfishandwildlife.com/ensp/pdf/endthrtened/loggerhdshrike.pdf

The National Wildlife Federation. Little Brown Bat, *Myotis lucifugus*. Accessed on July 7, 2020. Retrieved from https://www.nwf.org/Educational-Resources/Wildlife-

Guide/Mammals/Bats/Little-Brown-Bat

Virginia Department of Conservation Recreation's (DCR) Division of Natural Heritage (DNH). Virginia Invasive Plant Species List. Accessed on February 22, 2020. Retrieved from https://www.dcr.virginia.gov/natural-heritage/invsppdflist

Virginia Department of Environmental Quality (DEQ). State Water Resources Plan. Accessed on June 26, 2020. Retrieved from https://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/WaterSupplyPlanning/StateWaterResourcesPlan.aspx

Virginia Department of Transportation (VDOT). Traffic Count Comparison application. Accessed on July 2, 2020. Retrieved from https://www.virginiaroads.org/datasets/traffic-volume?geometry=-79.254%2C37.258%2C-78.993%2C37.306

Virginia Department of Wildlife Resources (DWR). Rafinesque's eastern big-eared bat, *Corynorhinus rafinesquii macrotis*, Accessed on July 10, 2020. Retrieved from https://dwr.virginia.gov/wildlife/information/rafinesques-eastern-big-eared-bat/

University of Virginia. Weldon Cooper Center for Public Service. Virginia Solar Initiative. Electromagnetic Fields (EMF). Accessed on January 14, 2021. Retrieved from https://solar.coopercenter.org/taxonomy/term/5356

U.S. Census Bureau. Dinwiddie County, Virginia. Accessed on July 7, 2020. Retrieved from https://data.census.gov/cedsci/profile?q=Dinwiddie%20County,%20Virginia&g=0500000US51031&tid=ACSDP5Y2018.DP05

U.S. Department of Agriculture (USDA). Natural Resources Conservation Service. Web Soil Survey. Accessed on July 6, 2020. Retrieved from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Department of Agriculture (USDA). Rural Development Instructions. *Guide to Applicants for Preparing Environmental Reports for Environmental Assessments*. Accessed July 2020. Retrieved from https://www.rd.usda.gov/files/1970c.pdf

U.S. Environmental Protection Agency (USEPA). Ecoregions of Virginia. Accessed July 7, 2020. Retrieved from https://www.epa.gov/eco-research/ecoregion-download-files-state-region-3#pane-36

U.S. Environmental Protection Agency (USEPA). Environmental Justice Screening and Mapping Tool. Accessed on July 7, 2020. Retrieved from https://ejscreen.epa.gov/mapper/

U.S. Fish and Wildlife Service (USFWS). Coastal Barrier Resources System Mapper. Accessed

on July 7, 2020. Retrieved from https://www.fws.gov/CBRA/Maps/Mapper.html

U.S. Fish and Wildlife Service (USFWS). Fact Sheet. Northern Long-Eared Bat, *Myotis septentrionalis*. Accessed on July 10, 2020. Retrieved from https://www.fws.gov/mountainprairie/ea/Northernlongearedbatfactsheet_March2015.pdf

U.S. Fish and Wildlife Service (USFWS). Fish and Aquatic Conservation. Atlantic Sturgeon, *Acipenser oxyrinchus*. Accessed on July 10, 2020. Retrieved from https://www.fws.gov/fisheries/freshwater-fish-of-america/atlantic_sturgeon.html

U.S. Fish and Wildlife Service (USFWS). Information, Planning and Conservation (IPaC) System Report and Resource List. Accessed on June 15, 2020. Retrieved from http://ecos.fws.gov/ipac

U.S. Fish and Wildlife Service (USFWS). National Wetlands Inventory, Wetlands Online Mapper. Accessed on July 9, 2020. Retrieved from http://fws.gov/wetlands/data./mapper.html

U.S. Fish and Wildlife Service (USFWS). Raleigh Ecological Service Field Office. Dwarf Wedgemussel, *Alasmidonta heterodon*. Accessed on July 10, 2020. Retrieved from https://www.fws.gov/raleigh/species/es_roanoke_logperch.html

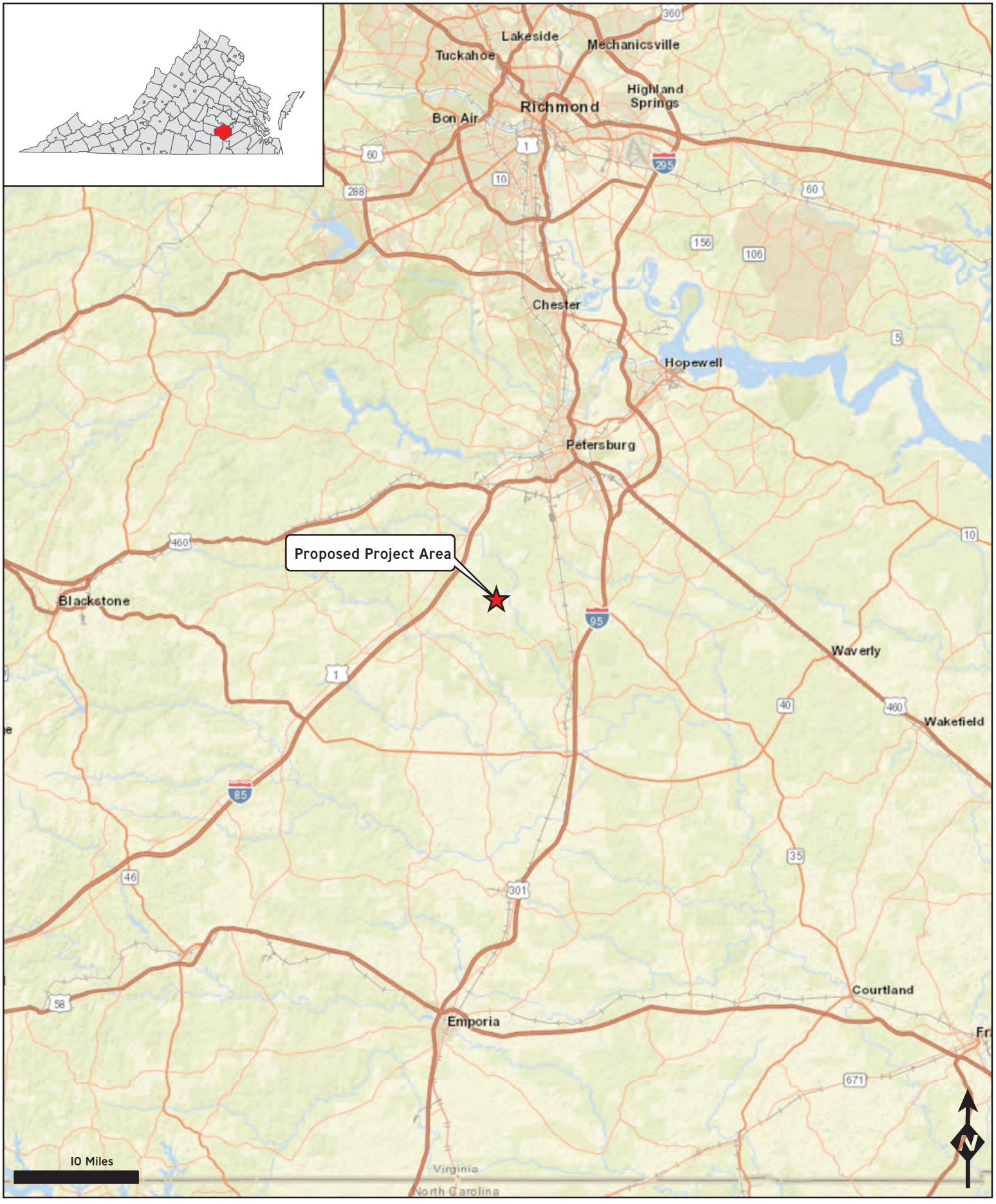
U.S. Fish and Wildlife Service (USFWS). Raleigh Ecological Service Field Office. Roanoke Logperch, *Percina rex*. Accessed on July 10, 2020. Retrieved from https://www.fws.gov/raleigh/species/es_roanoke_logperch.html

U.S. Fish and Wildlife Service (USFWS). Southeast Region. Tricolored Bat, *Perimyotis subflavus*. Accessed on July 10, 2020. Retrieved from https://www.fws.gov/southeast/pdf/fact-sheet/tri-colored-bat.pdf

U.S. Geological Survey (USGS). Fact Sheet. Barking Treefrog, *Hyla gratiosa*. Accessed on July 7, 2020. Retrieved from https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=55

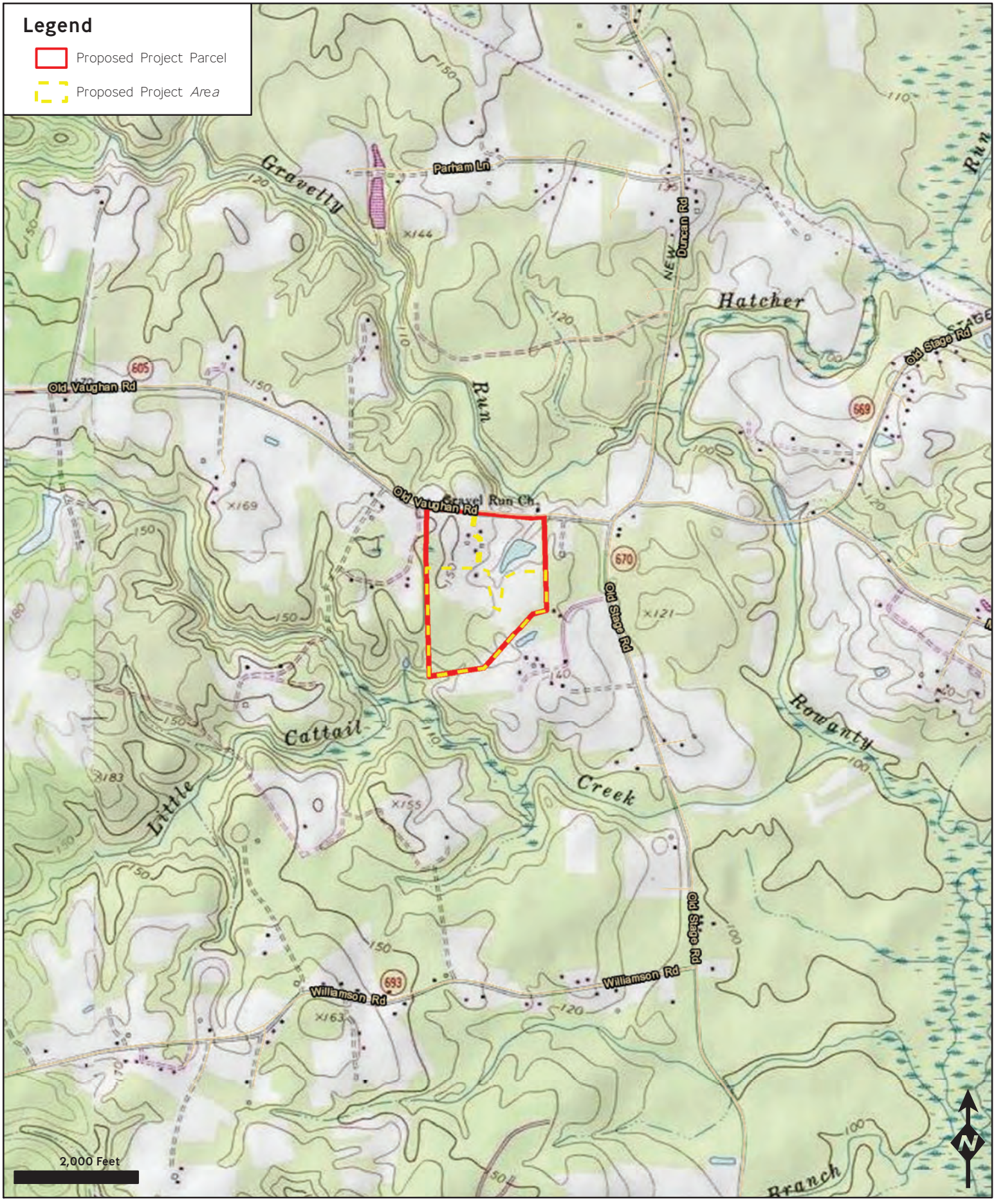
APPENDIX I

Figures



TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions.

FIGURE I
Regional Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia



TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions.

FIGURE 2
Topographic Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia

TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions.

FIGURE 3
Area Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia

APPENDIX II

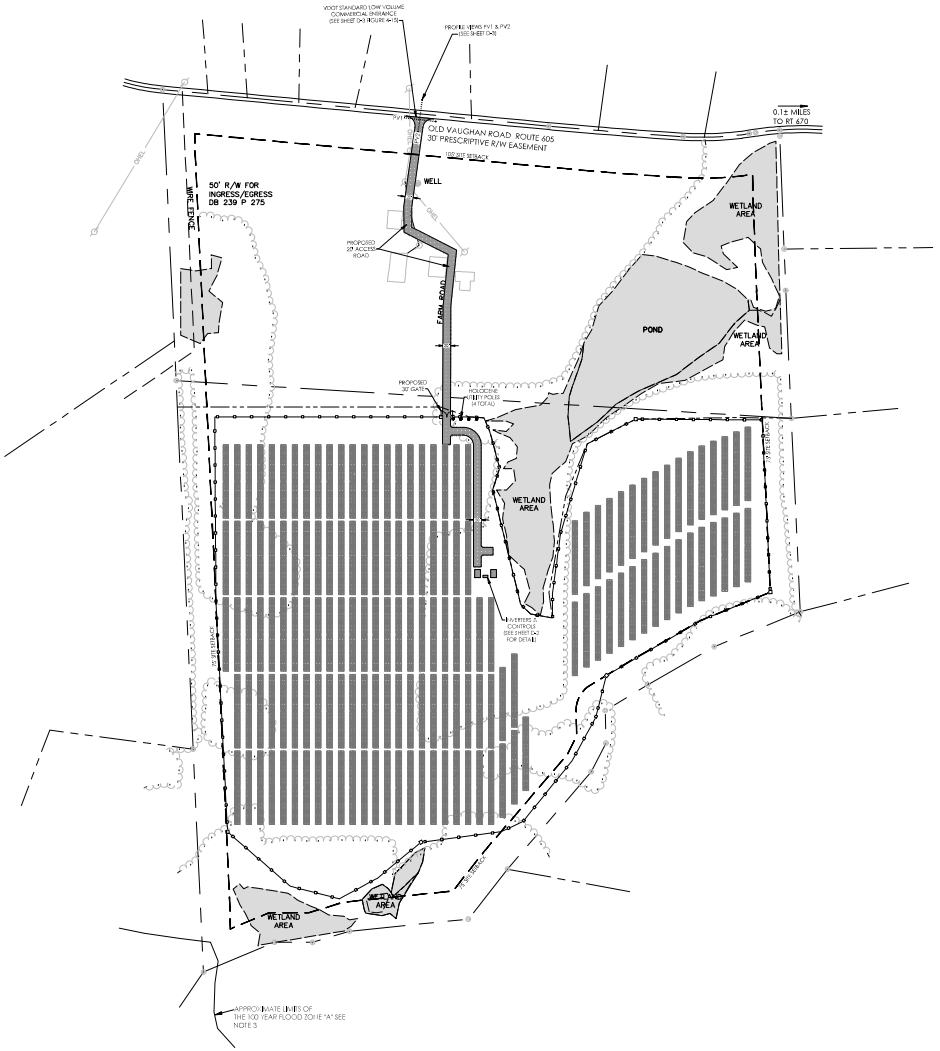
Drawings

LEGEND

- PROPERTY LINE
- SECURITY FENCE
- PROPOSED GRAVEL/ACCESS ROAD
- PROFILE VIEW
- SETBACK LINE
- LEASE BOUNDARY LINE
- PROPOSED SOLAR PANELS

GENERAL NOTES:

1. SEE SHEET D-2 FOR VDOT INFORMATION REGARDING ENTRANCE.
2. SOLAR FARM IS UNMANNED. MAXIMUM TRIPS PER DAY IS 10 VPD.
3. THIS PLAN TO BE USED ONLY FOR SITE/CIVIL CONSTRUCTION PURPOSES ONLY. ANY INSTALLATION OF SOLAR PANELS AND ASSOCIATED INFRASTRUCTURE SHALL BE BY OTHERS AND ARE NOT CONSIDERED PART OF THIS PLAN.
4. ALL NEW SITE ACCESS ROADS TO BE 6 INCHES OF 21A OR NUMBER 57 STONE.



811 Know what's below. Call before you dig.

0 150 300 450
GRAPHIC SCALE: 1" = 150'

ACCUPOINT SURVEYING & DESIGN
SURVEYORS ♦ ENGINEERS ♦ SOIL EVALUATORS
6200 FORT AVENUE, LYNCHBURG, VA 24502
PH: 434-610-4334 WWW.ACCUPOINTSURVEYING.COM

Holocene CLEAN ENERGY

HOLOCENE CLEAN ENERGY REAMS (DINWIDDIE COUNTY)
OLD VAUGHAN ROAD

DINWIDDIE COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
GARY K. WHITE
Lic. No. 036952
4/28/20
PROFESSIONAL ENGINEER

REVISION/DATE	

SCALE:	1" = 150'
ASD JOB #:	2019-265
FILE #:	2019-265 SITE
PARCEL ID:	TM #: 47-74
DATE:	APRIL 28, 2020

C-4
PROPOSED SITE PLAN

LEGEND

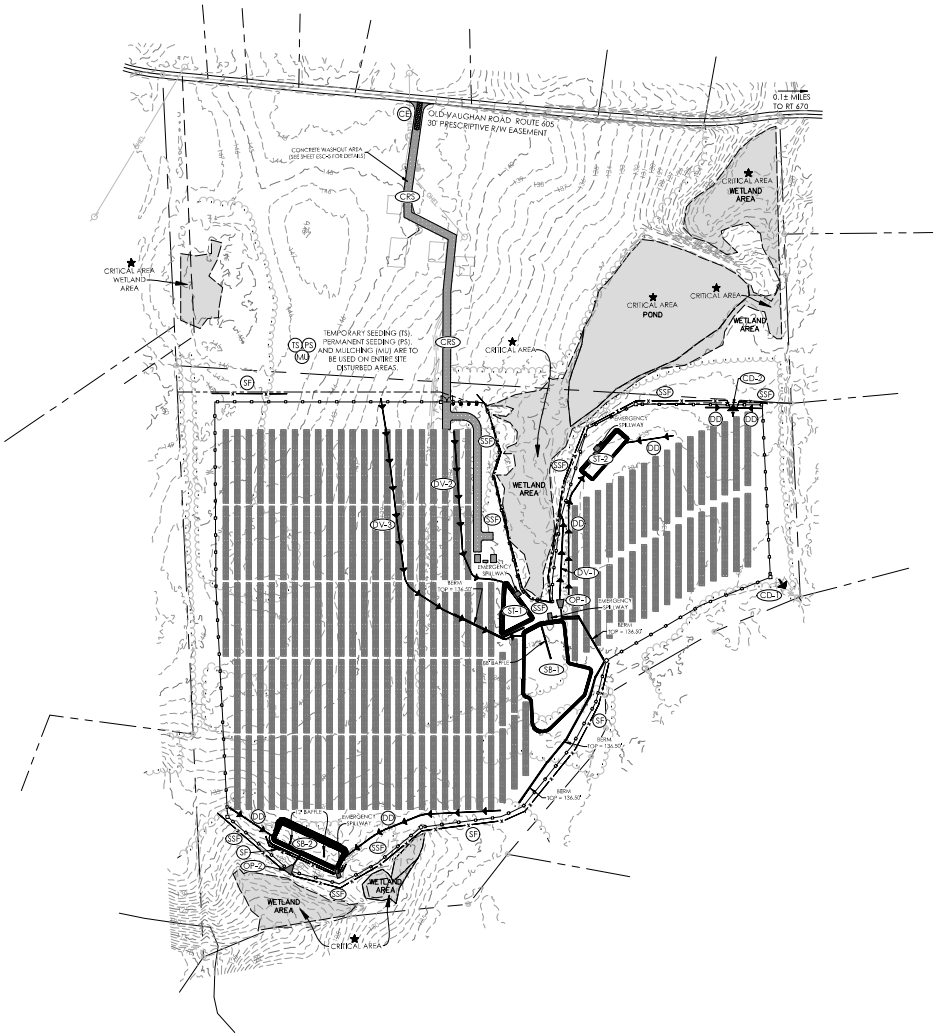
- PROPERTY LINE
- EXISTING 1' CONTOURS
- EXISTING 5' CONTOURS
- (SF) SILT FENCE
- (SSF) SUPER SILT FENCE
- (DIK) DIVERSION DIKE
- (DV) DIVERSION
- (CD) CHECK DAM
- (LS) LEVEL SPREADER
- (CE) CONSTRUCTION ENTRANCE
- (TS) TEMPORARY SEEDING
- (PS) PERMANENT SEEDING
- (ML) MULCHING
- LIMITS OF CONSTRUCTION
- (OP) OUTLET PROTECTION
- (ST) SEDIMENT TRAP
- (SB) SEDIMENT BASIN
- (CRS) CONSTRUCTION ROAD STABILIZATION

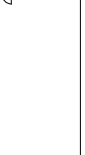
SEQUENCE OF CONSTRUCTION

1. INSTALL CONSTRUCTION ENTRANCE (CE) AND CONSTRUCTION ROAD STABILIZATION (CRS).
2. INSTALL SILT FENCE (SF) AND SUPER SILT FENCE (SSF) AROUND PERIMETER AND WETLAND AREAS.
3. INSTALL ST-2 AND ASSOCIATED DIVERSION DIKE.
4. INSTALL SB-1 AND ASSOCIATED DIVERSION DITCHES (DV-1 AND DV-2).
5. INSTALL ST-1 AND ASSOCIATED DIVERSION DIKE.
6. INSTALL SB-2 AND ASSOCIATED DIVERSION DIKES.
7. INSTALL CHECK DAMS (CD-1 AND CD-2) AND ASSOCIATED DIVERSION DIKES.
8. TS, PS, & MU TO BE APPLIED TO ALL DENUDED AREAS IN ACCORDANCE WITH E&S STANDARDS. MINIMAL TO NO GRADING TO OCCUR IN PANEL AREAS.
9. CONSTRUCT ACCESS ROAD AND BATTERY AND INVERTERS STORAGE AREA AND STABILIZE.
10. ALL DIVERSIONS, SILT FENCE, SEDIMENT TRAPS, AND SEDIMENT BASINS TO BE REMOVED UPON FINAL STABILIZATION OF PROJECT AND APPROVAL FROM LOCAL E&SC AUTHORITY.

SITE SHALL ONLY BE DENUDED AS NEEDED FOR REMOVAL OF TREES AND MINOR GRADING AS MAY BE NEEDED FOR INSTALLATION OF PANELS.

THIS SEQUENCE OF CONSTRUCTION MAY BE ALTERED BY DINWIDDIE COUNTY AT ANY TIME TO ADJUST TO ON-SITE CONDITIONS FOR RAIN EVENTS AND MAINTENANCE OF EROSION PROTECTION MEASURES.





Know what's below. Call before you dig.

GRAPHIC SCALE: 1" = 150'

ACCUPOINT SURVEYING & DESIGN
SURVEYORS ♦ ENGINEERS ♦ SOIL EVALUATORS
6200 FORT AVENUE, LYNCHBURG, VA 24502
PH: 434-610-4334 WWW.ACCUPOINTSURVEYING.COM

Holocene CLEAN ENERGY

HOLOCENE CLEAN ENERGY REAMS (DINWIDDIE COUNTY)
OLD VAUGHAN ROAD

DINWIDDIE COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
GARY K. WHITE
LIC. NO. 036952
4/28/20
PROFESSIONAL ENGINEER

REVISION/DATE

SCALE:	1" = 150'
ASD JOB #:	2019-265
FILE #:	2019-265 SITE
PARCEL ID:	TM #: 47-74
DATE:	APRIL 28, 2020

ESC-1
GRADING & E&SC PLAN

SHEET 5 OF 17

APPENDIX III

Site Photographs

APPENDIX IV

Land Use

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 1/5/2021		
Name of Project Reams Solar I	Federal Agency Involved USDA-RUS		
Proposed Land Use Solar Farm	County and State Dinwiddie, Virginia		
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 1/6/2021	Person Completing Form: Allison Hammer	

☑ ☐

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	36			
B. Total Acres To Be Converted Indirectly	-			
C. Total Acres In Site	36			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	73			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	10			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	1			
10. On-Farm Investments	(20)	5			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	66	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	73	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	66	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	139	0	0	0

Site Selected: A	Date Of Selection 1-11-2021	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Digitally signed by JAMES WARNER
DN: c=US, o=U.S. Government, ou=Department of Agriculture, cn=JAMES WARNER, 0.9.2342.19200300.100.1.1=12001000125897
Date: 2021.01.11 14:47:31 -05'00'

Name of Federal agency representative completing this form: Jim Warner, RD State Enviro Coord	Date: 1-11-2021

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Farmland Classification—Dinwiddie County Area, Virginia
(Proposed Reams Solar I)

Map Scale: 1:3,790 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5A	Emporia sandy loam, 0 to 2 percent slopes	All areas are prime farmland	16.8	46.7%
5B	Emporia sandy loam, 2 to 6 percent slopes	All areas are prime farmland	5.0	13.9%
12B	Mattaponi sandy loam, 2 to 6 percent slopes	All areas are prime farmland	5.9	16.3%
17B	Slagle sandy loam, 2 to 6 percent slopes	All areas are prime farmland	4.8	13.4%
19C	Uchee loamy sand, 6 to 10 percent slopes	Not prime farmland	3.5	9.8%
Totals for Area of Interest			**36.1**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Dinwiddie County Area, Virginia
(Proposed Reams Solar I)

Map Scale: 1:3,790 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

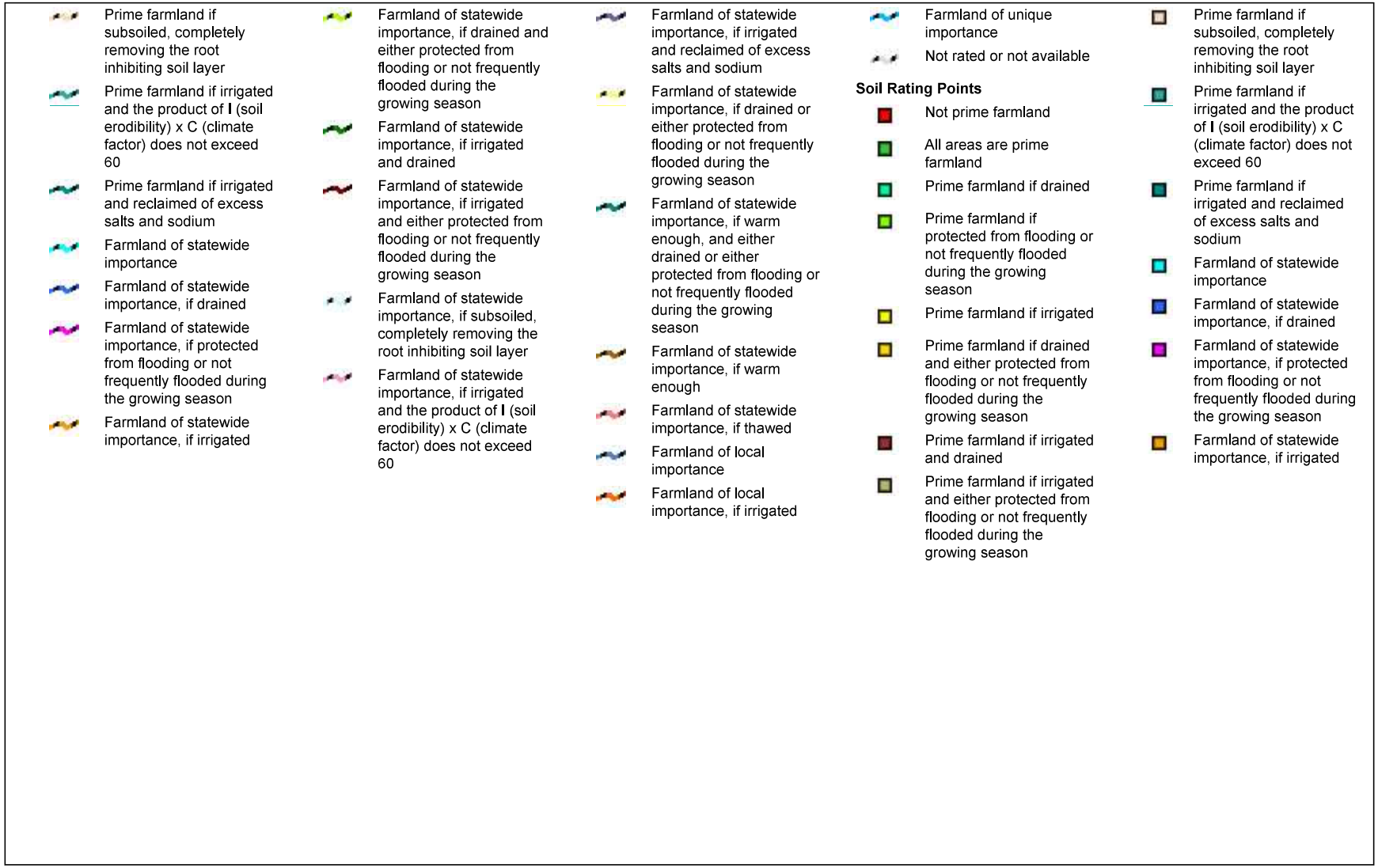
Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dinwiddie County Area, Virginia
Survey Area Data: Version 7, Jun 15, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 11, 2015—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5A	Emporia sandy loam, 0 to 2 percent slopes	All areas are prime farmland	16.8	46.7%
5B	Emporia sandy loam, 2 to 6 percent slopes	All areas are prime farmland	5.0	13.9%
12B	Mattaponi sandy loam, 2 to 6 percent slopes	All areas are prime farmland	5.9	16.3%
17B	Slagle sandy loam, 2 to 6 percent slopes	All areas are prime farmland	4.8	13.4%
19C	Uchee loamy sand, 6 to 10 percent slopes	Not prime farmland	3.5	9.8%
Totals for Area of Interest			**36.1**	**100.0%**

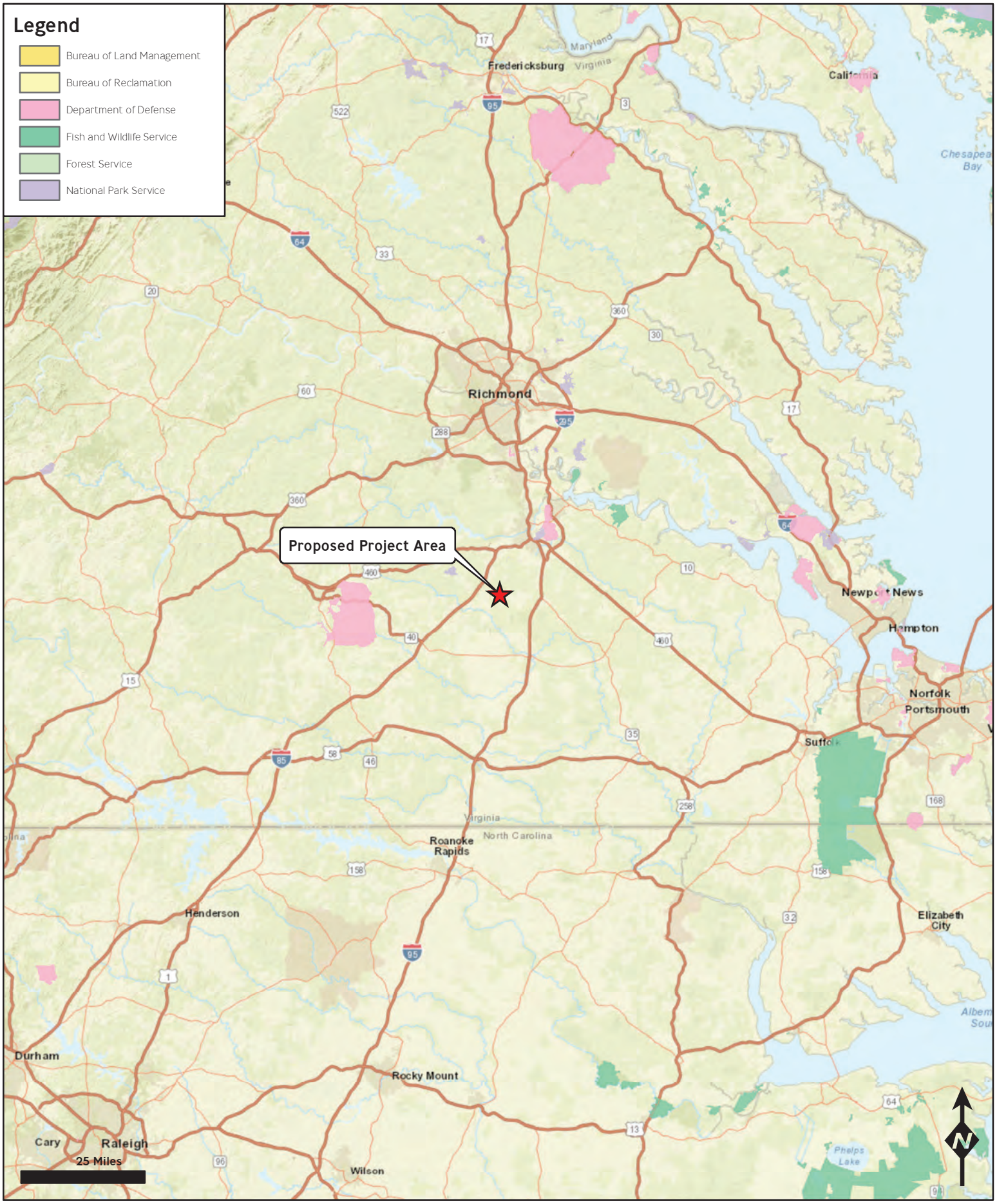
Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



TRUE NORTH CONSULTANTS

Trusted Partner, Leading Environmental Solutions.

USA FEDERAL LANDS MAP

Proposed Reams Solar I

Dinwiddie, Dinwiddie County, Virginia

VIRGINIA

Virginia has approximately 49,350 miles of river, but no designated wild & scenic rivers.

+ View larger map

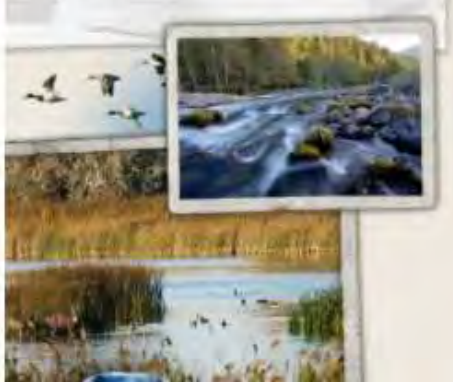
Virginia does not have any designated rivers.

EXPLORE DESIGNATED RIVERS

Choose A State Go

Choose A River Go

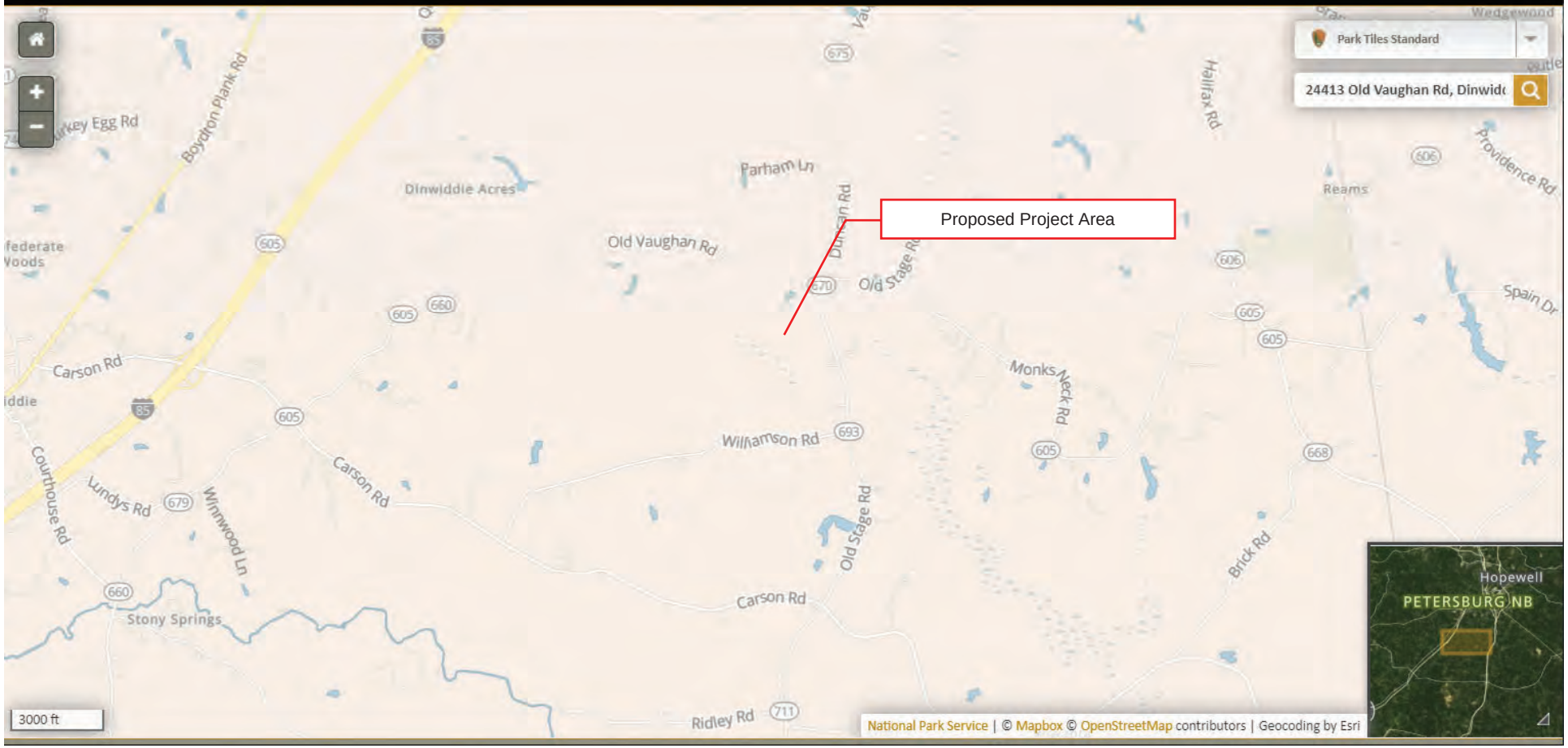
While progress should never come to a halt, there are many places it should never come to at all. — Paul Newman



Nationwide Rivers Inventory

This is a listing of more than 3,200 free-flowing river segments in the U.S. that are believed to possess one or more "outstandingly remarkable" values.

National Park Service
U.S. Department of the Interior



APPENDIX V

Floodplains

National Flood Hazard Layer FIRMette

FEMA

77°29'16"W 37°5'33"N

77°28'38"W 37°5'5"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/18/2021 at 2:20 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX VI

Wetlands

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

September 13, 2019

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
NAO-2019-01523 (Little Cattail Creek/Gravelly Run)

Holocene Clean Energy
c/o Davis Plunkett
727 W. Hargett St., Suite 20
Raleigh, NC 27603

Dear Mr. Plunkett:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as Reams Solar, located on a 63.1 acre parcel on Old Vaughan Road, 0.25 miles west of Old Stage Road in Dinwiddie, VA (tax map parcel 47-74).

The map entitled "Reams Solar", by Timmons Group dated July 11, 2019 and Corps date stamped as received August 9, 2019 (*copy enclosed)* provides the location(s) of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual (*and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*) and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark. This letter is not confirming the Cowardin classifications of these aquatic resources.

The Norfolk District has relied on the information and data provided by the applicant or agent. If such information and data subsequently prove to be materially false or materially incomplete, this verification may be suspended or revoked, in whole or in part, and/or the Government may institute appropriate legal proceedings.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in

question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to Nicole Woodward either via email (Nicole.l.woodward@usace.army.mil) or via standard mail to US Army Corps of Engineers, Regulatory Office, and ATTN: Nicole Woodward, 803 Front Street Norfolk, Virginia 23510 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands can be relied upon for no more than five years from the date of this letter. New information may warrant revision.

If you have any questions, please contact Nicole Woodward either via telephone at (757) 201-7122 or via email at Nicole.L.Woodward@usace.army.mil .

Sincerely,

Nicole L. Woodward

Digitally signed by Nicole L. Woodward
Date: 2019.09.13 10:02:33 -04'00'

Nicole L. Woodward
Project Manager, Southern Virginia
Regulatory Section

Enclosure(s):
Appeals Form
Delineation Map
Preliminary Jurisdictional Determination Form

Cc: Agent
Virginia Department of Environmental Quality

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 9/11/2019

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:
Holocene Clean Energy, 727 W. Hargett St., Suite 20, Raleigh, NC 27603

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:
Reams Solar NAO-2019-01523

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: Virginia County/parish/borough: Dinwiddie City:

Center coordinates of site (lat/long in degree decimal format): 37.085894, -77.482674

Lat.: xx.xxx° Long.: yy.yyy°

Universal Transverse Mercator:

Name of nearest waterbody: Little Cattail Creek/Gravelly Run

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☑ Office (Desk) Determination. Date: 9/11/20191

☐ Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
1	37.087987°	-77.481819°	4.03 acres	non-tidal wetland	404
2	37.089264°	-77.480942°	2.52 acres	non-tidal waters	404
3	37.085276°	-77.483234°	427 L.F.	non-tidal waters	404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: "Reams Solar," dated July 11, 2019 and st[illegible].
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [x] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Carson 1:24,000
- [x] Natural Resources Conservation Service Soil Survey. Citation: Corpsmap.
- [x] National wetlands inventory map(s). Cite name: Corpsmap
- [ ] State/local wetland inventory map(s): _____.
- [ ] FEMA/FIRM maps: _____.
- [ ] 100-year Floodplain Elevation is: ____. (National Geodetic Vertical Datum of 1929)
- [ ] Photographs: [x] Aerial (Name & Date): GoogleEarth, VBMP
  or [x] Other (Name & Date): Lidar.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Nicole L. Woodward

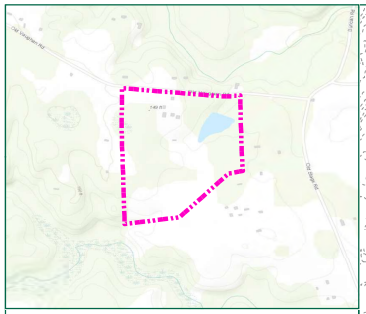
Digitally signed by Nicole L. Woodward
Date: 2019.09.13 09:58:20 -04'00'

Signature and date of Regulatory staff member completing PJD

[signature] 9/20/19

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.



Resource Identification	Confirmation								Resource Description Notes*
	PFO (sq ft)	PSS (sq ft)	PEM (sq ft)	POW (sq ft)	R3 (lf)	R4 (lf)	R6 (lf)	Ditch (lf)	
A	17,053								NT / V
B	122,770			109,842					NT / V
C	4,298		6,267						NT / V
D	25,183								NT / V
E						341			NT / NV
F						86			NT / NV
Total	169,304	0	6,267	109,842	0	427	0	0	
Total Wetland Area =	285,413 sq ft			6.55 ac					
Total Stream Length =	427 lf								

* T= Tidal; NT=Non-tidal V=Vegetated; NV=Non-Vegetated; PFO=Palustrine Forested Wetland; PSS=Palustrine Scrub-Shrub Wetland; PEM=Palustrine Emergent Wetland; POW= Palustrine Open Water; EM= Estuarine Intertidal Wetlands; R3= Upper Perennial Streams; R4=Intermittent Streams; R6 = Ephemeral Streams

Legend

- Project Study Limits - 63.1 Acres
- Stream Identifier
- Wetland Identifier
- Wetland Flag
- Field Data Station
- Intermittent Stream (R4)
- Palustrine Emergent (PEM) Wetlands
- Palustrine Forested (PFO) Wetlands
- Palustrine Open Water (POW)

Topographic Contours

- Major - 10 Feet
- Minor - 1 Foot

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Confirmation #:
NAO-2019-01523

Confirmation Date:
September 13, 2019

Old Vaughan Rd

03E1-4
03E1-9
FDS-03E1-2
FDS-03E1-1
03B1-22
03C1-7
03B1-11
03C1-11
03A1-53
03A1-59
03A1-7
03A1-49
03A1-42
03A1-26
FDS-03J1-1
FDS-03A1-1
FDS-03A1-2
FDS-03F1-2
FDS-03F1-1
03G1-1
03F1-14
03F1-18
03I1-3
03I1-8
03F1-1
A
B
C
D
E
F

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
TEL 804.200.6500
www.timmons.com

PROJECT NAME & LOCATION
REAMS SOLAR
DINWIDDIE COUNTY, VIRGINIA

DATE 07/11/2019
PROJECT NUMBER 44131.001
PROJECT NAME REAMS SOLAR
DESIGNED BY | DRAWN BY A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using submeter, Bluetooth GPS antennae by Timmons Group.
2.Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers until stamped.
3. Project limits are approximate.
4. Topography based on USGS LiDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal Stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

#	DESCRIPTION	DATE

DRAWING DESCRIPTION
FIGURE 4:
WETLANDS AND WATERS OF THE U.S. DELINEATION MAP

SCALE (FEET)
0 125 250
PLANS PRINTED AS 11 X17 ARE HALF SCALE

SCALE	SHEET NUMBER
H:1" = 125'	1

Y:\80\44131.001-Reams_Solar\GIS\WTDM\44131.001-WTDM.mxd

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

September 13, 2019

Supplemental Preapplication Information

Project Number: NAO-2019-1523
Applicant: Holocene Clean Energy
Project Location: 63.1 acre parcel on Old Vaughan Road, 0.25 miles west of Old Stage Road in Dinwiddie, VA (tax map parcel 47-74).

1. A search of the Virginia Department of Historic Resources data revealed the following:

   ☐ No known historic properties are located on the property.

   ☐ Tribal consultation may be required.

   ☒ American Battlefield Protection Program (ABPP) consultation may be required.

   ☒ The following known architectural resources are located on the property: 026-0132 (Hatcher's Run Battlefield), 026-5004 (Boydton Plank Road Battlefield, Burgess' Mill, Hatcher's Run), 026-0050 (Reams Station Battlefield (I & II))

   ☐ The following known archaeological resources are located on the property:

   ☐ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:
   1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
   2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

   ☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

   ☒ The following federally-listed species may occur within the vicinity of the subject property: Northern Long-eared Bat (Myotis septentrionalis)

   ☐ The following state-listed (or other) species may occur within the vicinity of the subject property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

REAMS SOLAR – 8-STEP DECISION MAKING PROCESS
FOR ALTERNATIVE CONSIDERATIONS

STEP 1: DETERMINE IF THE PROPOSED ACTION AREA IS IN A WETLAND. As indicated in Section 3.4.1 of this EA, there are 6.55 acres and 427 linear feet of non-tidal wetlands within the larger, parent parcel – this was confirmed by the USACE in September of 2019. The Project has been designed to avoid these features.

STEP 2: PRELIMINARY PUBLIC NOTICE. Under the direction of the Agency, public notice will be done concurrently with the publication of the Notice of Availability (NOA) for this EA. The purpose of this notice will be to inform the public of this proposed effect and request comments concerning the Proposed Project, alternative sites or actions that would avoid these impacts, and methods that could be used to minimize these impacts.

STEP 3: SEARCH FOR PRACTICABLE ALTERNATIVES. Selection of a viable solar energy generation project site is based on several factors and during the preliminary planning stages of the Proposed Project, a comprehensive site selection process that considered multiple parameters at potential project locations including:

- Quality of terrain including existing topography (i.e., suitable surface slopes), presence of excessively rocky, sandy or uneven land and substrates, and the presence of significant waterbodies, watercourses, wetlands or flood zones.
- Local transmission capacity including proximity to 1) distribution lines, 2) electrical infrastructure including substations and 3) potential connection points to distribution lines capable of receiving new energy production.
- Potential conservation and environmental impacts including the presence or absence of sensitive or protected areas, protected species or known cultural or historic resources.
- Opportunities and limitations presented by local zoning and land use ordinances and the existing land uses at and proximate to a potential site. Parameters considered also included assessment of the existing ownership at potential sites and options for purchase or lease and an associated evaluation of potential rights of way or easements that could be required for site access or connections to distribution lines.
- The availability of land of sufficient area for a solar facility and the associated presence or absence of suitable existing access and roadways for project construction and operation.

The goal of this process was to select a location with the best solar energy potential including an optimal mix of the above. The project area was determined to be most preferable for a utility-scale solar development because of its close proximity to existing electrical distribution and transmission infrastructure, existing suitable topography, minimal impact to wetlands and streams, and the receptiveness of landowners to the Project.

STEP 4: INDENTIFY ADVERSE IMPACTS AND BENEFICAL VALUES/FUNCTIONS. Short-term and minor adverse water quality impacts may occur during the construction of the Project.

These impacts would be associated with soils from disturbed areas being washed by storm water into adjacent waters during rainstorm events.

STEP 5: MITIGATE ADVERSE IMPACTS. BMPs and SWPPP will be developed and utilized during the construction phase to protect the soils and eliminate or minimize any potential erosion into any jurisdictional waters, including wetlands.

When disposing of excess spoil or other construction materials on public or private property, wetlands will not be filled in or otherwise converted.

Compost filter socks, conveyance channels, sediment basins, emergency basin spillways, silt fence, silt fence rock outlets and silt fencing around stockpiles will be used as temporary measures during construction to control the flow of water. The disturbed areas will then be permanently stabilized and additional BMPs, such as silt fencing, will be utilized to accept stormwater runoff until the project area has reached its final stabilization.

Additionally, ground vegetation will be maintained throughout the operational life of the facility to reduce erosion.

STEP 6: RE-EVALUATE ALTERNATIVES. As indicated above, it is the goal of the Project to avoid and minimize impacts on protected natural resources while meeting its energy production objectives. The Project has been designed to present the least number of risks and impacts to the environment.

STEP 7: FINAL PUBLIC NOTICE. Under the direction of the Agency, the final public notice will be done concurrently with the publication of the notice of availability for the Finding of No Significant Impact (FONSI). The purpose of this notice will be to provide the public with a finding and explanation of the Agency's final decision that the wetland impact is the least damaging practicable alternative (Step 3) and there is a significant need for the Project.

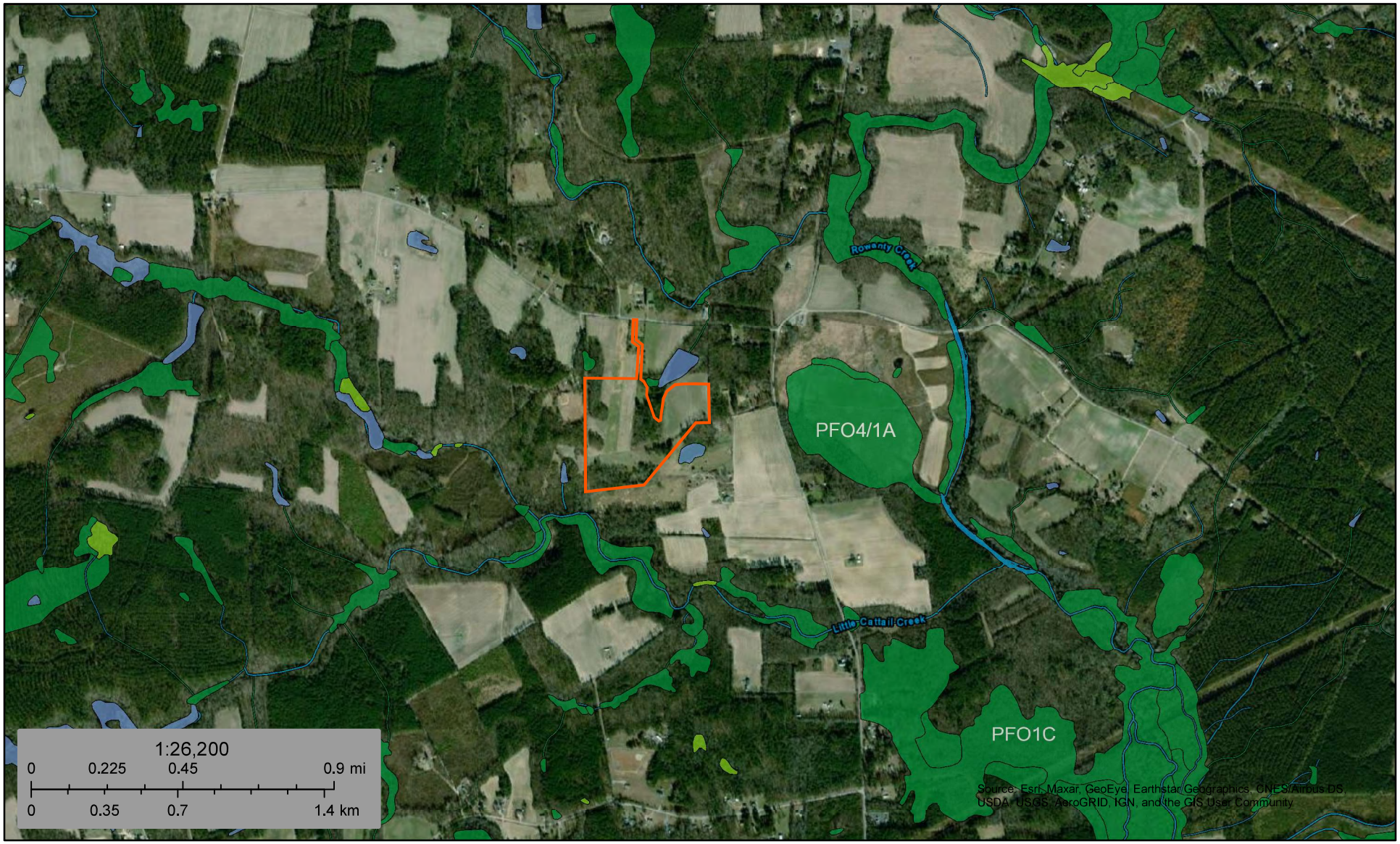
STEP 8: IMPLEMENT PROPOSED ACTION WITH APPROPRIATE MITIGATION. Due to the nature and design of the Project, impacts to wetlands are not anticipated. Short-term, impacts related to construction could occur; however, the mitigation measures outlined in Step 5 will be a requirement of the letter of conditions and will minimize the Project's impacts.

U.S. Fish and Wildlife Service

National Wetlands Inventory

Reams Solar I

Proposed Project Area



March 18, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Hydric Rating by Map Unit—Dinwiddie County Area, Virginia
(Proposed Reams Solar I)

Map Scale: 1:3,790 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dinwiddie County Area, Virginia
Survey Area Data: Version 7, Jun 15, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 11, 2015—Nov 22, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5A	Emporia sandy loam, 0 to 2 percent slopes	1	16.8	46.7%
5B	Emporia sandy loam, 2 to 6 percent slopes	1	5.0	13.9%
12B	Mattaponi sandy loam, 2 to 6 percent slopes	1	5.9	16.3%
17B	Slagle sandy loam, 2 to 6 percent slopes	4	4.8	13.4%
19C	Uchee loamy sand, 6 to 10 percent slopes	0	3.5	9.8%
Totals for Area of Interest			**36.1**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) 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 (Federal Register, 1994). 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.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

1001 Boulders Parkway
Suite 300
Richmond, VA 23225

P 804.200.6500
F 804.560.1016
www.timmons.com

August 9, 2019

Julie Hamilton
U.S. Army Corps of Engineers- Norfolk District
Southern Virginia Regulatory Section
Richmond Field Office
9100 Arboretum Parkway, Suite 235
Richmond, VA 23236

Re: Jurisdictional Waters of the U.S. Delineation Package
HCE Reams Solar I
(Approx. 63.1 acres)
Dinwiddie County, Virginia

Dear Ms. Hamilton,

Please find the enclosed Jurisdictional Waters of the U.S. Delineation Package for the HCE Reams Solar I site. On behalf of Holocene Clean Energy, Timmons Group is submitting this package to you in order to obtain a preliminary jurisdictional determination confirmation of the delineation performed at the HCE Reams Solar I site.

Please review this enclosure and contact Dan Cox at (804) 200-6512 or dan.cox@timmons.com so that we may schedule a site visit to review the delineation and confirm the jurisdictional boundary.

Sincerely,
Timmons Group

Alissa Bellios
Environmental Technician

Dan Cox
Environmental Scientist, PWS, PWD

Enclosure:
CC Richard Thomas

PREPARED FOR:
HOLOCENE CLEAN ENERGY
727 W. HARGETT ST. SUITE 201
RALEIGH, NC 27603

HCE REAMS SOLAR I

JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE

AUGUST 2019

PREPARED BY:
TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 BOULDERS PARKWAY, SUITE 300
RICHMOND, VIRGINIA 23225
PHONE: 804.200.6500
FAX: 804.560.1648
WWW.TIMMONS.COM

TIMMONS GROUP PROJECT NO. 44131.001

EXECUTIVE SUMMARY

On behalf of Holocene Clean Energy, Timmons Group environmental scientist Dan Cox and environmental technician Alissa Bellios conducted a field delineation on July 9, 2019 to identify jurisdictional Waters of the U.S. (WOTUS) and wetlands within the project study limits of the HCE Reams Solar I site (Site).

The Site encompasses approximately 63.1 acres and is located in Dinwiddie County, Virginia. The Site is located south of Old Vaughan Road (see Figure 1: Vicinity Map). The Site is bound by residential development to the north and south, and mixed pine and hardwood forests to the east and west. The majority of the Site consists of agricultural fields and mixed pine and hardwood forests (see Figure 3: Environmental Inventory Map). The property is located in the Nottoway (HUC 03010201) watershed.

The Site was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual; the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) and subsequently issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. Using these methodologies, preliminary delineation mapping was produced and is included along with the attached Site description and discussion for your review. During our delineation, approximately 3.89 acres of palustrine forested (PFO) wetlands, 0.14 acres of palustrine emergent (PEM) wetlands, and 2.52 acres of palustrine open water (POW) jurisdictional area were identified on-site. In addition, 427 linear feet of intermittent streams (R4) were identified on site.

JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE
HCE Reams Solar I

TABLE OF CONTENTS

1.0 PROJECT INFORMATION SHEET

General

Project Name:	HCE Reams Solar I
State:	Virginia
County:	Dinwiddie County
Latitude:	37.085894
Longitude:	-77.482674
Subject Property Size:	+/- 63.1 acres
HUC Code:	03010201 (Nottoway)
Waterbodies (TNW):	Little Cattail Creek Gravelly Run

Corresponding Information

USGS Quad and NWI:	Carson, 2016
USDA Soils Map:	http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm Dinwiddie, VA

Owner/Applicant

Name:	Holocene Clean Energy
Address:	727 W. Hargett St. Suite 201 Raleigh, NC 27603
Contact:	Davis Plunkett
Telephone:	(919) 999-2603

Consultant

Name:	Timmons Group
Address:	1001 Boulders Parkway, Suite 300 Richmond, VA 23225
Telephone:	(804) 200-6500
Contacts:	Dan Cox: (804) 200-6512 Alissa Bellios: (804) 200-6550

2.0 INTRODUCTION

On behalf of Holocene Clean Energy, Timmons Group environmental scientist Dan Cox and environmental technician Alissa Bellios conducted a field delineation on July 9, 2019 to identify jurisdictional Waters of the U.S. (WOTUS) and wetlands within the project study limits of the HCE Reams Solar I site (Site).

3.0 SITE INFORMATION

3.1 Site Location

The Site encompasses approximately 63.1 acres and is located in Dinwiddie County, Virginia. The Site is located south of Old Vaughan Road (see Figure 1: Vicinity Map). The property is located in the Nottoway (HUC 03010201) watershed (see Figure 2: Hydrologic Unit Code Map).

3.2 Site Description

The Site is bound by residential development to the north and south, and mixed pine and hardwood forests to the east and west. The majority of the Site consists of agricultural fields and mixed pine and hardwood forests (see Figure 3: Environmental Inventory Map). The topography of the Site is relatively flat and generally slopes downwards to the east and southeast and drains northeast off-site and eventually into Gravelly Run.

4.0 METHODS OF DELINEATION

4.1 Preliminary Off-site Investigation/Data Review

A review of publicly available resources was performed prior to the on-site field investigation in order to determine if there is the potential for jurisdictional areas, and if present, the extent of these areas located within the project area. These mapping resources generally include but are not limited to the United States Geological Survey (USGS) maps, the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) soils database, and the U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) database.

4.2 Field Investigation

The Site was delineated based upon the methodology outlined in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual; the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0); and subsequently issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features.

The wetland boundary was flagged with consecutively numbered pink and black ribbon at approximately 50-foot intervals. Field data stations were established within close proximity to the flagged wetland boundary in order to document upland and wetland conditions existing

along the jurisdictional boundary. Field data stations were labeled and marked with blue flagging in the field. Features identified in the field were GPS located within the study area. Photographs were taken of the field data stations to depict existing site conditions along the delineation boundary. Field data sheets are included in Appendix A. Site photographs collected during the field delineation are available upon request.

5.0 DELINEATION FINDINGS

5.1 Preliminary Off-site Investigation/Data Review Findings

The USGS Map of the Reams Solar Site depicts an eastern downwards sloping topography. Mapping shows two small topographic draws respectively located in the northeast and southwest corners of the Site. The Site has a topographic high of approximately 148 feet above mean sea level (AMSL) in the northwest portion of the Site which transitions to lower elevations of approximately 116 feet AMSL in the topographic draws respectively located in the northeast and southwest corners of the Site (see Figure 1: Vicinity Map).

The NRCS soils mapping identifies five (5) distinct soil series/complexes within the Site. Of the soils, none are documented as being hydric in Dinwiddie County. The upland soils are generally described as being moderately well-drained to well-drained and soil textures include sandy loam and loamy sand (see Figure 3: Environmental Inventory Map).

Although NHD mapping depicts no stream channels within the project boundary, it does depict stream channel just outside of the project boundary. Gravelly Run flows east just north of the northern project boundary. Little Cattail Creek Flows southeast just south of the southern project boundary. NWI mapping depicts palustrine forested wetlands along the western project boundary. Additionally, it depicts palustrine scrub shrub wetlands to the east of the pond and palustrine forested wetlands draining the pond offsite and eventually into Gravelly Run (see Figure 3 Environmental Inventory Map).

5.2 On-site Determination/Findings

5.2.1 Jurisdictional Area Summary

The on-site delineation verified the presence of wetlands within the project study area. A summary of the jurisdictional areas identified on-site is provided below in Table 1: Jurisdictional Areas Summary. The location and size of jurisdictional areas delineated on-site are shown on Figure 4: Wetlands and Waters of the U.S. Delineation Map.

Table 1: Jurisdictional Area Summary

Area Description	Area Size (acres)	PFO (acres)	PSS (acres)	PEM (acres)	POW (acres)	R3 Streams (L.F.)	R4 Streams (L.F.)	R6 Streams (L.F.)
HCE Reams Solar I	63.1	3.89	0	0.14	2.52	0	427	0

Notes:
1) PFO = palustrine forested wetlands, PSS = palustrine scrub-shrub wetlands, PEM = palustrine emergent wetlands, R3 = upper perennial streams, R4 = intermittent streams, R6 = ephemeral streams, and L.F. = linear feet.
2) Jurisdictional area acreages are preliminary based on field delineation and have not been confirmed or surveyed.

5.2.1.1 Jurisdictional Area Vegetation

The dominant vegetation within the tree and sapling strata of the wetlands on-site consists primarily of sweet-gum (*Liquidambar styraciflua*), river birch (*Betula nigra*), and willow oak (*Quercus phellos*). The dominant shrub vegetation found within jurisdictional areas includes willow oak, sweet-gum, and loblolly pine (*Pinus taeda).* The herbaceous layer within the wetland areas is generally comprised of greenbrier (*Smilax rotundifolia*), netted chain fern (*Woodwardia areolata*), and Japanese stiltgrass (*Microstegium vimineum*).

5.2.1.2 Jurisdictional Area Hydrology

Primary hydrology indicators observed within the jurisdictional areas included high water table within the upper 6 inches (A2), soil saturation within the upper inch (A3), water stained leaves (B9), oxidized rhizospheres on living roots (C3), and presence of reduced iron (C4). The secondary hydrology indicators observed included sparsely vegetated concave surface (B8), drainage patterns (B10), crayfish burrows (C8), FAC-Neutral Test (D5), and sphagnum moss (D8).

5.2.1.3 Jurisdictional Area Soils

Soils within the wetland areas on-site exhibit low chroma matrix colors and concentrations that are characteristic of reducing anaerobic conditions associated with the formation of hydric soils. Wetland soils are typically dark gray (10YR 4/1) within the upper four inches. Jurisdictional soils are generally underlain by gray (10YR 5/1, 10YR 6/1) down to 15 inches. Redox concentrations greater than or equal to 8% were observed between 4 and 15 inches below soil surface and are typically yellowish brown (10YR 5/6) or brownish yellow (10YR 6/8). The soils meet the F3 Depleted Matrix hydric soil indicator. Textures within the jurisdictional areas include sandy loam and loamy sand. Field data sheets are included in Appendix A and provide additional detail regarding the representative soils within wetlands.

5.3.1 Upland Area Summary

During the field investigation of the subject property, approximately 56.55 acres of upland or non-jurisdictional areas were identified on-site. The majority of the upland areas located within the subject property are characterized by agricultural fields. Upland soils are typically light olive brown (2.5Y 5/3), or yellowish brown (10YR 5/6). Soil textures include loam, sandy loam, and loamy sand. The majority of upland soils contain chroma values greater than 2 and exhibit little to no redoximorphic features within the upper 15 inches of soil. The mapped soils present within the Site are depicted on Figure 3: Environmental Inventory Map. No primary indicators of wetland hydrology were observed within the upland areas. The location and size of upland areas delineated on-site are shown on Figure 4: Wetlands and Waters of the U.S. Delineation Map.

6.0 REFERENCES

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). ERDC/EL TR-10-09. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

National List of Hydric Soils 2010, United States Department of Agriculture Natural Resource Conservation Service, http://soils.usda.gov/use/hydric/

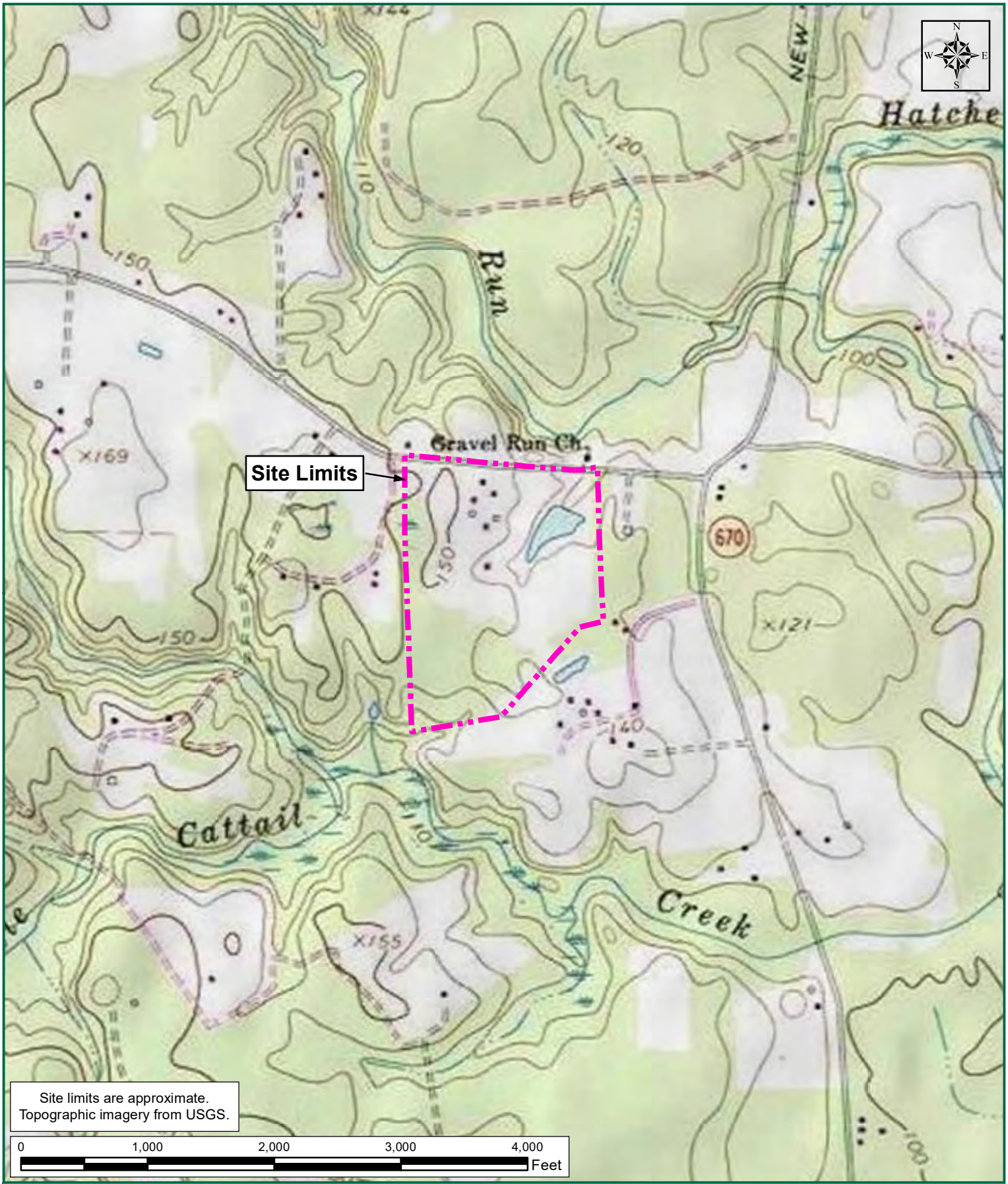
United States Department of Agriculture. Natural Resources Conservation Service http://websoilsurvey.nrcs.usda.gov/app/

United States Fish and Wildlife Service. National Wetlands Inventory http://www.fws.gov/nwi/

Wetland Training Institute. 1995. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual, Wetland Training Institute, Glenwood, NM, USA.

MAPS

Path: Y:\804\44131.001-Reams_Solar\GIS\Common Shared Exhibits\44131.001-VIC.mxd



REAMS SOLAR

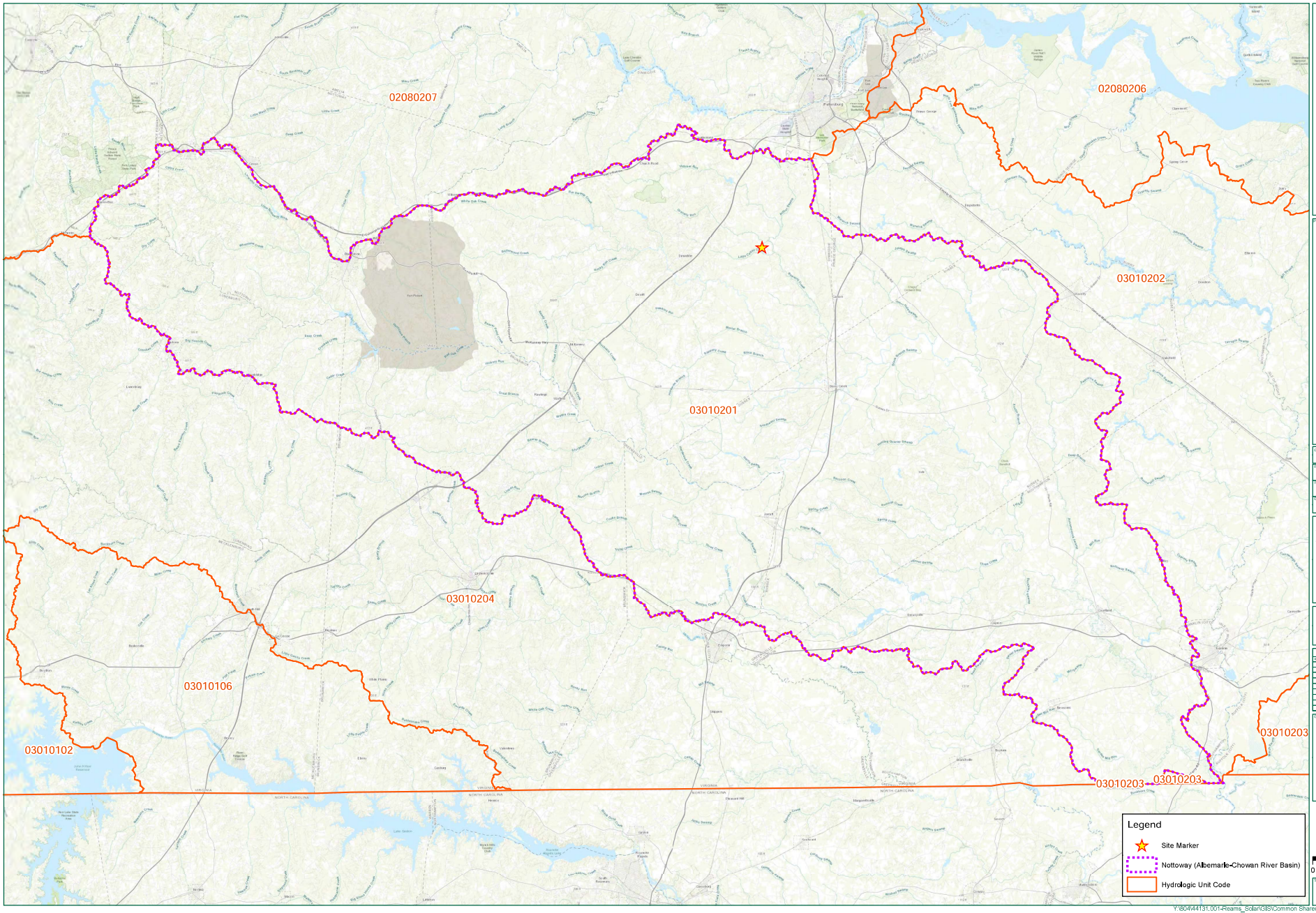
DINWIDDIE COUNTY, VIRGINIA

FIGURE 1: VICINITY MAP

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER:*44131.001*
PROJECT STUDY LIMITS:*63.1 ACRES*
LATITUDE:*37.085894*
LONGITUDE:*-77.482674*

U.S.G.S. QUADRANGLE(S):*CARSON*
DATE(S):*2016*
WATERSHED(S):*NOTTOWAY (ALBEMARLE-CHOWAN RIVER BASIN)*
HYDROLOGIC UNIT CODE(S):*03010201*



TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
TEL 804.200.6500
www.timmons.com

PROJECT NAME & LOCATION
REAMS SOLAR
DINWIDDIE COUNTY, VIRGINIA

DATE: 06/21/2019
PROJECT NUMBER: 44131.001
PROJECT NAME: REAMS SOLAR
DESIGNED BY / DRAWN BY: A. MEHFOUD

NOTES:
Site marker is approximate.
HUC from USGS.
Topographic basemap from Esri Online.

REVISIONS

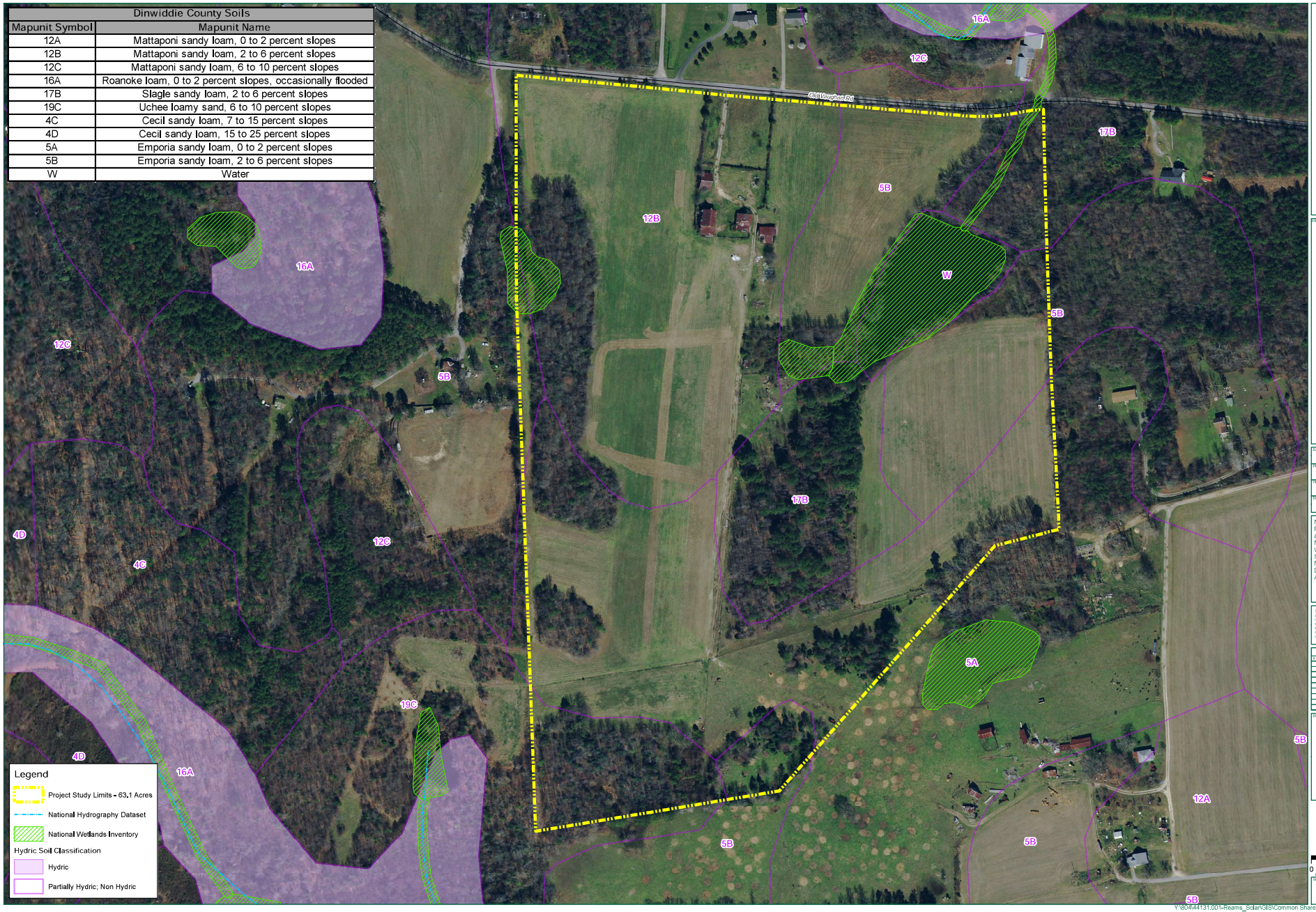
#	DESCRIPTION	DATE

DRAWING DESCRIPTION
FIGURE 2:
HYDROLOGIC UNIT CODE MAP

PLANS PRINTED AS 11X17, ADJUST HALF SCALE

SCALE	SHEET NUMBER
H: 1" = 3 Miles	1

Y:\804\44131.001-Reams_Solar\GIS\Common Shared Exhibits\44131.001-HUC.mxd



Dinwiddie County Soils	
Mapunit Symbol	Mapunit Name
12A	Mattaponi sandy loam, 0 to 2 percent slopes
12B	Mattaponi sandy loam, 2 to 6 percent slopes
12C	Mattaponi sandy loam, 6 to 10 percent slopes
16A	Roanoke loam, 0 to 2 percent slopes, occasionally flooded
17B	Slagle sandy loam, 2 to 6 percent slopes
19C	Uchee loamy sand, 6 to 10 percent slopes
4C	Cecil sandy loam, 7 to 15 percent slopes
4D	Cecil sandy loam, 15 to 25 percent slopes
5A	Emporia sandy loam, 0 to 2 percent slopes
5B	Emporia sandy loam, 2 to 6 percent slopes
W	Water

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
TEL 804.200.6500
www.timmons.com

PROJECT NAME & LOCATION
REAMS SOLAR
DINWIDDIE COUNTY, VIRGINIA

DATE: 06/21/2019
PROJECT NUMBER: 44131.001
PROJECT NAME: REAMS SOLAR
DESIGNED BY / DRAWN BY: A. MEHFOUD

NOTES:
Project Limits are approximate.
NWI from US Fish and Wildlife Service.
Soils data from SSURGO.
National Hydrography Dataset from USGS.
Aerial imagery from VGIN.

REVISIONS

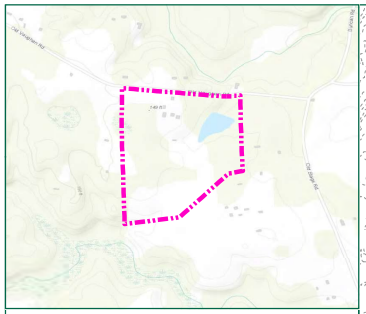
NO.	DESCRIPTION	DATE

DRAWING DESCRIPTION
FIGURE 3:
ENVIRONMENTAL INVENTORY MAP

SCALE (FEET)
0 125 250
PLANS PRINTED AS 11X17, ADD HALF SCALE

SCALE	SHEET NUMBER
H:1" = 125'	1

Y:\804\44131.001-Reams_Solar\GIS\Common Shared Exhibits\44131.001-EIM.mxd



Resource Identification	Confirmation								Resource Description Notes*
	PFO (sq ft)	PSS (sq ft)	PEM (sq ft)	POW (sq ft)	R3 (lf)	R4 (lf)	R6 (lf)	Ditch (lf)	
A	17,053								NT / V
B	122,770			109,842					NT / V
C	4,298		6,267						NT / V
D	25,183								NT / V
E						341			NT / NV
F						86			NT / NV
Total	169,304	0	6,267	109,842	0	427	0	0	
Total Wetland Area =			285,413 sq ft			6.55 ac			
Total Stream Length =			427 lf						

* T= Tidal; NT=Non-tidal V=Vegetated; NV=Non-Vegetated; PFO=Palustrine Forested Wetland; PSS=Palustrine Scrub-Shrub Wetland; PEM=Palustrine Emergent Wetland; POW= Palustrine Open Water; EM= Estuarine Intertidal Wetlands; R3= Upper Perennial Streams; R4=Intermittent Streams; R6 = Ephemeral Streams

Legend

- Project Study Limits - 63.1 Acres
- Stream Identifier
- Wetland Identifier
- Wetland Flag
- Field Data Station
- Intermittent Stream (R4)
- Palustrine Emergent (PEM) Wetlands
- Palustrine Forested (PFO) Wetlands
- Palustrine Open Water (POW)

Topographic Contours

- Major - 10 Feet
- Minor - 1 Foot

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
TEL 804.200.6500
www.timmons.com

PROJECT NAME & LOCATION
REAMS SOLAR
DINWIDDIE COUNTY, VIRGINIA

DATE: 07/11/2019
PROJECT NUMBER: 44131.001
PROJECT NAME: REAMS SOLAR
DESIGNED BY / DRAWN BY: A. MEHFOUD

1. Waters of the U.S. within the project study limits have been located using submeter, Bluetooth GPS antennae by Timmons Group.
2.Waters of the U.S. have not been confirmed by the U.S. Army Corps of Engineers until stamped.
3. Project limits are approximate.
4. Topography based on USGS LiDAR.
5. Cowardin Stream Classifications are based solely on field observations. No formal Stream assessment methodology was completed to determine these Cowardin Classifications.

REVISIONS

#	DESCRIPTION	DATE

DRAWING DESCRIPTION
FIGURE 4:
WETLANDS AND WATERS OF THE U.S. DELINEATION MAP

SCALE (FEET)
0 125 250
PLANS PRINTED AS TEXT ADJUSTED SCALE

SCALE	SHEET NUMBER
H:1" = 125'	1

Y:\80\44131.001-Reams_Solar\GIS\WTDM\44131.001-WTDM.mxd

APPENDIX A
FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03A1-1

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): 133A Lat: 37.087416° Long: -77.481881° Datum: NAD83

Soil Map Unit Name: Slagle sandy loam NWI classification: Upland

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A
Water Table Present?	Yes _____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: FDS-03A1-1

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	50	yes	FAC
2. Pinus taeda	30	yes	FAC
3. Nyssa sylvatica	5	no	FAC
4.			
5.			
6.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Sapling Stratum (30 ft)			
1. Pinus taeda	15	yes	FAC
2. Quercus phellos	10	yes	FACW
3. Liquidambar styraciflua	10	yes	FAC
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Shrub Stratum (30 ft)			
1. Pinus taeda	5	yes	FAC
2. Juniperus virginiana	3	yes	FACU
3.			
4.			
5.			
6.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Herb Stratum (30 ft)			
1. Microstegium vimineum	5	yes	FAC
2. Juncus effusus	5	yes	OBL
3. Smilax rotundifolia	3	yes	FAC
4. Toxicodendron radicans	2	no	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15 = Total Cover		
50% of total cover: 4.5	20% of total cover: 3		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90% (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:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03A1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/1	100					SL	
3-15	10YR 6/1	90	10YR 6/8	10	C	PL	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03A1-2

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): 133A Lat: 37.087207° Long: -77.481932° Datum: NAD83

Soil Map Unit Name: Slagle sandy loam NWI classification: Upland

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A
Water Table Present?	Yes _____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: FDS-03A1-2

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	60	yes	FAC
2. Pinus taeda	40	yes	FAC
3. Quercus phellos	10	no	FACW
4.			
5.			
6.			
	110	= Total Cover	
50% of total cover: 55	20% of total cover: 22		
Sapling Stratum (30 ft)			
1. Liquidambar styraciflua	10	yes	FAC
2. Quercus phellos	3	yes	FACW
3.			
4.			
5.			
6.			
	13	= Total Cover	
50% of total cover: 6.5	20% of total cover: 2.6		
Shrub Stratum (30 ft)			
1. Quercus phellos	10	yes	FACW
2. Ilex opaca	3	no	FAC
3. Juniperus virginiana	3	no	FACU
4. Pinus taeda	2	no	FAC
5.			
6.			
	18	= Total Cover	
50% of total cover: 9	20% of total cover: 3.6		
Herb Stratum (30 ft)			
1. Juncus effusus	10	yes	OBL
2. Microstegium vimineum	5	yes	FAC
3. Asplenium platyneuron	5	yes	FACU
4. Smilax rotundifolia	3	no	FAC
5. Acer rubrum	3	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	26	= Total Cover	
50% of total cover: 13	20% of total cover: 5.2		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (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:

__ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No __

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03A1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					L	
3-15	2.5Y 5/3	92	10YR 5/6	8	C	PL	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03E1-1

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): 133A Lat: 37.089282° Long: -77.484846° Datum: NAD83

Soil Map Unit Name: Mattaponi sandy loam NWI classification: PFO1/EM1E

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 ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ✓ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): N/A
Water Table Present?	Yes ____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: FDS-03E1-1

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	40	yes	FACW
2. Liquidambar styraciflua	30	yes	FAC
3. Ulmus rubra	10	no	FAC
4. Acer rubrum	5	no	FAC
5.			
6.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Sapling Stratum (30 ft)			
1. Fagus grandifolia	5	yes	FACU
2. Quercus phellos	3	yes	FACW
3.			
4.			
5.			
6.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Shrub Stratum (30 ft)			
1. Liquidambar styraciflua	10	yes	FAC
2. Quercus phellos	5	yes	FACW
3. Ulmus rubra	3	no	FAC
4. Fagus grandifolia	2	no	FACU
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (30 ft)			
1. Campsis radicans	15	yes	FAC
2. Smilax rotundifolia	10	yes	FAC
3. Liquidambar styraciflua	5	no	FAC
4. Rubus pensilvanicus	5	no	FAC
5. Microstegium vimineum	3	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	38 = Total Cover		
50% of total cover: 19	20% of total cover: 7.6		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5 (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:

__ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No __

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03E1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					SL	
4-15	10YR 5/1	92	10YR 5/6	8	C	PL	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03E1-2

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): 133A Lat: 37.089319° Long: -77.484596° Datum: NAD83

Soil Map Unit Name: Mattaponi sandy loam NWI classification: PFO1/EM1E

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A
Water Table Present?	Yes _____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: FDS-03E1-2

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	50	yes	FACW
2. Liquidambar styraciflua	40	yes	FAC
3. Ulmus rubra	5	no	FAC
4.			
5.			
6.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Sapling Stratum (30 ft)			
1. Acer rubrum	13	yes	FAC
2.			
3.			
4.			
5.			
6.			
	13 = Total Cover		
50% of total cover: 6.5	20% of total cover: 2.6		
Shrub Stratum (30 ft)			
1. N/A			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (30 ft)			
1. Smilax rotundifolia	80	yes	FAC
2. Campsis radicans	50	yes	FAC
3. Toxicodendron radicans	10	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	140 = Total Cover		
50% of total cover: 70	20% of total cover: 28		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03E1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					SL	
4-15	2.5Y 4/2	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03F1-1

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Drainage Swale Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): 133A Lat: 37.085349° Long: -77.484462° Datum: NAD83

Soil Map Unit Name: Uchee loamy sand NWI classification: Upland

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 _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✓ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A	
Water Table Present?	Yes ✓	No _____	Depth (inches): 6	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 1	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: FDS-03F1-1

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula nigra	30	yes	FACW
2. Nyssa sylvatica	20	yes	FAC
3. Liriodendron tulipifera	15	no	FACU
4. Liquidambar styraciflua	10	no	FAC
5. Acer rubrum	10	no	FAC
6.			
	85	= Total Cover	
50% of total cover: 42.5	20% of total cover: 17		
Sapling Stratum (30 ft)			
1. Betula nigra	30	yes	FACW
2. Quercus phellos	15	yes	FACW
3. Acer rubrum	5	no	FAC
4.			
5.			
6.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		
Shrub Stratum (30 ft)			
1. Betula nigra	10	yes	FACW
2. Ilex opaca	2	no	FAC
3.			
4.			
5.			
6.			
	12	= Total Cover	
50% of total cover: 6	20% of total cover: 2.4		
Herb Stratum (30 ft)			
1. Woodwardia areolata	20	yes	OBL
2. Smilax rotundifolia	10	yes	FAC
3. Athyrium asplenioides	5	no	FAC
4. Microstegium vimineum	5	no	FAC
5. Fragaria virginiana	3	no	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	43	= Total Cover	
50% of total cover: 21.5	20% of total cover: 8.6		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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:

__ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03F1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 5/1	100					LS	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03F1-2

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Drainage Swale Local relief (concave, convex, none): Concave Slope (%): 4

Subregion (LRR or MLRA): 133A Lat: 37.085495° Long: -77.484532° Datum: NAD83

Soil Map Unit Name: Uchee loamy sand NWI classification: Upland

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 ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A
Water Table Present?	Yes _____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: FDS-03F1-2

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	60	yes	FAC
2. Ilex opaca	40	yes	FAC
3. Quercus alba	30	yes	FACU
4. Acer rubrum	10	no	FAC
5.			
6.			
	140	= Total Cover	
50% of total cover: 70	20% of total cover: 28		
Sapling Stratum (30 ft)			
1. Quercus alba	10	yes	FACU
2. Carya tomentosa	7	yes	UPL
3. Juniperus virginiana	3	no	FACU
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (30 ft)			
1. Ilex opaca	5	yes	FAC
2. Juniperus virginiana	3	yes	FACU
3.			
4.			
5.			
6.			
	8	= Total Cover	
50% of total cover: 4	20% of total cover: 1.6		
Herb Stratum (30 ft)			
1. Fragaria virginiana	5	yes	FACU
2. Microstegium vimineum	3	yes	FAC
3. Smilax rotundifolia	2	yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 10 (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	120	x 3 =	360
FACU species	51	x 4 =	204
UPL species	7	x 5 =	35
Column Totals:	178 (A)		599 (B)

Prevalence Index = B/A = 3.37

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03F1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 5/6	100					LS	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12) (LRR T, U)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: HCE Reams Solar I City/County: Dinwiddie County Sampling Date: 07/09/2019

Applicant/Owner: Holocene Clean Energy State: VA Sampling Point: FDS-03J1-1

Investigator(s): D. Cox, A. Bellios Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): 133A Lat: 37.087591° Long: -77.484211° Datum: NAD83

Soil Map Unit Name: Emporia sandy loam NWI classification: Upland

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on 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 (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): N/A
Water Table Present?	Yes _____	No ✓	Depth (inches): >15
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >15

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: FDS-03J1-1

Tree Stratum (Plot sizes: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30	yes	FAC
2. Ilex opaca	25	yes	FAC
3. Nyssa sylvatica	20	yes	FAC
4. Liquidambar styraciflua	15	no	FAC
5. Pinus taeda	10	no	FAC
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling Stratum (30 ft)			
1. Liquidambar styraciflua	15	yes	FAC
2. Ilex opaca	10	yes	FAC
3. Acer rubrum	5	no	FAC
4. Nyssa sylvatica	5	no	FAC
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Shrub Stratum (30 ft)			
1. Ilex opaca	10	yes	FAC
2. Liquidambar styraciflua	7	yes	FAC
3. Vaccinium corymbosum	3	no	FACW
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (30 ft)			
1. Smilax rotundifolia	5	yes	FAC
2. Fragaria virginiana	3	yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Woody Vine Stratum (N/A)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 89% (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:

__ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ✓ No __

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: FDS-03J1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					SL	
2-15	2.5Y 5/3	97	10YR 5/8	3	C	PL	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
___ Organic Bodies (A6) **(LRR P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) **(MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12) (LRR T, U)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

APPENDIX B
USACE JD REQUEST FORM

NORFOLK DISTRICT REGULATORY OFFICE PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
http://www.nao.usace.army.mil/
Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. Date of Request: 07/19/2019
2. Project Name: Reams Solar
3. City or County where property located: Dinwiddie County
4. Address of property and directions (attach a map of the property location and a copy of the property plat): South off Old Vaugan Road, Dinwiddie County, VA.
5. Coordinates of property (if known): 37.085894, -77.482674
6. Size of property in acres: 63.1
7. Tax Parcel Number / GPIN (if available): 47-74
8. Name of Nearest Waterway: Gravelly Run, Little Cattail Creek

7. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request:
Preliminary Site Investigation.

8. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously? ☐ YES ☐ NO ☒ UNKNOWN

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

Property Owner Contact Information:

Property Owner Name: Rose K Smith
Mailing Address: 13612 Old Stage Road
City: State: Zip: Dinwiddie, VA 23841
Daytime Telephone:
E-mail Address:

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name: Timmons Group, Dan Cox
Mailing Address: 1001 Boulders Parkway, Suite 300
City: State: Zip: Richmond, Virginia 23225
Daytime Telephone: 804 200-6512
E-mail Address: dan.cox@timmons.com

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

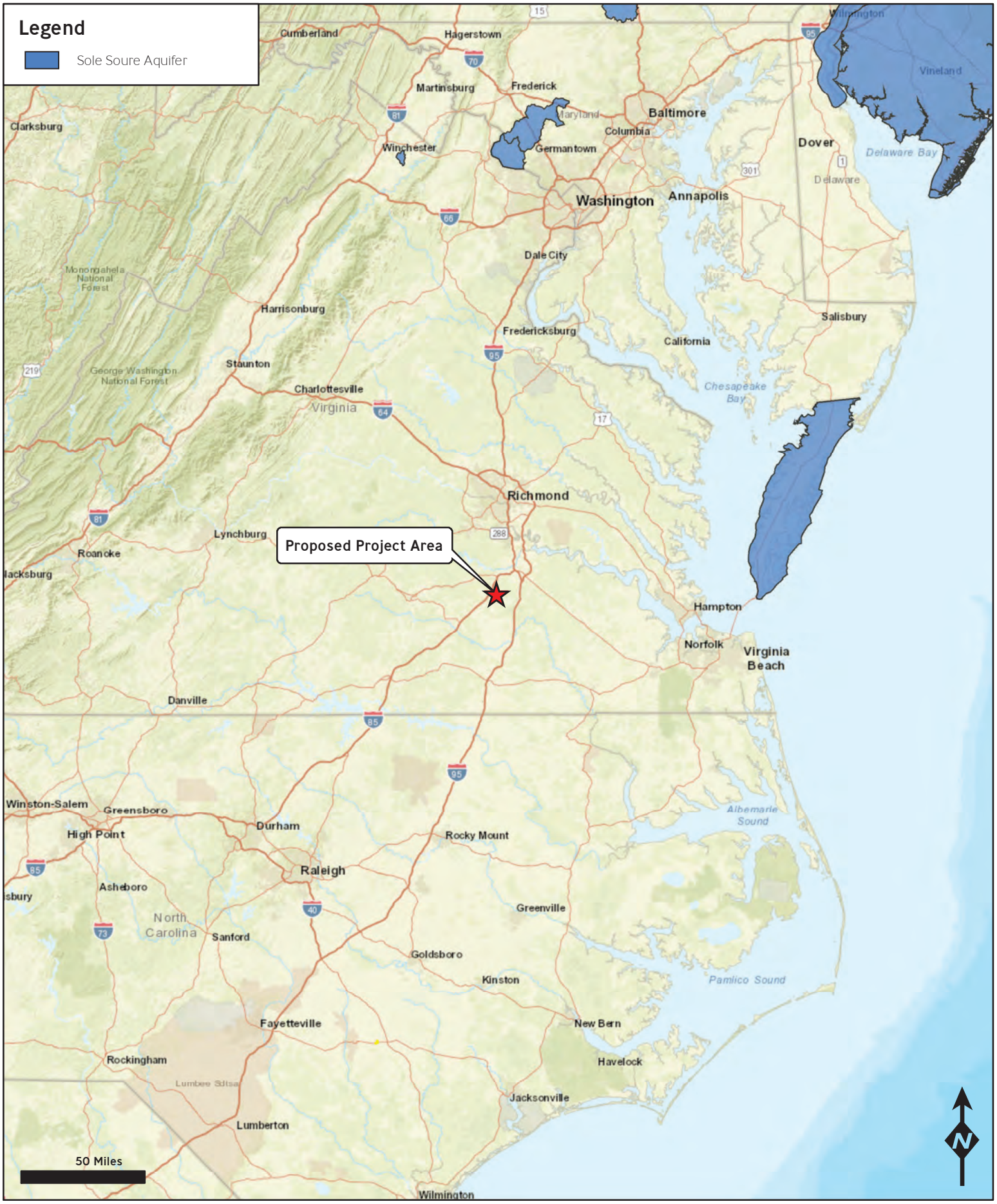
CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

Rose K. Smith
Property Owner's Signature

08/01/2019
Date

APPENDIX VII

Water Resources



TRUE NORTH CONSULTANTS

Trusted Partner, Leading Environmental Solutions.

SOLE SOURCE AQUIFER MAP

Proposed Reams Solar I

Dinwiddie, Dinwiddie County, Virginia

APPENDIX VIII

Biological Resources

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Date: 1/25/21

Self-Certification Letter

Project Name: Proposed Reams Solar

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA conclusions. These conclusions resulted in:

- "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR § 17.40(o) [as determined through the Information, Planning, and Consultation System (IPaC) northern long-eared bat assisted determination key]; and/or
- "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat.

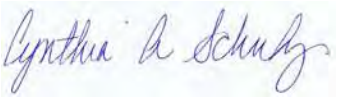
We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the determinations described above for proposed and listed species and proposed and designated critical habitat. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,



Cindy Schulz
Field Supervisor
Virginia Ecological Services

Enclosures - project review package

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: July 01, 2020
Consultation Code: 05E2VA00-2020-TA-4352
Event Code: 05E2VA00-2020-E-13025
Project Name: Proposed Reams Solar

Subject: Verification letter for the 'Proposed Reams Solar' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Marina Jawad:

The U.S. Fish and Wildlife Service (Service) received on July 01, 2020 your effects determination for the 'Proposed Reams Solar' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

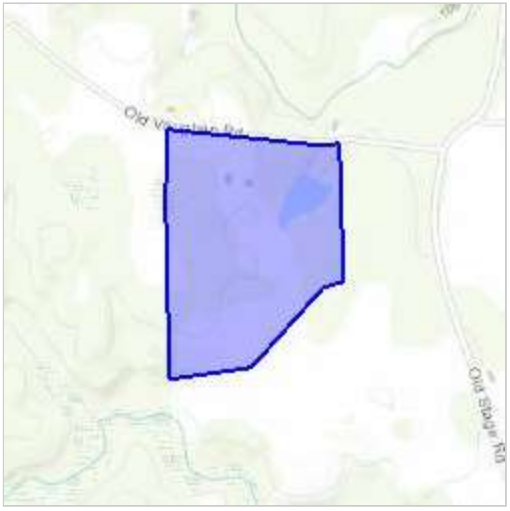
Proposed Reams Solar

2. Description

The following description was provided for the project 'Proposed Reams Solar':

VA

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.08790749763118N77.48231878047564W



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

7. Will the action involve Tree Removal?

   Yes

8. Will the action only remove hazardous trees for the protection of human life or property?

   No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

   No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

    No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type ‘0’ in questions 1-3.

1. Estimated total acres of forest conversion:

7

2. If known, estimated acres of forest conversion from April 1 to October 31

7

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type ‘0’ in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type ‘0’ in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type ‘0’ in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

Species Summary Table

Project name used in IPaC: **PROPOSED REAMS SOLAR I** Date: **3/19/2021**

Your name: **MARINA JAWAD**

Step 2 Listed or candidate species that are likely present according to the Official Species List from IPaC? "No Species" or IPaC species list Bald eagle nests from Step 4.	Step 2 Is your action area in critical habitat (only for Canada lynx or Atlantic salmon)? Yes or No	Step 3A Is suitable habitat for listed or candidate species present in your action area? "suitable habitat present" "suitable habitat not present" "Don't know"	Step 3B Does the species occur in your action area? "Species present" "Species not present" "Don't know"	Step 4 Is your project likely to take or disturb eagles and require an Eagle Act permit? "Will not disturb" "May disturb" "Don't know"	Step 5 Determinations for the Endangered Species Act – **only Federal agencies complete this column** "No effect" "May effect"	Notes and Documentation (provide additional information if needed)
Northern Long-eared Bat	No	Suitable Habitat Not Present	Species Not Present	Choose an item.	Choose an item.	Received verification letter from IPaC's programmatic biological opinion on Final 4(d) Rule for NLEB and Self-Certification letter through the USFWS' Virginia Field Office Online Project Review.

Notes:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: March 18, 2021
Consultation Code: 05E2VA00-2021-SLI-2687
Event Code: 05E2VA00-2021-E-07791
Project Name: Reams Solar I Project

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.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number 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
- USFWS National Wildlife Refuges and Fish Hatcheries

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:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2021-SLI-2687
Event Code: 05E2VA00-2021-E-07791
Project Name: Reams Solar I Project
Project Type: POWER GENERATION
Project Description: The construction of a 5-MW solar facility near the town of Dinwiddie, Virginia

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.087817650000005,-77.48355022634476,14z

Counties: Dinwiddie County, Virginia

Endangered Species Act Species

There is a total of 1 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[1], 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.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: June 15, 2020
Consultation Code: 05E2VA00-2020-SLI-4352
Event Code: 05E2VA00-2020-E-12152
Project Name: Proposed Reams Solar

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number 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
- USFWS National Wildlife Refuges and Fish Hatcheries

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:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2020-SLI-4352

Event Code: 05E2VA00-2020-E-12152

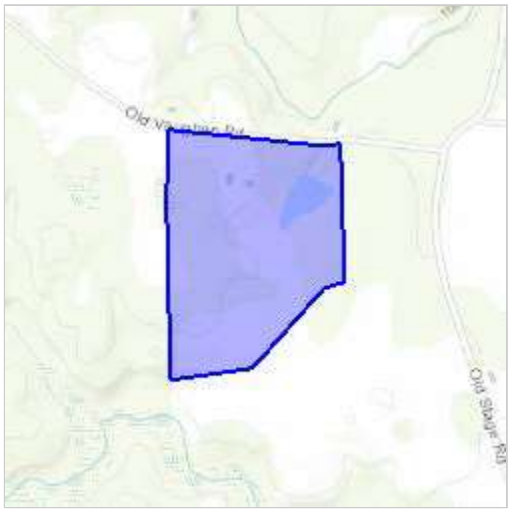
Project Name: Proposed Reams Solar

Project Type: AGRICULTURE

Project Description: VA

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.08790749763118N77.48231878047564W



Counties: Dinwiddie, VA

Endangered Species Act Species

There is a total of 1 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[1], 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.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Dinwiddie County, Virginia

Local office

Virginia Ecological Services Field Office

(804) 693-6694
(804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

http://www.fws.gov/northeast/virginiafield/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. 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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Northern Long-eared Bat Myotis septentrionalis — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.

Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1/EM1E
- PFO1A
- PSS1Eh

FRESHWATER POND

- PUBHh

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in

activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Site Location

37,05,25.9 -77,28,49.3
is the Search Point

Show Position Rings
○ Yes ◉ No
1/2 mile and 1/8 mile at the Search Point

Show Search Area
◉ Yes ○ No
2 Search distance miles buffer

Display at center	Search Point is not at map center

Base Map Choices
BW Aerial Photography

Map Overlay Choices
Current List: Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

T & E Waters
Federal
State

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

Trout Waters
Class I - IV
Class V - VI

Anadromous Fish Reach
Confirmed
Potential

123 Impediment

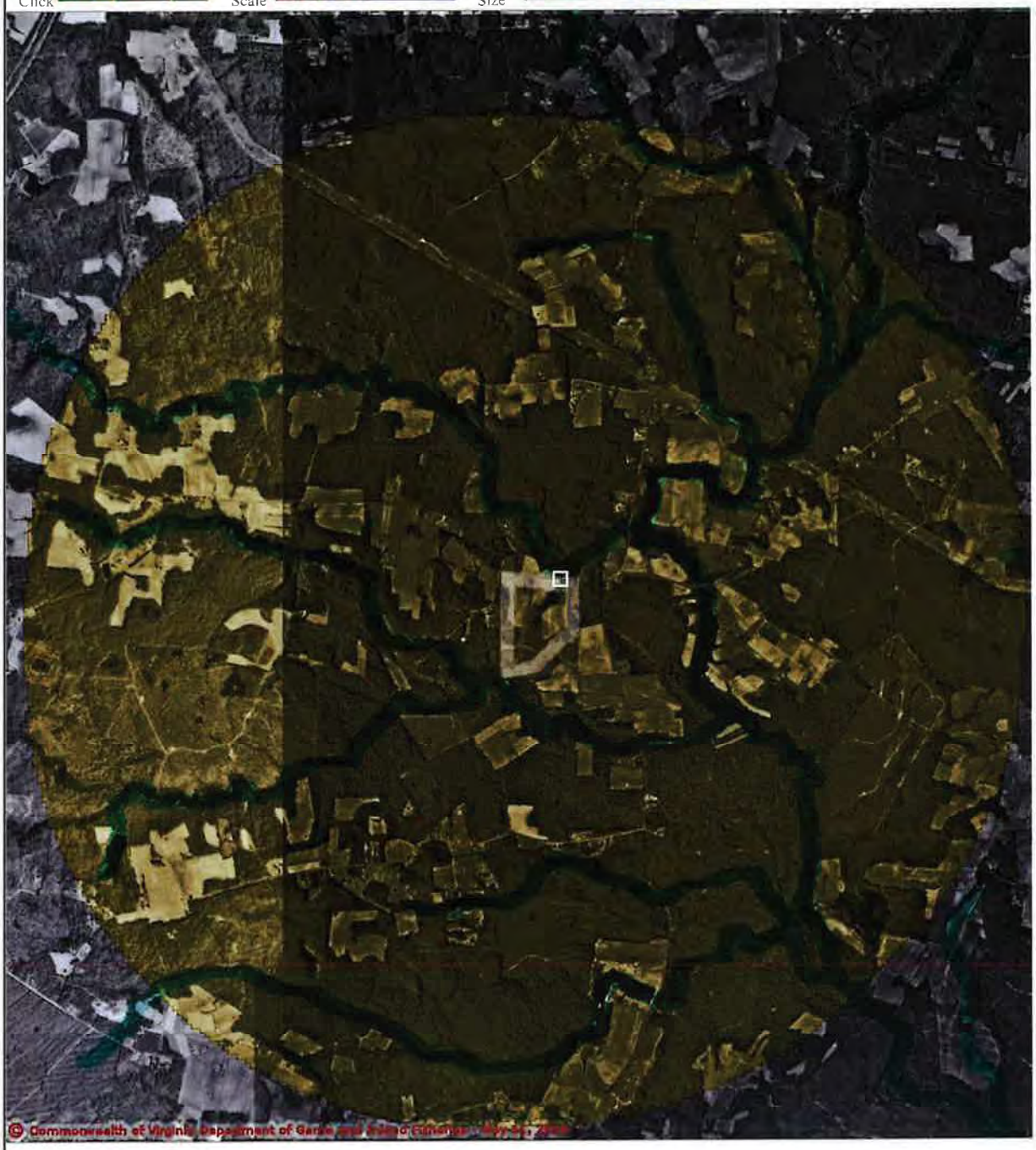
2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

Bald Eagle nests 660 and 330 foot management zones

Data Observation Site

back | Map Click Pan | Map Scale In Zoom Out | Refresh Browser Page | Screen Size Small Size Big | Help



N

500 0 500 1000 1500 2000 Meters
2000 0 2000 4000 6000 8000 Feet

Point of Search 37,05,25.9 -77,28,49.3
Map Location 37,05,26.8 -77,28,44.7

Select **Coordinate System:**
◉ Degrees,Minutes,Seconds Latitude - Longitude
○ Decimal Degrees Latitude - Longitude
○ Meters UTM NAD83 East North Zone
○ Meters UTM NAD27 East North Zone

Base Map source: Black & White USGS Aerial Photography (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 275666 and top 4111819. Pixel size is 8 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixles. The map display represents 8000 meters east to west by 8000 meters north to south for a total of 64.0 square kilometers. The map display represents 26251 feet east to west by 26251 feet north to south for a total of 24.7 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2020-05-11 12:07:31 (qa/qc March 21, 2016 12:20 - tn=1030265.0 dist=3218 1)
$poi=37.0905400 -77.4803699

VaFWIS Initial Project Assessment Report Compiled on 5/11/2020, 11:29:37 AM

Help

Known or likely to occur within a **2 mile buffer around polygon; center 37.0905400 -77.4803699** in **053 Dinwiddie County, VA**

View Map of Site Location

454 Known or Likely Species ordered by Status Concern for Conservation (displaying first 24) (24 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
040228	FESE	Ia	Woodpecker, red-cockaded	Picoides borealis		BOVA
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon		Habitat
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
010214	FESE	IIa	Logperch, Roanoke	Percina rex		BOVA,Habitat
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata		BOVA
010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon		Habitat
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040385	ST	Ia	Sparrow, Bachman's	Peucaea aestivalis		BOVA
060173	FPST	Ia	Pigtoe, Atlantic	Fusconaia masoni		BOVA
020002	ST	IIa	Treefrog, barking	Hyla gratiosa		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA
010174		Ia	Bass, Roanoke	Ambloplites cavifrons		BOVA,Habitat
010077		Ia	Shiner, bridle	Notropis bifrenatus		BOVA
040052		IIa	Duck, American black	Anas rubripes		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA
040140		IIa	Woodcock, American	Scolopax minor		BOVA
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA

To view **All 454 species** View 454

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (9 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Arthur Swamp (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes

		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Gravelly Run (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Gravelly Run (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
Gravelly Run (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
Gravelly Run (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
Health Meadows Branch (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
Little Cattail Creek (03010201)	FESE	010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
Little Cattail Creek (03010201)	FESE	010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
Rowanty Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch,	Percina rex	

					Roanoke		
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
Rowanty Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	
tributary (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
tributary (03010201)	SE	010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 5/11/2020, 11:29:37 AM. 11030239.0 report=IPA searchType= P dist= 3218 poi= 37.0905400 -77.4803699 siteDD= 37.0905440 -77.4803778;37.0905440 -77.4803758;37.0905440 -77.4803758;37.0905440 -77.4803398;37.0905440 -77.4803378;37.0905450 -77.4803028;37.0905450 -77.4803008;37.0905460 -77.4802658;37.0905460 -77.4802638;37.0905480 -77.4802278;37.0905480 -77.4802278;37.0905480 -77.4802278;37.0905480 -77.4802268;37.0905500 -77.4801908;37.0905510 -77.4801898;37.0905530 -77.4801538;37.0905540 -77.4801518;37.0905540 -77.4801518;37.0905540 -77.4801518;37.0905610 -77.4800808;37.0905620 -77.4800788;37.0905660 -77.4800438;37.0905670 -77.4800408;37.0905770 -77.4799728;37.0905820 -77.4799358;37.0905860 -77.4798978;37.0905890 -77.4798598;37.0905920 -77.4798218;37.0905920 -77.4798208;37.0905950 -77.4797838;37.0905950 -77.4797638;37.0896950 -77.4797498;37.0894040 -77.4797408;37.0885040 -77.4797158;37.0873680 -77.4796568;37.0872690 -77.4796548;37.0872630 -77.4796548;37.0871380 -77.4802898;37.0870990 -77.4803338;37.0857950 -77.4817958;37.0852110 -77.4824508;37.0849120 -77.4848658;37.0863180 -77.4849108;37.0891730 -77.4850008;37.0909010 -77.4849788;37.0909110 -77.4849788;37.0909020 -77.4848798;37.0909020 -77.4848788;37.0908360 -77.4840648;37.0907930 -77.4835658;37.0907790 -77.4833978;37.0907320 -77.4828818;37.0907320 -77.4828808;37.0906910 -77.4823458;37.0906700 -77.4820728;37.0906150 -77.4813928;37.0906150 -77.4813928;37.0905550 -77.4805978;37.0905520 -77.4805628;37.0905520 -77.4805618;37.0905490 -77.4805258;37.0905490 -77.4805238;37.0905490 -77.4805238;37.0905490 -77.4805238;37.0905490 -77.4805238;37.0905460 -77.4804528;37.0905450 -77.4804488;37.0905440 -77.4803778;

PixelSize=64; Anadromous=0.026408; BECAR=0.027859; Bats=0.024339; Buffer=0.115763; County=0.110791; Impediments=0.024691; Init=0.20001; PublicLands=0.031976; SppObs=0.250832; TEWaters=0.04026; TierReaches=0.094132; TierTerrestrial=0.109908; Total=1.163114; Tracking_BOVA=0.177737; Trout=0.029214

Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000013137

Client Project Number: 44131.001

PROJECT INFORMATION

TITLE: Reams Solar I

DESCRIPTION: Reams Solar I is a proposed solar facility located in Dinwiddie County on approximately 63 acres.

EXISTING SITE CONDITIONS: Agricultural and forested

QUADRANGLES: Carson

COUNTIES: Dinwiddie

Latitude/Longitude (DMS): 37° 5' 17.3379" N / 77° 28' 57.2938" W

Acreage: 66 acres

Comments:

REQUESTOR INFORMATION

Priority: N **Tier Level:** Tier I -

Contact Name: Julia Campus

Company Name: Timmons Group

Address: 1001 Boulders Pkwy Ste 300

City: Richmond **State:** VA **Zip:** 23225

Phone: 8042006577 **Fax:** **Email:** julia.campus@timmons.com

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence
Natural Heritage Screening Features Intersecting Project Boundary				

Intersecting Predictive Models
Predictive Model Results

Reams Solar I

Project Boundary

Buffered Project Boundary

1:6,883

0 0.05 0.1 0.2 mi

0 0.075 0.15 0.3 km

Quads: Carson

Counties: Dinwiddie

Company: Timmons Group

Lat/Long: 370517 / -772857

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources in the vicinity of the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

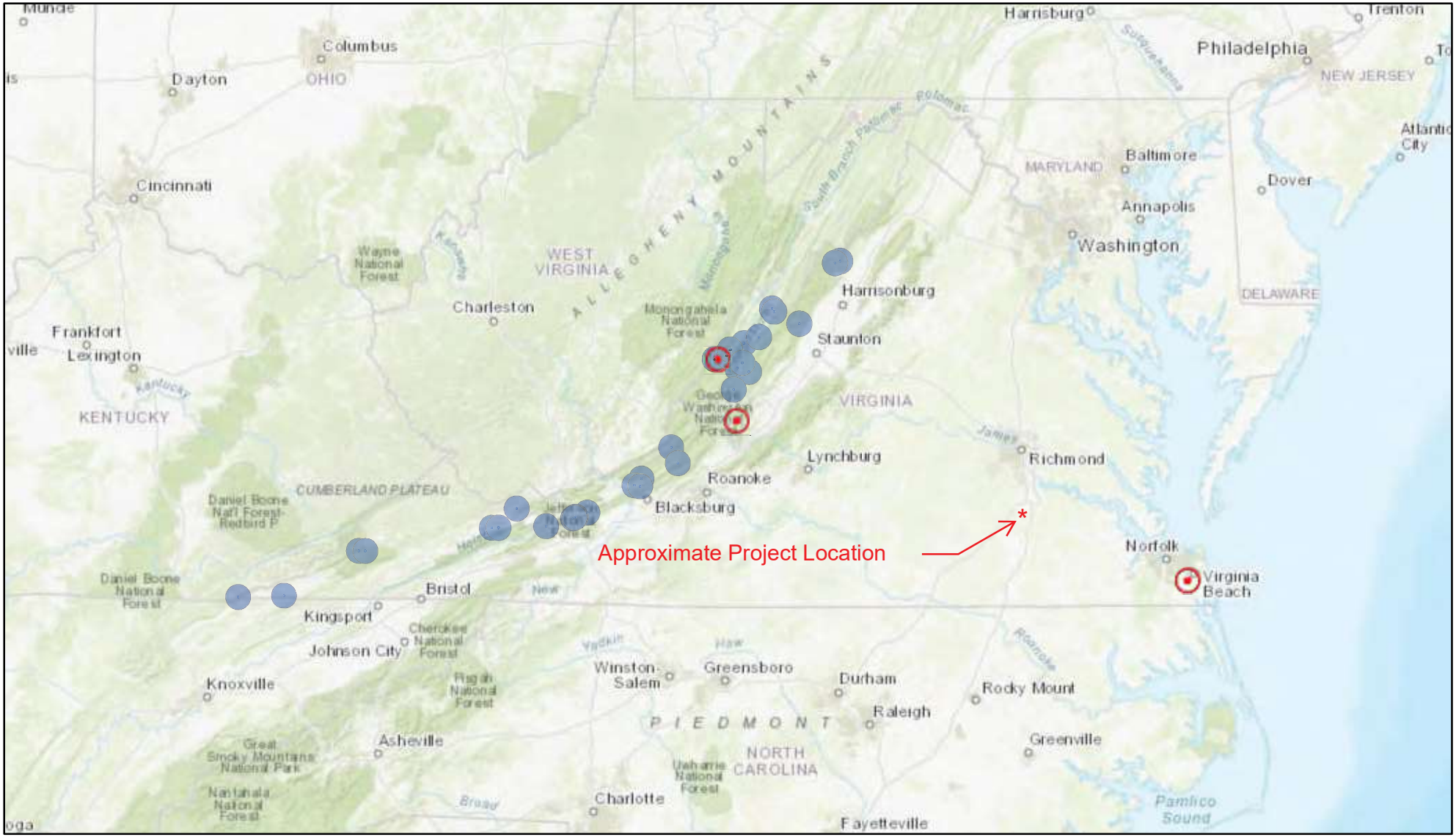
Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please revisit this website or contact DCR for an update on this natural heritage information if a significant amount of time passes (DCR recommends no more than six months) before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in the Natural Heritage Data Explorer. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach (804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov).

Thank you for submitting your project to the Virginia Department of Conservation and Recreation's Natural Heritage Data Explorer Web Service. Should you have any questions or concerns about this report, the Data Explorer, or other Virginia Natural Heritage Program services, please contact the Natural Heritage Project Review Unit at 804-371-2708.

NLEB Locations and Roost Trees



5/8/2020, 4:13:12 PM

NLEB Known Occupied Maternity Roost (Summer Habitat)

NLEB Hibernaculum 5.5 Mile Buffer

NLEB Hibernaculum Half Mile Buffer

1:4,622,324

0 30 60 120 mi

0 50 100 200 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

VA Dept. Game & Inland Fisheries

Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS |

CCB Mapping Portal

Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers, Eagle Roosts, Eagle Roost Polygons, Eagle Roost Buffers

Map Center [longitude, latitude]: [-77.46322631835938, 37.08804885952269]

Map Link:
https://www.ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&layer=Eagle+Roosts&layer=Eagle+Roost+Polygons&layer=Eagle+Roost+Buffers&zoom=11&lat=37.08804885952269&lng=-77.46322631835938&legend=legend_tab_4ca7337c-c07d-11e5-93bc-0ecfd53eb7d3&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 05/08/2020

Virginia Invasive Plant Species List 2014			Region			Light Requirements			Soil Moiture Requirements		
Scientific Name	**Common Name**	**VA Invasiveness Rank**	**Mountain**	**Piedmont**	**Coastal**	**Full**	**Partial**	**Shade**	**Hydric**	**Mesic**	**Xeric**
Ailanthus altissima	Tree-of-heaven	High	•	•	•	•	•			•	
*Aldrovanda vesiculosa**	Waterwheel	High			•	•			•		
Alliaria petiolata	Garlic Mustard	High	•	•	•	•	•	•		•	
Alternanthera philoxeroides	Alligator-weed	High			•	•	•		•		
Ampelopsis brevipedunculata	Porcelain-berry	High		•	•	•	•	•		•	
Carex kobomugi	Japanese Sand Sedge	High			•	•	•				•
Celastrus orbiculatus	Oriental Bittersweet	High	•	•	•	•	•	•		•	
Centaurea stoebe ssp. micranthos	Spotted Knapweed	High	•	•	•	•	•				•
Cirsium arvense	Canada Thistle	High	•	•	•	•				•	
Dioscorea polystachya	Cinnamon Vine	High	•	•	•		•	•		•	
*Eichhornia crassipes**	Water Hyacinth	High			•	•			•		
Elaeagnus umbellata	Autumn Olive	High	•	•	•	•	•			•	
Ficaria verna	Lesser Celandine	High		•	•		•	•		•	
Hydrilla verticillata	Hydrilla	High	•	•	•	•	•		•		
*Imperata cylindrica**	Cogon Grass	High			•		•	•		•	
Iris pseudacorus	Yellow Flag	High	•	•	•	•	•		•		
Lespedeza cuneata	Sericea Lespedeza	High	•	•	•	•				•	
Ligustrum sinense	Chinese Privet	High	•	•	•		•	•	•	•	
Lonicera japonica	Japanese Honeysuckle	High	•	•	•	•	•	•		•	
Lonicera maackii	Amur Honeysuckle	High	•	•	•		•			•	
*Ludwigia grandiflora ssp. hexapetala**	Large flower primrose willow	High	•	•	•	•			•		
Lythrum salicaria	Purple Loosestrife	High	•	•	•	•			•	•	
Microstegium vimineum	Japanese Stiltgrass	High	•	•	•	•	•	•	•	•	
Murdannia keisak	Marsh dewflower	High	•	•	•	•	•		•		
Myriophyllum aquaticum	Parrot Feather	High	•	•	•	•			•		
Myriophyllum spicatum	Eurasian Water-milfoil	High	•	•	•	•			•		
Persicaria perfoliata	Mile-a-minute	High	•	•	•	•	•	•	•	•	
Phragmites australis ssp. australis	Common Reed	High	•	•	•	•	•		•	•	
Pueraria montana var. lobata	Kudzu	High	•	•	•	•	•	•		•	
Reynoutria japonica	Japanese knotweed	High	•	•	•	•	•			•	
Rosa multiflora	Multiflora Rose	High	•	•	•	•	•			•	
Rubus phoenicolasius	Wineberry	High	•	•	•		•	•		•	
Sorghum halepense	Johnson Grass	High	•	•	•	•	•			•	

Urtica dioica	European Stinging Nettle	High	•	•	•		•	•	•	•		
*Vitex rotundifolia**	Beach Vitex	High			•	•					•	
Acer platanoides	Norway Maple	Medium	•	•	•	•	•			•		
Agrostis capillaris	Colonial bent-grass	Medium	•	•	•	•	•			•		
Akebia quinata	Five-leaf Akebia	Medium		•	•	•	•	•		•		
Albizia julibrissin	Mimosa	Medium	•	•	•	•	•			•		
Arthraxon hispidus var. hispidus	Joint Head Grass	Medium	•	•	•	•	•		•	•		
Berberis thunbergii	Japanese Barberry	Medium	•	•	•	•	•	•		•		
Cirsium vulgare	Bull Thistle	Medium	•	•	•	•				•		
Dipsacus fullonum	Wild Teasel	Medium	•	•	•	•			•	•		
Egeria densa	Brazilian Waterweed	Medium	•	•	•	•	•		•			
Euonymus fortunei	Winter Creeper	Medium	•	•	•		•	•	•	•		
Glechoma hederacea	Gill-over-the-ground	Medium	•	•	•		•	•		•		
Hedera helix	English ivy	Medium		•	•	•	•	•		•		
Holcus lanatus	Common Velvet Grass	Medium	•	•	•	•	•		•	•		
Humulus japonicus	Japanese Hops	Medium	•	•	•	•	•	•	•	•		
*Ipomoea aquatica**	Water spinach	Medium	•	•	•	•			•			
Ligustrum obtusifolium var. obtusifolium	Border privet	Medium	•	•	•			•		•		
Lysimachia nummularia	Moneywort	Medium	•	•	•	•	•	•	•	•		
Miscanthus sinensis	Chinese Silvergrass	Medium	•	•	•	•	•			•		
Najas minor	Brittle Naiad	Medium	•	•	•	•			•			
Paulownia tomentosa	Royal Paulowina	Medium	•	•	•	•	•			•		
Persicaria longiseta	Long-bristled Smartweed	Medium	•	•	•	•	•	•	•	•		
Phyllostachys aurea	Golden Bamboo	Medium	•	•	•	•	•			•		
Poa compressa	Flat-stemmed Bluegrass	Medium	•	•	•	•	•	•		•		
Poa trivialis	Rough Bluegrass	Medium	•	•	•	•	•	•	•	•		
Pyrus calleryana	Callery Pear	Medium	•	•	•	•	•			•		
Rhodotypos scandens	Jetbead	Medium	•	•	•	•	•	•	•	•		
Rumex acetosella	Sheep sorrel	Medium	•	•	•	•	•			•		
*Salvinia molesta**	Giant Salvinia	Medium	•	•	•	•			•			
*Solanum viarum**	Tropical Soda Apple	Medium		•	•	•	•		•	•		
Stellaria media	Common Chickweed	Medium	•	•	•	•	•	•		•		
Veronica hederifolia	Ivy-leaved Speedwell	Medium	•	•	•	•	•			•		
Wisteria sinensis	Chinese Wisteria	Medium	•	•	•		•	•		•		
Commelina communis	Asiatic Dayflower	Low	•	•	•	•	•			•		

Elaeagnus pungens	Thorny Olive	Low	•	•	•	•	•			•	
Lespedeza bicolor	Shrubby Bushclover	Low	•	•	•	•	•			•	
Lonicera fragrantissima	Winter Honeysuckle	Low	•	•	•	•	•			•	
Melia azedarach	Chinaberry	Low		•	•	•	•			•	
Morus alba	White Mulberry	Low	•	•	•	•	•			•	
Perilla frutescens	Beefsteak Plant	Low	•	•	•		•	•		•	
Phleum pratense	Timothy	Low	•	•	•	•	•			•	
Populus alba	Silver Poplar	Low	•	•	•	•	•			•	
Rumex crispus ssp. crispus	Curly dock	Low	•	•	•	•				•	•
Securigera varia	Crown-vetch	Low	•	•	•	•				•	•
Trapa natans	European Water Chestnut	Low			•	•			•		
Vinca major	Greater Periwinkle	Low	•	•	•	•	•	•		•	
Vinca minor	Periwinkle	Low	•	•	•	•	•	•		•	
Wisteria floribunda	Japanese Wisteria	Low		•	•		•	•		•	

*Early detection species not yet established in Virginia.

Citation: Heffernan, K., E. Engle, C. Richardson. 2014. Virginia Invasive Plant Species List. Virginia Department of Conservation and Recreation, Division of Natural Heritage. Natural Heritage Techincal Document 14-XX. Richmond.

APPENDIX IX

Historic and Cultural Resources

Section 106 Conclusion Memo

To: File

Copy: Barbara Britton

From: Michael Geiger

4/23/2021

RE: Finding of No Adverse Effect
Holocene – Reams Solar
Old Vaughn Road, Dinwiddie, Dinwiddie County Virginia

Under the Consolidated Farm, and/or Rural Development Act, the Rural Utilities Service (RUS),] is considering funding an application from Holocene to construct 5-megawatt (MW) ground-mounted photovoltaic (PV) system on the south side of Old Vaughan Road near the town of Dinwiddie. The PV system and associated components will be situated on approximately 35.7 acres of a larger, 62.6-acre parent parcel (Site) – this parcel is identified by Dinwiddie County Assessor as: 47-74. The Proposed Project's infrastructure would include installing PV solar panels; inverters (to allow for the transmission to the utility grid); connections to the existing powerlines and necessary safety features including access roads, perimeter roads and fencing. The estimated duration of construction is approximately 4 months and is anticipated that the Proposed Project will operate for a minimum of 35 years. When the Proposed Project has reached its operation end, the Site can be returned to its pre-construction state.

RUS has determined that this Project is an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. § 300101 et seq., and its implementing regulations, 36 CFR Part 800 (Section 106 review).

In accordance with 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. Under this delegation, RUS may conclude Section 106 review on the basis of an agreement reached between Holocene, Virginia Department of Historic Resources (VADHR) and other consulted parties on the recommended finding of effect.

The Virginia Cultural Resource Information Services (VCRIS) database identified five architectural resources and two archaeological resources within the half-mile buffer. Pursuant to Section 106 of the NHPA, the Proposed Project was submitted to the Virginia Department of Historic Resources' (VDHR) Electronic Project Information Exchange (ePIX) system on June 14,

2020. In a response dated July 14, 2020, the VDHR concluded that in order to identify historic properties that may be affected by the Proposed Project, a Phase I cultural resources study be conducted within the Proposed Project Area.

In response to the VDHR's recommendation, Dutton + Associates, LLC (D+A) conducted a Phase I Cultural Resource Survey for the Proposed Project Area. The survey involved both archaeological and architectural investigations in order to confirm the presence or absence of cultural resources located within the Proposed Project Area, evaluate their potential eligibility for listing in the NRHP, and assess those that are considered NRHP-eligible for project effects.

D+A initiated an architectural resources survey, which identified twelve (12) architectural resources greater than 50 years of age located within the Proposed Project APE, three of which are located directly within or overlap the Proposed Project Area.

Of the surveyed resources, five (5) were previously recorded and seven (7) were newly recorded during this Phase I survey. The twelve resources within the Proposed Project APE and evaluated as part of this survey include single family dwellings from the mid-nineteenth to mid-twentieth century, a late-nineteenth century church, and three Civil War battlefields. Three (3) of the twelve resources surveyed were identified as Civil War battlefields (Reams Station Battlefield I & II, Hatcher's Run Battlefield, and Boydton Plank Road Battlefield) and considered potentially eligible for listing in the NRHP. D+A noted that the remaining surveyed resources do not appear to reflect any unique or significant design or historical associations, and as such, none were recommended to be potentially eligible for listing in the NRHP individually or collectively.

D+A concluded that the Proposed Project would not have an adverse impact on historic resources and did not recommend further evaluation. Their findings were submitted to the VDHR on January 13, 2021. A response was received from the VDHR concurring with the findings of the Phase I Cultural Resources Survey on February 10, 2021. The VDHR concluded that the Proposed Project will have no adverse effects on historic resources and no further investigation is warranted.

Upon review of U.S. Department of Housing and Urban Development's (HUD) Tribal Directory Assessment Tool, it was determined that the Catawba Indian Nation, Nansemond Indian Nation and Delaware Nation were listed as the tribes with interest in the area.

True North Consultants (True North) sent a letter to each Tribal Historic Preservation Office (THPO) on June 12, 2020 providing notification of intent to initiate the Section 106 review process. A response from the Nansemond Indian Tribe was received on June 17, 2020 stating that they are satisfied with efforts conducted to be sure that no Nansemond historic properties or other cultural resources will likely be adversely affected. The Nansemond Indian Nation is not currently aware of any specific Nansemond cultural or historic sites within the Proposed Project Area, therefore, there are no objections to the Proposed Project. The Delaware Nation responded in a letter dated July 9, 2020 stating the location of the Proposed Project does not

endanger cultural, or religious sites of interest to the Delaware Nation; however, should archaeological sites or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted and the appropriate agencies be contacted. A response was received from the Catawba Indian Nation on July 15, 2020 concluding that there were no immediate concerns in regards to the Proposed Project; however the Catawba Indian Nation requested to be notified if Native American artifacts and/or human remains are located during ground disturbing activity.

Based on review of the project documentation provided by Holocene, RUS has determined that a finding of no historic adverse effect in accordance with 36 CFR § 800.5(b) is appropriate for this undertaking. This finding will conclude Section 106 review process as it agrees with the recommendations of Holocene, VAHDR on July 14, 2020, as well as that of the Catawba Indian Nation on July 15, 2020, the Delaware Nation July 9, 2020 and Nansemond Indian Nation June 17, 2020.

There are no additional conditions to which the Applicant and SHPO have agreed to, to support this finding. The commitment on the part of the Agency to their implementation is ongoing provided project scope remains within parameters detailed in the report. RUS will include an inadvertent discovery provision, developed in accordance with 36 CFR § 800.13(b) and (c), as a condition of obligation in order to address any historic properties which might be inadvertently discovered or affected during project construction.

Should you have any questions, please contact: Michael Geiger USDA,RD
michael.geiger@usda.gov 202.819.0076

Michael Geiger

Digitally signed by Michael Geiger
Date: 2021.04.23 15:06:34 -04'00'

COMMONWEALTH of VIRGINIA

Matthew Strickler
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

February 10, 2021

Leslie Schroeder
1000 E. Warrenville Road, Suite 140
Naperville, IL 60563

Re: Reams Solar
Dinwiddie County, VA
DHR File No. 2020-3863

Dear Ms. Schroeder

We have received for review the *Phase I Cultural Resource Survey of the 25.3-Hectare (62.6-Acres) Reams Solar Project Area, Dinwiddie County, Virginia.* prepared by Dutton + Associated (D+A). The undertaking, as presented, involves the construction of a 5-megawatt (MW) solar facility on approximately 35.7 acres of a 62.6-acre parent parcel. Our comments are provided as assistance to the United States Department of Agriculture's (USDA) Rural Development (RD) and Rural Utilities Service (RUS) in meeting their responsibilities under Section 106 of the National Historic Preservation Act.

Archaeology

The report documents a cultural resources survey of approximately 62.6 acres. During the course of the survey, no new archaeological sites were identified. Dutton and Associates (D+A) recommends no additional work for this undertaking. DHR *concurs* with these recommendations.

Architecture

The architectural resources survey resulted in the identification of 12 architectural resources greater than within the Area of Potential Effects (APE), three resources are located directly within or overlap the project area. Of the surveyed resources, five (5) were previously recorded (DHR ID# 026-0050, 026-0132, 026-5004, 026-5146, 026-5147) and seven (7) were newly recorded during this survey (DHR ID # 026-5298 through 026-5300 and 026-0302 through 026-0305).

D+A recommends that DHR ID # 026-0050, 026-0132, and 026-5004 are potentially eligible for listing the Virginia Landmarks Register (VLR) and the National Register of Historic Places (NHRP). The remaining resources (DHR ID# 026-5146, 026-5147, 026-5298 through 026-5300 and 026-0302 through 026-0305) were recommended not eligible for listing in the VLR/NRHP. D+A recommends that the Reams

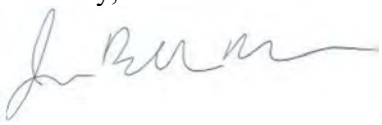
Solar project will have no adverse effect on DHR ID # 026-0050, 026-0132, 026-5004. D+A recommends that no further consideration is warranted for architectural resource

The undertaking will occur within the vicinity of Hatcher's Run Battlefield (VDHR #**026-0132**) and Boydton Plank Road Battlefield (VDHR #**026-5004**), two properties *eligible* for listing in the NRHP. However, the portions of the battlefields most impacted by the solar project are considered non-contributing to the larger resources because they are ingress/egress routes.

DHR *concurs* that resource **# 026-0050** is *potentially eligible* for listing in VLR/NRHP. DHR also *concurs* that resources **# 026-5146, 026-5298** through **026-5300** and **026-0302** through **026-0305** are *not eligible* for listing in the VLR/NRHP. The nearby c. 1880 House at 24205 Old Vaughan Road (DHR ID # **026-5147**) may be *potentially eligible* for listing in the NRHP. DHR believes the proposed undertaking will have *No Adverse Effects* on DHR ID # 026-050, 026-0132, 026-5004, and 026-5147. Please see the attached table for all eligibility and impact recommendations

Based upon the information provided, we agree that a determination of *No Adverse Effects* is appropriate for this undertaking. If for any reason the undertaking cannot be conducted as proposed in the submission, consultation under Section 106 should be reopened. Thank you for seeking our comments on this project. If you have any questions at this time, please do not hesitate to contact me at jennifer.bellville-marrion@dhr.virginia.gov.

Sincerely,



Jenny Bellville-Marrion, Project Review Archaeologist
Review and Compliance Division

Cc:
David Dutton, D+A

VDHR ID#	D+A Eligibility	DHR Eligibility	D+A Impacts	DHR Impacts
026-0050	Potentially Eligible	Potentially Eligible	No Adverse Effects	Concur; No Adverse Effects
026-0132	Potentially Eligible	Eligible	No Adverse Effects	Concur; No Adverse Effects
026-5004	Potentially Eligible	Eligible	No Adverse Effects	Concur; No Adverse Effects
026-5146	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5147	Not Eligible	Potentially Eligible	No Historic Properties Affected	No Adverse Effects
026-5298	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5299	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5300	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5302	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5303	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5304	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected
026-5305	Not Eligible	Not Eligible	No Historic Properties Affected	Concur; No Historic Properties Affected

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Phase I Cultural Resources Survey provided electronically

COMMONWEALTH of VIRGINIA

Matthew Strickler
Secretary of Natural Resources

Department of Historic Resources
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
TDD: (804) 367-2386
www.dhr.virginia.gov

July 14, 2020

Leslie Schoeder
1000 E. Warrenville Road, Suite 140
Naperville, IL 60563

Re: Reams Solar
Dinwiddie County, VA
DHR File No. 2020-3863

Dear Ms. Schoeder

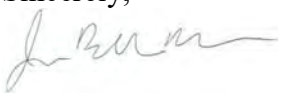
We have received your request for comments on the project referenced above. The undertaking, as presented, involves the construction of a 5-megawatt (MW) solar facility on approximately 35.7 acres of a 62.6-acre parent parcel. Our comments are provided as assistance to the United States Department of Agriculture's (USDA) Rural Development (RD) and Rural Utilities Service (RUS) in meeting their responsibilities under Section 106 of the National Historic Preservation Act.

According to our records, the area of potential effects (APE) has not been systematically surveyed. The boundaries of three (3) battlefields, Reams Station Battlefield (DHR # 026-0050), Hatcher's Run Battlefield, (DHR # 026-0132), and Boydton Plank Road Battlefield (DHR # 026-5004) are located within the Area of Potential Effects. All three battlefields have been found to be eligible or potentially eligible for listing in the National Register of Historic Places (NRHP). Given the proximity to the battlefields, there is potential for unrecorded archaeological sites within the APE.

In order to identify historic properties that may be affected by this undertaking, we recommend that a Phase I cultural resources study be conducted within the project area. This survey should include the documentation and assessment of any structures located within the APE. This survey must be conducted by qualified professionals in accordance to the Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (48 FR 44716-42) and DHR's Guidelines for Conducting Historic Resources Survey in Virginia (2017). One bound copy and one digital copy of the resulting report should be submitted to our office for review.

Thank you for seeking our comments on this project. If you have any questions at this time, please do not hesitate to contact me at jennifer.bellville-marrion@dhr.virginia.gov.

Sincerely,



Jenny Bellville-Marrion, Project Review Archaeologist
Review and Compliance Division

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 Boulders Parkway, Suite 300
Richmond, VA 23225
TEL 804.200.6500
www.timmons.com

PROJECT NAME & LOCATION

HCE REAMS SOLAR I
DINWIDDIE COUNTY, VIRGINIA

DATE: 05/08/2020

PROJECT NUMBER: 44131.001

PROJECT NAME: HCE REAMS SOLAR I

DESIGNED BY / DRAWN BY: L. WHEELER

NOTES:
Project Limits are approximate.
Cultural resource data from DHR.
Aerial imagery from VGIN.

REVISIONS

#	MM.DD.YY	DESCRIPTION

DRAWING DESCRIPTION
CULTURAL RESOURCE MAP

SCALE (FEET)
0 400 800
PLANS PRINTED AS 11X17, ARE HALF SCALE

SCALE	SHEET NUMBER
H:1" = 400 '	1

Y:\851\44131.001-Reams_1\GIS\Common Shared Exhibits\44131.001-VCRIS.mxd

Property Information

Property Names

Name Explanation	Name
Historic/Current	Reams Station Battlefield (I & II)

Property Addresses

Current - Halifax Road
Current - Reams Road
Alternate - Route 604
Alternate - Route 606

Property Evaluation Status

DHR Staff: Potentially Eligible

This Property is associated with the Reams Station Battlefields (I & II).

County/Independent City(s): Dinwiddie (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CARSON

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*
Site Description:

No Data

Surveyor Assessment:

The Battle of Reams Station was the last attempt by Confederate forces under General A.P. Hill to recapture the important Weldon Railroad into Petersburg. Having lost control of the line on August 21, 1864, on the 25th Gen. Hill intercepted a Federal force under General Winfield S. Hancock destroying the track at Reams Station. Even though they were able to successfully defeat the Northerners and recapture the line, they were forced to relinquish their stronghold and they fell back to Petersburg. The Federals would begin entrenching along the Weldon Railroad and would use this postion as a jump off point for operation against the southside railroad.

Surveyor Recommendation: *No Data*

Primary Resource Information

Resource Category: Defense
Resource Type: Battle Site
NR Resource Type: Site
Historic District Status: Contributing
Date of Construction:
Date Source: *No Data*
Historic Time Period: Civil War (1861 - 1865)
Historic Context(s): Landscape, Military/Defense, Transportation/Communication
Other ID Number: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None
Architectural Description:

No Data

Secondary Resource Information

Historic District Information

Historic District Name: Reams Station Battlefields (I & II)
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: DHR Staff: Potentially Eligible

DHR ID: 026-0050
Staff Name: ABPP
Event Date: 1/24/2007
Staff Comment

Preliminary survey data from the American Battlefield Protection Program (ABPP) indicates that this historic Civil War battlefield is likely eligible for listing in the National Register of Historic Places and likely deserving of future preservation efforts. This survey information should be reassessed during future Section 106/NEPA compliance reviews.

Event Type: Other

Project Review File Number: *No Data*
Investigator: Gossett, Tanya
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 9/13/2005
Dhr Library Report Number: *No Data*
Project Staff/Notes:

The American Battlefield Protection Program and the Virginia Department of Historic Resources agree that where a joint undertaking is to be located within or near a Civil War battlefield surveyed by the Civil War Sites Advisory Commission (1991-1993), the ABPP and the VDHR will recommend that the Federal agency (or its designee or the designee's consultant) take into account lands within the Study Areas of those battlefields when identifying the historic property and assessing effects to the historic property in Section 106 reviews. Both the ABPP and the VDHR will recommend systematic metal detector surveys and other field methods appropriate to battlefields for Phase I work where a proposed undertaking may have a direct effect on the historic property/battlefield.

Please see also the CWSAC data within the file for the battlefield. The VDHR GIS includes the full boundaries of the CWSAC study areas for battlefields recorded within the VDHR architectural inventory, unless VDHR has refined the boundary by evaluation of integrity and eligibility, or unless the battlefield is listed in the National Register. The ABPP asks that the full study area be evaluated, even in cases where a National Register boundary exists. Many National Register boundaries were drawn to exclude eligible areas for political reasons or owner objections, and therefore do not represent the entire eligible battlefield. In cases where VDHR has refined the boundaries of a battlefield to lands eligible for the National Register, the study area is presumed by both the VDHR and the ABPP to be obsolete.

Bibliographic Information

Bibliography:
No Data
Property Notes:
No Data

Property Information

Property Names

Name Explanation	Name
Historic	Hatcher's Run Battlefield

Property Addresses

Current - Dabney Mill Road
Alternate - Route 613

Property Evaluation Status

DHR Staff: Eligible

County/Independent City(s): Dinwiddie (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CARSON, DINWIDDIE, PETERSBURG, SUTHERLAND

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*

Site Description:

April 2009: Hatcher's Run Battlefield is located in Dinwiddie County and contains over 6,118 acres. The battlefield is situated in rural Dinwiddie County.

April 2009: None.

Surveyor Assessment:

Hoping to cut Lee's supply route into Petersburg, in February 1865 Grant ordered two army corps led by Major Generals Gouverneur K. Warren and Andrew A. Humphreys to seize the Boydton Plank Road. The Confederate corps commanded by Major General John B. Gordon successfully blocked Warren's attacks at nearby Dabney's Mill on 6-7 February, and Warren's corps withdrew to its previous position. The brief Union campaign enabled Grant to extend his lines, and cost the Confederates the life of Brigadier General John Pegram on February 6.

Entered 2004:

The fighting in the Hatcher's Run vicinity during February 5-7 developed from Grant's ongoing strategy of supply interdiction. Grant ordered Gregg's Division of Union cavalry on a raid to Dinwiddie Court House to interfere with Confederate supply wagons along the Boydton Plank Road. The Union II Corps moved to a supporting position along Hatcher's Run near the Vaughan Road crossing, while V Corps took position about two miles to the south of II Corps. The two corps maintained a corridor for Gregg's retreat, while offering one another mutual support to prevent a Confederate flanking countermove. Heth's Division of Confederates mounted a determined attack against II Corps from the north in the late afternoon of February 5, but was beaten back. On February 6, the Union V Corps made a reconnaissance in force along the Dabney Mill Road, while Pegram's Division of Confederates, supported by Evans's and Mahone's divisions, advanced along the same road to make its own probe. The two forces clashed, and after a seesawing struggle, the Confederates were forced to retreat. Additional skirmishing took place on February 7. In the aftermath of the fighting, the Northerners dug in permanently as far west as the Vaughan Road crossing, so that Grant's strategy of extending the siege lines was also brought into play (Trudeau 1991:312-322; Greene 2000:143-149).

The surveyor made use of the recent secondary histories by Trudeau and Greene. The 1992-1993 NPS study identified three discrete battlefield core areas, viz., a large one to the northeast for the February 5 fighting, extending across routes 670, 674, and 613, a small one to the west for the February 6-7 combat along Dabney Mill Road, and an additional small area to the south on Gravelly Run, said to represent other fighting on February 6. The Trudeau-Greene research indicated that it would be appropriate to extend the large northeasterly 1992-1993 NPS core area to the eastward by about .4 miles to fully include the area of the February 5 attack by Heth's Division against II Corps. The NPS 1992-1993 core area on Dabney Mill Road evidently reflects the February 6 fighting fairly accurately. The Trudeau-Greene research did not refer to fighting farther south on Gravelly Run, suggesting that this was probably cavalry combat on a relatively minor scale, associated with the withdrawal of Gregg's Union cavalry behind the cover of II Corps and V Corps.

A 2004 field survey found that the battlefield core areas were intact, as regards the density of non-contributing resources that interfere with the interpretation of the battleground. There are modern residential properties scattered in some sections of the core areas, but not in such density as to be disruptive of these areas' sense of historic feeling. The surveyor recommends National Register boundaries for the battlefield as shown on the attached map.

April 2009: Today, the battlefield contains historic road beds, period buildings, and earthworks. Although portions of the battlefield contain modern residential properties, they are situated far enough apart to not diminish the historic setting of the battlefield. Due to the fact that this resource retains much of its integrity, it is recommended that Hatcher's Run Battlefield is still Potentially Eligible for the NRHP under Criterion A for its association with notable Civil War events in this area. During Dovetail's survey Vaughn Road was investigated for its significance during the Civil War. This road was travel by troops during the Battle of Hatcher's Run and the Battle of Peebles' Farm and still follows its original alignment and retains much of its historic setting and feeling. In addition, troops took

position along Vaughn Road during the Battle of Hatcher's Run. As such, Vaughn Road is a contributing resource to the Hatcher's Run Battlefield.

Surveyor Recommendation: Legacy

Ownership

Ownership Category	Ownership Entity
Public - State	*No Data*

Primary Resource Information

Resource Category: Defense
Resource Type: Battle Site
NR Resource Type: Site
Historic District Status: *No Data*
Date of Construction: 1865
Date Source: Site Visit
Historic Time Period: Civil War (1861 - 1865)
Historic Context(s): Military/Defense
Other ID Number: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

The battlefield is mainly planted in pines, having been originally owned and managed by a timber company. An access road runs through the center of the property, although traces of an original wood road running to Dabney's steam-sawmill traverses across it from the old Vaughan Road. The land is generally flat in surface.

April 2009: This resource has not changed since the previous survey.

Secondary Resource Information

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: DHR Staff: Eligible

DHR ID: 026-0132
Staff Name: Holma, Marc
Event Date: 7/6/2009
Staff Comment

DHR concurs with Dovetail that this resource remains eligible for the NRHP.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2001-1460
Investigator: Barile, Kerri
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 4/1/2009
Dhr Library Report Number: DW-62
Project Staff/Notes:

Barile, Kerri, Heather Dollins and Claire Lanier. Phase I Architectural Survey of Road Construction Areas Associated with the Southeast High Speed Rail Project within the Cities of Richmond, Colonial Heights and Petersburg and Chesterfield and Dinwiddie Counties, Virginia. Dovetail Cultural Resource Group I, Inc., Fredericksburg, Virginia. 2009.

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book
Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: Other

Project Review File Number: *No Data*
Investigator: ABPP
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 1/24/2007
Dhr Library Report Number: DW-62
Project Staff/Notes:

Preliminary survey data from American Battlefield Protection Program (ABPP) indicates that this historic Civil War battlefield is likely eligible for listing in the National Register of Historic Places and likely deserving of future preservation efforts. This survey information should be reassessed during future Section 106/NEPA compliance reviews.

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service

Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book
Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: Other

Project Review File Number: *No Data*

Investigator: APBB

Organization/Company: Unknown (DSS)

Photographic Media: *No Data*

Survey Date: 1/24/2007

Dhr Library Report Number: DW-62

Project Staff/Notes:

Preliminary survey data from American Battlefield Protection Program (ABPP) indicates that this historic Civil War battlefield is likely eligible for listing in the National Register of Historic Places and likely deserving of future preservation efforts. This survey information should be reassessed during future Section 106/NEPA compliance reviews.

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book

Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: DHR Staff: Eligible

DHR ID: 026-0132
Staff Name: Holma, Marc
Event Date: 10/6/2006
Staff Comment

No Data

Event Type: Other

Project Review File Number: *No Data*
Investigator: CWSAC
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 9/13/2005
Dhr Library Report Number: DW-62
Project Staff/Notes:

The American Battlefield Protection Program and the Virginia Department of Historic Resources agree that where a joint undertaking is to be located within or near a Civil War battlefield surveyed by the Civil War Sites Advisory Commission (1991-1993), the ABPP and the VDHR will recommend that the Federal agency (or its designee or the designee's consultant) take into account lands within the Study Areas of those battlefields when identifying the historic property and assessing effects to the historic property in Section 106 reviews. Both the ABPP and the VDHR will recommend systematic metal detector surveys and other field methods appropriate to battlefields for Phase I work where a proposed undertaking may have a direct effect on the historic property/battlefield.

Please see also the CWSAC data within the file for the battlefield. The VDHR GIS includes the full boundaries of the CWSAC study areas for battlefields recorded within the VDHR architectural inventory, unless VDHR has refined the boundary by evaluation of integrity and eligibility, or unless the battlefield is listed in the National Register. The ABPP asks that the full study area be evaluated, even in cases where a National Register boundary exists. Many National Register boundaries were drawn to exclude eligible areas for political reasons or owner objections, and therefore do not represent the entire eligible battlefield. In cases where VDHR has refined the boundaries of a battlefield to lands eligible for the National Register, the study area is presumed by both the VDHR and the ABPP to be obsolete.

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book
Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria A - Associated with Broad Patterns of History

Recommendations:

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2001-1460
Investigator: The Louis Berger Group, Inc.
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 9/1/2004
Dhr Library Report Number: DW-62
Project Staff/Notes:

Property surveyed by Berger Architectural Historian Philip Pendleton for the Southeast High Speed Rail DEIS, North Carolina DOT Project No. 9.9083003, North Carolina TIP Project No. P-3819.

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book
Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: PIF

Project Review File Number: *No Data*
Investigator: Calkins, Christopher M.
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 8/13/1991
Dhr Library Report Number: DW-62
Project Staff/Notes:

No Data

Project Bibliographic Information:

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Greene, A. Wilson
Record Type: Book
Bibliographic Notes: Greene, A. Wilson
2000Breaking the Backbone of the Rebellion: The Final Battles of the Petersburg Campaign. Savas Publishing Company, Mason City, Iowa.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Property Information

Property Names

Name Explanation	Name
Historic	Boydton Plank Road Battlefield
Historic	Burgess' Mill
Historic	Hatcher's Run

Property Evaluation Status

DHR Staff: Eligible

Property Addresses

Current - Routes 1 & 613

County/Independent City(s): Dinwiddie (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CARSON, DINWIDDIE, PETERSBURG, SUTHERLAND

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*
Site Description:

Petersburg's 10-month seige took place over a county-sized area east, south and southwest of the city. Petersburg National Battlefield preserves much of the seige lines to the east including the initail assaults, the Crater, and Fort Stedman. A swath of commercial and residential development has eradicated nearly all historic resources along Crater Road, the main road to the south. Many fortifications southwest of the city are preserved by the NPS or the City of Petersburg on land transferred by the NPS. Except for being sparsely dotted by modern residences, this large southwestern area remains remarkably unspoiled.

April 2009: The resource location has not significantly altered since the previous survey.

April 2009: None.

Surveyor Assessment:

Start Year: 1864
End Year: 1864
Date Source: Site Visit
Type: Historical Event

Directed by Major General Winfield Scott Hancock, divisions from three Union corps (II, V, and IX) and Gregg's cavalry adivision, numbering more thn 30,000 men, withdrew from the Petersburg lines and marched west to operate against the Boydton Plank Road and South Side Railroad. The initial Union advance on October 27 gained the Boydton Plank Road, a major campaign objective. But that afternoon, a counterattack near Burgess' Mill spearheaded by Major General Henry Heth's division and Major General Wade Hampton's cavalry isolated the II Corps and forced a retreat. The confederates retained control of Boydton Plank Road for the rest of the winter.

Entered 2004:

Grant’s objective on October 27 was to cut the Boydton Plank Road and perhaps the Southside Railroad, thereby advancing his strategy of siege line extension, supply line interdiction, and attrition. The Union plan called for two corps to advance westward against the Confederate right wing, which extended southwestward from the Fort Gregg area to protect the Boydton Plank Road. II Corps moved on the left to outflank the Southerners and seize the road; IX Corps moved on the right to directly assault the Confederate line along the road. The Union V Corps was to offer support as necessary.

The Union operation was unsuccessful. The assaults by IX Corps and V Corps were driven back, while A. P. Hill attacked II Corps’s advanced position with Mahone’s and Heth’s divisions. The latter fighting seesawed back and forth, ending with Hill driven back. II Corps commander General Hancock judged his position to be ultimately untenable, and withdrew on October 28 (Trudeau 1991:221-253).

The surveyor employed Trudeau’s 1991 secondary work on the overall Petersburg campaign. The research indicated that the core area developed for this battlefield by the NPS 1992-1993 study accurately reflected the battle action.

Modern development, consisting of residential, Interstate highway and electric power line construction has deprived much of the core area of its integrity of setting and of feeling. However, the epicenter of the battle, located within the bounds of US Route 1 on the west, Hatcher's Run on the north, Interstate 85 on the east, and Dabney Mill Road (Route 613) on the south, possesses the integrity necessary for National Register eligibility.

April 2009: While the core area of the battlefield has succumbed to modern development and has been deprived of its integrity of setting and feeling, the epicenter of the battlefield still possesses its historic setting and retains much of its original integrity. Despite

the loss of the core area to development, it is recommended that Boydton Plank Road Battlefield is still Potentially Eligible for the NRHP under Criterion A for its association with notable Civil War events in this area.

Surveyor Recommendation: Legacy

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category: Defense
Resource Type: Battle Site
NR Resource Type: Site
Historic District Status: *No Data*
Date of Construction: 1864
Date Source: Site Visit
Historic Time Period: Civil War (1861 - 1865)
Historic Context(s): Military/Defense
Other ID Number: *No Data*
Architectural Style: No Discernable Style
Form: *No Data*
Number of Stories: *No Data*
Condition: Good
Threats to Resource: None Known

Architectural Description:

Petersburg's 10-month seige took place over a county-sized area east, south and southwest of the city. Petersburg National Battlefield preserves much of the seige lines to the east including the initail assaults, the Crater, and Fort Stedman. A swath of commercial and residential development has eradicated nearly all historic resources along Crater Road, the main road to the south. Many fortifications southwest of the city are preserved by the NPS or the City of Petersburg on land transferred by the NPS. Except for being sparsely dotted by modern residences, this large southwestern area remains remarkably unspoiled.

The current site is comprised of monuments/plaques, road beds, interpretive materials, archeological sites (Burgess Mill), and earthworks. The land's current use is agricultural and residential in nature.

April 2009: The resource has not changed since the previous survey.

Secondary Resource Information

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: DHR Staff: Eligible

DHR ID: 026-5004
Staff Name: Holma, Marc
Event Date: 7/6/2009

Staff Comment

DHR concurs with Dovetail that this resource remains eligible for the NRHP.

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2001-1460
Investigator: Barile, Kerri
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 4/1/2009
Dhr Library Report Number: DW-62

Project Staff/Notes:

Barile, Kerri, Heather Dollins and Claire Lanier. Phase I Architectural Survey of Road Construction Areas Associated with the Southeast High Speed Rail Project within the Cities of Richmond, Colonial Heights and Petersburg and Chesterfield and Dinwiddie Counties, Virginia. Dovetail Cultural Resource Group I, Inc., Fredericksburg, Virginia. 2009.

Project Bibliographic Information:

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Salmon, John S.
Record Type: Book
Bibliographic Notes: Salmon, John S. The Official Virginia Civil War Battlefield Guide. Stackpole Books, Mechanicsburg, Pennsylvania. 2001.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: Other

Project Review File Number: *No Data*
Investigator: APBB
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 1/24/2007
Dhr Library Report Number: DW-62

Project Staff/Notes:

Preliminary survey data from American Battlefield Protection Program (ABPP) indicates that this historic Civil War battlefield is likely eligible for listing in the National Register of Historic Places and likely deserving of future preservation efforts. This survey information should be reassessed during future Section 106/NEPA compliance reviews.

Project Bibliographic Information:

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New

York, New York. 1991.

Name: Salmon, John S.
Record Type: Book
Bibliographic Notes: Salmon, John S. The Official Virginia Civil War Battlefield Guide. Stackpole Books, Mechanicsburg, Pennsylvania. 2001.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: DHR Staff: Eligible

DHR ID: 026-5004
Staff Name: Holma, Marc
Event Date: 10/6/2006
Staff Comment

No Data

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2001-1460
Investigator: The Louis Berger Group, Inc.
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 9/1/2004
Dhr Library Report Number: DW-62
Project Staff/Notes:

Property surveyed by Berger Architectural Historian Philip Pendleton for the Southeast High Speed Rail DEIS, North Carolina DOT Project No. 9.9083003, North Carolina TIP Project No. P-3819.

Project Bibliographic Information:

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Salmon, John S.
Record Type: Book
Bibliographic Notes: Salmon, John S. The Official Virginia Civil War Battlefield Guide. Stackpole Books, Mechanicsburg, Pennsylvania. 2001.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission

1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: VA079
Investigator: CWSAC -
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 1/1/1993
Dhr Library Report Number: DW-62
Project Staff/Notes:

Civil War Sites Advisory Commission Survey Form - no photos submitted - not dated or signed, but surveys occurred during the period between 1991 and 1993.

Project Bibliographic Information:

Name: Trudeau, Noah Andre
Record Type: Book
Bibliographic Notes: Trudeau, Noah Andre. The Last Citadel: Petersburg, Virginia, June 1864-April 1865. Little, Brown and Company, New York, New York. 1991.

Name: Salmon, John S.
Record Type: Book
Bibliographic Notes: Salmon, John S. The Official Virginia Civil War Battlefield Guide. Stackpole Books, Mechanicsburg, Pennsylvania. 2001.

Name: National Park Service
Record Type: Report
Bibliographic Notes: National Park Service
2002Petersburg National Battlefield Land Protection Report Assessment of Integrity. Draft document on file, Petersburg National Battlefield, Petersburg, Virginia.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993bCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields, Technical Volume II: Battle Summaries. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/battles/tvii.htm.

Name: Civil War Sites Advisory Commission
Record Type: Report
Bibliographic Notes: Civil War Sites Advisory Commission
1993aCivil War Sites Advisory Commission Report on the Nation's Civil War Battlefields. National Park Service, Washington, D.C. Available online at http://www.cr.nps.gov/hps/abpp/cwsac/cws0-1.html.

Name: Louis Berger Group
DHR CRM Report Number: DW-62
Record Type: Report
Bibliographic Notes: "Archaeological Survey and Architectural Survey and Evaluation, Southeast High Speed Rail Corridor; City of Petersburg, Dinwiddie, Brunswick, and Mecklenburg Counties, Virginia."

Dated: December 2005.

Surveyor's NR Criteria Recommendations: A - Associated with Broad Patterns of History

Bibliographic Information

Bibliography:

No Data

Property Notes:

Name: Unknown
Company 1: Petersburg National Battlefield
Address 1: P.O. Box 549
City: Petersburg
State: Virginia
ZIP: 23804
Owner Relationship: Owner of property

Property Information

Property Names

Name Explanation	Name
Historic	Smart House

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 23805 Old Vaughan Road

County/Independent City(s): Dinwiddie (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CARSON

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*
Site Description:

Jan 2010: The house is located in a rural location east of the Vaughan Road. It is approached by a long drive on axis with the house. The drive leads around the east side of the house. The house is surrounded by fields.

Jan 2010: The house is accompanied by a series of five nineteenth- and twentieth-century outbuildings located to the rear (south) of the house. These include a c. 1870 barn, a c. 1930 barn, a frame chicken house, a c. 1930 garage, and a granary with sheds to each side. To the front and northeast of the house are found three agricultural outbuildings: a late nineteenth-century log tobacco barn and two frame early twentieth-century tobacco barns. A ninth outbuilding is the most significant. It is a one-room log secondary dwelling, possible a slave house, located to the northwest of the house.

Surveyor Assessment:

Jan 2010: The house is a good example of the regionally popular central-passage dwelling form. It is accompanied by a wide variety of domestic and agricultural outbuildings. The most significant element of the property is the rare single-room log tenant house or slave house. The house is labeled Smart on the 1872 Rives Map.

Surveyor Recommendation: *No Data*

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
NR Resource Type: Building
Historic District Status: *No Data*
Date of Construction: Ca 1850
Date Source: Site Visit
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Architecture/Community Planning, Domestic
Other ID Number: *No Data*
Architectural Style: Vernacular
Form: *No Data*
Number of Stories: 2.0
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:

Jan. 2010: The Smart House is a frame, two-story, three-bay, double-pile, center-passage-plan dwelling. It has exterior end chimneys, a gabled standing-seam metal roof, and a one-story ell to the rear. A one-story front porch has been removed, with one surviving engaged Doric square column to show what was there. No new porch has been added. A one-story shed and porch addition are located on the south elevation of the house next to the ell. There is a modern one-story addition to the east end.

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Sash, Double-Hung	Vinyl	6/6
Structural System and Exterior Treatment	Frame	Wood	Siding, Aluminum
Foundation	Solid/Continuous	Concrete	Poured
Roof	Gable	Metal	Standing Seam
Porch	Missing	Vinyl	Columns, Square
Chimneys	Exterior End	Brick	Bond, American

Secondary Resource Information

Secondary Resource #1

Resource Category: Agriculture/Subsistence
Resource Type: Granary
Date of Construction: 1900Ca
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:

Jan 2010: This is a frame vertical-board-sheathed granary with sheds added to each side and a gabled standing-seam metal roof.

Number of Stories: 1

Secondary Resource #2

Resource Category: Agriculture/Subsistence
Resource Type: Tobacco Barn
Date of Construction: 1900Ca
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:

Jan 2010: This is a log tobacco barn with a gabled standing-seam metal roof.

Number of Stories: 1

Secondary Resource #3

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Date of Construction: 1900Ca
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style

Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a log tobacco barn with a gabled standing-seam metal roof.
Number of Stories: 1

Secondary Resource #4

Resource Category: Domestic
Resource Type: Secondary Dwelling
Date of Construction: 1850Ca
Date Source: Site Visit
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Poor
Threats to Resource: Deterioration
Architectural Description:
Jan. 2010: The secondary dwelling is a one-story log building with a shed addition to the west end, a brick interior end chimney, a gabled standing-seam metal roof, an off-center door on the south front (with an added c. 1900 door in the opening), a six-over-six sash window on the north front, bricktex siding, and a plain box cornice. The interior features particle-board sheathing and an enclosed ladder stair in the SW corner with a plain tongue-and-groove board enclosure. The mantel is missing.
Interior Plan: One-room
Number of Stories: 2

Secondary Resource #5

Resource Category: Domestic
Resource Type: Garage
Date of Construction: 1930Ca
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a frame garage with a standing-seam metal gable roof.
Number of Stories: 1

Secondary Resource #6

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Date of Construction: 1870Ca
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a frame vertical board barn with a gabled standing-seam metal roof.

Number of Stories: 1

Secondary Resource #7

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Date of Construction: 1930Ca
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a frame vertical board barn with a gabled standing-seam metal roof.
Number of Stories: 1

Secondary Resource #8

Resource Category: Agriculture/Subsistence
Resource Type: Chicken House/Poultry House
Date of Construction: 1930Ca
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a frame chicken house with a gabled standing-seam metal roof.
Number of Stories: 1

Secondary Resource #9

Resource Category: Agriculture/Subsistence
Resource Type: Barn
Date of Construction: 1930Ca
Date Source: Site Visit
Historic Time Period: World War I to World War II (1917 - 1945)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: No Discernable Style
Form: *No Data*
Condition: Fair
Threats to Resource: Deterioration
Architectural Description:
Jan 2010: This is a frame vertical-board tobacco barn with a gabled standing-seam metal roof.
Number of Stories: 1

Secondary Resource #10

Resource Category: Agriculture/Subsistence
Resource Type: Tobacco Barn
Date of Construction: Ca
Date Source: *No Data*

Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: *No Data*
Form: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:
No Data
Number of Stories: *No Data*

Secondary Resource #11

Resource Category: Agriculture/Subsistence
Resource Type: Tobacco Barn
Date of Construction: Ca
Date Source: *No Data*
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Architecture/Community Planning, Domestic
Architectural Style: *No Data*
Form: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*
Architectural Description:
No Data
Number of Stories: *No Data*

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Worsham, Gibson
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 1/28/2010
Dhr Library Report Number: *No Data*
Project Staff/Notes:
The survey was completed by 3north Architects with the assistance of Braxton Worsham in the photography, fieldwork, and data entry.
Project Bibliographic Information:
Name: Rives Map
Record Type: Map
Bibliographic Notes: Rives Map of Dinwiddie County, 1872

Bibliographic Information

Bibliography:
No Data

Property Notes:
No Data

Property Information

Property Names

Name Explanation	Name
Function/Location	House, 24205 Old Vaughan Road

Property Evaluation Status

Not Evaluated

Property Addresses

Current - 24205 Old Vaughan Road

County/Independent City(s): Dinwiddie (County)
Incorporated Town(s): *No Data*
Zip Code(s): *No Data*
Magisterial District(s): *No Data*
Tax Parcel(s): *No Data*
USGS Quad(s): CARSON

Additional Property Information

Architecture Setting: Rural
Acreage: *No Data*
Site Description:

Jan 2010: The house is located in a rural location on the south side of Vaughan Road. It is located behind a mid-to-late twentieth-century dwelling and is approached by a short drive. The house is surrounded by woods on the south.

Jan 2010: None.

Surveyor Assessment:

Jan 2010: The house is an unusual survival of the formerly widespread one-room dwelling. The frame addition demonstrates how houses were expanded as families and their means increased. In this case the house was given the form of the central-passage plan, a popular dwelling form in the region and locality.

Surveyor Recommendation: *No Data*

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category: Domestic
Resource Type: Single Dwelling
NR Resource Type: Building
Historic District Status: *No Data*
Date of Construction: Ca 1880
Date Source: Site Visit
Historic Time Period: Reconstruction and Growth (1866 - 1916)
Historic Context(s): Architecture/Community Planning, Domestic
Other ID Number: *No Data*
Architectural Style: No Discernable Style
Form: *No Data*
Number of Stories: 1.0
Condition: Poor
Threats to Resource: Deterioration
Architectural Description:

Jan 2010: The house consists of an original one-story, frame, one-room section augmented by an early-twentieth-century addition that contained a central passage and adjacent room that gave the house the form of a center-passage-plan dwelling. The original section has a stone exterior end chimney with a brick stack at the east end, a central door in the south front, and a single window in the north. A small casement to the south of the chimney in the east wall may have been added. The garret is lit by a similar casement beside the chimney stack. The doorway contains a

modern solid-core door. The window has one-over-one replacement sashes. The original section has a stone pier foundation. When the addition was made the north front was given continuous weatherboard siding. The south front (the likely original principal facade) retains a seam where the buildings abut each other. The added room contains an interior brick stove flue. The entire house has a standing-seam metal roof.

Exterior Components

Component	Component Type	Material	Material Treatment
Windows	Sash, Double-Hung	Vinyl	1/1
Roof	Gable	Metal	Standing Seam
Porch	None	*No Data*	*No Data*
Chimneys	Exterior End	Stone	Coursed Rubble
Structural System and Exterior Treatment	Frame	Wood	Weatherboard
Foundation	Piers	Stone	Piers

Secondary Resource Information

Historic District Information

Historic District Name: *No Data*
Local Historic District Name: *No Data*
Historic District Significance: *No Data*

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: *No Data*
Investigator: Worsham, Gibson
Organization/Company: Unknown (DSS)
Photographic Media: *No Data*
Survey Date: 1/28/2010
Dhr Library Report Number: *No Data*
Project Staff/Notes:

The survey was completed by 3north Architects with the assistance of Braxton Worsham in the photography, fieldwork, and data entry.

Bibliographic Information

Bibliography:

No Data

Property Notes:

No Data

Snapshot

Date Generated: May 12, 2020

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 15000 - 8501 B.C.E
Site Type(s): Camp, Lithic workshop
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad: CARSON
County/Independent City: Dinwiddie (County)
Physiographic Province: No Data
Elevation: No Data
Aspect: No Data
Drainage: No Data
Slope: No Data
Acreage: No Data
Landform: Other
Ownership Status: No Data
Government Entity Name: No Data

Site Components

Component 1

Category: No Data
Site Type: No Data
Cultural Affiliation: Native American
DHR Time Period: Paleo-Indian
Start Year: -15000
End Year: -8501
Comments: No Data

Component 2

Category: Domestic
Site Type: Camp
Cultural Affiliation: No Data
DHR Time Period: No Data
Start Year: No Data
End Year: No Data
Comments: No Data

Component 3

Category: Industry/Processing/Extraction
Site Type: Lithic workshop
Cultural Affiliation: No Data
DHR Time Period: No Data
Start Year: No Data
End Year: No Data
Comments: No Data

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Staff/Notes:
No Data

Project Review File Number: No Data
Sponsoring Organization: No Data
Organization/Company: Unknown (DSS)
Investigator: MacCord, H. A., Livesay
Survey Date: No Data
Survey Description:
Random walk-over, with fairly good visibility, permitting search to cover a band of ten feet on eack side of walker. Scarcity of rocks in field made finding Indian-related material quite easy.

Current Land Use	Date of Use	Comments
Agricultural field	*No Data*	Plowed and well washed by rains.

Threats to Resource: No Data
Site Conditions: Unknown Portion of Site Destroyed
Survey Strategies: Surface Testing
Specimens Collected: No
Specimens Observed, Not Collected: No
Artifacts Summary and Diagnostics:
Core, preforms, utilized flakes, and debitage - all made of the locally-available Williamson chert (Cattail Creek Chalcedony).
Summary of Specimens Observed, Not Collected:
Fluted point and other tools, collection of Joseph McAvoy, Richmond.
Current Curation Repository: No Data
Permanent Curation Repository: No Data
Field Notes: No
Field Notes Repository: No Data
Photographic Media: No Data
Survey Reports: No Data
Survey Report Information:
Site seems to be an outlier from the larger Williamson Site, for which there are many reports and studies.
Survey Report Repository: No Data
DHR Library Reference Number: No Data
Significance Statement: No Data
Surveyor's Eligibility Recommendations: No Data
Surveyor's NR Criteria Recommendations, : No Data
Surveyor's NR Criteria Considerations: No Data

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

July 15, 2020

Attention: Brian S. Mihelich
True North Consultants
1000 East Warrenville Road, Suite 140
Naperville, Illinois 60563

Re. THPO # TCNS # Project Description
2020-1010-12 Proposed Reams Solar I Project – Dinwiddie, Dinwiddie Co., VA

Dear Mr. Mihelich,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

The Delaware Nation
Historic Preservation /106 Department
31064 State Highway 281
Anadarko, OK 73005
Phone (405)247-2448

July 9, 2020

To Whom It May Concern:

The Delaware Nation Historic Preservation Department received correspondence regarding the following referenced project(s).

Project: Proposed Reams Solar I Project
Dinwiddie, Dinwiddie County, Virginia

Our office is committed to protecting tribal heritage, culture and religion with particular concern for archaeological sites potentially containing burials and associated funerary objects.

The Lenape people occupied the area indicated in your letter during prior to European contact until their eventual removal to our present locations. According to our files, the location of the proposed project does not endanger cultural, or religious sites of interest to the Delaware Nation. **Please continue with the project as planned** keeping in mind during construction should an archaeological site or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted until the appropriate state agencies, as well as this office, are notified (within 24 hours), and a proper archaeological assessment can be made.

Please note the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge Munsee Band of Mohican Indians are the only Federally Recognized Delaware/Lenape entities in the United States and consultation must be made only with designated staff of these three tribes. We appreciate your cooperation in contacting the Delaware Nation Cultural Preservation Office to conduct proper Section 106 consultation. Should you have any questions, feel free to contact our offices at 405-247-2448.

Erin N. Paden

Erin Paden
Director of Historic Preservation
Delaware Nation
31064 State Highway 281
Anadarko, OK 73005
Ph. 405-247-2448 ext. 1403
epaden@delawarenation-nsn.gov

Leslie Schroeder

From: Megan Bass <administrator@nansemond.org>
Sent: Wednesday, June 17, 2020 8:56 PM
To: Leslie Schroeder
Cc: samflyingeagle48
Subject: Section 106 Initiation: Reams Solar I

Good evening Leslie,

I hope you are doing well. My name is Megan Bass and I am the administrator for the Nansemond Indian Nation. On behalf of Chief Sam Bass, the Nansemond Indian Nation is satisfied with efforts conducted to be sure that no Nansemond historic properties or other cultural resources will likely be adversely affected. The Nansemond Indian Nation is not currently aware of any specific Nansemond cultural or historic sites in the project area referenced. We, therefore, offer no objections to the proposed project.

The Nansemond Indian Nation only wishes to be informed if ancestral or cultural artifacts are discovered. Thank you for your time and for including our Nation in the 106 process.

Sincerely,

--

Megan L. Bass, J.D.
Administrator
Nansemond Indian Nation
(757) 777-4647

TRUENORTH CONSULTANTS

1000 East Warrenville Road, Suite 140
Naperville, Illinois 60563

P : 630 717 2880
F : 630 689 5881

mail@consulttruenorth.com

June 12, 2020

Nansemond Indian Nation
1001 Pembroke Lane
Suffolk, Virginia 23434

RE: United States Department of Agriculture (USDA) – Rural Development (RD)
Rural Utilities Service (RUS)
Applicant THPO Section 106 Initiation
Proposed Reams Solar I Project
Dinwiddie, Dinwiddie County, Virginia

To Whom it May Concern:

HCE Reams Solar (Applicant) is seeking financial assistance from the United States Department of Agriculture's (USDA) Rural Development (RD), Rural Utilities Service (RUS) for the proposed Reams Solar I Project, as shown on the enclosed maps.

The Proposed Project will consist of the installation of a 5-megawatt (MW) ground-mounted photovoltaic (PV) system on the south side of Old Vaughan Road near the town of Dinwiddie. The PV system and associated components will be situated on approximately 35.7 acres of a larger, 62.6-acre parent parcel (Site) – this parcel is identified by Dinwiddie County Assessor as: 47-74. The Proposed Project's infrastructure would include installing PV solar panels; inverters (to allow for the transmission to the utility grid); connections to the existing powerlines and necessary safety features including access roads, perimeter roads and fencing. The estimated duration of construction is approximately 4 months and is anticipated that the Proposed Project will operate for a minimum of 35 years. When the Proposed Project has reached its operation end, the Site can be returned to its pre-construction state.

The Site is bound on the north by Old Vaughan Road, on the east by forestland, residences and Old Stage Road, on the south by a pond, farm, cow pasture, forestland and agricultural land and on the west by forestland, agricultural lands, residences and an athletic field. Currently, the Site consists of agricultural land and forested areas with a vacant farm and large pond. The vacant farm includes dilapidated barns, sheds, and various farm-use structures. Overhead electric power lines extend onto the Site in several areas. The Site has historically consisted of a farm, agricultural fields, a pond and forested lands. The surrounding properties have historically consisted of forested areas and agricultural lands along with farms and residences.

Within the Site, there will be no demolition of existing structures. The two main sources of

ground disturbance are the racking system installation and the measures for erosion control and stormwater. Ditches will be located around the Site with an approximate total distance of 2400' and a depth of 2-4' to direct runoff into stormwater basins. This Site will have two basins with a maximum depth of 10' and an average area of 60'x200'. The dirt removed for the construction of the stormwater measures will be graded out across the Site and will be replanted with a grass seed mix. Approximately 1050 steel piles will be driven into the ground with an approximate average depth of 8'. The access road to the project will be approximately 1400' and will consist of 6" of compacted gravel over 12" of compacted native soil.

Utilizing the RUS loan guarantee process will allow the lender to extend credit to the Proposed Project and in turn, the borrower will be able to build a renewable energy system. Traditional generation technologies utilize large amounts of water and typically have high levels of greenhouse gas emissions (coal-fired and combined cycle natural gas facilities). The Proposed Project will provide long-term, emission free electricity to the local utility and will also help meet national and state goals to expand the use of renewable energy. The Proposed Project will also provide positive economic impacts by increasing the tax base for the county.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. In accordance with this blanket delegation, HCE Reams Solar is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers and the Tribal Historic Preservation Office (THPO) or other Tribal cultural representative. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

HCE Reams Solar proposes that the area of potential effects (APE) for the referenced project are limited to the boundaries of the approximate 35.7-acre portion of the larger parent parcel group as shown on the enclosed map. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x). The geographic scope of the APE will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

HCE Reams Solar is notifying you about the referenced project because of the possible interest of the Nansemond Indian Nation in Dinwiddie County, Virginia. Should the Nansemond Indian Nation elect to participate in Section 106 review for the referenced project, please notify me at the following address – Brian Mihelich, True North Consultants, 1000 East Warrenville Road, Suite 140, Naperville, Illinois 60563, or bmihelich@consulttruenorth.com.

Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. HCE Reams Solar will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with the USDA-Rural Development as the agency responsible for conducting Section 106 review, or to request that USDA-Rural Development participate directly in Section 106 review, please notify me at once; however, you may also contact the Agency directly. If you wish to do so, please submit your request to Steven Polacek, USDA-Rural Development, 1400 Independence Avenue, SW, Washington DC 20250-1510, or steve.polacek@usda.gov.

Please submit your response **electronically** within thirty (30) days. The RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information, you may contact me at 224-387-6125 or bmihelich@consulttruenorth.com.

Sincerely,

TRUE NORTH CONSULTANTS, INC.

Brian S. Mihelich
Executive Vice President

Leslie Schroeder
Staff Consultant

cc: Steven Polacek (via email)
Environmental Protection Specialist
United States Department of Agriculture
Environmental & Engineering Staff, Rural Development
steve.polacek@usda.gov

TRUENORTH CONSULTANTS

1000 East Warrenville Road, Suite 140
Naperville, Illinois 60563

P : 630 717 2880
F : 630 689 5881

mail@consulttruenorth.com

June 12, 2020

Dr. Wenonah G. Haire
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, South Carolina 29730

RE: United States Department of Agriculture (USDA) – Rural Development (RD)
Rural Utilities Service (RUS)
Applicant THPO Section 106 Initiation
Proposed Reams Solar I Project
Dinwiddie, Dinwiddie County, Virginia

Dear Dr. Haire:

HCE Reams Solar (Applicant) is seeking financial assistance from the United States Department of Agriculture's (USDA) Rural Development (RD), Rural Utilities Service (RUS) for the proposed Reams Solar I Project, as shown on the enclosed maps.

The Proposed Project will consist of the installation of a 5-megawatt (MW) ground-mounted photovoltaic (PV) system on the south side of Old Vaughan Road near the town of Dinwiddie. The PV system and associated components will be situated on approximately 35.7 acres of a larger, 62.6-acre parent parcel (Site) – this parcel is identified by Dinwiddie County Assessor as: 47-74. The Proposed Project's infrastructure would include installing PV solar panels; inverters (to allow for the transmission to the utility grid); connections to the existing powerlines and necessary safety features including access roads, perimeter roads and fencing. The estimated duration of construction is approximately 4 months and is anticipated that the Proposed Project will operate for a minimum of 35 years. When the Proposed Project has reached its operation end, the Site can be returned to its pre-construction state.

The Site is bound on the north by Old Vaughan Road, on the east by forestland, residences and Old Stage Road, on the south by a pond, farm, cow pasture, forestland and agricultural land and on the west by forestland, agricultural lands, residences and an athletic field. Currently, the Site consists of agricultural land and forested areas with a vacant farm and large pond. The vacant farm includes dilapidated barns, sheds, and various farm-use structures. Overhead electric power lines extend onto the Site in several areas. The Site has historically consisted of a farm, agricultural fields, a pond and forested lands. The surrounding properties have historically consisted of forested areas and agricultural lands along with farms and residences.

Within the Site, there will be no demolition of existing structures. The two main sources of ground disturbance are the racking system installation and the measures for erosion control and stormwater. Ditches will be located around the Site with an approximate total distance of 2400' and a depth of 2-4' to direct runoff into stormwater basins. This Site will have two basins with a maximum depth of 10' and an average area of 60'x200'. The dirt removed for the construction of the stormwater measures will be graded out across the Site and will be replanted with a grass seed mix. Approximately 1050 steel piles will be driven into the ground with an approximate average depth of 8'. The access road to the project will be approximately 1400' and will consist of 6" of compacted gravel over 12" of compacted native soil.

Utilizing the RUS loan guarantee process will allow the lender to extend credit to the Proposed Project and in turn, the borrower will be able to build a renewable energy system. Traditional generation technologies utilize large amounts of water and typically have high levels of greenhouse gas emissions (coal-fired and combined cycle natural gas facilities). The Proposed Project will provide long-term, emission free electricity to the local utility and will also help meet national and state goals to expand the use of renewable energy. The Proposed Project will also provide positive economic impacts by increasing the tax base for the county.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. In accordance with this blanket delegation, HCE Reams Solar is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers and the Tribal Historic Preservation Office (THPO) or other Tribal cultural representative. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

HCE Reams Solar proposes that the area of potential effects (APE) for the referenced project are limited to the boundaries of the approximate 35.7-acre portion of the larger parent parcel group as shown on the enclosed map. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x). The geographic scope of the APE will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

HCE Reams Solar is notifying you about the referenced project because of the possible interest of the Catawba Indian Nation in Dinwiddie County, Virginia. Should the Catawba Indian Nation elect to participate in Section 106 review for the referenced project, please notify me at the following address – Brian Mihelich, True North Consultants, 1000 East Warrenville Road, Suite 140, Naperville, Illinois 60563, or bmihelich@consulttruenorth.com.

Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. HCE Reams Solar will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with the USDA-Rural Development as the agency responsible for conducting Section 106 review, or to request that USDA-Rural Development participate directly in Section 106 review, please notify me at once; however, you may also contact the Agency directly. If you wish to do so, please submit your request to Steven Polacek, USDA-Rural Development, 1400 Independence Avenue, SW, Washington DC 20250-1510, or steve.polacek@usda.gov.

Please submit your response **electronically** within thirty (30) days. The RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information, you may contact me at 224-387-6125 or bmihelich@consulttruenorth.com.

Sincerely,

TRUE NORTH CONSULTANTS, INC.

Brian S. Mihelich
Executive Vice President

Leslie Schroeder
Staff Consultant

cc: Steven Polacek (via email)
Environmental Protection Specialist
United States Department of Agriculture
Environmental & Engineering Staff, Rural Development
steve.polacek@usda.gov

TRUENORTH CONSULTANTS

1000 East Warrenville Road, Suite 140
Naperville, Illinois 60563

P : 630 717 2880
F : 630 689 5881

mail@consulttruenorth.com

June 12, 2020

Erin Paden
Historic Preservation Director
Delaware Nation of Oklahoma
P.O. Box 825
Anadarko, Oklahoma 73005

RE: United States Department of Agriculture (USDA) – Rural Development (RD)
Rural Utilities Service (RUS)
Applicant THPO Section 106 Initiation
Proposed Reams Solar I Project
Dinwiddie, Dinwiddie County, Virginia

Dear Ms. Paden:

HCE Reams Solar (Applicant) is seeking financial assistance from the United States Department of Agriculture's (USDA) Rural Development (RD), Rural Utilities Service (RUS) for the proposed Reams Solar I Project, as shown on the enclosed maps.

The Proposed Project will consist of the installation of a 5-megawatt (MW) ground-mounted photovoltaic (PV) system on the south side of Old Vaughan Road near the town of Dinwiddie. The PV system and associated components will be situated on approximately 35.7 acres of a larger, 62.6-acre parent parcel (Site) – this parcel is identified by Dinwiddie County Assessor as: 47-74. The Proposed Project's infrastructure would include installing PV solar panels; inverters (to allow for the transmission to the utility grid); connections to the existing powerlines and necessary safety features including access roads, perimeter roads and fencing. The estimated duration of construction is approximately 4 months and is anticipated that the Proposed Project will operate for a minimum of 35 years. When the Proposed Project has reached its operation end, the Site can be returned to its pre-construction state.

The Site is bound on the north by Old Vaughan Road, on the east by forestland, residences and Old Stage Road, on the south by a pond, farm, cow pasture, forestland and agricultural land and on the west by forestland, agricultural lands, residences and an athletic field. Currently, the Site consists of agricultural land and forested areas with a vacant farm and large pond. The vacant farm includes dilapidated barns, sheds, and various farm-use structures. Overhead electric power lines extend onto the Site in several areas. The Site has historically consisted of a farm, agricultural fields, a pond and forested lands. The surrounding properties have historically consisted of forested areas and agricultural lands along with farms and residences.

Within the Site, there will be no demolition of existing structures. The two main sources of ground disturbance are the racking system installation and the measures for erosion control and stormwater. Ditches will be located around the Site with an approximate total distance of 2400' and a depth of 2-4' to direct runoff into stormwater basins. This Site will have two basins with a maximum depth of 10' and an average area of 60'x200'. The dirt removed for the construction of the stormwater measures will be graded out across the Site and will be replanted with a grass seed mix. Approximately 1050 steel piles will be driven into the ground with an approximate average depth of 8'. The access road to the project will be approximately 1400' and will consist of 6" of compacted gravel over 12" of compacted native soil.

Utilizing the RUS loan guarantee process will allow the lender to extend credit to the Proposed Project and in turn, the borrower will be able to build a renewable energy system. Traditional generation technologies utilize large amounts of water and typically have high levels of greenhouse gas emissions (coal-fired and combined cycle natural gas facilities). The Proposed Project will provide long-term, emission free electricity to the local utility and will also help meet national and state goals to expand the use of renewable energy. The Proposed Project will also provide positive economic impacts by increasing the tax base for the county.

If RUS elects to fund the Project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. In accordance with this blanket delegation, HCE Reams Solar is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers and the Tribal Historic Preservation Office (THPO) or other Tribal cultural representative. RUS believes this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties earlier in project planning.

HCE Reams Solar proposes that the area of potential effects (APE) for the referenced project are limited to the boundaries of the approximate 35.7-acre portion of the larger parent parcel group as shown on the enclosed map. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x). The geographic scope of the APE will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

HCE Reams Solar is notifying you about the referenced project because of the possible interest of the Delaware Nation of Oklahoma in Dinwiddie County, Virginia. Should the Delaware Nation of Oklahoma elect to participate in Section 106 review for the referenced project, please notify me at the following address – Brian Mihelich, True North Consultants, 1000 East Warrenville Road, Suite 140, Naperville, Illinois 60563, or bmihelich@consulttruenorth.com.

Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. HCE Reams Solar will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with the USDA-Rural Development as the agency responsible for conducting Section 106 review, or to request that USDA-Rural Development participate directly in Section 106 review, please notify me at once; however, you may also contact the Agency directly. If you wish to do so, please submit your request to Steven Polacek, USDA-Rural Development, 1400 Independence Avenue, SW, Washington DC 20250-1510, or steve.polacek@usda.gov.

Please submit your response **electronically** within thirty (30) days. The RUS will proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information, you may contact me at 224-387-6125 or bmihelich@consulttruenorth.com.

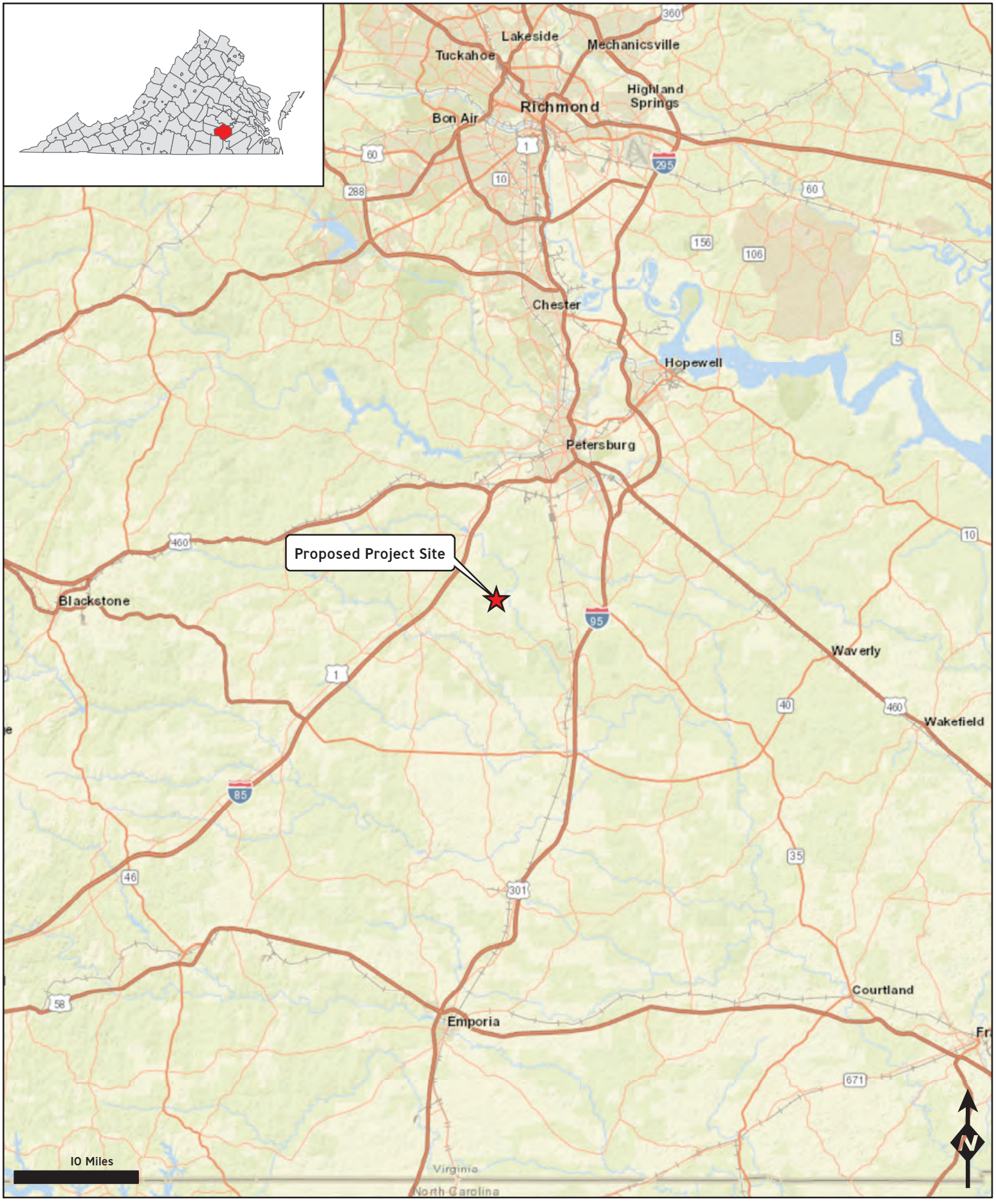
Sincerely,

TRUE NORTH CONSULTANTS, INC.

Brian S. Mihelich
Executive Vice President

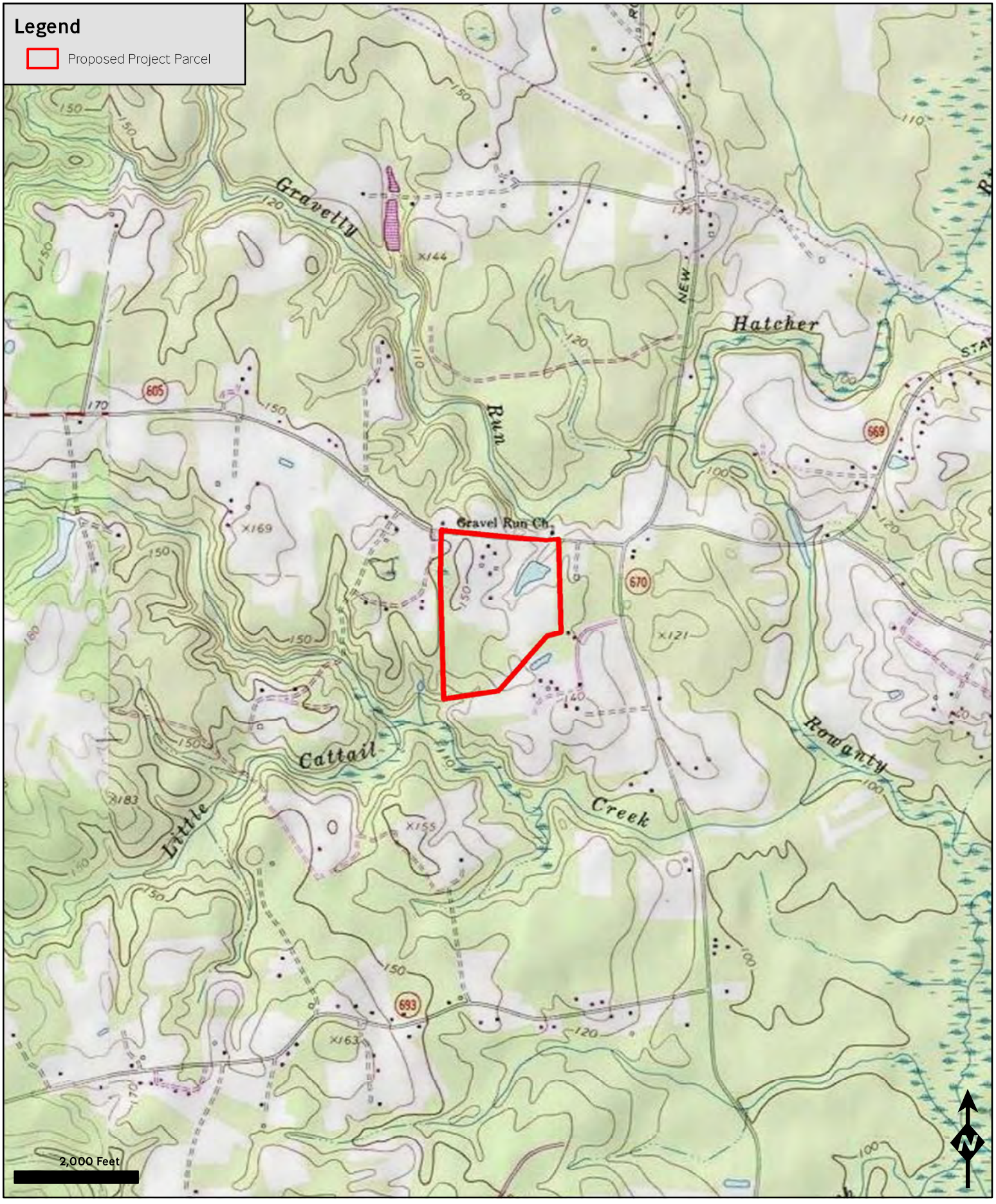
Leslie Schroeder
Staff Consultant

cc: Steven Polacek (via email)
Environmental Protection Specialist
United States Department of Agriculture
Environmental & Engineering Staff, Rural Development
steve.polacek@usda.gov



TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions.

FIGURE I
Regional Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia



TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions

FIGURE 2
Topographic Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia

TRUE NORTH CONSULTANTS
Trusted Partner, Leading Environmental Solutions.

FIGURE 3
Area Map
Proposed Reams Solar I
Dinwiddie, Dinwiddie County, Virginia

Tribal Directory Assessment Information

Contact Information for Tribes with Interests in Dinwiddie County, Virginia

	Tribal Name	County Name
+	Catawba Indian Nation	Dinwiddie
+	Delaware Nation, Oklahoma	Dinwiddie

1 - 2 of 2 results « ‹ 1 › » 10

APPENDIX X

Air Quality

Virginia Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of December 31, 2020

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m^3) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:
VIRGINIA GO

Important Notes

Download National Dataset: dbf | xls | Data dictionary (PDF)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
VIRGINIA								
Alexandria city	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	139,966	51/510
Alexandria city	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	139,966	51/510
Alexandria city	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	139,966	51/510
Alexandria city	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	139,966	51/510
Alexandria city	Carbon Monoxide (1971)	Washington, DC-MD-VA	92 93 94 95	03/15/1996	Moderate <= 12.7ppm	Whole	139,966	51/510
Alexandria city	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	139,966	51/510

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Arlington County	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	207,627	51/013
Arlington County	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	207,627	51/013
Arlington County	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	207,627	51/013
Arlington County	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	207,627	51/013
Arlington County	Carbon Monoxide (1971)	Washington, DC-MD-VA	92 93 94 95	03/15/1996	Moderate <= 12.7ppm	Whole	207,627	51/013
Arlington County	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	207,627	51/013
Charles City County	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Part	62	51/036
Charles City County	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	7,256	51/036
Chesapeake city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	222,209	51/550
Chesapeake city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	222,209	51/550

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Chesterfield County	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	316,236	51/041
Chesterfield County	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	316,236	51/041
Colonial Heights city	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	17,411	51/570
Colonial Heights city	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	17,411	51/570
Fairfax County	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	1,081,726	51/059
Fairfax County	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	1,081,726	51/059
Fairfax County	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	1,081,726	51/059
Fairfax County	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	1,081,726	51/059
Fairfax County	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	1,081,726	51/059
Fairfax city	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	22,565	51/600

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Fairfax city	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	22,565	51/600
Fairfax city	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	22,565	51/600
Fairfax city	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	22,565	51/600
Fairfax city	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	22,565	51/600
Falls Church city	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	12,332	51/610
Falls Church city	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	12,332	51/610
Falls Church city	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	12,332	51/610
Falls Church city	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	12,332	51/610
Falls Church city	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	12,332	51/610
Fredericksburg city	8-Hour Ozone (1997)-NAAQS revoked	Fredericksburg, VA	04 05	01/23/2006	Moderate	Whole	24,286	51/630
Gloucester County	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	36,858	51/073

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Hampton city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	137,436	51/650
Hampton city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	137,436	51/650
Hanover County	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	99,863	51/085
Hanover County	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	99,863	51/085
Henrico County	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	306,935	51/087
Henrico County	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	306,935	51/087
Hopewell city	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	22,591	51/670
Hopewell city	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	22,591	51/670

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Isle of Wight County	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	35,270	51/093
James City County	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	67,009	51/095
James City County	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	67,009	51/095
Loudoun County	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	312,311	51/107
Loudoun County	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	312,311	51/107
Loudoun County	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	312,311	51/107
Loudoun County	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	312,311	51/107
Loudoun County	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	312,311	51/107
Madison County	8-Hour Ozone (1997)-NAAQS revoked	Madison and Page Cos (Shenandoah NP), VA	04 05	02/02/2006	Former Subpart 1	Part	237	51/113

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Manassas Park city	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	14,273	51/685
Manassas Park city	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	14,273	51/685
Manassas Park city	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	14,273	51/685
Manassas Park city	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	14,273	51/685
Manassas Park city	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	14,273	51/685
Manassas city	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	37,821	51/683
Manassas city	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	37,821	51/683
Manassas city	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	37,821	51/683
Manassas city	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	37,821	51/683
Manassas city	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	37,821	51/683
Newport News city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	180,719	51/700

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Newport News city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	180,719	51/700
Norfolk city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	242,803	51/710
Norfolk city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	242,803	51/710
Page County	8-Hour Ozone (1997)-NAAQS revoked	Madison and Page Cos (Shenandoah NP), VA	04 05	02/02/2006	Former Subpart 1	Part	1,789	51/139
Petersburg city	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	32,420	51/730
Poquoson city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	12,150	51/735
Poquoson city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	12,150	51/735
Portsmouth city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	95,535	51/740

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Portsmouth city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	95,535	51/740
Prince George County	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	35,725	51/149
Prince William County	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	402,002	51/153
Prince William County	8-Hour Ozone (1997)-NAAQS revoked	Washington, DC-MD-VA	04 05 06 07 08 09 10 11 12 13 14	/ /	Moderate	Whole	402,002	51/153
Prince William County	8-Hour Ozone (2008)	Washington, DC-MD-VA	12 13 14 15 16 17 18	05/15/2019	Marginal	Whole	402,002	51/153
Prince William County	8-Hour Ozone (2015)	Washington, DC-MD-VA	18 19 20	/ /	Marginal	Whole	402,002	51/153
Prince William County	PM-2.5 (1997)-NAAQS revoked	Washington, DC-MD-VA	05 06 07 08 09 10 11 12 13	11/05/2014 *	Moderate	Whole	402,002	51/153
Richmond city	1-Hour Ozone (1979)-NAAQS revoked	Richmond, VA	92 93 94 95 96	12/17/1997	Moderate	Whole	204,214	51/760
Richmond city	8-Hour Ozone (1997)-NAAQS revoked	Richmond-Petersburg, VA	04 05 06	06/18/2007	Marginal	Whole	204,214	51/760
Smyth County	1-Hour Ozone (1979)-NAAQS revoked	Smyth Co, VA (White Top Mtn)	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Rural Transport (Marginal)	Part	0	51/173

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Spotsylvania County	8-Hour Ozone (1997)-NAAQS revoked	Fredericksburg, VA	04 05	01/23/2006	Moderate	Whole	122,397	51/177
Stafford County	1-Hour Ozone (1979)-NAAQS revoked	Washington, DC-MD-VA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Severe-15	Whole	128,961	51/179
Stafford County	8-Hour Ozone (1997)-NAAQS revoked	Fredericksburg, VA	04 05	01/23/2006	Moderate	Whole	128,961	51/179
Suffolk city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	84,585	51/800
Suffolk city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	84,585	51/800
Virginia Beach city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	437,994	51/810
Virginia Beach city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	437,994	51/810
Williamsburg city	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	14,068	51/830

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Williamsburg city	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	14,068	51/830
York County	1-Hour Ozone (1979)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	92 93 94 95 96	07/28/1997	Marginal	Whole	65,464	51/199
York County	8-Hour Ozone (1997)-NAAQS revoked	Norfolk-Virginia Beach-Newport News (Hampton Roads), VA	04 05 06	06/01/2007	Marginal	Whole	65,464	51/199

Important Notes

APPENDIX XI

Socioeconomic and Environmental Justice

EJSCREEN ACS Summary Report

Location: User-specified point center at 37.087908, -77.482319
Ring (buffer): 10-miles radius
Description: Proposed Reams Solar Farm

Summary of ACS Estimates	2013 - 2017
Population	45,025
Population Density (per sq. mile)	188
Minority Population	27,160
% Minority	60%
Households	17,321
Housing Units	20,321
Housing Units Built Before 1950	2,990
Per Capita Income	23,937
Land Area (sq. miles) (Source: SF1)	239.39
% Land Area	99%
Water Area (sq. miles) (Source: SF1)	2.28
% Water Area	1%

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	45,025	100%	640
Population Reporting One Race	43,873	97%	1,400
White	19,027	42%	492
Black	23,588	52%	505
American Indian	87	0%	51
Asian	400	1%	113
Pacific Islander	21	0%	21
Some Other Race	750	2%	218
Population Reporting Two or More Races	1,152	3%	190
Total Hispanic Population	1,894	4%	329
Total Non-Hispanic Population	43,131		
White Alone	17,865	40%	488
Black Alone	23,482	52%	498
American Indian Alone	87	0%	51
Non-Hispanic Asian Alone	400	1%	113
Pacific Islander Alone	21	0%	21
Other Race Alone	187	0%	157
Two or More Races Alone	1,089	2%	172
Population by Sex			
Male	21,760	48%	381
Female	23,265	52%	411
Population by Age			
Age 0-4	2,760	6%	205
Age 0-17	9,135	20%	322
Age 18+	35,890	80%	545
Age 65+	7,260	16%	252

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017 .

EJSCREEN ACS Summary Report

Location: User-specified point center at 37.087908, -77.482319
Ring (buffer): 10-miles radius
Description: Proposed Reams Solar Farm

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	31,749	100%	413
Less than 9th Grade	1,944	6%	253
9th - 12th Grade, No Diploma	3,330	10%	228
High School Graduate	11,265	35%	310
Some College, No Degree	9,407	30%	295
Associate Degree	2,195	7%	170
Bachelor's Degree or more	5,803	18%	238
Population Age 5+ Years by Ability to Speak English			
Total	42,265	100%	618
Speak only English	39,867	94%	565
Non-English at Home[1+2+3+4]	2,397	6%	220
[1]Speak English "very well"	1,499	4%	188
[2]Speak English "well"	468	1%	140
[3]Speak English "not well"	404	1%	104
[4]Speak English "not at all"	26	0%	34
[3+4]Speak English "less than well"	430	1%	104
[2+3+4]Speak English "less than very well"	898	2%	154
Linguistically Isolated Households*			
Total	263	100%	100
Speak Spanish	186	71%	99
Speak Other Indo-European Languages	24	9%	23
Speak Asian-Pacific Island Languages	53	20%	40
Speak Other Languages	0	0%	17
Households by Household Income			
Household Income Base	17,321	100%	170
< $15,000	2,678	15%	159
$15,000 - $25,000	1,965	11%	130
$25,000 - $50,000	4,525	26%	178
$50,000 - $75,000	3,063	18%	194
$75,000 +	5,090	29%	229
Occupied Housing Units by Tenure			
Total	17,321	100%	170
Owner Occupied	10,573	61%	208
Renter Occupied	6,748	39%	175
Employed Population Age 16+ Years			
Total	36,806	100%	528
In Labor Force	23,165	63%	454
Civilian Unemployed in Labor Force	2,045	6%	163
Not In Labor Force	13,641	37%	331

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

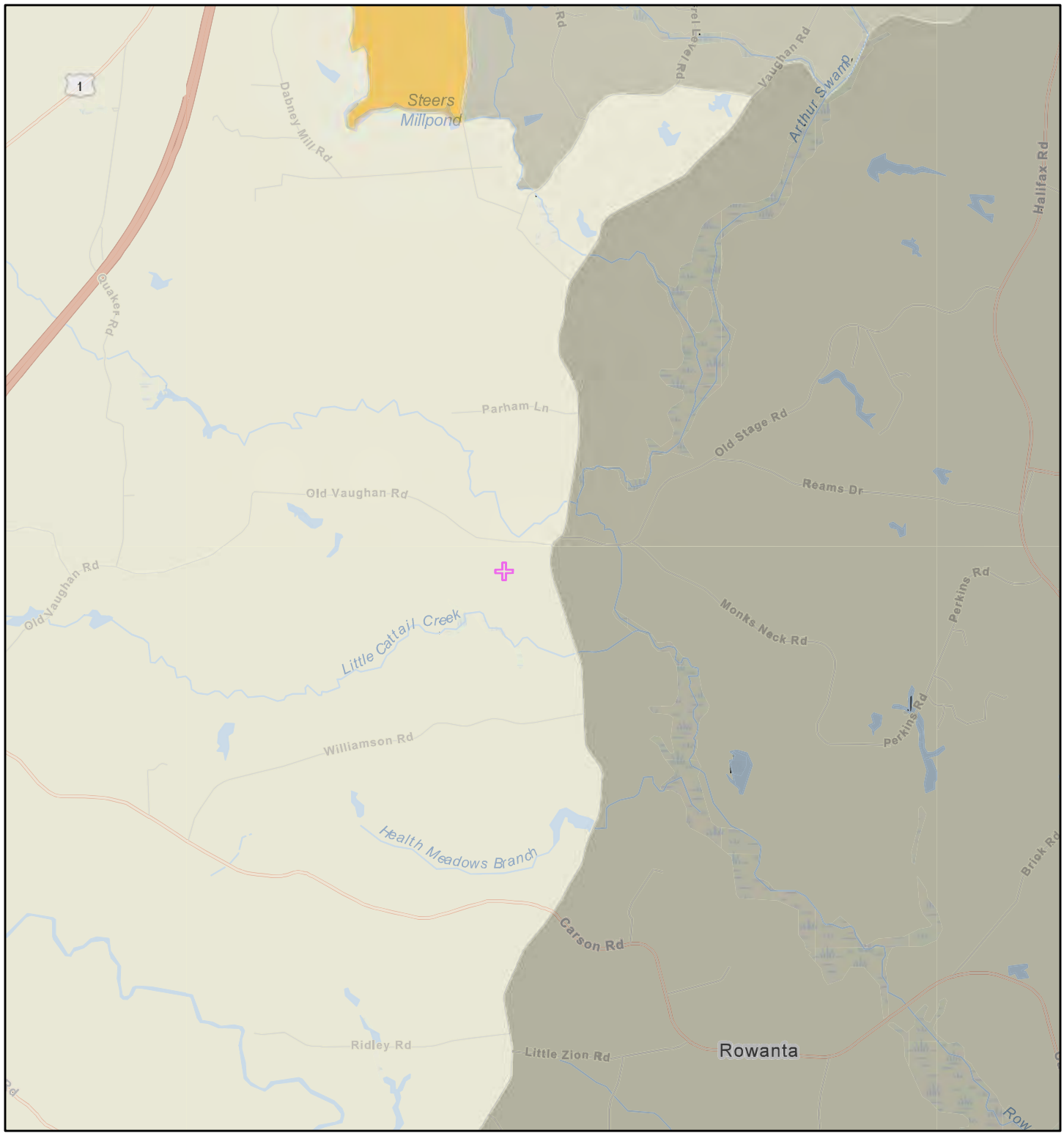
EJSCREEN ACS Summary Report

Location: User-specified point center at 37.087908, -77.482319
Ring (buffer): 10-miles radius
Description: Proposed Reams Solar Farm

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	42,265	100%	618
English	39,867	94%	635
Spanish	1,683	4%	273
French	120	0%	106
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	145	0%	60
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	143	0%	106
Chinese	0	0%	17
Japanese	N/A	N/A	N/A
Korean	108	0%	62
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	6	0%	17
Other Asian	108	0%	116
Tagalog	17	0%	23
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	21	0%	51
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	47	0%	100
Total Non-English	2,397	6%	886

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017.
*Population by Language Spoken at Home is available at the census tract summary level and up.

Proposed Reams Solar Farm: Low Income Populations Map



June 26, 2020

1:72,224

0 0.5 1 2 mi

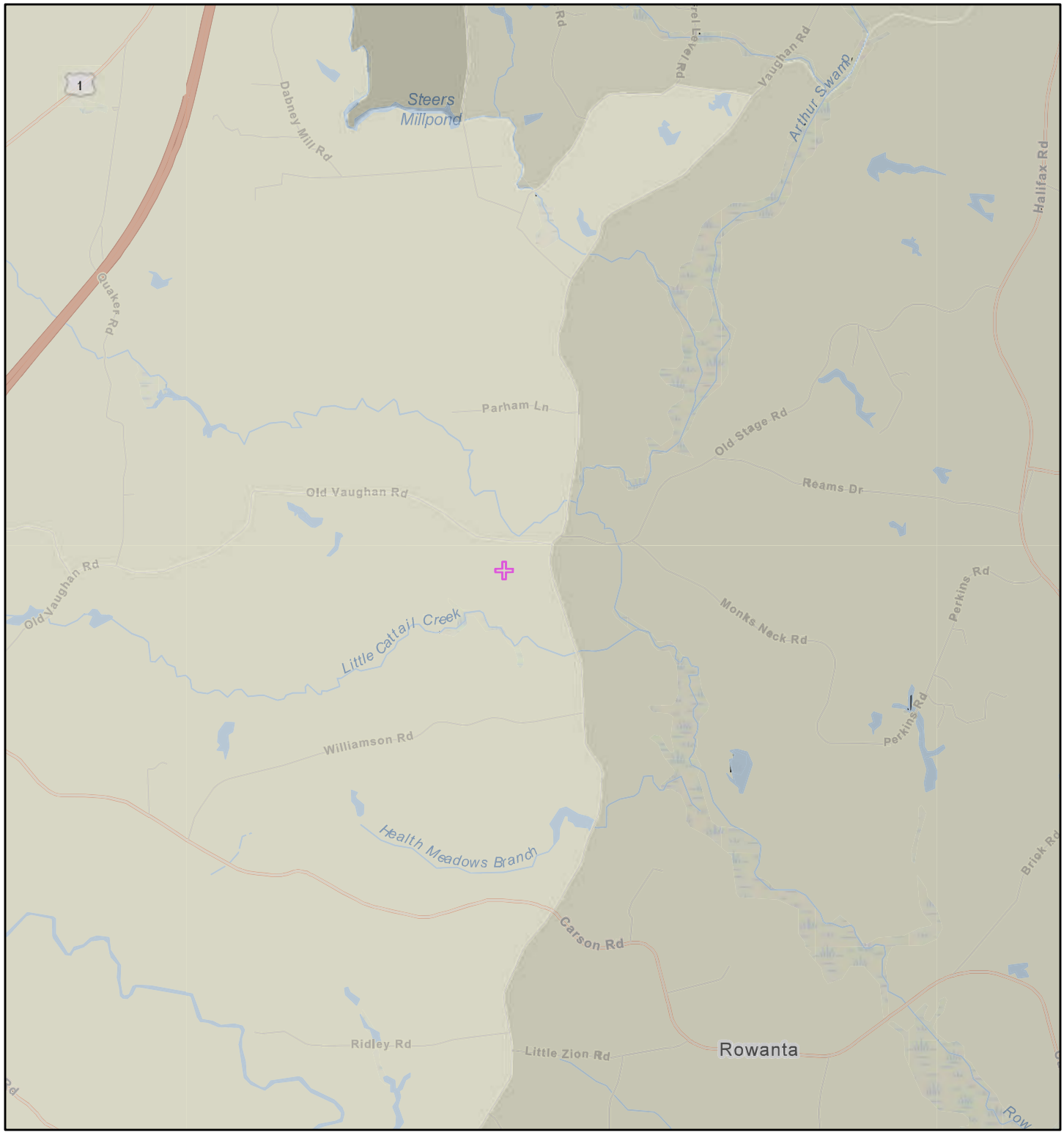
0 0.75 1.5 3 km

Low Income Population (National Percentiles)

- Data not available
- Less than 50 percentile
- 50 -60 percentile
- 60 -70 percentile
- 70 -80 percentile
- 80 - 90 percentile
- 90 - 95 percentile
- 95 - 100 percentile
- Search Result (point)

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Proposed Reams Solar Farm: Minority Populations Map



June 26, 2020

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Minority Population (National Percentiles)

- Data not available
- Less than 50 percentile
- 50 -60 percentile
- 60 -70 percentile
- 70 -80 percentile
- 80 - 90 percentile
- 90 - 95 percentile
- 95 - 100 percentile
- Search Result (point)

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

APPENDIX XII

Coastal Resources

U.S. Fish and Wildlife Service
Coastal Barrier Resources System

Reams Solar Project I

March 18, 2021

CBRS Buffer Zone

System Unit

CBRS Units

Otherwise Protected Area

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at https://www.fws.gov/cbra/maps/index.html. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (http://www.fws.gov/cbra/Determinations.html) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS mapper.


Proposed Project Area
Virginia's Coastal Zone
Fairfax
Falls Church
Arlington
Fairfax
Alexandria
Prince William
Stafford
Potomac
Fredericksburg
King George
Spotsylvania
Caroline
Hanover
Henrico
City of Richmond
New Kent
Chesterfield
Hopewell
Colonial Heights
Petersburg
Prince George
Surry
Isle of Wight
Suffolk
Westmoreland
Richmond
Northumberland
Essex
King and Queen
King William
Lancaster
Middlesex
Gloucester
Mathews
James City
York
Newport News
Hampton
Poquoson
Williamsburg
Norfolk
Portsmouth
Virginia Beach
Chesapeake
Great Dismal Swamp
Currioman Bay
Nomini Bay
Potomac River
Wicomico River
Wrights Cove/ Cove River
Great Wicomico River
Smith Point
Tangier Island
Pocomoke Sound
Chincoteague Bay
Boundary
Islands
Accomack
Atlantic Ocean
Northampton
Hog Island Bay
Cobb Island Bay
South Bay
Barrier
Sea
Territorial
Three-Mile
Chesapeake Bay
Mobjack Bay
Rappahannock River
Piankatank River
Mattaponi River
Pamunkey River
Dragon Run
Chickahominy River
York River
James River
Appomattox River
Blackwater River
Nansemond River
Elizabeth River
Lynnhaven River
Back Bay
North Landing River
Northwest River

APPENDIX XIII

DEQ Scoping Letters

Commonwealth of Virginia

Environmental Impact Review, rr <eir@deq.virginia.gov>

General Project Review Request: Reams Solar I Project

1 message

Leslie Schroeder <lschroeder@consulttruenorth.com> Tue, Jan 26, 2021 at 5:09 PM
To: "EIR@DEQ.Virginia.gov" <EIR@deq.virginia.gov>
Cc: Marina Jawad <mjawad@consulttruenorth.com>

Good Afternoon,

On behalf of my client, Reams Solar I, LLC, I am requesting a general project review for the proposed Reams Solar I Project. Reams Solar I, LLC will be requesting financial assistance from the USDA Rural Development and is therefore required to prepare a NEPA Environmental Assessment. We are specifically looking for comments from your office regarding erosion and sediment control, stormwater management, air quality, wetlands and stream impacts, hazardous and solid waste management, herbicide and pesticide management, and pollution control.

The Reams Solar I project will be a small-scale utility solar project located on the south side of Old Vaughan Road near the town of Dinwiddie, Virginia. The Proposed Project will disturb approximately 35.7 acres of a larger, 62.6-acre parent parcel identified as 47-74 by the Dinwiddie County assessor (Proposed Project Area). The Proposed Project Area is currently agricultural land with a small amount of forested areas, and land use in the vicinity includes agricultural lands, forestland, and scattered residences.

The Proposed Project will generate a total of 5 megawatts (MW) of clean, reliable solar energy when complete. The Proposed Project would utilize solar modules, mounted on a steel racking system which will be anchored into the ground using driven steel piers, to convert the sun's energy to usable power. The estimated duration of construction is 4 months and it is anticipated that the Proposed Project will operate for a minimum of 35 years. When the operational end of the Proposed Project has been reached, the Proposed Project Area can be returned to its pre-construction state. The Proposed Project would be accessed from Old Vaughan Road (Route 605). An interior road would be constructed inside the perimeter and is anticipated to be flat and will match existing grades to minimize earth work. The Proposed Project Area would be secured by a security fence with standard gates for emergency and maintenance vehicles.

Reams Solar I Plans.pdf

Reams Solar I Maps.pdf

Please review the above information and links to documents. Let me know if there if anything else you will need to complete your review. Thank you for your assistance.

Leslie Schroeder

Staff Consultant

TRUENORTH CONSULTANTS

Trusted Partner. Leading Environmental Solutions.

1000 East Warrenville Road | Suite 140 | Naperville, IL 60563

o 630.717.2880 x109 | m 630.303.3006 | f 630.689.5881

COVID-19 Services

ConsultTrueNorth.com

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

January 29, 2021

Leslie Schroeder
True North Consultants
1000 East Warrenville Road, Suite 140
Naperville, Illinois 60563

RE: Reams Solar I Project, Dinwiddie County
Powhatan Solar I Project, Powhatan County
Amelia I Solar Project, Amelia County
Amelia II Solar Project, Amelia County

Dear Ms. Schroeder:

This letter is in response to the scoping request for the above-referenced projects.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the NEPA document, notification of the NEPA document documentation should be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (25 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITA LFT file share system (Requires an "invitation" for access. An invitation request should be sent to eir@deq.virginia.gov.).

The NEPA document should include U.S. Geological Survey topographic. We strongly encourage you to issue shape files with the NEPA document. In addition, project details should be adequately described for the benefit of the reviewers.

ENVIRONMENTAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT: PROJECT SCOPING AND AGENCY INVOLVEMENT

As you may know, NEPA (PL 91-190, 1969) and its implementing regulations (Title 40, *Code of Federal Regulations*, Parts 1500-1508) requires a draft and final Environmental Impact Statement (EIS) for federal activities or undertakings that are federally licensed or federally funded which will or may give rise to significant impacts upon the human environment. An EIS carries more stringent public

participation requirements than an Environmental Assessment (EA) and provides more time and detail for comments and public decision-making. The possibility that an EIS may be required for the proposed project should not be overlooked in your planning for this project. Accordingly, we refer to "NEPA document" in the remainder of this letter.

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the NEPA document. Accordingly, we are providing notice of your scoping request to several state agencies and those localities and Planning District Commissions, including but not limited to:

Department of Environmental Quality:
- DEQ Regional Office
- Air Division
- Office of Wetlands and Stream Protection
- Office of Local Government Programs
- Division of Land Protection and Revitalization
- Office of Stormwater Management

Department of Conservation and Recreation
Department of Health
Department of Agriculture and Consumer Services
Department of Wildlife Resources
Virginia Marine Resources Commission
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Department of Transportation

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

  Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:
  - www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - http://128.172.160.131/gems2/

- MARCO Mid-Atlantic Ocean Data Portal

  The Mid-Atlantic Ocean Data Portal is a publicly available online toolkit and resource center that consolidates available data and enables users to visualize and analyze ocean resources and human

use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true

- DHR Data Sharing System

  Survey records in the DHR inventory:
  - www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

  Produces lists of resources that occur in specific counties, watersheds or physiographic regions:
  - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- DWR Fish and Wildlife Information Service

  Information about Virginia's Wildlife resources:
  - http://vafwis.org/fwis/

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

  Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:
  - www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

  Information on hazardous waste facilities:
  - www.epa.gov/enviro/facts/rcrainfo/search.html

- EPA Envirofacts Database

  EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:
  - www.epa.gov/enviro/index.html

- EPA NEPAssist Database

  Facilitates the environmental review process and project planning:
  http://nepaassisttool.epa.gov/nepaassist/entry.aspx

If you have questions about the environmental review process, please feel free to contact me (telephone (804) 698-4204 or e-mail bettina.rayfield@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review and
Long-Range Priorities

From: ImpactReview
To: Fulcher, Valerie; Leslie Schroeder
Cc: eir@deq.virginia.gov
Subject: RE: NEW SCOPING 4 SOLAR PROJECTS
Date: Wednesday, February 3, 2021 2:04:00 PM

Ms. Schroeder,

The Virginia Outdoors Foundation has reviewed the project referenced above. As of 3 February 2021, there are not any existing nor proposed VOF open-space easements in the immediate vicinity of the four projects:

- Amelia I Solar
- Amelia II Solar
- Powhatan Solar I
- Reams Solar I

Please contact VOF again for further review if the project areas change or if a project does not begin within 24 months. Thank you for considering conservation easements.

Thanks,
Mike

Mike Hallock-Solomon, AICP
Virginia Outdoors Foundation

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Sent: Friday, January 29, 2021 2:14 PM
Cc: lschroeder@consulttruenorth.com
Subject: NEW SCOPING 4 SOLAR PROJECTS

Alert: This email originated from outside VOF

Good afternoon—attached is a request for scoping comments on the following:

Reams Solar I Project, Dinwiddie County
Powhatan Solar I Project, Powhatan County
Amelia I Solar Project, Amelia County
Amelia II Solar Project, Amelia County

If you choose to make comments, please send them directly to the project sponsor (lschroeder@consulttruenorth.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

If you have any questions regarding this request, please email our office at eir@deq.virginia.gov.

Valerie

--

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review

OUR ENFORCEABLE POLICIES HAVE BEEN UPDATED FOR 2020: https://www.deq.virginia.gov/permits-regulations/environmental-impact-review/federal-consistency

For program updates and public notices please subscribe to Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR

From: Smallwood, Desmond
To: Leslie Schroeder
Cc: McAdory, Liz; rr Environmental Impact Review
Subject: Re: NEW SCOPING 4 SOLAR PROJECTS
Date: Tuesday, February 23, 2021 2:11:15 PM

Good Afternoon,

After an extensive review in coordination with both the Chesterfield and Petersburg residencies, the Richmond district planning department does not have any impeding comments and approves the plans for each site. Please let me know if any additional information is required.

Best,
Desmond A. Smallwood

Desmond A. Smallwood
Richmond District Planning Specialist
Virginia Department of Transportation
804-774-1624
Desmond.Smallwood@VDOT.Virginia.gov

On Sun, Feb 14, 2021 at 9:40 AM Paul F Hinson, P.E. <paul.hinson@vdot.virginia.gov> wrote:

> Reams road solar is in Prince George County and construction is complete and facility operational.
>
> On Sun, Feb 14, 2021, 9:38 AM Paul F Hinson, P.E. <paul.hinson@vdot.virginia.gov> wrote:
>
> > Desmond,
> >
> > As Adam said, Petersburg Residency was involved in zoning (special use) and provided comments to the county. We have been successful in the Petersburg Residency in getting localities to have applicants proffer a "construction traffic management plan". The plan requires pre-construction survey of all roads used to access site starting at a primary highway and applicant is responsible for maintenance of identified secondary roads during construction. Construction traffic is biggest issue with solar farms.
> >
> > On Sat, Feb 13, 2021, 8:28 PM Smallwood, Desmond <desmond.smallwood@vdot.virginia.gov> wrote:
> >
> > > Adam,
> > >
> > > Received, thank you very much.
> > >
> > > Best,
> > > Desmond A. Smallwood
> > >
> > > **Desmond A. Smallwood**
> > > *Richmond District Planning Specialist*
> > > Virginia Department of Transportation
> > > 804-774-1624

Desmond.Smallwood@VDOT.Virginia.gov

On Fri, Feb 12, 2021 at 1:57 PM Wilkerson, Adam <adam.wilkerson@vdot.virginia.gov> wrote:

> Desmond,
>
> I have reviewed the information provided for Powhatan Solar I, Amelia Solar I, and Amelia Solar II. The Chesterfield Residency Land Use Office reviewed and commented on the zoning cases for all three sites and have provided comments to the respective counties regarding construction access and permanent access to these sites. Site plans for these three projects were routed to our office for review, and we recommended approval for each plan. We are satisfied with each site and have no further comments.
>
> The fourth site named Reams Solar I, LLC appears to be located on Old Vaughan Road in Dinwiddie, VA. I checked Landtrack and it appears Paul Hison reviewed the site plan for this project. Please let me know if you need any further information regarding these projects.

Adam Wilkerson, P.E.
Area Land Use Engineer / Chesterfield Residency
Virginia Department of Transportation
804-674-2384
Adam.Wilkerson@VDOT.Virginia.gov

On Tue, Feb 9, 2021 at 8:49 AM Smallwood, Desmond <desmond.smallwood@vdot.virginia.gov> wrote:

> Ok, thanks.

Desmond A. Smallwood
Richmond District Planning Specialist
Virginia Department of Transportation
804-774-1624
Desmond.Smallwood@VDOT.Virginia.gov

On Mon, Feb 8, 2021 at 8:19 AM Cage, Todd <todd.cage@vdot.virginia.gov> wrote:

> Desmond,
>
> All of these are in Adam's area.

C. Todd Cage
Land Development Engineer
Richmond District
South Hill & Petersburg Residencies
Virginia Department of Transportation
Cell 434-774-9053

South Hill Res. Office 434-774-2310
Petersburg Res. Office 804-863-4005
todd.cage@VDOT.Virginia.gov

On Fri, Feb 5, 2021 at 9:05 AM Smallwood, Desmond <desmond.smallwood@vdot.virginia.gov> wrote:

> Good Morning Gentlemen,
>
> Please see the attached documents pertain to 4 new solar projects in Amelia, Powhatan, & Chesterfield County. Please review the attached project materials for impacts to existing and proposed transportation facilities and let me know if you have any comments or concerns.
>
> Best,
> Desmond A. Smallwood

Desmond A. Smallwood
Richmond District Planning Specialist
Virginia Department of Transportation
804-774-1624
Desmond.Smallwood@VDOT.Virginia.gov

On Fri, Jan 29, 2021 at 5:51 PM EIR Coordination, rr <eir.coordination@vdot.virginia.gov> wrote:

> DATE: January 29, 2021
> TO: District Transportation Planning
> PROJECT: Four Solar Projects
> DEQ PROJECT: N/A
> LOCATION: Dinwiddie County, Powhatan County, Amelia County
> SUBJECT: Scoping Comment Request
>
> Please review the attached project materials for impacts to existing and proposed transportation facilities, and send any comments you might have to the project sponsor (lschroeder@consulttruenorth.com) copying the DEQ Office of Environmental Impact Review (eir@deq.virginia.gov) and the VDOT EIR Coordination email (eir.coordination@vdot.virginia.gov).
>
> Thank you,
> Kirk Millikan
>
> ---
> Kirk Millikan, P.E.
> Environmental Division
> VDOT Central Office
>
> ---------- Forwarded message ---------

From: **Fulcher, Valerie** <valerie.fulcher@deq.virginia.gov>
Date: Fri, Jan 29, 2021 at 2:14 PM
Subject: NEW SCOPING 4 SOLAR PROJECTS
To: rr dgif-ESS Projects <essprojects@dgif.virginia.gov>, Keith Tignor <keith.tignor@vdacs.virginia.gov>, Roberta Rhur <robbie.rhur@dcr.virginia.gov>, odwreview (VDH) <odwreview@vdh.virginia.gov>, Carlos Martinez <carlos.martinez@deq.virginia.gov>, Tom Ballou <thomas.ballou@deq.virginia.gov>, Lawrence Gavan <larry.gavan@deq.virginia.gov>, Holly Sepety <holly.sepety@deq.virginia.gov>, West, Kelley <kelley.west@deq.virginia.gov>, Roger Kirchen <roger.kirchen@dhr.virginia.gov>, Michelle Henicheck <michelle.henicheck@deq.virginia.gov>, Scott Kudlas <scott.kudlas@deq.virginia.gov>, <jruffa@craterpdc.org>, <mfoster@virginiasheartland.org>, <sstewart@planrva.org>, Terrance Lasher <terry.lasher@dof.virginia.gov>, <taylor.harvie@ameliacova.com>, <kmassengill@dinwiddieva.us>, <administration@powhatanva.gov>, rr EIR Coordination <eir.coordination@vdot.virginia.gov>, ImpactReview <impactreview@vofonline.org>
Cc: <lschroeder@consulttruenorth.com>

Good afternoon—attached is a request for scoping comments on the following:

Reams Solar I Project, Dinwiddie County
Powhatan Solar I Project, Powhatan County
Amelia I Solar Project, Amelia County
Amelia II Solar Project, Amelia County

If you choose to make comments, please send them directly to the project sponsor (lschroeder@consulttruenorth.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

If you have any questions regarding this request, please email our office at eir@deq.virginia.gov.

Valerie

--

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review

OUR ENFORCEABLE POLICIES HAVE BEEN UPDATED FOR 2020: https://www.deq.virginia.gov/permits-regulations/environmental-impact-review/federal-consistency

For program updates and public notices please subscribe to Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR