Environmental Assessment for the Pioneer Solar Project, Village of Pioneer, Williams County, Ohio

Prepared for: U.S. Department of Agriculture, Rural Utility Service

Submitted by: Village of Pioneer, Ohio

Prepared by: Emmons & Olivier Resources, Inc. and Power Systems Engineering, Inc.

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ACEP – Agricultural Conservation Easement Program	HUD – U.S. Department of Housing and Urban Development
BGEPA – Bald and Golden Eagle Protection Act	ODNR – Ohio Department of Natural Resources
BMPs – Best Management Practices	ODOT – Ohio Department of Transportation
CAA – Clean Air Act	OSHPO – Ohio State Historic Preservation Office
CWA – Clean Water Act	IPaC – Information for Planning and Conservation
CEQ – Council on Environmental Quality	MBTA – Migratory Bird Treaty Act
CZMA – Coastal Zone Management Act	NHPA – National Historic Preservation Act
ESA – Endangered Species Act	National Register – National Register of Historic Places
EA – Environmental Assessment	NEPA – National Environmental Policy Act
EIS – Environmental Impact Statement	NRCS – Natural Resources Conservation Service
EPA – U.S. Environmental Protection Agency	RCARA – Resource Conservation and Recovery Act
EO – Executive Order	SDWA – Safe Drinking Water Act
FPPA – Farmland Protection Policy Act	USACE – U.S. Army Corps of Engineers
FEMA – Federal Emergency Management Agency	USDA – U.S. Department of Agriculture
FONSI – Finding of No Significant Impact	USFWS – U.S. Fish and Wildlife Service
FIRM – Flood Insurance Rate Map	WSRA – Wild and Scenic Rivers Act
FSA – Food Security Act	WRE – Wetland Reserve Easement

Introduction

The Village of Pioneer, Ohio, (Village) has requested Rural Utility Service (RUS) Electric Program loan funds authorized under the *Rural Electrification Act* of 1936, as amended. Electric Program loans finance the construction of electric distribution, transmission, and generation facilities. Programming also includes funds for system improvements and replacement required to furnish and improve electric service in rural areas; demand-side management; energy efficiency and conservation programs; and on-grid and off-grid renewable energy systems. The proposed action is referred to as the Village of Pioneer Solar Project (Pioneer Solar Project or project). It is located partially within the municipal boundary of the Village and in rural, unincorporated Madison Township, Williams County, Ohio (Figure 1). It is on property currently owned or recently acquired by the Village.

Emmons & Olivier Resources, Inc. (EOR) and Power Systems Engineering, Inc. (PSE) prepared this environmental assessment (EA) to support RUS's *National Environmental Policy Act* of 1969 (NEPA) review of the Pioneer Solar Project. The purpose of this EA is to analyze and disclose the potential direct, indirect, and cumulative effects of building and operating the project. The analysis in this EA has taken place in accordance with NEPA (42 United States Code [USC] 4321 et seq.), its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508), and RUS's NEPA guidance (RD Instruction 1970-Subpart C). This document provides guidance to the RUS decision-maker regarding any significant project effects to consider in determining whether the project requires preparation of an environmental impact statement (EIS) or a finding of no significant impact (FONSI). If RUS determines that this project would have "significant" impacts, as defined by 40 CFR 1508.27, then an EIS would be prepared. If it is determined that the project would have no adverse effect to the human environment, a FONSI would be prepared for the project.

Section 1 of this EA discusses the purpose of and need for the project (i.e., the proposed action); applicable laws, regulations, and plans; and the agency decision to be made. Section 2 discusses the proposed action in detail, as well as any alternatives to the proposed action and the alternatives development and evaluation process. Section 3 discusses the affected environment and analyzes the potential environmental effects that the proposed action and alternatives would have on the affected environment. Section 4 discusses the potential cumulative effects that the proposed action and alternatives would have on the affected environment, along with the effects of past, present, and reasonably foreseeable future actions. Section 5 summarizes all mitigation measures proposed for the proposed action and alternatives, and Section 6 discusses the agency and Tribal consultations that took place and describes the public scoping and comment process.

Purpose and Need

The USDA has a vision to provide economic opportunity through innovation, helping rural America to thrive; to promote agriculture production that better nourishes Americans while also helping feed others throughout the world; and to preserve our nation's natural resources through conservation, restored forests, improved watersheds, and healthy private working lands. The USDA helps promote many projects in line with their vision through financial support. Financial assistance can include direct loans, guaranteed loans, and grants to accomplish program objectives. PACE (Powering Affordable Clean Energy) is an opportunity currently available through the

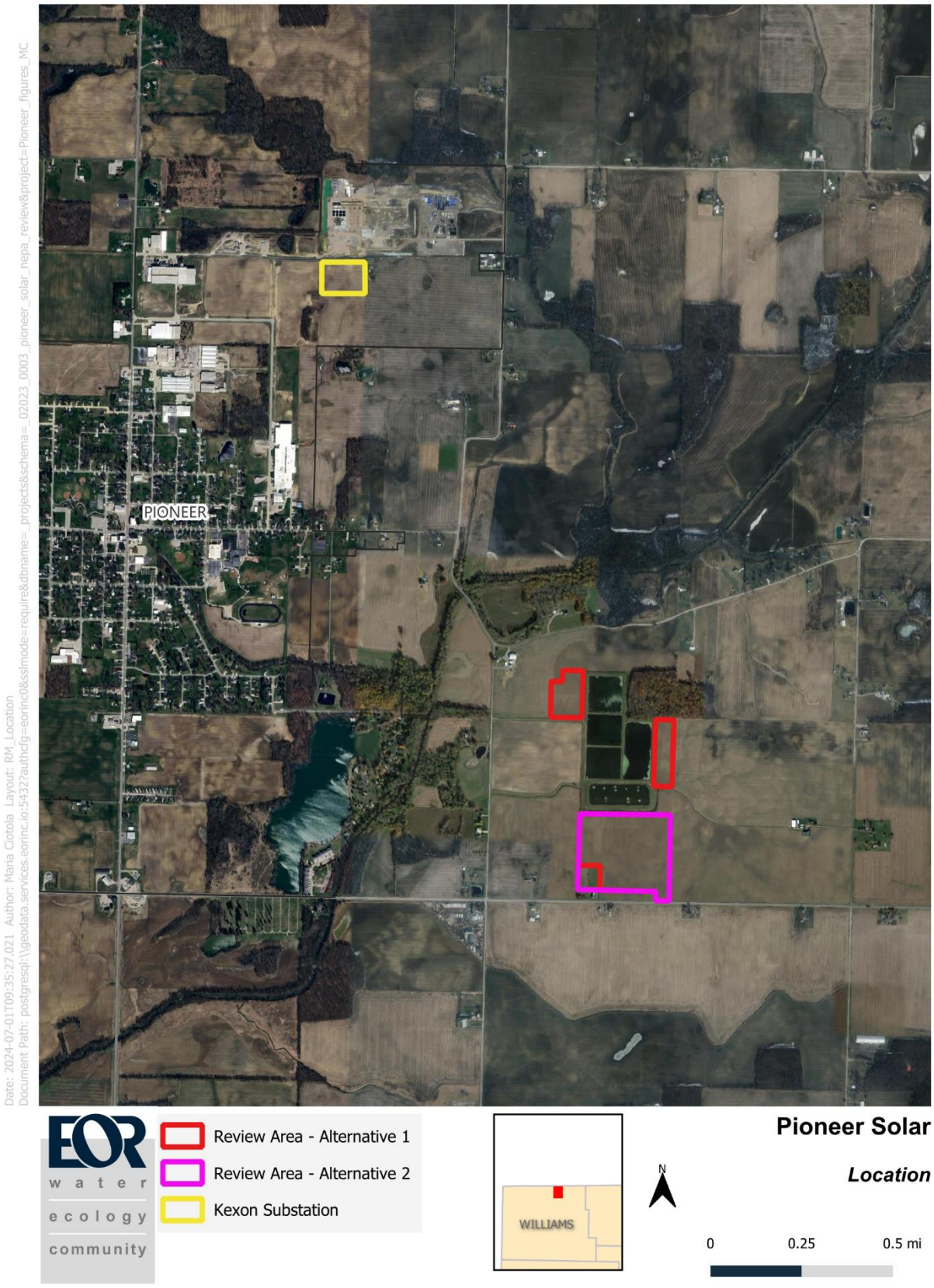


Figure 1. Project Location.

USDA. The Powering Affordable Clean Energy (PACE) program is part of the *Inflation Reduction Act*, which represents the largest investment in rural electrification since President Franklin Delano Roosevelt signed the *Rural Electrification Act* into law in 1936. With $1 billion in funding, PACE helps make clean, affordable, and reliable energy accessible to the people of rural America. Under PACE, RUS will forgive up to 60 percent of loans for renewable energy projects that use wind, solar, hydropower, geothermal, or biomass, as well as for renewable energy storage projects. PACE funding makes it more affordable for rural Americans to use clean, reliable energy to heat and cool their homes, run their businesses, and power their cars, schools, and hospitals.

In May 2008, Ohio enacted broad electric industry restructuring legislation (S.B. 221) containing advanced energy and renewable energy generation and procurement requirements for the state's electric distribution utilities and electric service companies. Under the standard, utilities must provide 25 percent of their retail electricity supply from alternative energy sources by 2025. The project would assist the Village in meeting its targets for renewable energy, generally, and solar energy, specifically, as required under Section 4928.64 of the ORC as established per S.B. 221. Ohio law (ORC 4928.64) requires that electric distribution utilities and electric services companies secure a portion of their electricity supplies from alternative energy resources. By 2025, 25 percent of the electricity sold by each utility or electric services company within Ohio must be generated from alternative energy sources. At least half of the 25 percent, (12.5 percent of the total electricity supplied) must be generated from renewable energy resources, including wind, hydro, biomass and solar. The remainder may be generated from advanced energy resources, including nuclear, clean coal and certain types of fuel cells. In addition, at least one half of the renewable energy requirement must be generated by facilities located in Ohio, while the remainder may be generated by resources that must demonstrate deliverability into the state of Ohio.

To assist with meeting Ohio's requirement of alternative renewable energy, the Village is proposing to construction a solar system and supporting equipment and components to produce 10 GWh of renewable electricity on an annual basis. The Village received an invitation from RUS to submit a full application for a System Loan under the USDA's PACE Program, pursuant to the Notice of Funding Opportunity published in the Federal Register on May 16, 2023. The Village is committed to investing in new renewable energy distribution infrastructure to provide clean, affordable energy services to its rural residents. The Village is seeking financial assistance through the PACE program funding for the Pioneer Solar Project. The Pioneer Solar Project would be a renewable energy source powered by energy generated from sunlight through photovoltaics. The new solar project would provide a renewable electrical energy generation resource to meet growing electrical energy needs in the area. It would also increase capacity that would be available to the Village's 800 consumers. As communities migrate toward electric vehicles and further electrification of homes, the Village would be staged to support these increased loads. The Village also recognizes the cost savings impact the renewable generation resource would have on consumers in the village.

Additionally, the Village serves rural and agricultural residences and businesses outside the Village's corporate limits. Current Ohio state laws allow the Village to provide up to 50 percent of its electrical load to rural areas in the immediate vicinity of the Village. However, because of limited supply, the Village currently considers additional service requests on a first-come, first-serve basis. The proposed project would provide additional capacity to serve and benefit agricultural producers and operators.

The Village would use PACE funds to: 1) obtain materials and labor required to construct and commission a grid-connected solar photovoltaic system with 10,000 photovoltaic (PV) modules delivering 6,150 kW DC and 49 inverters providing 4,900 kW AC to meet federal and state renewable energy goals and the Kexon Substation; 2) expand capacity to serve rural agricultural interests outside the immediate municipal boundary of the Village; and 3) provide municipal costumers with locally produce renewable energy to meet growing energy demand, resiliency needs, and clean energy goals.

Applicable Laws, Statues, and Regulations

Because the RUS is considering financing the proposed project through a RUS guaranteed Federal Financing Bank loan, it is a Federal action subject to review under the *National Environmental Policy Act* of 1969 (NEPA) and all applicable Federal environmental laws and regulations. This Environmental Assessment (EA) has been prepared to analyze potential impacts to the natural and human environments associated with the project in accordance 42 USC § 4332; RUS' Environmental Policies and Procedures; and 40 CFR 1500-1508 – the regulations issued by the Council on Environmental Quality (CEQ) for implementing NEPA. Relevant Federal and State laws and regulations that may be applicable to the proposed action include the following:

- *Clean Air Act* (42 U.S.C. § 7401 et seq.)
- *Clean Water Act* (Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.);
- *Consolidated Farm and Rural Development Act* (7 U.S.C. §§ 1927(a)(6)(A)) and 2006e)
- *Coastal Zone Management Act* (16 U.S.C. §§ 1451–1464)
- *Endangered Species Act of 1973* (16 U.S.C. § 1531 et seq.)
- *Farmland Protection Policy Act* of 1981 (7 U.S.C. § 4201 et seq.)
- *Federal Noxious Weed Act* of 1974 (7 U.S.C. § 2801 et seq.)
- *Food Security Act* of 1985 (16 U.S.C. §§ 3801-3862)
- *National Environmental Policy Act* of 1969 (42 U.S.C. §§ 4321 et seq.)
- *National Historic Preservation Act* of 1966 (16 U.S.C. § 470 et seq.)
- *Safe Drinking Water Act* of 1974 (42 U.S.C. § 300f et seq.)
- Executive Order (EO) 11514: Protection and Enhancement of Environmental Quality
- EO 11988: Floodplain Management (g) Floodplains and Wetlands
- EO 11990: Protection of Wetlands
- EO 12898, Environmental Justice for Minority and Low Income Populations
- EO 13112, Invasive Species

This environmental review identifies and evaluates all relevant impacts, conditions, and issues associated with the proposed alternative in accordance with:

- President's Council on Environmental Quality's (CEQ) Regulations outlined in 40 CFR parts 1500-1508, hereafter referred to as the CEQ regulations
- RUS Bulletin 1794A-601, Guide for Preparing an Environmental Report for Electric Projects Requiring an EA

Additionally, zoning, permitting, and health and safety requirements are included in this environmental review.

Project Description

The Pioneer Solar Project involves two components: 1) the solar-generating facility (solar facility) and 2) a new substation to meet and anticipated increased demand.

The solar facility would be connected to the municipal system through the Village's existing electrical line that services its sewage lagoon treatment facility east of the Village. No upgrades to this electrical line are anticipated.

The construction schedule would be determined when all environmental considerations have been addressed and the location of the project approved by the RUS. Final engineering would proceed at that time. It is anticipated construction could begin as early as Fall 2024 for the substation with the solar field construction to follow.

The project would also incorporate the following concerns and details into the planning and operation of the solar facility:

- One hundred percent of the power generated from the project would be used to serve Pioneer electric consumers, so no power sales contracts are associated with or entered into as a result of this project.
- There are no interconnection agreements associated with the project, and all generated electricity would be distributed through the Village's electrical distribution system to service its municipal electrical customers.
- The Village proposal to RUS accounts for agrivoltaics in project planning and operation.

Several environmental evaluations and investigations have been performed in association with this project to ensure water features, wetland habitat, other types of natural or cultural resources, and contaminated sites would not be impacted by proposed construction activities. Additionally, appropriate BMPs would be used as this project is being constructed and after construction is completed. The evaluations, investigations, and BMPs used at the site are described below in detail.

Generating Facility Description

Solar PV generation is the direct conversion of sunlight (photons) into electricity (voltage). Solar modules would be arranged on the site in the form of single-axis tracking solar arrays. Structures supporting the PV modules would consist of steel piles (e.g., cylindrical pipes, H-beams, or equivalent). The panels themselves would measure approximately 3 to 4 feet wide by 6 to 7 feet in height. The solar panels are anticipated to be mounted on a galvanized steel and/or aluminum rack system, positioned approximately 2 to 3 feet above the finished grade, thus reaching a total height of 8 to 12 feet. The racking system would allow for a range of motion (single axis) tracker positioned to track the sun. A concrete foundation would not be required to support the racking system. Instead, the racking system foundation would consist of metal posts (pilings) pile-driven into the ground to a depth just below the frost level. All required equipment would be manufactured off-site and delivered to the site for final assembly and installation.

The proposed design would be laid out primarily in blocks (Figure 2). Each block would include an inverter-transformer station constructed on a concrete pad or a pile mounted steel skid located on the perimeter of the PV module block. Direct Current (DC) cables would be installed to transmit DC current to inverters where the DC is converted to AC.

Figure 2. Typical Community-scale Solar-generating Facility.

The exact number of blocks, arrays, and modules would be finalized during detailed design. Power generated by the project would be transmitted through a collection system to a proposed on-site substation where a step-up transformer would increase the voltage to match the system voltage of the Village-owned substation. The proposed on-site substation, housed within a fenced and graveled yard, would include buses, circuit breakers, disconnect switches, grounding, and the main step-up transformer. The enclosure for the substation would house all of the protection and control equipment, metering equipment, automation relay panels, and communication equipment. Equipment would be installed on concrete foundations and would be connected using standard electrical buswork materials or aluminum conductor steel-reinforced cable.

The on-site substation would be protected from overhead lightning with use of lighting arrestors and overhead static wires to safely dissipate any lighting strikes. The station would be minimally lit as necessary for the health and safety of persons needing to enter the facility for operations purposes. The project would also comply with local, State, and Federal guidelines, and the National Electric Code.

The project's on-site roadway system would include 20-foot wide internal roads and access roads, which would be surfaced with native compacted soil or gravel (where necessary) and would accommodate the project's operations and maintenance activities. The project site would be fully enclosed with an 8-foot-high perimeter security fence.

Site Preparation

Site preparation (surveying and staking, removal of tall vegetation, grading, development of site roads, installation of a perimeter security fence, and preparation of construction laydown or staging areas) would be required prior to construction of the solar facility.

The project would employ industry standard practices to work with the existing landscape (e.g., slope, drainage, utilization of existing roads) where feasible and minimize or eliminate grading work to the extent possible. Any required grading activities would be performed with portable earthmoving equipment (such as motor graders) and would result in a relatively consistent slope to local land areas. Silt fence and other appropriate controls would be used (as needed) to prevent soil from leaving the work area. Disturbed areas would be revegetated post-construction using a mixture of certified weed-free, low-growing native and/or non-invasive grass seed. Erosion control measures would be inspected and maintained until vegetation in the disturbed areas has returned to the pre-construction conditions or the site is stable.

Grading would consist of the excavation and compaction of earth to meet the final design requirements. Grading may include stripping, cutting, filling, stockpiling or any cut and fill quantity of earthwork to the extent practical, so little – if any -- off-site and minimal on-site hauling is anticipated.

To minimize potential for runoff of water and soil during the construction process, temporary stormwater controls may be constructed in accordance with the site's Stormwater Pollution Prevention Plan (SWPPP). A vegetation management plan would be developed to ensure appropriate vegetation is used to reduce erosion and runoff. This could include planting native pollinator species.

Construction

Construction of the solar facility would include assembly of the solar arrays, pile driving for the support structures, installation of the solar panels and equipment, electrical interconnection, testing/verification activities, and construction of ancillary facilities.

Galvanized steel would support most of the substation equipment. Concrete foundations and embedment for equipment would be installed with trenching machines, concrete trucks and pumpers, vibrators, forklifts, boom trucks, and large cranes. Above-ground and below-ground conduits from this equipment would run to the control enclosure. For personnel safety and equipment protection during faulted conditions, a ground grid would be installed in the area. This would consist of appropriately sized conductors meshed and buried below ground. Each piece of equipment and supporting structure within the substation would be electrically connected to the ground grid per the requirements of Institute of Electrical and Electronics Engineers Standard 80.

It is anticipated water would be needed for soil compaction and dust control during construction, including on access roads, as a currently accepted best management practices (BMPs. During construction, the primary water use would be dust control during grading activities. Portable toilets would be available on-site for the duration of the construction period.

The project would be constructed over a period of up to approximately nine months and would employ up to 10 to 12 workers per day during the peak construction period. During the peak of construction, a typical day would include the transportation of workers, movement of heavy equipment, and transportation of materials.

Construction Transportation

It is anticipated that on average approximately five construction vehicles and eight to nine shipping trucks would come and go from the site each day, though these numbers would likely also increase during the peak construction period. Overall, approximately 1,000 construction related vehicle trips are expected to occur throughout the full construction period. Access would be from U.S. Highway 20.

During construction, the project components – including the solar modules, mounting system, inverters, transformers, electrical cabling, and ancillary construction equipment – would be transported to the site using standard trucking methods as described above. The Village would coordinate with Williams County Engineer and Sheriff, as appropriate, to assure construction traffic does not place any undue burdens on the community. Temporary roadway signs would be placed along U.S. Highway 20 alerting drivers of trucks and equipment entering and exiting the highway. All transport vehicles would comply with the Ohio Department of Transportation (ODOT) Maximum Legal Dimensions and Weights on federal, state, and local routes. Permit stipulations would be enforced to ensure minimizing offsite impacts and control the spread of invasive species.

Operations and Maintenance

The solar panels are expected to be in operation during daylight hours, seven days per week, 365 days per year. During project operation, no major physical disturbances are expected to occur. Moving parts of the solar array would be restricted to the east-to-west facing tracking motion of the solar modules, an approximate movement of less than 1 degree every few minutes. At sunset, the modules would track to stow position.

Operational activities include:

- Maintenance of transformers, inverters, or other electrical equipment
- Road and fence repairs
- Mechanized vegetation management
- Weed management as needed
- Site security
- Project operations control (remote)

Once operations start, no more than one to three vehicles per day Monday through Friday and one Saturday and Sunday are anticipated to visit the site as needed for scheduled/preventative maintenance or emergency repair activities. Routine maintenance work would typically occur during daylight hours. Any work that might interfere with power production may occur in early evening hours. For more complex activities, additional workers and vehicles may be temporarily onsite.

The primary source of water use during operations would be annual panel washing. Panel washing would take place primarily during early morning hours or late in the day, avoiding "peak" sun/heat hours, to minimize evaporation and impacts to generation. A temporary crew of up to 12 people along with water trucks would be brought on-site to complete the washing. Runoff from washing panels is not expected to be generated by the washing process.

Kexon Substation

The Kexon Substation would be located on 5.0 acres of agricultural ground south of Kexon Drive in the Pioneer Industrial Park. The proposed substation would consist of two 20MVA 60/12kV

transformers; six 12kV exit feeders; and nine new 12.47kV outdoor circuit breakers. A new control building system complete with relay panels and revenue meter bases would also be installed. New 69-12.47kV underground conduit and a 15kV cable system from the structure/breaker area to pad-mounted junctions would be included. The substation would be placed on a gravel pad, and high-security fencing would ring the perimeter.

Project Permits

The project would be compliant with the following federal, state, and local regulations outlined in Table 1.

Table 1. Pioneer Solar Project Permits and Compliance.

Agency	Permit, Regulatory Compliance, and Coordination
Federal	
U.S. Fish and Wildlife Service (USFWS)	Section 7 of the *Endangered Species Act* (ESA), *Migratory Bird Treaty Act* of 1918, and *Bald and Golden Eagle Protection Act* of 1972
U.S. Army Corps of Engineers (USACE)	Sections 401 and 404 of the *Clean Water Act* (CAA) and Sections 10 of the *Rivers and Safe Harbors Act* of 1899
U.S, Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS)	Farmland Conversion Form – Form AD-1066
State	
Ohio Environmental Protection Agency	National Pollutant Discharge Elimination System (NPDES) Permit for construction activities.
Ohio Department of Natural Resources	Threatened and Endangered Species
Ohio Department of Commerce, Division of Industrial Compliance	Building permit
Ohio State Historic Preservation Office and Tribal Historic Preservation Offices	Section 106 consultation and *Ohio State Agency Historic Resources Preservation Act*
Ohio Department of Transportation	Right-of-Way permit

Decommissioning and Reclamation

The Project would operate for approximately 35 years. At the end of the useful life, the Village would assess whether to cease operations at the site or replace equipment and continue operations. If operations cease at the site, the project would be decommissioned and dismantled and the project site restored – a process which would take approximately three months. To the extent practicable, the majority of decommissioned equipment and materials would be recycled. Materials that could not be recycled would be disposed of at approved facilities.

General decommissioning and reclamation activities are described below. Decommissioning activities typically include:

- Dismantling and removal of aboveground equipment (solar panels, panel supports, transformers, project substations, and other components) to a depth of 5 feet;

- Removing below-ground electrical connections and utilities up to a depth of 24 inches;
- Removing pilings;
- Dismantling and removing concrete pads and foundations;
- Removing of access roads;
- Stabilizing site soils per National Pollutant Discharge Elimination System (NPDES) construction permit (if required for decommissioning activities); and
- Revegetation.

Agency Decision to be Made

The purpose of this EA is to analyze the potential environmental impacts of the proposed action (Pioneer Solar Project) to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The EA provides: 1) a detailed description of the proposed action; 2) identifies natural and cultural resources within the review area; 3) describes the purpose and need; and 4) analyzes alternatives considered reasonable and feasible to accomplish the proposed action. Discussions of the affected environment, the environmental consequences of the project, and the mitigation of the potential environmental impacts are also included. Based on the analysis contained in this document, RUS will decide:

1. Whether to proceed with financing the proposed action.
2. Whether the alternative that is selected would have a significant impact on the quality of the human environment.

If RUS finds the proposed action will not have a significant impact on the quality of the human environment, it will prepare a FONSI. If at any point in the preparation of an EA the RUS determines the proposed project will have a significant impact on the quality of the human environment, it will initiate preparation of an EIS.

Alternatives

This section describes each alternative evaluated as required by NEPA. It includes three alternatives: 1) Preferred Action Alternative (Alternative 1), 2) Alternative 2, and the 3) No Action Alternative. These details serve as the basis for the environmental impact assessment presented in Affected Environmental and Environmental Consequences section.

Under Alternatives 1 and 2, the solar facility would be east of the Pioneer in a currently unincorporated portion of Williams County (Madison Township). The review area is currently in row-crop production and would be developed to include all necessary components to construct a working solar generation facility, distribution substation, and connecting transmission line between the solar facility and the Village. The proposed solar generation facility would be a 4.9 MW generation source that would be connected to the Village's existing distribution system through a new substation (Kexon Substation) associated with the solar field. This substation would convert a 35kV output from the solar field to a 12.47kV distribution voltage that can be distributed onto Village's electrical distribution system.

The Village has a prime location for the proposed solar field located within ground it currently owns and leases for agricultural production or is finalizing acquiring. The community and site location meet all suitability and technical requirements, including available space and a path for interconnection. Both alternatives 1 and 2 would require grading, and/or ground-disturbing activities, as well as mowing and light surface preparation (including grubbing of existing vegetation) similar in nature to current on-site agricultural activities. Preliminary conceptual plans for alternatives 1 and 2 are included in Appendix A for reference.

Alternatives 1 and 2 meet the defined project purpose and need for generating 10 GWh of renewable electricity on an annual basis. The No Action Alternative would not meet the purpose and need for the project, as the solar generating facility and Kexon Substation would not be constructed.

Project Alternatives Considered but Eliminated

The Village initially identified a site east of Pioneer, but because of potential environmental and cultural resource concerns and a landowner who was unwilling to sell or lease his property, the Village did not pursue the site. This alternative would have required a new transmission line between the solar site and the Village's existing substation.

The Village also identified a site immediately east, north and west of its wastewater treatment facility on property it owns and leases for agricultural production. Because of the presence of mapped floodplains and other potential environmental concerns, this alternative was not pursued.

Alternative 1

Under the Alternative 1, the solar facility would include three discontiguous units surrounding the Village's existing sewage lagoon treatment facility east of Pioneer: Units 1-3 (Figure 3).

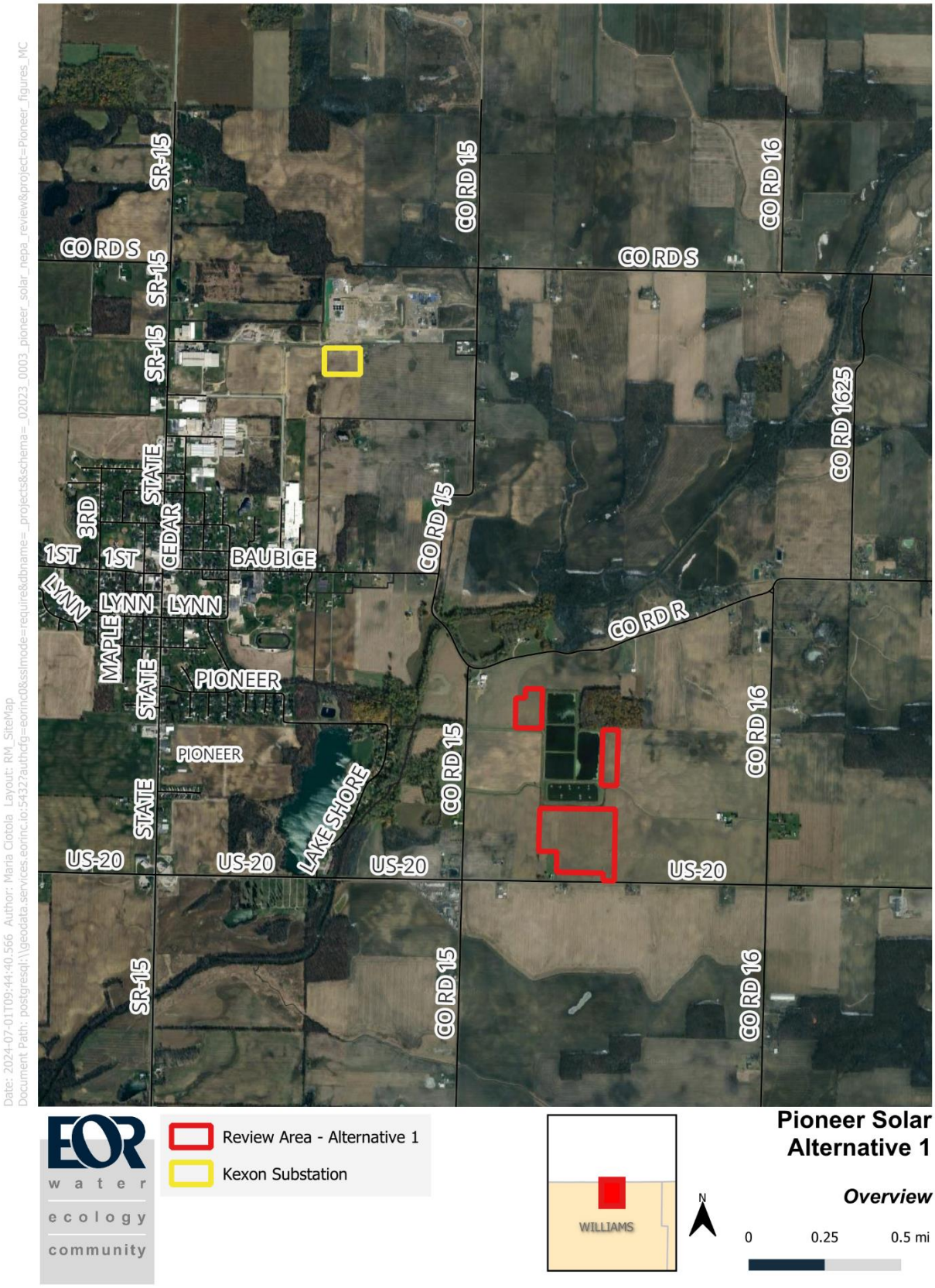


Figure 3. Alternative 1 Overview.

The solar facility would be east of the Pioneer in a currently unincorporated portion of Williams County (Madison Township). The review area is currently in row-crop production and would be developed to include all necessary components to construct a working solar generation facility, distribution substation, and connecting transmission line between the solar facility and the Village. Access to the solar generating facility would be off U.S. Highway 20 for the South Unit, through the Village's wastewater treatment facility for the Central Unit, and the access road servicing the wastewater treatment facility for the North Unit.

The North Unit of the solar facility is directly north of the access road leading to the Village's wastewater treatment facility off Williams County Road 15. The array would be placed on approximately 6.6 acres of agricultural land immediately west of the northern-most lagoon.

The Central Unit is directly east of the wastewater treatment facility, which would provide access into this unit. It is approximately 5.9 acres and would be placed in a portion of an agricultural field.

The South Unit of the solar facility is north of U.S. Highway 20 and south of the wastewater treatment facility. The array would be placed on approximately 31.4 acres of production ground that the Village is in the process of acquiring.

Alternative 1 would also involve the construction of the 69/12-kilovolt (kV) Kexon Substation, which is in the Pioneer Industrial Park. The Village's existing substation and the proposed Kexon Substation would be connected, allowing the Village to purchase electricity from the regional electrical distribution network through AMP Transmission, LLC's (AMPT's) proposed Phase I Reinforcement Project and CR 15 Re-Route Project. This effort involves the construction of approximately 2.5 miles of new 69-kV transmission line between the proposed Kexon Substation and the existing AMPT 69-kV transmission line located along U.S. Highway 20. A potential re-route was also evaluated along CR 15 as part of this project. AMP's project is being funded independently and would not use grant dollars from the Village's PACE grant.

Alternative 2

Under Alternative 2, the solar generating facility would be sited on a single 34.0-acre parcel between of U.S. Highway 20 on the north and the Village's wastewater treatment facility on the north. Access to this site would be off U.S. Highway 20 and would require construction of a short driveway (Figure 4).

As with Alternative 1, Alternative 2 would also involve the construction of the 69/12-kilovolt (kV) Kexon Substation, which is located on an approximately 6.8-acre parcel northeast of Pioneer. The Village's existing substation and the proposed Kexon Substation would be connected, allowing the Village to purchase electricity from the regional electrical distribution network through AMPT Transmission, LLC's (AMPT's) proposed Phase I Reinforcement Project and CR 15 Re-Route Project. This effort involves the construction of approximately 2.5 miles of new 69-kV transmission line between the proposed Kexon Substation and the existing AMPT 69-kV transmission line located along U.S. Highway 20. AMP's project is being privately funded and would not use grant dollars from the Village's PACE grant.

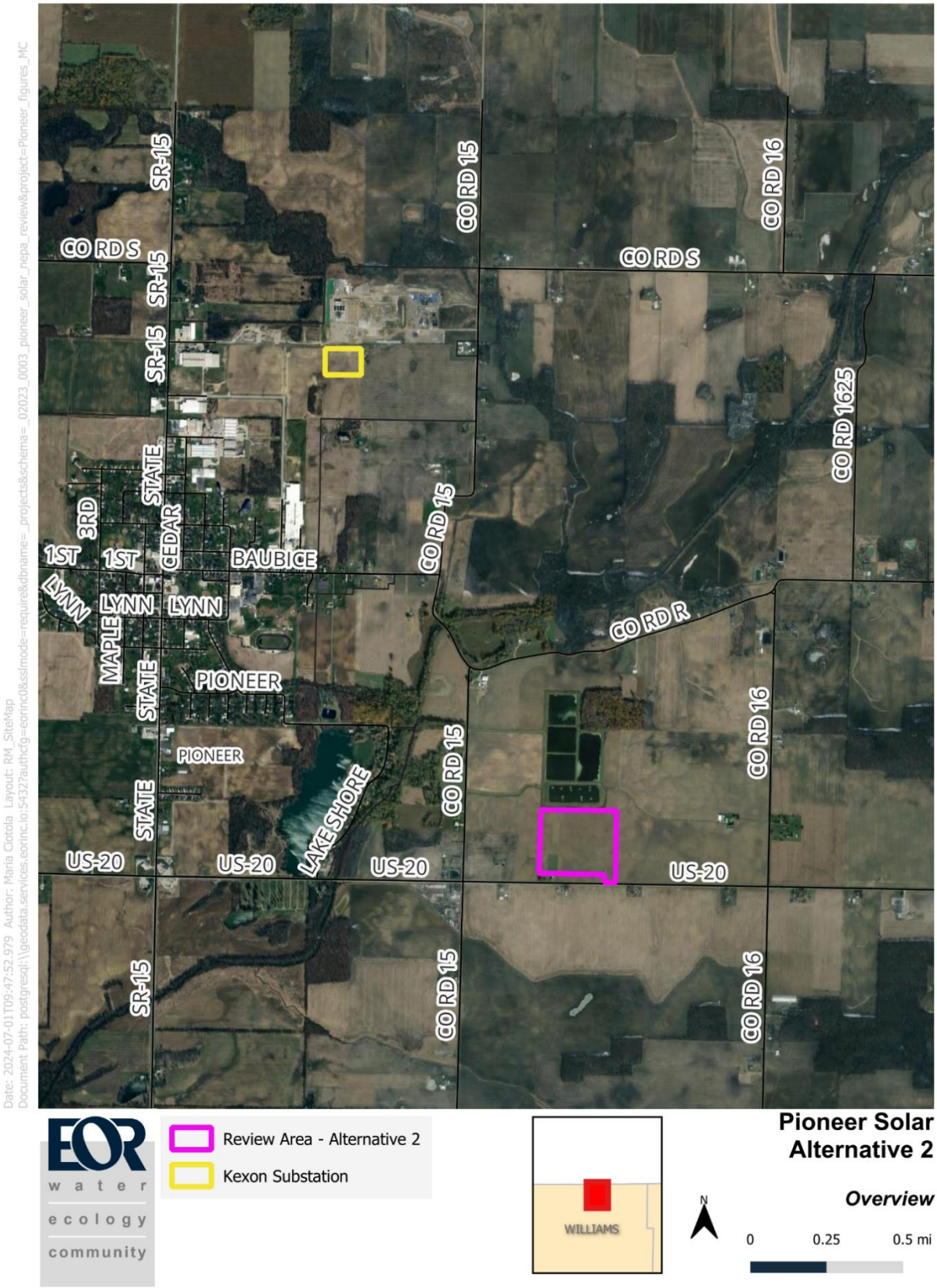


Figure 4. Alternative 2 Overview.

No Action Alternative

Under the No Action Alternative, RUS would not provide funding for the Village Solar Project, and the project developed would seek other financing sources. For the purposes of this analysis, it is assumed the project would not be constructed.

Assuming the project would not be constructed, existing conditions would likely remain unchanged (i.e., property would remain as predominantly-disturbed agricultural land) and agricultural activities would likely continue. Under the No Action Alternative, there would be no project-related changes to land use, natural resources, or socioeconomic conditions in the immediate future. This alternative does not meet the stated need and purpose for the action.

Project Alternatives Carried Forward for Analysis

The Alternative 1, Preferred Action Alternative (Alternative 2), and the No Action Alternative are carried forward for analysis under this review.

Because of its connection with the Kexon Substation, the AMPT Transmission, LLC's (AMPT's) proposed Phase I Reinforcement Project and CR 15 Re-Route Project is considered and analyzed as an indirect effect.

Affected Environment and Environmental Consequences

This section of the EA describes the potential impacts of the project on:

- Land use
- Soils
- Wetlands
- Water quality and quantity
- Vegetation
- Threatened, endangered, and rare species
- Air quality
- Cultural resources
- Transportation
- Health and safety
- Socioeconomics and environmental justice
- Visual resources

Both short-term impacts associated with the proposed construction activity and long-term impacts associated with operation of the proposed Pioneer Solar Project have been considered. These activities include the construction, operations, and maintenance of the proposed solar facility and electrical substation.

This EA addresses individual and cumulative impacts associated with the proposed action and alternatives. The CEQ's regulations for the implementation of NEPA define cumulative impacts as, "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such action."

The region of influence for the majority of the resources investigated was limited to the immediate vicinity of the review area. However, the region of influence – or area of potential effect (APE) – for aboveground cultural resources for the proposed project was divided into a direct APE (or the land directly impacted by ground disturbance and an indirect APE for cultural resources that may be visually impacted by the construction of the project within 500 feet of the direct APE. The region of influence for wetlands and streams in the review area was downstream and in the immediate vicinity of the review area, and the region of influence for socioeconomics was the county that the project would directly affect.

Aerial environmental overview photographs are included in Appendix B for reference. Environmental overview maps are included as Figures 5-9.

Land Use

The environment affected by this project includes primarily agricultural ground used in commodity-crop production. The elevation across the two components of the solar facility is nearly flat, ranging from 880 to 890 feet above mean sea level. Agricultural fields and rural home sites border the review area on all sides, with surrounding general land use consisting of agriculture fields.

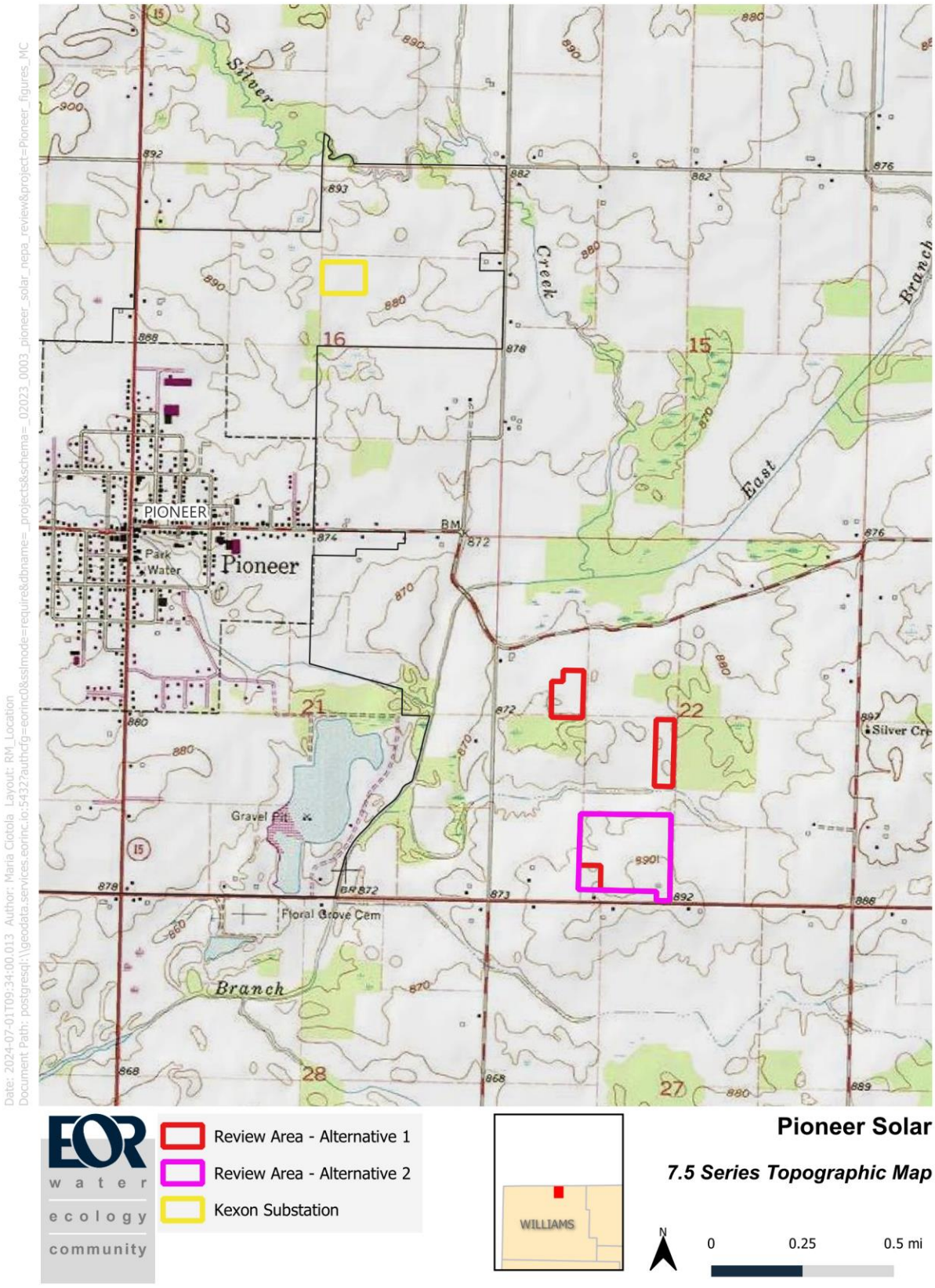


Figure 5. USGS 7.5' Series Topographic Map.

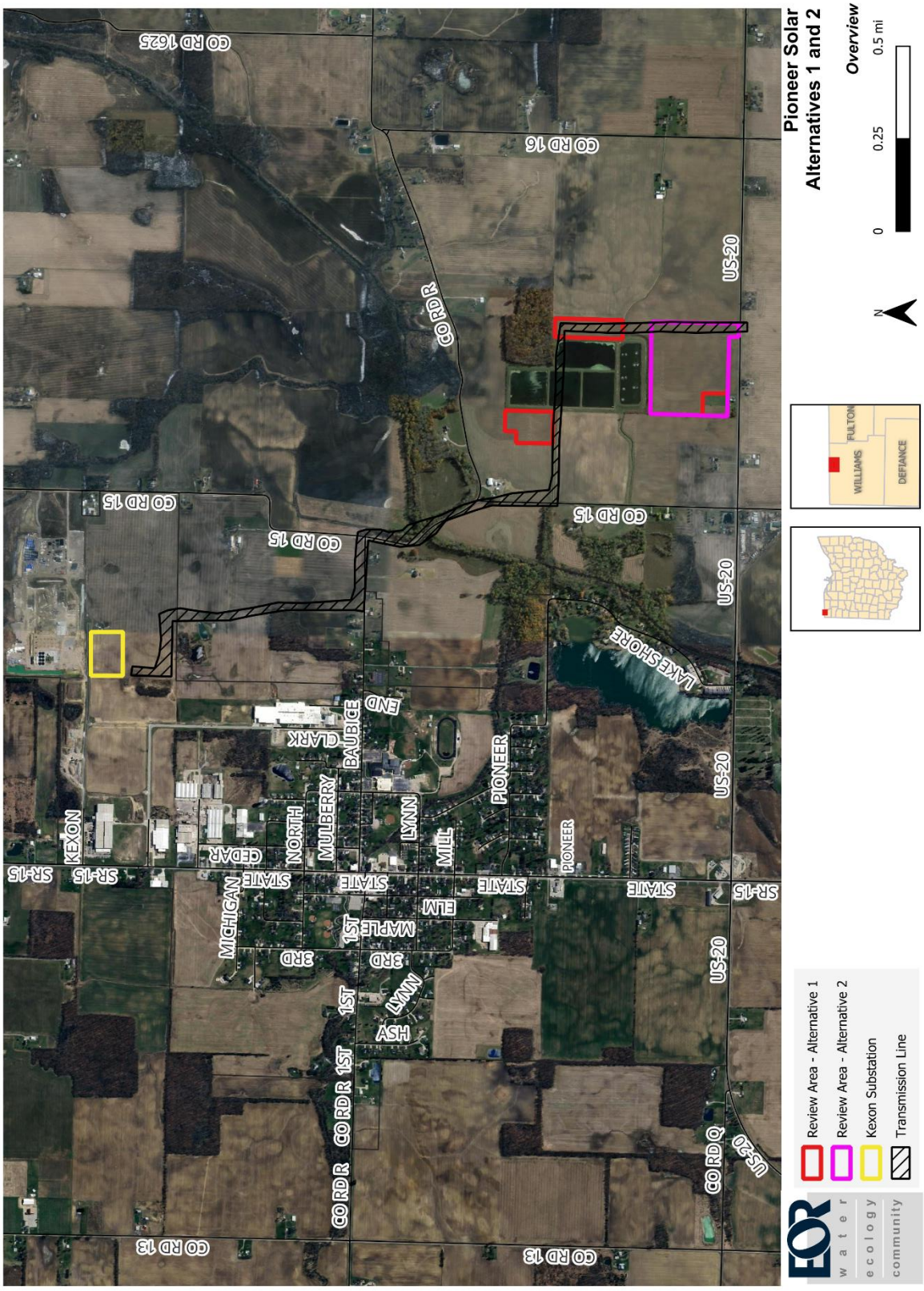


Figure 6. Landscape Overview.

Figure 7. Environmental Overview -- Alternative 1.

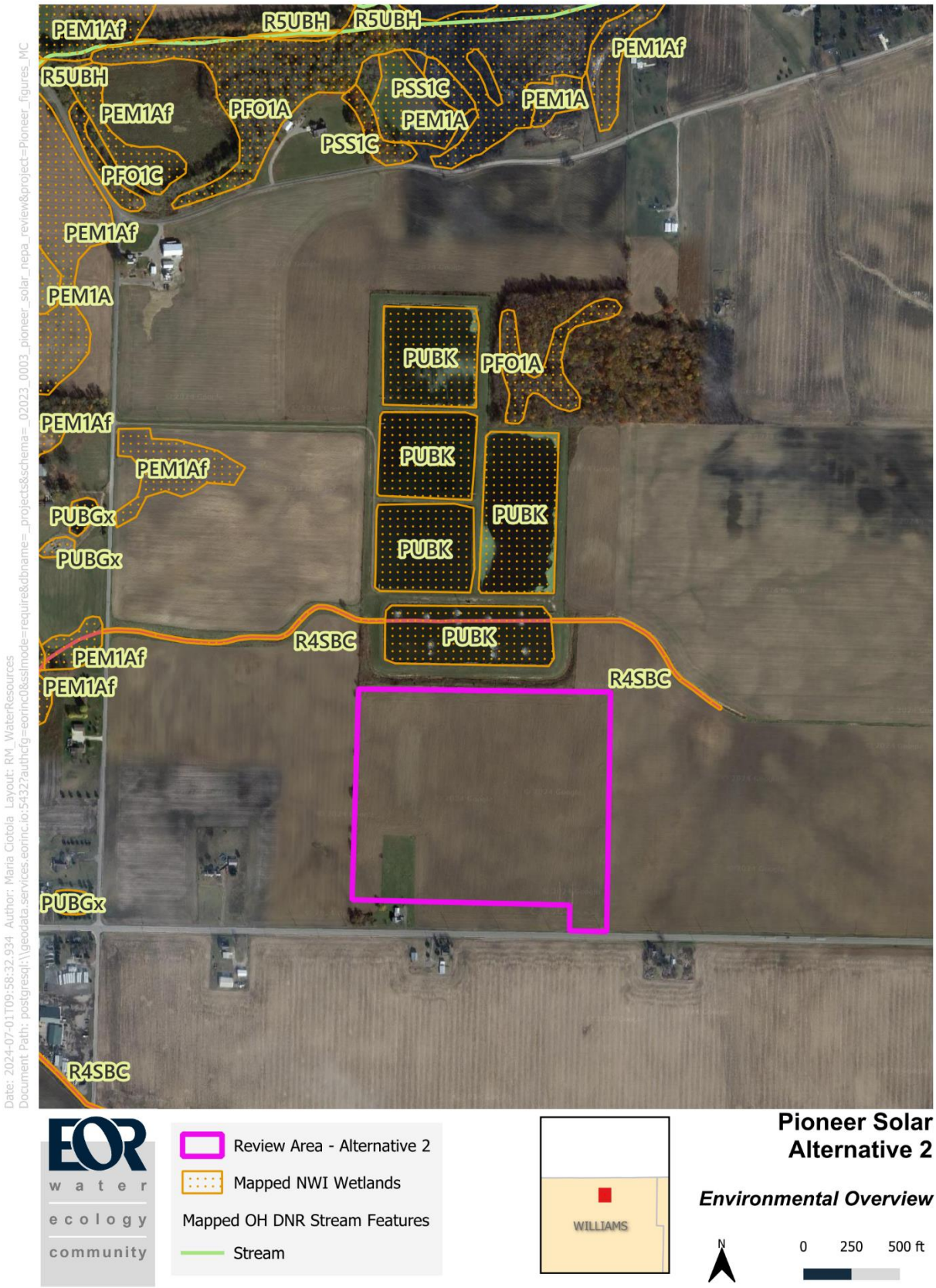


Figure 8. Environmental Overview -- Alternative 2.

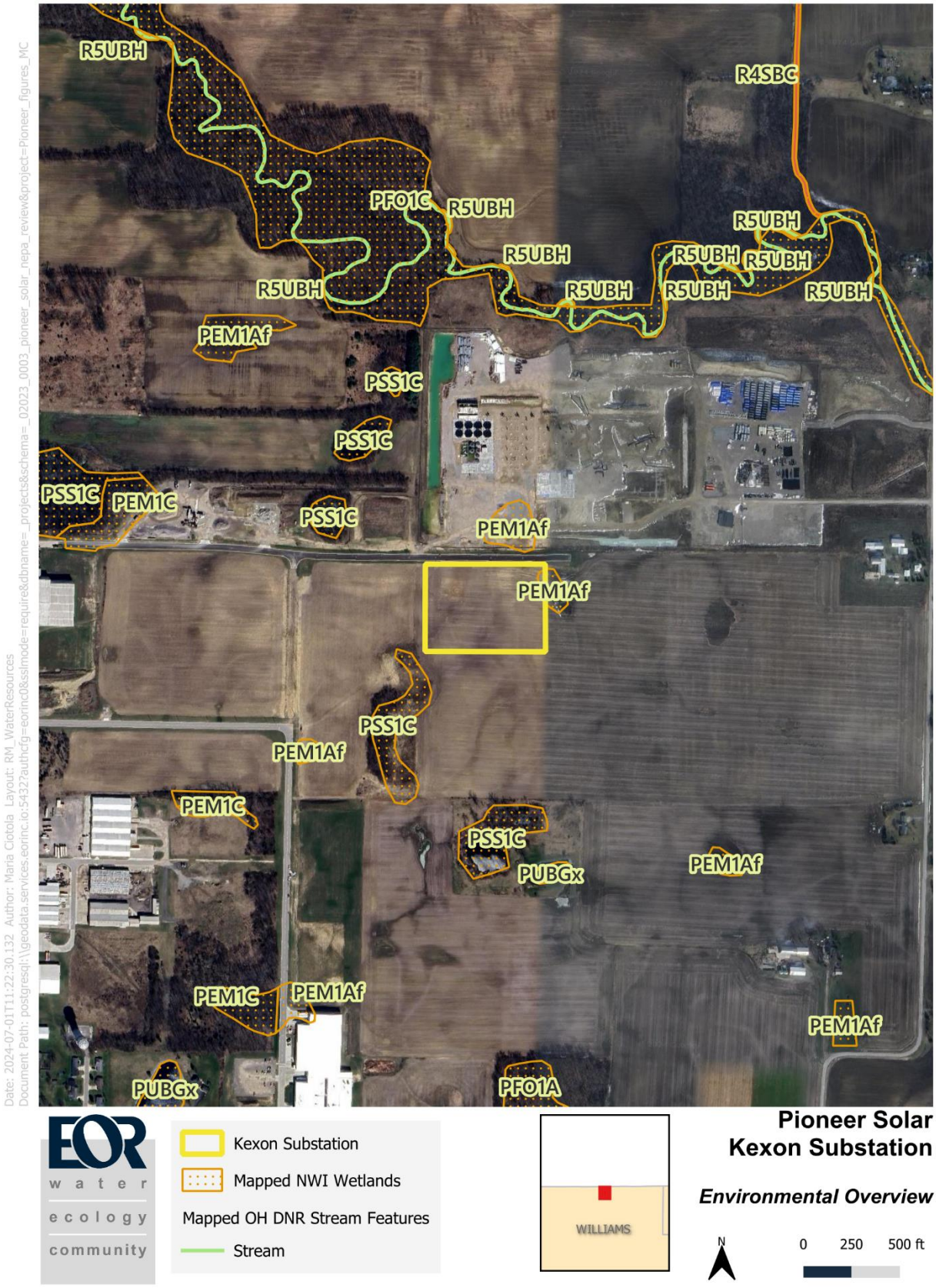


Figure 9. Environmental Overview -- Kexon Substation.

A review of the potential for formally classified lands within the vicinity of the proposed action. Based on the review, there are no formally classified lands within the vicinity of the review area. The following land areas were reviewed:

- National Parks and Monuments
- National Forests and Grasslands
- National Historic Landmarks
- National Battlefield and Military Parks
- National Historic Sites and Historical Parks
- National Natural Landmarks
- National Wildlife Refuges
- National seashores, lake shores, and trails
- Wilderness areas
- Wild, scenic, and recreational rivers
- State parks
- Local recreation areas
- State fish and wildlife management areas
- Bureau of Land Management-administered lands

  Native American owned lands and leases administered through the Bureau of Indian Affairs

A Building Permit and Plan Review approval would likely be necessary by the Ohio Department of Commerce, Building Code Inspection, prior to initiating construction activities. Williams County only issues building permits for residential developments.

The review area is in a rural area east of Pioneer. Both alternatives 1 and 2 are in agricultural fields used in commodity-crop production. Based on a review of historic aerial imagery, both alternatives have been in agricultural use since at least the 1930s. Williams County, the Village, and Madison Township do not have zoning ordinances, and Williams County does not have a comprehensive plan.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land or land uses. Land-disturbance activities to develop the solar facility would occur within the boundaries of the review area. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities. Removal of above-ground equipment, concrete pads and foundations, pilings, and below ground electrical connections from the project site would result from decommissioning. The majority of the review area could be returned to agricultural use due to reclamation activities, including breaking up soil in compacted areas. There are no other anticipated impacts from the use of this property as a solar facility or to the surrounding land uses, including excessive demand on local parks or schools.

Alternative 1 would have a minor adverse impact on land use during the course of the project lifetime as a relatively small portion of the large land agricultural land use in the vicinity of the selected solar facility would be lost. Associated land could be reclaimed and returned to agricultural use after decommissioning. The Kexon Substation would have longer-term impacts, though the land use is consistent with the surrounding industrial and commercial area.

Alternative 2 would have a minor adverse impact on land use during the course of the project lifetime as a relatively small portion of the large land agricultural land use in the vicinity of the selected solar facility would be lost. Associated land could be reclaimed and returned to agricultural use after decommissioning. The Kexon Substation would have longer-term impacts, though the land use is consistent with the surrounding industrial and commercial area.

The No Action Alternative would not affect land use, as it would not likely not be constructed.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields.

Environmental Commitments

A General Stormwater Permit under the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) would need to be obtained from the Ohio Environmental Protection Agency (OEPA). The contractor would follow provisions of this permit during preliminary site grading activities and would adhere to the Sediment and Erosion Control Plan criteria specified in the Civil Construction Plans developed for this project. This plan includes BMPs that avoid or minimize soil erosion, including proper seeding of disturbed areas after land disturbance activities are complete, and establishment of vegetated buffers around the perimeter of the project site, where necessary.

A State Highway Access Permit and/or Notice to Proceed from the Ohio Department of Transportation would also be required for the access driveway connection to U.S. Highway 20 to the southern solar filed within 30 days of issuance.

Important Farmland

(*Farmland Protection Policy Act* [FPPA], 7 CFR Part 658)

Prime farmland soils, as defined by the USDA, are those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and are available for agriculture (NRCS 2010). They have the quality, growing season, and moisture supply needed to economically produce sustained high yields of crops. Prime farmland soils may presently be in use as cropland, pastureland, range land, forestland, or other uses, but do not include soils under urban or built-up areas. The conversion of these soils to industrial and other nonagricultural uses essentially precludes farming them in the foreseeable future. The concern that continued conversion of Prime farmland to nonagricultural use would deplete the nation's resources of productive farmland prompted enactment of the FFPA (FPPA - 7 U.S.C. 4201 et seq.). This law requires all Federal agencies to identify Prime farmland proposed to be converted to

nonagricultural use and evaluate the impact of that conversion. A Farmland Conversion Impact Rating (Form AD-1006) is used to determine whether a site is farmland subject to the FPPA. The impact rating 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.

Affected Environment

The review area is in a largely agricultural landscape matrix consisting of row-crop production fields interspersed with narrow riparian corridors and isolated tamarack forests. Alternatives 1 and 2 are exclusively within agricultural fields. Soils were formed in outwash, till, and glaciolacustrine deposits consisting of clay loams and sandy loams (Figures 10-12; Table 2). Based on review of historical aerial photographs, the review area has been used continuously for agricultural production (including pasturage and forage production) since at least the late 1930s.

Table 2. Farmland Classification.

Soil[1]	Map Unit Symbol	Farmland Classification	Hydric Rating	Alternative(s)
Blount loam, 0-6%	Blo2A1 BloB1	Prime farmland if drained	Non-hydric	1 and 2
Digby loam, 0-3% slopes	DmA	Prime farmland if drained	Non-hydric	1 and 2
Glynwood loam, 2-6% slopes	GLB	All areas are Prime farmland	Non-hydric	1 and 2
Millgrove loan	Mh	Prime farmland if drained	Hydric	1 and 2
Pewamo silty clay loam, 0-1% slopes	Pm	Prime farmland if drained	Hydric	2
Haskins sandy loam, 0-3% slopes	HkA	Prime farmland if drained	Non-hydric	2
Mermill loam	Md	Prime farmland if drained	Hydric	2

Prime farmland soils, as defined by the USDA, are those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and are available for agriculture. They have the quality, growing season, and moisture supply needed to economically produce sustained high yields of crops. Prime farmland soils may be in use as cropland, pastureland, range land, forestland, or other uses, but do not include soils under urban or built-up areas.

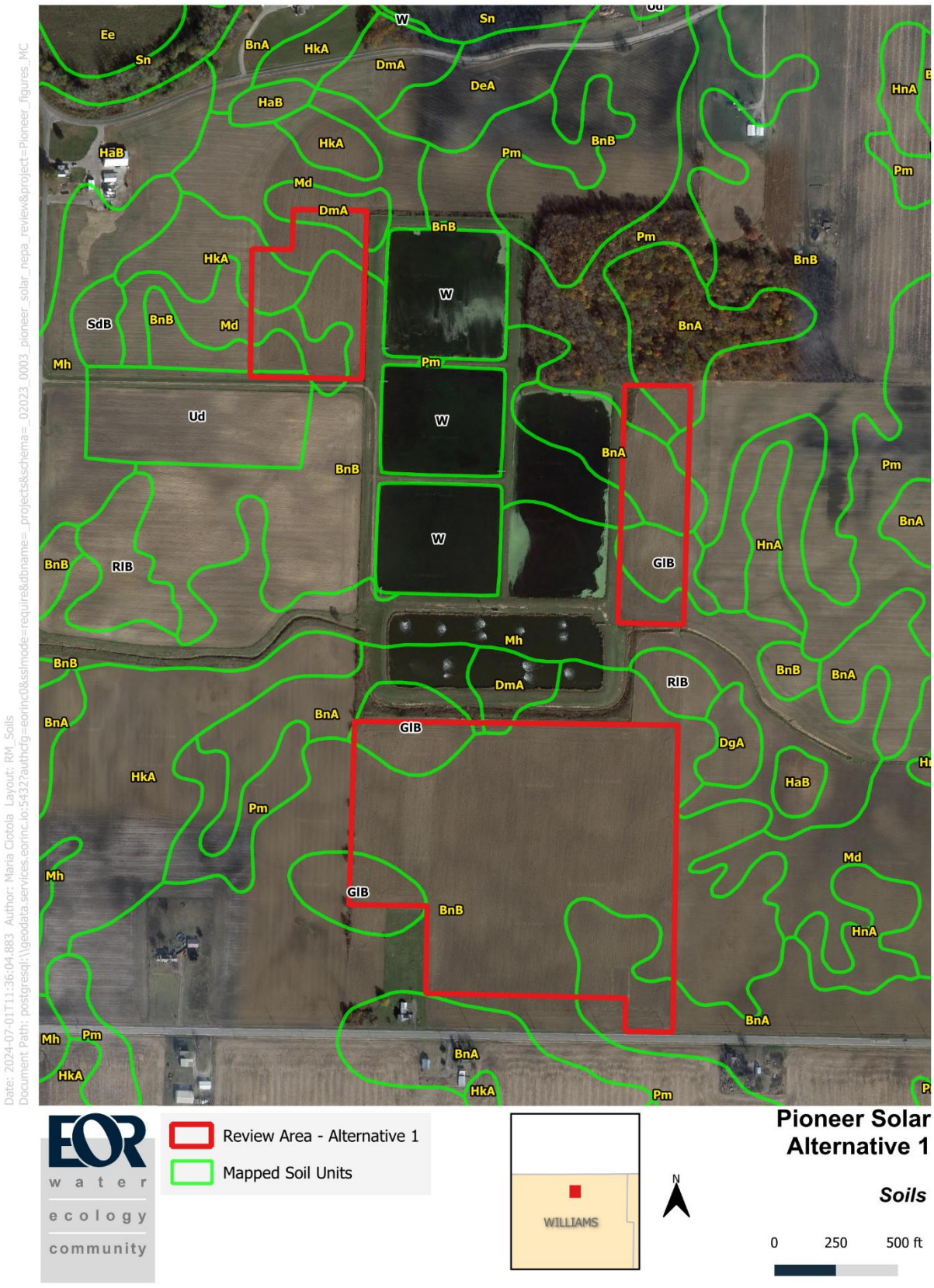


Figure 10. Soils -- Alternative 1.

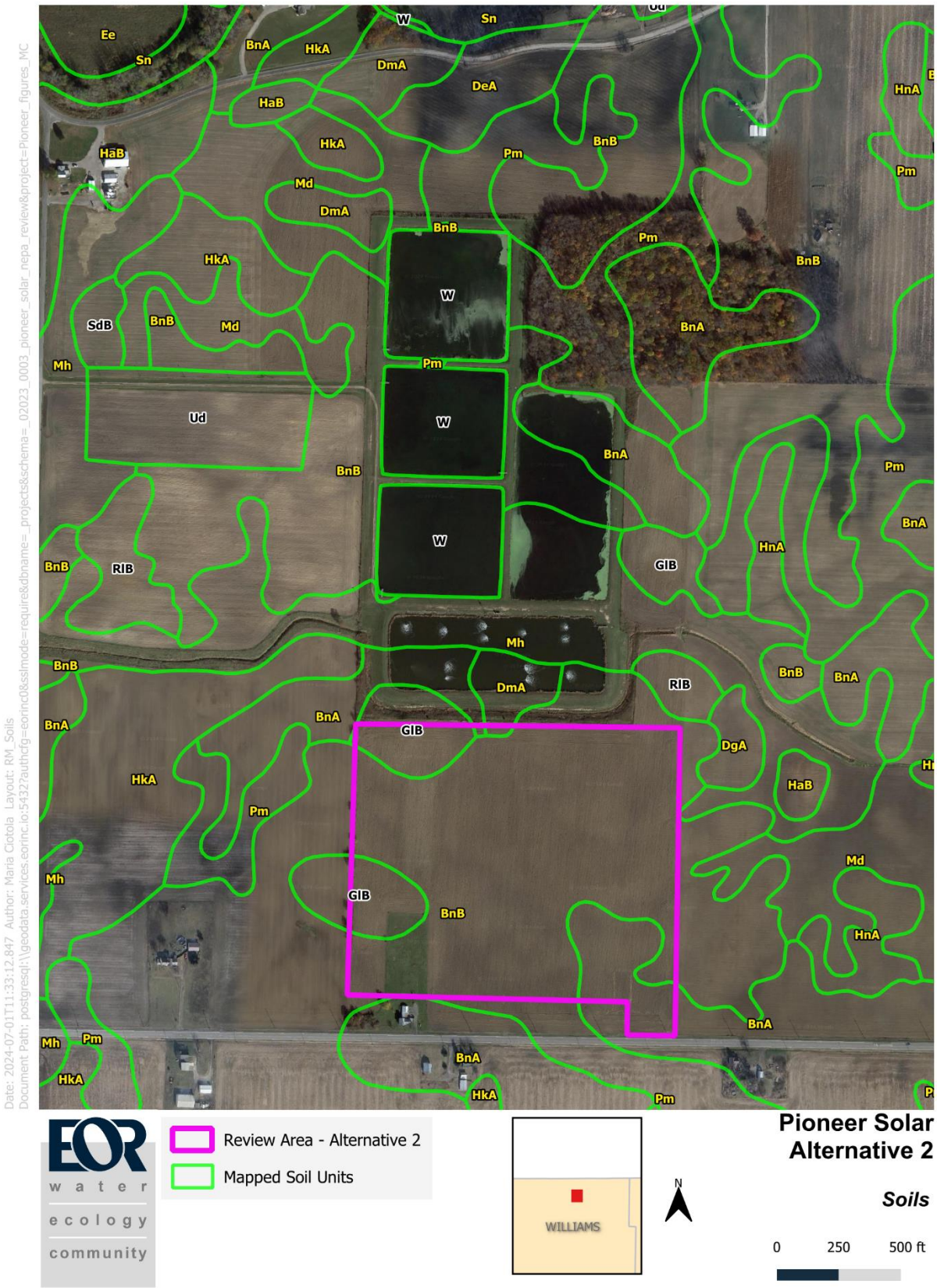


Figure 11. Soils -- Alternative 2.

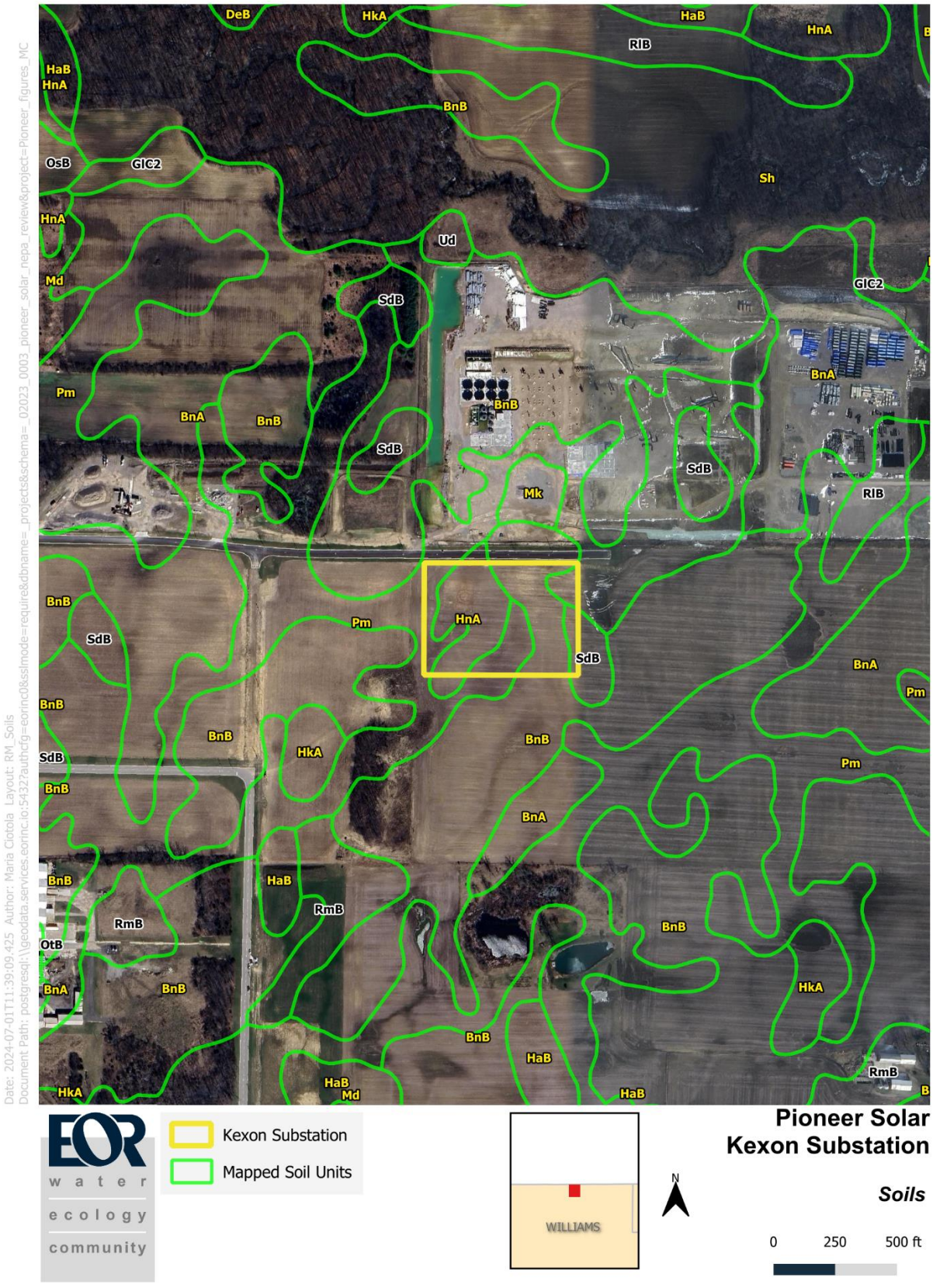


Figure 12. Soils -- Kexon Substation.

The conversion of these soils to industrial and other nonagricultural uses essentially precludes farming them in the foreseeable future. Continued conversion of prime farmland to nonagricultural uses prompted enactment of the FFPA (FPPA - 7 U.S.C. 4201 et seq.). This act requires all federal agencies to identify prime farmland proposed to be converted to nonagricultural use and evaluate the impact of the conversion. A Farmland Conversion Impact Rating (Form AD-1006) is used to determine whether a site is farmland and subject to the FPPA. The impact rating 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.

A Farmland Conversion Impact Rating was conducted by the NRCS to determine impacts to Prime farmland on the proposed review area. Forms are included in Appendix C.

Alternative 1 would convert approximately 43.9 acres of Prime Farmland. The total amount of Prime farmland in question represents less than 0.02 percent of the farmland in Williams County. The NRCS assessed the Land Evaluation for the solar component of the alternative of the converted acreage at 76 out of 260 points. The Kexon Substation received a score of 79 out of 260.

Alternative 2 would convert approximately 26.3 acres of Prime Farmland. The total amount of prime farmland in question represents less than 0.01 percent of the farmland in Williams County. The NRCS assessed the Land Evaluation for the solar component of the alternative of the converted acreage at 80 out of 260 points. The Kexon Substation received a score of 79 out of 260.

According to the criteria stated in FPPA regulations (7 CFR 658.4(c)(2)), because both Alternatives 1 and 2 received a total score of less than 160, no further consideration for protection is necessary.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land., as land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities.

Impacts would be negligible and limited to the duration of construction and facility operation under Alternatives 1 and 2 and absent under the No Action Alternative. Portions of the review area's Prime or Unique farmlands would be converted uses as a result of the proposed action alternative. A Farmland Conversion Impact Rating was conducted by the NRCS to determine impacts to important farmland.

Alternative 1 would not result in significant impacts due to loss of Prime Farmland, based on the Farmland Conversion Impact Rating of 76 out of 260 points for the solar component of the alternative and 79 out 260 points for the Kexon Substation component. Impacts would be limited to the proposed generating facility and substation, and they would be limited to the period of operation for the solar facility, at which time the land would be reclaimed and farming could resume. Impacts associated with the Kexon Substation would be permanent. The Village would

ensure the long-term stability of the site soils and preserve the potential for the site to be used for agricultural purposes after decommissioning.

Alternative 2 would not result in significant impacts due to loss of Prime Agricultural Land, based on the Farmland Conversion Impact Rating of 80 out of 260 points for the solar component of the alternative and 79 out 260 points for the Kexon Substation component. Impacts would be limited to the proposed generating facility and substation, and they would be limited to the period of operation for the solar facility, at which time the land would be reclaimed and farming could resume. Impacts associated with the Kexon Substation would be permanent. The Village would ensure the long-term stability of the site soils and preserve the potential for the site to be used for agricultural purposes after decommissioning.

As the project would not likely be constructed, the No Alternative Action would not affect Prime Farmland.

Indirect and cumulative effects on prime farmland are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields and would represent a small fraction of agricultural land in the county.

Environmental Commitments

BMPs are not proposed.

Floodplain Management

(24 CFR Part 55, Executive Order [EO] 11988)

All Federal actions must meet the standards of EO 11988, Floodplain Management. The purpose of the EO is to avoid incompatible development in floodplain areas. It states, in part, that:

> *Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities*.

Floodplains are lowlands or relatively flat areas adjoining inland or coastal waters, including areas subject to a one percent or greater chance of flooding in any given year. Floodplains serve critical functions and values including:

- dissipating the energy of floods and reducing flood damage downstream;
- storing floodwater that slowly releases water into adjacent streams; and
- maintaining base flows for area streams.

The floodplain is divided into two sections: the floodway which carries most of the flow during a flood event, and the floodway fringe which is an area of very slow-moving water or "slack water." A floodway is the channel of a river or stream and those portions of the floodplain adjoining the channel that are reasonably required to carry and discharge the 100-year flood. These are high hazard areas of rapidly moving water during times of flood. Regulations are designed to ensure the flow-carrying capacity of a watercourse is not harmfully obstructed and the floodway portion of the floodplain is not used for residential construction.

Affected Environment

The proposed action has been planned to avoid and minimize impacts to sensitive areas, including floodplains. The nearest Special Flood Zone Hazard is associated with East Branch of St. Joseph and Larid creeks. Williams County does not participate in the National Flood Insurance Program, so modernized Flood Insurance Rate Maps (FIRM) are not available. Williams County uses 1987 FIRM to determine the need for a floodplain permit (Appendix D).

A Floodplain Development Permit is required for any construction within any Special Flood Hazard Areas in Williams County from the Williams County Engineer's Office. As the project is outside any Special Flood Hazard Areas, a Floodplain Development Permit would not be required for this project.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction and operation under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land or floodways. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities.

Under Alternative 1, no impacts to the floodplain are anticipated (According to the 1987 FIRM data, no portion of this alternative is within the 100-year floodplain). Minor, beneficial, indirect impacts from the change in land use and the reduction in the amount of fertilizer and pesticide/herbicide are anticipated for runoff surface water quality. This will result in the reduction of disturbance activities on the project site, including erosion and sedimentation.

Under Alternative 2, no impacts to the floodplain are anticipated (According to the 1987 FIRM data, no portion of this alternative is within the 100-year floodplain). Minor, beneficial, indirect impacts from the change in land use and the reduction in the amount of fertilizer and pesticide/herbicide are anticipated for runoff surface water quality. This will result in the reduction of disturbance activities on the project site, including erosion and sedimentation.

The No Action Alternative would not affect floodplains, as the solar facility and substation would not likely be constructed.

Indirect and cumulative effects on floodplains and flooding are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV transmission line would likely require a floodplain permit from the county.

Environmental Commitments

BMPs are not proposed.

Wetlands and Water Resources

(*Clean Water Act* [CWA], 24 CFR Part 55, EO 11990)

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States (waters of the U.S.) under Section 404 of the CWA. The USACE defines wetlands as areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, an occurrence of vegetation typically adapted for life in saturated soil conditions. An area is a wetland if it meets three criteria including: wetland hydrology, hydrophytic vegetation, and hydric soils as established in the *1987 USACE Wetland Delineation Manual*.

Section 401 of the CWA gives the states the authority to protect wetlands by regulating certain activities. Through the issuance of a Section 401 Water Quality Certification, the state ensures that a proposed project will not violate Ohio water quality standards. The Ohio Environmental Protection Agency reviews and issues Water Quality Certification under Section 401 of the CWA. A CWA Section 401 Water Quality Certification is required for any federal license or permit that is issued to construct or operate a facility that may result in any fill or discharge into the navigable waters of the U.S. All Section 404 nationwide permits are certified by statute and do not require separate 401 certification. When an individual 401 certification is issued, it becomes part of the 404 permit issued by the USACE. The applicant of a 404/401 permit is required to avoid and/or minimize the project's impacts to wetlands and other waters of the state. If adverse impacts cannot be avoided, compensatory mitigation may be required.

Affected Environment

On May 6, 2024, CT Consultants performed a wetlands determination of the site in accordance with the USACE Wetlands Delineation Manual, dated 1987 (1987 Manual), and the USACE Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region, dated January 2012 (Regional Supplement). A single wetland (Wetland 1) and an unnamed ditch/stream were documented within the review area (CT Consultants 2024) (Appendix E). The methods, results, conclusions, and recommendations contained in this report are incorporated by reference into this assessment.

Wetland 1 is a small depressional area in the northwest corner of the agricultural field east of the east lagoon in the Central Unit of Alternative 1. This wetland meets the three criteria of a wetland (hydrophytic vegetation, wetland hydrology, and hydric soils), as defined by the 1987 Manual and the Regional Supplement. This wetland extends west into the wooded area located between the lagoon and the agricultural field. The wetland area is approximately 0.09 acre. This wetland is confined to the depressional area and the wooded area with no apparent outlet and would be

classified as isolated and would fall under the OEPA jurisdiction. Under the Ohio EPA's Ohio Rapid Assessment for Wetlands, this wetland is classified as a Category 1 wetland, as it supports minimal wildlife habitat and minimal hydrological and recreational functions.

The unnamed ditch/stream crosses through the review area. It was rerouted around the south lagoon (presumably during lagoon construction) and flows to the East Branch of the Saint Joseph River. It would be a jurisdictional wetland under Section 404 of the *Clean Water Act*, as it contributes flow to a likely jurisdictional waters of the United States.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land or wetlands and streams. Land-disturbance activities to develop the solar facility would occur within the boundaries of the review area. Land disturbances are limited in duration to the construction, operation, and decommissioning phases and would be of an intensity related to construction activities. The proposed solar facility would not require any groundwater or surface water appropriations.

Under Alternative 1, 0.09-acres of poor-quality agricultural and emergent wetland located within an agricultural field could be impacted. If this alternative is selected, the Village would submit a Preconstruction Notification to the Buffalo District of the USACE. USACE would review the letter and confirm that project activities would fall within the parameters of a Nationwide Permit 51 – Land-Based Renewable Generation Facilities or some other nationwide or regional permit. Because no modification to the unnamed ditch/stream would be required, the overhead electrical line connection between the Village's existing transmission line and the South Unit of this alternative would likely be covered under Nationwide Permit 57 – Electrical Utility Line and Telecommunication Activities or some similar nationwide or regional permit issued by the Regulatory Branch of the Buffalo District. If changes, including impacts to potentially jurisdictional waters, are made during final design and construction phases, approval from USACE would be required.

Under Alternative 2, no wetlands would be impacted. The overhead electrical line connection between the Village's existing transmission line and of this alternative would likely be covered under Nationwide Permit 57 – Electrical Utility Line and Telecommunication Activities or similar a nationwide or regional permit issued by the Regulatory Branch of the Buffalo District. If changes, including impacts to potentially jurisdictional waters, are made during final design and construction phases, approval from USACE would be required.

As the No Action Alternative would not likely advance, no wetlands would be affected.

Indirect and cumulative effects on water resources are not anticipated as a result of these activities. The construction of the electrical transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields and would likely result of impacts of less than 0.1 acres. Project activities would likely be permitted under a nationwide or regional permit from the USACE.

Environmental Commitments

Construction planning would avoid any impacts to delineated wetlands through redesign. A minimum of a 120-foot buffer should be maintained for Wetland 1 (a Category 1 wetland).

If Wetland 1 cannot be avoided if Alternative 1 is selected, then a Preconstruction Notification to the USACE would be required to determine if impacts fall within the minimal allowable wetland impacts under Nationwide Permit 51 – Land-Based Renewable Energy Generation Facility. The OEPA would also need to be consulted.

Likewise, if modification of the unnamed ditch/stream is required, then a Preconstruction Notification should be submitted to the USACE to determine if the action is within the parameters of Nationwide Permit 57 – Electric Utility Line and Telecommunication Activities

A General Ohio Discharge Permit System (ODPS) Permit for discharges of stormwater from construction activities would be required for all construction projects disturbing 1 acre or more of land area. The application must be prepared in accordance with the OEPA and environment regulations as established by the State of Ohio. A construction permit from the Ohio Industrial Relations Commercial Inspection Department would need to be obtained before the start of construction. This permit provides the framework of requirements for compliance to discharge stormwater from a construction site. This plan should be on the site at all times during construction. The plan should include:

- Control measures for storm water pollution prevention during each phase of construction
- Control measures for storm water pollution prevention after construction
- Sources of storm water and non-storm water pollution, and
- Inspection and maintenance procedures.
- The contractor would adhere to the erosion, sediment control, and stormwater pollution prevention protocols specified in the Stormwater Management Plan and other construction plans, including for potential wetlands adjacent to the construction zone.

Water Quality

Safe Drinking Water Act [SDWA], 40 CFR Part 149)

The SDWA requires protection of drinking water systems that are the sole or principal drinking water source for an area and that, if contaminated, would create a significant hazard to public health. The EPA uses Sole Source Aquifer designations as a tool to protect drinking water supplies in areas where alternatives to the groundwater resource are few, cost-prohibitive, or nonexistent. The designation protects an area's groundwater resource by requiring an EPA review of any proposed projects within the designated area receiving Federal financial assistance. All proposed actions involving new conversion or construction projects receiving Federal funds are subject to review to ensure they do not endanger the water source. There are no sole source aquifers in Williams County (USEPA n.d.b.).

Affected Environment

There are significant deposits of glacial drift within the review area. Drift is thinnest in the northwestern portion of the proposed review area (199 feet) and drift is thickest in the southern portion of the review area (231 feet). The uppermost bedrock unit is Coldwater Shale (Ohio Department of Natural Resources, Division of Geological Survey, Bedrock Geology Map of Ohio).

The review area is in Madison Township, Williams County. The construction of this facility is not expected to have significant impacts on public or private well yields. The Groundwater Vulnerability Index for the review area ranges from 147 to 177 out of a maximum of 250, which equates to a high groundwater vulnerability (OEPA, 2014). The construction of the facility is not expected to pose a significant groundwater contamination risk.

Groundwater resources in the unconsolidated glacial material are plentiful throughout the area. Wells developed in the Williams Complex Aquifer are likely to yield between 100 to 500 gallons per minute. Bedrock aquifer resources in the general area are limited. The underlying Coldwater Shale yields range from 5 to 25 gallons per minute (Ohio Department of Natural Resources, Division of Water, Bedrock Aquifer Map, 2000). ODNR has record of 57 water wells drilled within 1 mile of the review area. These wells range in depth from 45 to 204 feet, with an average depth of 98 feet. The most common aquifer reported is sand and gravel with 56 of these wells being completed in the unconsolidated material. One well is completed in the underlying Coldwater Shale. Sustainable yields of 25 to 70 gallons per minute have been reported for six wells within 1 mile of the review area, with the average sustainable yield being 48 gallons per minute (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Water Wells).

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land or aquifers. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be limited to construction activities. Water for dust control during construction would be from the Village's system or from potable water obtained from the wastewater treatment facility at the project site. The Village's system obtains water from local groundwater sources.

Under Alternative 1, there is the potential for erosion, runoff, and sedimentation during the construction phase of this project, resulting in some stormwater runoff once the solar facility and substation are complete and operational. No other discharges are anticipated to occur as a result of the construction or operation of the solar generating facility under this alternative.

Under Alternative 2, there is the potential for erosion, runoff, and sedimentation during the construction phase of this project, resulting in some stormwater runoff once the solar facility and substation are complete and operational. No other discharges are anticipated to occur as a result of the construction or operation of the solar generating facility under this alternative.

The No Action Alternative would not result in erosion, runoff, or sedimentation, as the project would likely not be constructed.

Indirect and cumulative effects on water quality are not anticipated.

Environmental Commitments

The project will need a NPDES/SDS General Stormwater Permit from the Ohio Environmental Protect Agency if Alternatives 1 or 2 are selected for construction. Land disturbances including grading, installing the solar array, and landscaping are subject to the BMPs specified in this permit. The contractor would adhere to the erosion, sediment control, and stormwater pollution prevention protocols specified in the Stormwater Management Plan and other construction plans. The proposed solar facility must also comply with local post-construction stormwater management standards. These protocols include BMPs that would prevent or minimize soil erosion, including proper seeding of disturbed areas after land disturbance activities have been completed.

Coastal Resources

(*Coastal Zone Management Act* [CZMA], Sections 307(c) and (d))

CZMA is the main Federal law that applies to the management of a nation's coastal resources. CZMA established the planning and management program for U.S. coastal land and water resources and directs Federal agencies to preserve, protect, develop, and (where possible) restore or enhance the resources of the nation's coastal zone. Coastal zones include coastal waters, adjacent shore land, islands, transitional and intertidal areas, marshes, wetlands, and beaches. No coastal zone management zones or programs are in northwestern Ohio, as detailed in information provided by the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management (NOAA n.d.).

Affected Environment

The environment affected by this project includes mostly agricultural ground in an upland setting and is not within a Coastal Zone.

Environmental Consequences

Alternative 1 would not affect a coastal zone or on adjacent shore lands that exhibit strong influence on the coastal zone.

Alternative 2 would not affect a coastal zone or on adjacent shore lands that exhibit strong influence on the coastal zone.

The No Action Alternative would not affect a coastal zone or adjacent Shore lands, as the project would not likely be constructed.

Indirect and cumulative effects on land use are not anticipated as a result of these activities.

Environmental Commitments

BMPs are not proposed.

Biological Resources

Listed Threatened and Endangered Species

(*Endangered Species Act*, 50 CFR Part 402)

The ESA was enacted to protect endangered and threatened species and to provide a means to conserve critical habitat. All Federal agencies are mandated to protect species and preserve their habitats by ensuring Federal actions do not jeopardize the continued existence of listed species. When a species is designated as threatened with extinction, a recovery plan includes restrictions on cropping practices, water use, and pesticide use is developed to protect the species from further population declines. All Federal agencies are required to implement the ESA by ensuring Federal actions do not jeopardize the continued existence of listed species.

The USFWS and the National Marine Fisheries Service are mandated the responsibility to ensure other agencies plan or modify Federal projects, so that they would have minimal impact on listed species and their habitats. Section 7 of the ESA requires projects to be checked against USFWS and State listings of critical habitat and threatened and endangered species.

The ESA defines an endangered species as one in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the near future. Threatened and Endangered designations may be applied to all species of plants and animals except pest insects. A species may be threatened at the state level. However, that same designation does not automatically apply nationwide, because species numbers may be greater in other states.

The ESA also requires the delineation of the Critical Habitat of sensitive species. Critical Habitat is defined by the ESA as areas "essential" to the conservation of listed species. Private, city, and State lands are generally not affected by critical habitat until the property owner needs a Federal permit or requests Federal funding. Consultation with USFWS would be required when Critical Habitat is encountered.

Section 7 of the ESA (referred to as Interagency Consultation) is the mechanism by which Federal agencies ensure the actions they take (including those they fund or authorize) do not jeopardize the existence of any listed species. Under Section 7, consultation with USFWS is initiated when any action the agency carries out, funds, or authorizes may affect a threatened and endangered species or critical habitat. This process usually begins as an informal consultation. In the early stages of project planning, a Federal agency approaches USFWS and requests informal consultation. Discussions between the two agencies may include which types of listed species may occur in the proposed action area and what effect the project may have on those species.

If the Federal agency, after discussions with USFWS, determines the Preferred Alternative is not likely to affect any listed species in the project site and if USFWS concurs, the informal consultation is complete, and the project moves ahead. If it appears the agency's action may affect a listed species, that agency may then prepare a Biological Assessment to assist in its determination of the project's effect on a species.

When a Federal agency determines its action is likely to adversely affect a listed species, the agency submits a request to USFWS for formal consultation. During formal consultation, the USFWS and NRCS would share information about the project and the species likely to be affected. Formal consultation may last up to 90 days, after which USFWS would prepare a Biological Opinion on whether the activity would jeopardize the continued existence of a listed species. The NRCS would have 45 days after completion of formal consultation to write the opinion.

On April 23 and 24, 2024, a United States Fish and Wildlife Service (USFWS) technical assistance letter and an Environmental Review request letter was sent to the Ohio Department of Natural Resources (ODNR) requesting any known occurrences of state or federally listed threatened or endangered species or any areas of designated critical habitat on-site or within a 1-mile radius of the proposed action (Appendix F.1 and Appendix F.2).

The ODNR provided a list of potentially sensitive species with known habitat in the general area around Pioneer (Table 3). One of the threatened mussel species, the slippershell mussel (*Alasmidonta viridis*) has been documented within the proposed AMPT 69-kV corridor, but the documentation was from weathered shells only. Surveys for extent populations have not been conducted by the ODNR.

Table 3. Summary of Protected Species.

COMMON/ *SCIENTIFIC NAMES*	STATE-LISTED STATUS	FEDERALLY LISTED STATUS	TYPICAL HABITAT DESCRIPTION[1]	HABITAT IN REVIEW AREA?	POTENTIAL IMPACTS AND AVOIDANCE DATES
Federally Protected Species – Williams County					
Indiana bat/*Myotis sodalis*	E	E	During the spring and summer (April 1 through September 30), these species of bats habitat comprise of forested/wooded areas where they usually roost under loose tree bark on dead or dying trees. Winter hibernation habitat consists of caves or, occasionally, abandoned mines. Tree cutting between October 1 and March 31 is recommended.	No	Tree clearing during exclusion period from between October 1 and March 31. If seasonal tree cutting is not possible, a mist net survey or acoustic survey may be conducted by an approved surveyor between June 1 and August 15.
Northern long-eared bat/*Myotis septentrionalis*	E	E		No	
Little brown bat/*Myotis lucifugus*	E	N/A		No	
Tricolored bat/ *Perimyotis subflavus*	E	E		No	
Copperbelly water snake/ *Nerodia erythrogaster neglecta*	E	T	The species is associated with swampy woodlands, river bottoms, and other wetlands. The species spends a considerable amount of time on land as it	No	No – suitable habitat is not present.

COMMON/ *SCIENTIFIC NAMES*	STATE-LISTED STATUS	FEDERALLY LISTED STATUS	TYPICAL HABITAT DESCRIPTION[1]	HABITAT IN REVIEW AREA?	POTENTIAL IMPACTS AND AVOIDANCE DATES
			moves between wetland habitats.		
Salamander mussel /*Simpsonaias ambigua*	T	T	Found in medium to large rivers and lakes where it is usually found in silt or sand under flat stones. Its presence is usually linked to that of the mudpuppy (*Necturus maculosus*), its host.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Whooping crane/*Grus americana*	--	Ex	Dense emergent vegetation (sedge, bulrush) in shallow (often slightly alkaline) ponds, freshwater marshes, wet prairies, or along lake margins.	No	No
Monarch butterfly		C	Varied		No
State-Protected Species					
Clubshell/ *Pleurobema clava*	E	E	Found in perennial streams with coarse sand and gravel areas of runs and riffles within streams and small rivers with relatively little silt. Surveys can only be completed from May 1 to October 1.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Northern riffleshell/ *Epioblasma torulosa rangiana*	E	E	Found in a wide variety of stream from large to small where it buries itself in bottoms of firmly packed sand or gravel.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Rayed bean/ *Villosa fabalis*	E	E	Small, shallow, headwater creeks, rivers, in and near riffles and often near aquatic vegetation. It also occurs along shallow, wave-swept shores of lakes. This species is often buried deep in sand and/or gravel, its preferred substrate.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.

COMMON/ *SCIENTIFIC NAMES*	STATE-LISTED STATUS	FEDERALLY LISTED STATUS	TYPICAL HABITAT DESCRIPTION[1]	HABITAT IN REVIEW AREA?	POTENTIAL IMPACTS AND AVOIDANCE DATES
White cat's paw/ *Epioblasma obliquata perobliqua*	E	E	The species has been found in riffles or runs of high gradient streams with coarse and stable substrate, such as gravel and pebbles. It has also been found is large rivers.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Purple lilliput/ *Toxolasma lividus*	E	E	Occurs in small to medium sized streams, and less often in large rivers and lakes, It occurs most often in well pack sand or gravel in water depths less than one meter.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Rabbitsfoot/ *Quadrula cylindrica*	E	E	Suitable habitat occurs in small to medium-sized streams and some larger rivers with substrates comprised of sand and gravel.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Sharp-ridged pocketbook/ *Lampsilis ovata*	E	N/A	Found in larger rivers with loose to firmly packed sand, gravel-sand, or silty sand substrates.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Long-solid/ *Fusconaia maculate maculata*	E	N/A	Found in small streams to large rivers (such as the Ohio River), and prefers a mixture of sand, gravel, and cobble substrates without excessive accumulation of silt and detritus.	No	No – in-stream work is not proposed, so, impacts to freshwater mussels are not anticipated.
Northern harrier/ *Circus hudsonis*	E	N/A	This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of	No	No – suitable habitat is not available.

COMMON/ *SCIENTIFIC NAMES*	STATE-LISTED STATUS	FEDERALLY LISTED STATUS	TYPICAL HABITAT DESCRIPTION[1]	HABITAT IN REVIEW AREA?	POTENTIAL IMPACTS AND AVOIDANCE DATES
			sticks on the ground, often on top of a mound. Harriers hunt over grasslands. Nesting avoidance dates- May 15 to August 1.		

Status key - E = Endangered; T = Threatened; S = Species of Concern; Ex = Experimental Population; C = Candidate; SC = Special Interest, P = Potentially Threatened Species, X = Presumed Extirpated Species; [1] Habitat descriptions sourced from multiple resources, including Michigan Natural Features Inventory, Pennsylvania Natural Heritage, New York Natural Heritage, United States Forest Service, USFWS, and NatureServe; [2] Represents the opinion of POWER biologists based on site conditions at time that aquatic resources delineations were completed

The proposed solar facility is in the vicinity of the Indiana bat (*Myotis sodalis*), and northern long-eared bat (*M. septentrionalis*), and tricolored bat (*Perimyotis subflavus*) – all federally protected species. The USFWS indicated that summer habitat for Indiana bats, northern long-eared bats, and tricolored bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed and may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. To avoid adverse effects, the USFWS recommended that tree clearing be avoided wherever possible, and that the removal of any trees three inches or more in diameter at breast height only occur between October 1 and March 31. The USFWS also recommended avoiding and minimizing impacts on wetland habitats to the extent possible. A review of ODNR Map Viewer revealed no karst or historical mining with 0.25 mile of the review area.

Indiana Bat

The Indiana bat (*M. sodalis*) is an endangered mammal under the ESA. Williams County is not within the final defined critical habitat for the species.

The range of the Indiana bat includes much of the eastern half of the United States, including northwest Ohio. Indiana bats migrate seasonally between winter hibernacula and summer roosting habitats. Winter hibernacula include caves and abandon mines. For hibernation, they require cool, humid caves with stable temperatures, under 50° F but above freezing. Very few caves within the range of the species have these conditions. Hibernation is an adaptation for survival during the cold winter months when no insects are available for bats to eat. Bats must store energy in the form of fat before hibernating. During the six months of hibernation the stored fat is their only source of energy. If bats are disturbed or cave temperatures increase, more energy is needed, and hibernating bats may starve.

After hibernation (late March to early April), Indiana bats migrate to their summer habitat in wooded areas where they usually roost under the loose tree bark of several preferred species and on dead or dying trees. Males roost alone or in small groups, while females roost in larger groups of up to 100 bats or more. Indiana bats also forage in or along the edges of forested areas. During this period, the Indiana bat frequents the corridors of small streams with well-developed riparian woods, as well as mature upland forests. It forages for insects along stream corridors; within the

canopy of floodplain and upland forest; over clearings with early successional vegetation (old fields); along the borders of croplands; along wooded fence rows; and over farm ponds in pastures. Females form nursery colonies under the loose bark of trees (dead or alive) and/or cavities, where each female gives birth to a single young in June or July. A maternity colony may include from one to 100 individuals. A single colony may use a number of roost trees during the summer – typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during summer months, but others disperse throughout the range of the species and roost individually or in small numbers in the same types of trees as females.

Disturbance and vandalism of caves, improper cave gates and structures; natural hazards such as flooding or freezing; microclimate changes; land-use changes in maternity range; and chemical contamination are leading causes of population decline in the Indiana bat.

There are no known hibernacula or roost trees within the project site. Suitable habitat is absent from the review area, so the proposed project is anticipated to have no effect on this species.

Northern Long-Eared Bat

The Northern Long-eared bat (*M. septentrionalis*) is an endangered mammal with no established critical habitat.

The Northern Long-eared bat is a forest-dependent species, generally relying on forest features for both foraging and roosting during the summer months (USFWS 2013). In particular, the Northern Long-eared bat appears to be a forest interior species that requires adequate canopy closure for both roosting and foraging habitat. The wing morphology of the Northern Long-eared bat makes it ideally suited for the high maneuverability required for gleaning-type foraging within a cluttered forest interior. Northern Long-eared bats roost singly, or in colonies, underneath bark, in cavities, or in crevices of both live and dead trees. Cooler roost locations such as caves and mines may be used by non-reproductive females and males. In general, these bats are opportunistic in selecting roosts and using tree species that retain bark, provide cavities, or crevices. Rarely, Northern Long-eared bats have been found roosting in structures such as barns and sheds; however, structures that may be used for roosting are likely located close to wooded habitat that would be used for foraging. Additionally, riparian areas are considered critical resource areas for many species of bats because they support higher concentrations of prey; provide drinking areas; and act as unobstructed commuting corridors. While Northern Long-eared bats are typically associated with forest habitats, they also have been documented in agricultural settings where forest habitats are highly fragmented. Studies in landscapes dominated by agricultural activities have also found that Northern Long-eared bat may use woodlots and riparian zones with very few acres of actual forest cover as traveling and commuting habitat.

There are no known hibernacula or roost trees within the project site. Given that the project site does not contain trees larger than 3 inches diameter at breast height (dbh) with potential for exfoliating bark, cracks, cavities, or crevices, the potential for suitable habitat is absent within the site boundaries.

The proposed action would have no effect on this species.

Tricolored Bat

The Tricolored bat (*P. subflavus*) is proposed for listing as an endangered mammal with no established critical habitat.

The Tricolored bat is one of the smallest North American bats and is distinguishable and named for its tricolored fur, which is dark at the base and tip of each strand and light colored in the middle. This is a forest-dependent species that is believed to prefer roosting habitat within larger contiguous forest habitat and is generally understood to rely heavily on available foraging areas over waterways and forest edge habitat during the summer months (USFWS *n.d.*). During the spring, summer, and fall, tricolored bats primarily roost in leaf clusters of live or recently dead hardwood deciduous trees; however, these bats have also been documented roosting on pine needles and pinecones, in eastern red cedar *(Juniperus virginiana)* trees and in human-made structures such as within barns, beneath porches, bridges, bunkers, and road-associated culverts. These bats have also been documented roosting on lichen and in Spanish moss in the northern and southern portions of its range, respectively. Neither male or female bats typically utilize cave habitats during the summer season, with male bats roosting singly, and females forming maternity colonies. Winter hibernaculum habitat includes caves, mines, tree cavities, abandoned wells, and road-associated culverts in the southern portion of the range where caves are sparse. Both males and females exhibit high roost site fidelity during both summer and winter seasons, returning to the same roosting areas year after year.

Riparian areas are considered critical resource areas for many species of bats because they support higher concentrations of prey; provide drinking areas; and act as unobstructed commuting corridors. While tricolored bats are typically associated with forest habitats, recent research indicates these species are especially dependent on structured forest habitat with natural openings and riparian areas for roosting and foraging area (Gaulke et al., 2023). Studies in landscapes dominated by agricultural activities have also found that many bats may use woodlots and riparian zones with very few acres of actual forest cover as traveling and commuting habitat.

The status of the tricolored bat was proposed to be listed as endangered on September 13, 2022, with an anticipated decision to occur within 12 months. Please note, as of the date of this report, no official federal regulations regarding this species are required.

There are no known hibernacula or roost trees within the review area. Given that the review area does not have available wooded habitat and bridges/culverts present, the potential for suitable habitat is absent from the review area.

The proposed action would have no effect on this species.

Monarch Butterfly

Specific habitat requirements have not been defined for this candidate species.

Copperbelly Water Snake

The general area is also within the range of the Copperbelly water snake (*Nerodia erythrogaster neglecta*) – a state- and federally threatened species. No critical habitat has been defined for the species.

The range for this species includes areas north of 40 degrees north latitude in Indiana, Michigan, and Ohio. This species requires habitat complexes of isolated wetlands distributed within a forested upland matrix. In the warm summer months, Copperbelly water snakes go through a state of dormancy, foraging, and shedding called aestivating. During this period, they occupy forested upland habitats. After the aestivating period, they will begin seeking hibernacula, where they remain underground and inactive generally from late October until late April. In spring and early summer, the species is more active searching for food and mates.

The proposed project would have no effect on this species.

Salamander Mussel

The area is within the range of the Salamander mussel (*Simpsonaias ambigua*) – a state- and federally threatened species. No critical habitat has been defined for the species.

The Salamander mussel is a small, freshwater mussel that is found in scattered populations from New York to Arkansas. This species typically inhabits swift-flowing rivers and streams with plenty of rocks suitable for shelter. It feeds on water particles including phytoplankton, zooplankton, rotifers, and dissolved organic matter within sediments or suspended in the water.

The proposed project would have no effect on this species.

Whooping Crane

The general area is within the range of the Whooping crane (*Grus americana*) – an Experimental, Non-essential population. Habitat during migration and winter includes marshes, shallow lakes, lagoons, salt flats, grain and stubble fields, and barrier islands. Migration habitat includes mainly sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectares for roosting. Nesting occurs in dense emergent vegetation (sedge, bulrush) in shallow (often slightly alkaline) ponds, freshwater marshes, wet prairies, or along lake margins. Pothole breeding sites in Canada are separated by narrow ridges vegetated by black spruce, tamarack, and willow. The nest is a mound of marsh vegetation rising about 20 to 50 centimeters above the surrounding water level (NatureServe 2024).

Affected Environment

The environment affected by this project includes the mostly agricultural ground devoid of native vegetation. Vegetation and intact ecological communities needed by protected species are absent within the review area. No in-stream work is anticipated with either alternative, so aquatic and wetland species would not be affected by the proposed action.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding areas. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities. No tree clearing would be required under Alternatives 1 and 2, as trees are absent from the review area. No in-stream work is anticipated under Alternatives 1 or 2. Project analyst conducted an Information for Planning and Consultation (IPaC) coordination with the USFWS (see Appendix F.1). A review of habitat requirements for the five federally protected species listed in Williams County indicates suitable habitat to support these species is not present in the review area.

The Monarch butterfly is a candidate species and not yet listed or proposed for listing. There are generally no requirements for candidate species, but the USFWS encourages all agencies and organizations to take advantage of any opportunity they may have to conserve the species.

Sixteen state-protected species were identified by the ODNR as possibly having supporting habitat in this portion of Williams County. A review of habitat requirements indicates that suitable habitat for state-protected species is absent.

There are no anticipated environmental consequences to listed threatened and endangered species as a result of the development of this project, as no federally or state-protected species would be affected by Alternative 1.

Under Alternative 2, there are no anticipated environmental consequences to listed threatened and endangered species as a result of the development of this project, as no federally or state-protected species would be affected.

The No Action Alternative would not affect these species, as the solar project would not likely be constructed.

In terms of indirect effects, construction of the proposed AMPT 69-kV transmission line could impact suitable habitat for the three federally protected bat species. BMPs limiting tree clearing from October 1 to March 31 would be implemented to reduce or eliminate potential impacts. Consequently, construction of the transmission line may affect – but not adversely affect these species. No in-stream work is anticipated with the transmission line, so impacts to the Copperbelly water snake and the Salamander mussel are not anticipated.

Environmental Commitments

The Monarch butterfly is currently listed as a Candidate species under the ESA, and regulatory agencies have not developed BMPs for this species. The following recommendations pertaining to the Monarch butterfly are therefore optional and are provided to the Village for informational purposes. Clearing or mowing of observed milkweed within the project footprint prior to the spring season would reduce potential adverse impacts to the species by removing desirable habitat for

egg-laying adults. This would reduce potential negative impacts incurred by the project on larval populations of the Monarch butterfly.

Migratory Birds

Migratory Birds Treaty Act (MBTA)

Affected Environment

The environment affected by this project includes mostly agricultural ground. Vegetation and intact ecological communities needed by protected species are absent within the review area. No in-stream work is anticipated with either alternative, so aquatic and wetland species would not be affected by the proposed action. Roosting and nesting trees are absent from both Alternatives 1 and 2 review areas.

Environmental Consequences

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land. Land-disturbance activities to develop the solar facility and substation would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities.

Alternative 1 is mostly in agricultural fields, so it is not anticipated that either alternative would affect migratory birds.

Alternative 2 is mostly in agricultural fields, so it is not anticipated that either alternative would affect migratory birds.

The No Action Alternative would have no effect on migratory birds, as the project would not likely move forward.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. It is anticipated construction of the proposed AMPT 69-kV transmission line would follow BMPs for tree clearing and in-stream work.

Environmental Commitments

Ground nesting birds are protected under the MBTA may create nests in the project site prior to construction. Based on this, typically pre-construction surveys would be conducted to identify if any nests would be disturbed by project construction. If it is necessary to relocate or alter the nests, construction may need to avoid active nests or a permit from the USFWS may need to be obtained. Section 1 of the USFWS Interim Empty Nest Policy states that if the nest is completely inactive at the time of destruction or movement, a permit is not required in order to comply with the MBTA. Appropriate lighting (downward lighting system) would be installed at the substation to reduce minimize impacts to migratory birds.

Bald and Golden Eagles

Bald and Golden Eagles Protection Act

While Bald eagles (*Haliaeetus luecocephalus*) are no longer protected under the federal ESA, the species is protected under the *Bald and Golden Eagle Protection Act*. Bald eagles may use the general area for foraging or stopover given the Project's proximity to water resources and woodland habitat in the surrounding area. There is more suitable habitat (i.e., streams and woodlands) in the surrounding area that would better serve eagles that may currently use areas within the review area. Similarly, the general area is also located within the range of the Golden eagle (*Aquila chrysaetos*). Both of these eagles are considered to have a low likelihood of occurrence within the review area, though nesting and roasting trees are absent.

Affected Environment

The environment affected by this project includes mostly agricultural ground. Vegetation and intact ecological communities needed by protected species are absent within the review area. No in-stream work is anticipated with either alternative, so aquatic and wetland species would not be affected by the proposed action. Roosting and nesting trees are absent from both Alternatives 1 and 2 review areas.

Environmental Consequences

Based on the land-use history associated with row-crop production, there are no anticipated environmental consequences to Bald or Golden eagles as a result of the development of either Alternative 1 or 2. The No Action Alternative would have no effect on Bald or Golden eagles, as the project would not likely move forward.

Impacts would be absent to negligible and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not extend to surrounding land. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities. No potential roost trees occur within the project site.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields. It is anticipated that established protocols concerning bald and golden eagles would be followed if these species are encountered during this project.

Environmental Commitments

If an eagle is observed within 600 feet of the project site, the USFWS would be consulted to determine the best approach to protect the species.

Invasive Species

(EO 13112, Invasive Species)

Non-native invasive plants are species that have the ability to spread into natural habitats where they can alter plant communities by displacing native species. Non-native invasive plant species are introduced into the United States from other geographic regions, so there are few biological

agents to control their populations. "Noxious weeds" are non-native invasive plants designated by state and county weed laws that are injurious to public health, agriculture, recreation, wildlife or any public or private property. In sufficient numbers, they can:

- Reduce biological diversity;
- Increase fire risk;
- Poison humans, wildlife, and livestock; and
- Reduce the quality of forage.

Management of invasive plants is regulated by the *Federal Noxious Weed Act* of 1974, as amended (7 U.S.C 2801 et seq.), requires cooperation with state, local, and other federal agencies in the application and enforcement of all laws and regulations relating to management and control of noxious weeds. EO 13112 (1999) directs federal agencies to reduce the spread of invasive plants. Ohio's noxious weed law is included in provisions under Rule 901:5-37 --Prohibited noxious weeds, Ohio Administrative Code 901:5, Chapter 901:5-37 – Noxious Weeds.

Affected Environment

The environment affected by this project includes mostly land used in commodity-crop production. Vegetation and intact ecological communities needed by protected species are absent within the review area. The review area is largely devoid of natural vegetation, as it is actively farmed. Construction, operation, and maintenance of the solar facility could result in the short- and long-term loss of some limited non-native vegetation. Following the completion of construction, most of the solar facility site would be re-vegetated with herbaceous vegetation to minimize wind and water erosion, to provide competition with noxious weeds, to enhance aesthetics, and to allow the site to be used in some sort of agricultural use.

Environmental Consequences

Impacts would be negligible to minor and limited to the duration of construction under Alternatives 1 and 2 and absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be site-specific and would not likely extend to surrounding land. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances would be limited in duration to the construction, operation, and reclamation phases and would be of an intensity related to construction activities. Disturbed soils associated with construction and maintenance activities would provide a likely development for noxious weeds. The project would be planned to avoid and minimize impacts to native vegetation and surrounding agricultural fields.

Under Alternative 1, construction, operation, and maintenance of the solar facility would result in the short- and long-term loss of non-native vegetation. A vegetation management plan would be developed and implemented using BMPs. The goal of the plan would be to eliminate or reduce the potential for invasive species. The solar facility site would be revegetated according to this plan.

Under Alternative 2, construction, operation, and maintenance of the solar facility would result in the short- and long-term loss of non-native vegetation. A vegetation management plan would be

developed and implemented using BMPs. The goal of the plan would be to eliminate or reduce the potential for invasive species. The solar facility site would be revegetated according to this plan.

Under the No Action Alternative, no increase in weed pressure would occur, as the project would not likely be constructed.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields. BMPs for introduction of weeds and regular management are likely part of the construction and operation of the transmission line.

Environmental Commitments

A vegetation management plan would be developed for the project, and appropriate invasive species BMPs would be identified and implemented. These may include – but are not limited to – seeding of disturbed areas after land disturbance activities have been completed with invasive-species-free seed mixes, and plantings of vegetated buffers around the perimeter of the project site where necessary. The plan could also include use of native pollinator species. Any areas where seeding was not successful would be re-seeded, as necessary. Additionally, selective herbicide application may be used within areas of the project experiencing any unwanted invasive species. Any such application would occur according to product instructions and personal safety practices. The project site would be seeded with an appropriate seed mix after construction to eliminate and control erosion and spread of noxious weeds.

Cultural Resources and Historic Properties

(*National Historic Preservation Act* [NHPA], 36 CFR Part 800]

Cultural Resources are often defined as the tangible remains of past human activity and may include buildings and structures; prehistoric and historic archaeological sites; canals; or landscapes. These non-renewable resources may yield unique information about past societies and environments and provide answers for modern day social and conservation problems. Although many have been discovered and protected, many more remain undiscovered or unprotected.

Federal actions are subject to the review requirements of Section 106 of the NHPA. The review process involves consultation with various agencies, groups and individuals. The goal of consultation is to identify historic properties potentially affected by the undertaking; assess its effects; and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. Historic Properties are those properties that are listed on the National Register of Historic Places (National Register) or are eligible for listing. A property is considered eligible when it meets specific criteria established by the National Park Service (36 CFR Part 63).

Compliance with Section 106 of the NHPA is required since this project is a federal action involving a guaranteed loan through a USDA program. Under Section 106 of the NHPA, a Federal agency must consider direct and indirect impacts of any action they fund or permit on properties listed on or evaluated as eligible for listing on the National Register of Historic Places (NRHP). Construction and installation of a structure or practice could impact an archaeological site through earthmoving activities such as trenching, grading, and grubbing. The NHPA implementation

regulations are found at 36 CFR 800, Protection of Historic Properties. Compliance with Section 106 of NHPA must be followed in planning for most agency activities where there is some potential to impact a historic property and in the ongoing management of agency resources.

The cultural and archaeological resources inventories for the Pioneer Solar Project were conducted on three separate occasions from 2022 to 2024. In 2022, POWER Engineers conducted an inventory for the Pioneer Phase 1 Reinforcement Project for American Municipal Power Transmission, LLC (Favret and Kall 2022). This inventory included the Kexon Substation. In 2023, POWER Engineers conducted a supplemental inventory for the Pioneer Phase I Reinforcement Project that involved a reroute of the corridor (Favret and Kall 2023). This inventory included eastern portions of the Central and South units of Alternative 1 and the eastern portion of Alternative 2. Personnel from the Mannik Smith Group conducted a Phase I inventory for all of the North Unit of and previously unsurveyed areas in the Central and South units of Alternative 1 and Alternative 2 (Hickle et al. 2024).

The results, conclusions, and recommendations presented in *Phase I Cultural Resources Survey for the Pioneer Phase 1 Reinforcement Project, Williams County, Ohio* (Favret and Kall 2022), *Phase I Archaeological Reconnaissance Survey, for the Phase I Reinforcement Project CR 15 Re-Route, Williams County, Ohio* (Favret and Kall 2023, and *Results of a Phase I Cultural Resources Survey for the Proposed Pioneer Solar Project in Madison Township (Township 9 South, Range 2 West, Section 22), Williams County, Ohio* (Mannik Smith Group 2024) are incorporated into this review by reference.

Affected Environment

National Register of Historic Places

Authorized by the NHPA and administered by the National Park Service in collaboration with the Ohio Historic Preservation Office (OAHP), the National Register is the official list of the country's historic places worthy of preservation and recognition. Under Section 106 of the NHPA, a federal agency must consider direct and indirect impacts of any action they fund or permit on properties listed on or evaluated as eligible for listing on the National Register (For purposes of Section 106 of the NHPA, a property evaluated as eligible is treated as though it were listed on the National Register.). In Williams County, seven properties are currently listed on the National Register (NPS 2020a). No National Register property occurs within or in proximity to the review area. The nearest National Register properties are the Kunkle Log House located 3.0 miles southeast of the review area. This property would not be directly or indirectly affected by installation of the proposed solar facility.

Standing Structures and Buildings

Field reconnaissance was undertaken for the project in the spring of 2024. This reconnaissance included review of all previously surveyed properties and the documentation and evaluation of previously unrecorded buildings and structures over 50 years of age within the direct Area of Potential Effect (APE). The APE includes the 95.7 acres of land where the substation and solar field will be constructed and the additional 500-foot radius surrounding these facilities within which (direct) visual effects to historic properties would result.

Site reconnaissance was conducted through on-site observation. All identified properties 50-years or older (including one previously recorded property) were individually photographed and recorded on Ohio Historic Inventory (OHI) forms. Photographs were taken from as unobstructed a perspective as possible at three-quarter view, and all photographed properties were located on field maps.

Three architectural resources (WIL0051303, WIL0051403, and WIL0051503) were documented and evaluated for significance within the APE – all of which were determined to be not eligible for listing on the National Register (Hickle et al. 2024) . This included one single-family house adjacent to Alternative 1 and inside Alternative 2. No architectural resources were identified within the Kexon Substation component of the project (Favret and Kall 2022). Most surveyed properties are 20th century buildings; construction dates range from 1878 to 1969. The single previously surveyed property is a private residence at the intersection of County Road 15 and U.S. Highway 20.

Most properties surveyed for this project are rural residential types located on large agricultural parcels of land and including one or more agricultural-related outbuildings. Single residences identified within the project APE were constructed between 1900 and 1969. The majority of dwellings were constructed in 1920. None of the identified and evaluated historical resources were assessed as significant or eligible for listing on the National Register. In general, these resources lacked: 1) known historical associations; 2) integrity due to modifications and additions; and 3) distinctive design features and architectural elements. None would contribute to a historic district.

Archaeological Resources

The entire review area was intensively inventoried for archaeological resources by specialists on two separate occasions in 2022 and 2024. The 2022 inventory included the Kexon Substation and the eastern portions of the South Unit of Alternative 1 and Alternative 2. The second inventory was performed by Mannik Smith Group for previously un-inventoried areas for Alternatives 1 and 2. This review included areas outside Alternatives 1 and 2 and examined areas north and west of the wastewater treatment lagoon.

The archaeological inventories were conducted in accordance with the guidelines developed by the OSHPO (Ohio State Historic Preservation Office 2023). In areas where ground surface visibility was less than 50 percent (such as domestic yard areas or woodlots), 20-x-20-inch shovel tests were excavated at 50-foot intervals and to depths of approximately 20 inches. Excavated soil was screened through ¼-inch wire mesh, and recovered artifacts were bagged and labeled according to location. If a shovel test showed the presence of artifacts, further delineation of the site boundaries was performed. When surface artifacts or features were not present to indicate site boundaries, shovel tests were excavated at a distance of 25 feet in cardinal directions from positive shovel test to document the size of the archaeological site. In areas where ground surface visibility was greater than 50 percent (such as recently plowed agricultural fields), systematic pedestrian surface survey was conducted at approximately 30-foot intervals.

Additionally, the project area and its immediate vicinity were visually inspected and photographically documented. Members of the field crew took detailed notes about soil colors,

textures, inclusions, stratigraphy, and other relevant information. When cultural material was identified, site boundaries were defined and field site numbers were assigned.

As a result of the 2022 and 2024 inventories, 10 archaeological resources were documented and evaluated within the solar component of Alternatives 1 and 2. No archaeological resources were identified within the Kexon Substation component of Alternatives 1 and 2. Because artifacts are limited to a disturbed context within the historical plowzone and because of their limited research potential, none of the archaeological resources are assessed as significant archaeological resources or eligible for listing on the National Register when evaluated against Criterion D. None have any potential for unmarked graves or burials. All could be directly affected by the project depending upon the selected alternative. The OSHPO was consulted on June 24, 2024, regarding project effects (Appendix G.1). Only July 11, 2024, they concurred with the determination that no historic properties would be affected by the proposed action (Appendix G.2).

Native American Consultation

In addition to the agencies listed above, the following Tribal agencies were given the same opportunity to identify and or comment on the identification of any historic properties and or culturally sensitive properties and or areas within the review area (Appendix G.3 and Appendix G.4). These Tribal agencies are registered with the U.S. Department of Housing and Urban Development's (HUD) Tribal Directory as having interest based on state and county location of the project. As a result, the following six (n = 9) Tribes/Organizations were contacted:

Citizen Potawatomi Nation, Oklahoma	Eastern Shawnee Tribe of Oklahoma	Forest County Potawatomi Community, Wisconsin
Hannahville Indian Community, Michigan	Miami Tribe of Oklahoma	Ottawa Tribe of Oklahoma
Peoria Tribe of Indians of Oklahoma	Pokagon Tribe of Potawatomi Indians, Michigan and Indiana	Prairie Band Potawatomi Nation

A native consultation was conducted on June 13, 2024, using USHUD Tribal Assistance portal to identify Native American tribes and governments that may have an interest in the project. As of the date of this Draft EA, consultation with American Indian tribes and the OSHPO is on-going. The results of the Section 106 consultation will be included in the Final EA prepared for the proposed action. As of July 15, 2024, the tribe providing any comments on the project was the Pokagon Band of Potawatomi Indians. They provided a No Adverse Effect determination on any historic, religious, or culturally significant resources to the tribe (Appendix G.5.)

Environmental Consequences

Impacts would be minor (No Historic Properties Affected) and limited to the duration of construction under Alternatives 1 and 2 for standing historical resources (35-year life of the facility) in most cases and permanent for archaeological resources and one historical resource. Impacts would be absent under the No Action Alternative. Environmental consequences of the

proposed solar facility and substation would be site-specific and would not likely extend to surrounding land. Land-disturbance activities to develop the solar facility would occur within the boundaries of the project site. Land disturbances are limited in duration to the construction and operation periods and would be of an intensity related to construction activities.

Under Alternative 1, no property listed on or eligible for listing on the National Register would be directly or indirectly affected. This alternative would directly impact 10 prehistoric archaeological sites. Three historical/architectural resources are within the 500-foot visual impact portion of the APE. The archaeological sites and historical/architectural resources were evaluated as not significant and not eligible for listing on the National Register.

Under Alternative 2, no property list on or eligible for listing on the National Register would be directly or indirectly affected. This alternative would directly impact five archaeological sites and one architectural resource. Two historical/architectural resources are within the 500-foot visual impact portion of the APE. None of the cultural or archaeological resources were evaluated as significant or eligible for listing on the National Register.

The No Action Alternative would not affect potentially significant archaeological and cultural resources, as the project would not likely advance.

Based on the Phase I cultural resources assessment prepared for proposed AMPT 69-kV transmission line, which included the review area in total, alternatives 1 and 2 would not indirectly affect any property listed on or eligible for listing on the National Register. The proposed AMPT 69-kV transmission line could impact one historic-artifact scatter evaluated as not eligible for listing on the National Register. The OSHPO previously concurred that the proposed AMPT 69-kV transmission line would not affect any historic or potentially historic properties (Favret and Kall 2022, 2023).

Environmental Commitments

In the event that unanticipated discoveries of human remains or cultural resources should occur during construction or operations, these activities would cease immediately. Coordination would be required between RUS, Ohio State Historic Preservation Office, and the tribes before further action is taken.

Air Quality and Greenhouse Gases

(*Clean Air Act* [CAA], Sections 176(c) and (d), and 40 CFR Parts 6, 51, and 93)

The CAA, its amendments, and NEPA require air quality impacts be addressed in the preparation of environmental documents. The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six "criteria" pollutants:

- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Ozone (O_3)
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Sulfur dioxide (SO_2)

- Lead

The NAAQS also defines the allowable concentrations that may be reached (but not exceeded) in a given time period to protect human health (primary standard) and welfare (secondary standard) with a reasonable margin of safety.

Primary and secondary standards for NAAQS have been established for most of the criteria pollutants. The EPA is authorized to: 1) designate those locations that have not met the NAAQS as non-attainment (not in compliance/violation of any of the NAAQS for the six criteria pollutants); and 2) classify these non-attainment areas according to their degree of severity. States are required to submit an annual monitoring network plan to EPA. The network plans provide for the creation and maintenance of monitoring stations, in accordance with EPA monitoring requirements specified in 40 CFR Part 58.

Greenhouse gases (GHGs) are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. GHGs are both naturally occurring and generated by human activity. GHGs include carbon dioxide (CO_2), the most abundant GHG, as well as methane, nitrous oxide and other less-common gases. Major GHG sources include transportation, industrial activities, electric power, commercial and residential land uses, and agriculture. Increased atmospheric concentrations of GHGs are considered a main contributor to global climate change.

Affected Environment

Historically and currently, Williams County is in compliance with all air quality standards and is currently in attainment for the NAAQS for carbon monoxide, nitrogen oxide, particulate matter, and ozone (USEPA n.d.c.).

The potential for the atmosphere to disperse emissions of air pollutants is influenced by weather conditions. Regional climate in the local land resource area (MLRA 67B) of the project site is characterized by average annual precipitation of 12 to 18 inches (305 to 455 millimeters). Precipitation generally increases from west to east within the land resource area. This rainfall occurs as frontal storms in spring and early summer; in the late summer high-intensity convective thunderstorms are common. Maximum precipitation occurs from the middle of spring through late autumn. In winter, precipitation occurs as rain and snowfall. The average annual temperature is 45 to 55 degrees Fahrenheit (7 to 13 degrees Celsius). On average, the freeze-free period is 160 days but ranges from 135 to 190 days (USDA 2006).

Greenhouse gases (GHGs) are compounds that trap and convert sunlight into infrared heat; they are found naturally within the earth's atmosphere. In this way, GHGs act as insulation in the stratosphere and contribute to the maintenance of global temperatures. Temperatures are increasing on earth as a result of increasing concentrations of atmospheric GHGs. This is commonly known as global warming, which is associated with climate change. Negative economic and social consequences are anticipated as a result of changes in weather (e.g., more intense hurricanes, greater risk of forest fires, flooding).

Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the most common GHGs emitted from natural processes and human activities. In the US, the primary GHG emitted as a result of human activities is CO_2, which represents approximately 85 percent of total GHG emissions. Fossil fuel combustion accounts for the largest source of CO_2 and of overall GHG emissions. CH_4 emissions, which mostly result from enteric fermentation (digestion) associated with domestic livestock, decomposition of wastes in landfills, and natural gas systems, have declined from 1990 levels. N_2O emissions in the US primarily result from agricultural soil management and mobile source fuel combustion.(EPA 2019b).

Environmental Consequences

Impacts on local and regional air quality may include short-term, temporary, and localized increases in PM_{10} (fugitive dust) during construction and solar array installation activities. Because these increases would not exceed the applicable thresholds, minor adverse impacts are expected from the installation activities. The project may also have a small impact on the local ambient air temperature due to heat diffusion and light reflected from the solar modules. Any air temperature increases would be restricted to the air immediately around the project site and only during sunny days. The solar facility would use photovoltaic modules to produce electrical energy without fossil fuel. The electrical energy generated by the Pioneer Solar Project would reduce the need for electricity generated with fossil fuels or other resource intensive generation methods. Impacts are expected to be positive.

Under Alternative 1, no significant affects to the air quality and contribution to GHGs are expected. No significant affects to the air quality and contribution to GHGs are expected under Alternative 1.

Under Alternative 2, no significant affects to the air quality and contribution to GHGs are expected. No significant affects to the air quality and contribution to GHGs are expected under Alternative 2.

The No Action Alternative would not impact air quality or result in GHG emissions, as the project would not be constructed.

Indirect and cumulative effects are not anticipated as a result of these activities.

Environmental Commitments

BMPs associated with particulate matter with a diameter of less than or equal to 10 microns would be employed to minimize blowing dust during construction and operations. This could include at a minimum:

- Using water or wetting agents to control dust
- Having a wheel wash station and/or crushed stone apron at egress/ingress areas to prevent dirt being tracks onto public streets.

Socioeconomics and Environmental Justice

Title VI of the *Civil Rights Act* of 1964 (Title VI) ensures that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving Federal financial assistance on the basis of race, color, national origin, age, sex, and disability (42 USC 2000d et seq.). EO 12898 on environmental justice directs that programs, policies, and activities do not result in a disproportionately high and adverse human health or environmental effect on minority and low-income populations (59 FR 7629). In addition to the EO, a Presidential Memorandum directs agencies to incorporate environmental justice concerns in their NEPA processes and practices. *Environmental Justice: Guidance under the National Environmental Policy Act* provides guidance for addressing environmental justice. The following definitions were used to define minority populations and low-income populations:

- Minority individuals. Individuals who identify themselves as members of the following population groups: American Indian or Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander, Black, Hispanic, or two or more races.
- Minority populations. Minority populations are identified where: 1) the minority population of an affected area exceeds 50 percent or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. For the purposes of this analysis, "meaningfully greater" is defined as greater than 20 percent of the minority population percentage in the general population of the larger geographical region within which the affected area is located.
- Low-income populations. Low-income populations in an affected area are identified with the annual statistical poverty thresholds from the USCB Current Population Reports, Series P-60, on Income and Poverty. In this analysis, low-income populations are identified where: 1) the population of an affected area exceeds 50 percent low-income based on the Census data or 2) the percentage of low-income population in the affected area is greater than 20 percent of the low-income population percentage in the larger geographical region within which the affected area is located.

Data from the USCB is used to assess minority and low-income populations within an affected area of a project. For the Project, minority populations are identified by assessing the racial and ethnic statistics of the community in comparison to the general population of Williams County. If a community has a minority population greater than fifty percent or that is meaningfully greater than the general population of Williams County, it is identified as having a minority population. A census block group is the geographic unit used to identify environmental justice communities of concern. If one of the two criteria described above for either minority or low-income populations are met, a census block group would be considered an environmental justice community. As the review area falls within Williams County, it is the geographical impact area for environmental justice.

Affected Environment

Williams County (3.8 percent) has a lower minority population lower than Ohio (19.1 percent), and a lower percentage of its population below the poverty level (12.3 percent) than the state average (13.4 percent). A summary of the population demographics is shown in Table 4. This demographic information was confirmed using the USEPA's environmental justice tool available on their website (https://www.epa.gov/ejscreen). This tool identifies environmental justice communities and their associated demographics (Appendix H).

Table 4. Demographic Information for Williams County and Ohio (2022).

Category	Williams County	Ohio
Total Population	36,591	11,785,935
Under 18 years	21.7%	21.8%
Under 5 years	5.6%	5.6%
White (not Hispanic or Latino percent)	96.2%	80.9%
Black or African American	1.5%	13.3%
American Indian and Alaska Native	0.3%	0.3%
Asian	0.6%	2.7%
Native Hawaiian and Other Pacific Islander	0%	2.7%
Hispanic or Latino[1]	5.4%	4.5%
Two or more races	1.4%	2.7%
High School Graduate and Higher	91.1%	91.4%
Bachelor's Degree or Higher	14.4%	30.4%
Median Household Income	$60,632	$66,990
Below Poverty Level	12.3%	13.4%

[1] – Hispanics can be any race and are included in applicable race categories

To evaluate potential social justice impacts, it was analyzed whether the construction of the recommended alternative would have a disproportionate impact on minorities, low-income households, or children under the age of 18. Socioeconomic data from Ohio was compared to socioeconomic data for Williams County to assess impacts on minority populations or low-income households. Additionally, the EPA's environmental justice screening and mapping tool was consulted to determine if the review area was in an environmental justice census block.

Environmental Consequences

Impacts would be negligible and limited to the duration of construction and operation under Alternatives 1 and 2. Impacts would be absent under the No Action Alternative. Environmental consequences of the proposed solar facility and substation would be limited to the Pioneer area. Approximately 3.8 percent of the population in Williams County is comprised of minority individuals. This does not exceed the minority population of Ohio (19.1 percent). In terms of poverty, 12.3 percent of households in Williams County are below the poverty line as compared to 13.4 percent for the state. Approximately 21.7 percent of the population of Williams County are children under the age of 18, which is slightly higher than the state average of 21.8 percent. Williams County does not appear to have a disproportionate number of minority individuals,

households below the poverty line, or children under the age of 18 in relation to the state. Given these facts this project would not have a significant effect on any minority populations, low-income populations, or children under the age of 18 in the review area. Finally, no minority or disadvantage community or population would be relocated or displaced by the project.

A variety of operation and maintenance related activities are anticipated as a result of implementing Alternatives 1 or 2. These activities would directly affect employment, industry, and commerce in surrounding areas. Short-term, beneficial, direct impacts are anticipated for the local economy as a result of construction activities. Economic stimulation may also result in positive indirect impacts to the general area. Under the No Action Alternative, socioeconomic conditions would likely remain unchanged from current conditions.

Benefits of this alternative include decreasing the demand for and use of fossil fuel-based energy for residents and businesses located in Pioneer and surrounding areas. Another benefit would be direct energy cost savings to participating Village's customers (i.e., residential and commercial clients). Consequently, the communities within the Village's service territory would enjoy an increase in the long-term sustainability of their energy use. This alternative would also provide beneficial economic impacts by increasing temporary and permanent jobs as well as a tax base for Williams County.

Significant impacts are not anticipated for the conversion of farmland as a result of the Alternatives 1 or 2. The solar facility would be located on land that the Village leases to local producers. While leases would lose access to farmland under Alternatives 1 and 2, the Village could integrate an agrivoltatic operation within the solar facility if it is practical. Approximately 282,912 acres of land in Williams County is dedicated to farming. The approximately Village Solar Project comprises less than 0.01 percent of the total farmed land in the county. As such, the reduction in farmland would not constitute a significant change to the local economy.

Local employment would occur in the construction trades under Alternatives 1 and 2. These impacts are anticipated to be temporary. The Village would strive to fill as many local jobs as possible. Benefits associated with construction under Alternatives 1 and 2 include the local or regional purchase of construction materials, equipment, and services in the area as well as a temporary increase in employment and income from hiring a construction force.

Once completed, the proposed Village's solar facility would have minimal to no impact on local traffic patterns, businesses, or populations. These and other aspects of social impact have been considered by the local community. The construction, operation, and maintenance of the proposed solar energy facility are not anticipated to have environmental justice or social effects on the surrounding populations and would not disproportionately affect minority or low-income communities.

No high and adverse human health or environmental impacts are anticipated as a result of the construction or operation of the proposed project. As a result, there would be not disproportionately high and adverse effects on minority or low-income populations – including but not limited to – displacement, relocation, or loss of businesses.

Under Alternative 1, the Pioneer Solar Project is expected to have positive economic benefits to the Pioneer community

Under Alternative 2, the Pioneer Solar Project is expected to have positive economic benefits to the Pioneer community

The No Action Alternative could result in a negative economic outcome, as Pioneer's existing electrical system would not be updated.

Indirect and cumulative effects are not anticipated as a result of these activities.

Environmental Commitments

BMPs are not proposed.

Miscellaneous Issues

Noise

The review area is surrounded by agricultural and undeveloped land, with some rural residential and commercial buildings in the area. The nearest community is Pioneer, Ohio, which is 2.0 miles to the west. As the project site is located in a rural area along U.S. Highway 20, noise levels are moderately high, with 120 cars per hour on average passing the southern edge of the review area. Noise levels are generally higher during peak travel times during the day with a decrease during the evening and night. The Village's wastewater treatment facility is adjacent to both Alternatives 1 and 2.

Noise is defined as unwanted or unwelcome sound. Noise, which is typically caused by human activity, includes sound that disrupts normal activities and diminishes the quality of the environment. The following considerations influence the community response to noise: the intensity of the sound source, its duration, the proximity of noise-sensitive land uses, and the time of day the noise occurs (i.e., higher sensitivities would be expected during the quieter overnight periods). Various units including decibel (dB), A-weighted decibel scale (dBA), sound-level equivalents (Leq), day-night average sound levels (L_{dn}), and percentile are used to measure noise levels.

The decibel is the most common unit of sound, and the dB scale is an unweighted logarithmic unit of measure based on sound pressure or intensity. The dBA scale is based on intensity and weighted for frequency. The human ear does not perceive all frequencies in the same way, as dBA increases, hearing is more likely to be damaged. The dBA is the most common measurement of sound and environmental noise; it is a logarithmic scale that ranges from 0 dBA to about 140 dBA and approximates the range of human hearing. The approximate noise levels of common activities/events measured in dBA are:

- 0 dBA - the softest sound a person can hear with normal hearing
- 10 dBA - normal breathing
- 20 dBA - whispering at 5 feet
- 30 dBA - soft whisper

- 50 dBA - rainfall
- 60 dBA - normal conversation
- 110 dBA - shouting in ear
- 120 dBA - thunder

OSHA's occupational noise exposure standard states that when sound levels exceed 90 dBA over an 8-hour exposure period, protection against the effects of noise exposure must be provided for employees when sound levels exceed 90 dBA over an 8-hour exposure period. These must consist of feasible administrative or engineering controls. Personal protective equipment must be provided and used to reduce exposure if the implemented controls do not reduce sound noise to acceptable levels. An employer would be required to implement a hearing conservation program if employee noise exposure were equal to or in excess of 85 dBA, which is the action level of an 8-hour time-weighted average sound level. This program has the following objectives: to prevent initial occupational hearing loss, preserve and protect remaining hearing, and equip workers with training and hearing protection devices. Periodic area and personal noise monitoring, performance and evaluation of audiograms, provision of hearing protection, annual employee training, and record keeping would be required under the hearing conservation program (OSHA 2002).

The EPA and the U.S. Department of Housing and Urban Development (HUD) Noise Guidebook both provide guidance on community noise. The EPA guidance contains criteria for sound levels affecting residential land use: an L_{dn} less than 55 dBA for exterior levels and an L_{dn} less than 45 dBA for interior levels. The HUD Noise Guidebook recommends that exterior areas of frequent human use follow the EPA guideline of 55 dBA L_{dn} (HUD 2009). Consequently, 55 dBA L_{dn} is considered the threshold for determining potential sound level impacts at sound-sensitive receivers like residences in the absence of a quantified sound level threshold from local regulations. The *Noise Control Act* of 1972, as amended, directs State and local government agencies to comply with Federal, State, and local noise requirements. This act delegates authority to the states to regulate environmental noise and directs.

Affected Environment

Sources that contribute to the ambient noise in the vicinity of the project include man-made noise such as vehicular traffic, machines used in agricultural practices, roadways, rural residential sounds, operation of the wastewater treatment facility, and natural sounds (wind). Some land uses are considered more sensitive to intrusive noise than others because of the activities typically involved at those receptor locations. Sensitive human noise receptors normally include residences, schools, libraries, religious institutions, hospitals, nursing homes, daycare centers, and other businesses. A cursory desktop review of the review area indicates that schools and churches, multiple residences, and area businesses are located within a 1 mile of the review area. No hospitals are located within a 2-mile radius. The area immediately surrounding the review area is mostly rural.

An EPA EJScreen was performed for two alternatives to determine traffic noise effects. The screen shows an intermediate traffic proximity index of 50 to 60 percentile in the state. Traffic around this area is considered to be intermediate, indicating average noise levels. The frequent number of

motorists around the project site indicates that traffic noise from surrounding streets is average to slightly above average.

Environmental Consequences

Under Alternative 1, noise impacts are anticipated to be minor, and temporary for residents living in proximity to the project site. Impacts to the ambient noise environment would be limited to the construction phase of the project. Once construction is completed, minor permanent impacts to noise would result from inverters and the substation transformer. Noise from the inverters is anticipated to be approximately 58 dB; but there will be no noise after sunset or at distances of more than 150 feet from the inverters.

Under Alternative 2, noise impacts are anticipated to be minor, and temporary for residents living in proximity to the project site. Impacts to the ambient noise environment would be limited to the construction phase of the project. Once construction is completed, minor permanent impacts to noise would result from inverters and the substation transformer. Noise from the inverters is anticipated to be approximately 58 dB; but there will be no noise after sunset or at distances of more than 150 feet from the inverters.

The No Action Alternative would not result in an increase in noise, as the project would not likely be constructed.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. It is in an industrial area over 0.25 miles from a densely populated area. The construction of the proposed AMPT 69-kV electrical transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields and is not expected to have a significant increase in noise.

Environmental Commitments

The following BMPs are recommended during the construction phase of the project:

- Construction activities would be limited to 8 am to 5 pm Eastern Standard Time;
- The contractor selected for this project would ensure construction workers follow all local and federal workplace safety laws;
- Restricting speed to less than 10 mph in the work zone; and
- Buffering zones between the truck routes and residential areas, to the extent practicable.

Transportation

Affected Environment

The review area is in rural, north-central Williams County, Ohio, east of Pioneer. Land use around the review area is mostly agricultural, residential, and the water treatment lagoons. The primary access road to the U.S. Highway 20, County Road 15, and the access road through the wastewater treatment lagoon. Access for construction traffic to the area from outside the rural area would occur from U.S. Highway 20 and Interstate 90 to the south. U.S. Highway 20 is classified as a rural principal arterial corridor.

The Ohio Department of Transportation (ODOT) measures the Traffic Count Data System (TCDS) data throughout the state. This nearest station (Station 3986) is located at County Road 15 and U.S. Highway 20 has a AADT of 2,939 vehicles per day in 2023 at this location (ODOT 2024).

Environmental Consequences

Impacts from implementation under Alternatives 1 and 2 are anticipated to be minor and would be limited to the construction phase of the project. There may be a minor increase in motor vehicle traffic during the construction phase of this project, and approximately two to three vehicle trips per month would be created by the operation and maintenance of the solar facility. This increase would be minimal and is not anticipated to pose any issues or concerns among area residents. The slight increase in traffic would not provide an undue burden on emergency responders or on the infrastructure itself.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69 kV electrical transmission line would be within or adjacent to public and private rights-of-way or along agricultural fields and would be limited to the install phase of the project.

Environmental Commitments

The contractor would obtain a State Highway Access Permit and/or Notice to Proceed from the Ohio Department of Transportation for the access driveway connection to U.S. Highway 20 and would comply with all other local and federal safety regulations and obtain other necessary permits, including likely signs warning of construction traffic entering the highway. BMPs detailed in the Civil Construction Plans would be used to prevent or minimize the track-out of sediment from the construction site.

Airport Hazards

(*Clear Zones and Accident Potential Zones*, 24 CFR Part 51D)

The National Plan of Integrated Airport Systems was reviewed for civilian and commercial service airports near the review area, as activities located within 2,500 feet of a civil airport or 15,000 feet of a military airport would require consultation with the appropriate airport operator.

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77. The review area is located approximately 13.5 miles north of the Williams County Airport and is not located near military airfield control towners, air traffic areas, or helicopter landing zones. An analysis of solar glint/glare and potential ocular impacts was not conducted for the review because the Federal Aviation Administration's (FAA's) Policy for Solar Energy System Project on Federally Obligated Airports and Department of Defense (DoD) guidance (DoD 2014) do not apply to the Project, as modeling is only required for those solar arrays installed at federally-obligated airports. Additionally glare or glint is not expected to be observed from the Williams County Airport traffic control tower or would glare be observed along the final approach path for an airplane, as defined by 2 miles from 50 feet above the landing threshold using a standard 3° glidepath. The project

would not exceed obstruction standards and would not be a hazard to air navigation. FAA notification would not be required (Appendix I).

Affected Environment

The review area is a largely rural area consisting of a mix of large agricultural fields, farmsteads, and rural businesses. The Williams County Airport – located on the eastern edge of Bryan approximately 13.5 miles south – is the closest airport to the review area (Figure 13).

Environmental Consequences

Impacts from implementation under Alternatives 1 and 2 are anticipated to be absent and limited to the operational life of the facility.

Alternative 1 would not affect airport operations or create unsafe conditions for aviation traffic.

Alternative 2 would not affect airport operations or create unsafe conditions for aviation traffic.

The No Action Alternative would not affect air traffic, as the project would not likely advance.

Indirect and cumulative effects on land use are not anticipated as a result of these activities.

Environmental Commitments

BMPs are not proposed.

Visual Resources

Visual resources include both natural and man-made attributes and embody the visual characteristics of a place. These resources can influence how an observer experiences a particular location. Viewer groups can include local residents, people traveling on U.S. Highway 20, and people who work in the area. A viewshed describes the environmental context and visual character that can be seen from a certain vantage point. The viewshed (or the area that can be viewed from a particular point) is an expansive, 360 degree view. The existing wastewater treatment facility is in the mid-ground and background the traveling public along U.S. Highway 20 and the foreground, mid-ground, and background for local residences. Visually sensitive areas include regions of high scenic beauty, scenic overlooks, scenic highways, wilderness areas, integral vistas, parks, national forests, and along wild and scenic, recreational, and/or national inventory rivers.

Affected Environment

The review area is a largely rural area consisting of a mix of large agricultural fields, farmsteads, and rural businesses. The surrounding region is characterized by commercial, industrial, and municipal facilities, agricultural land and residential properties. No high scenic beauty, scenic overlooks, national or state-designated scenic byways, wilderness areas, integral vistas, parks, national forests, significant geological or natural features, historic properties or landmarks, and wild and scenic, recreational, and/or national inventory rivers are present within the review area.

The visual setting is currently comprised of undeveloped agricultural land. Based on the topographic maps and site reconnaissance, the review area has a general topographic gradient to the north towards the East Branch of the St. Joseph River. Surrounding properties largely consist

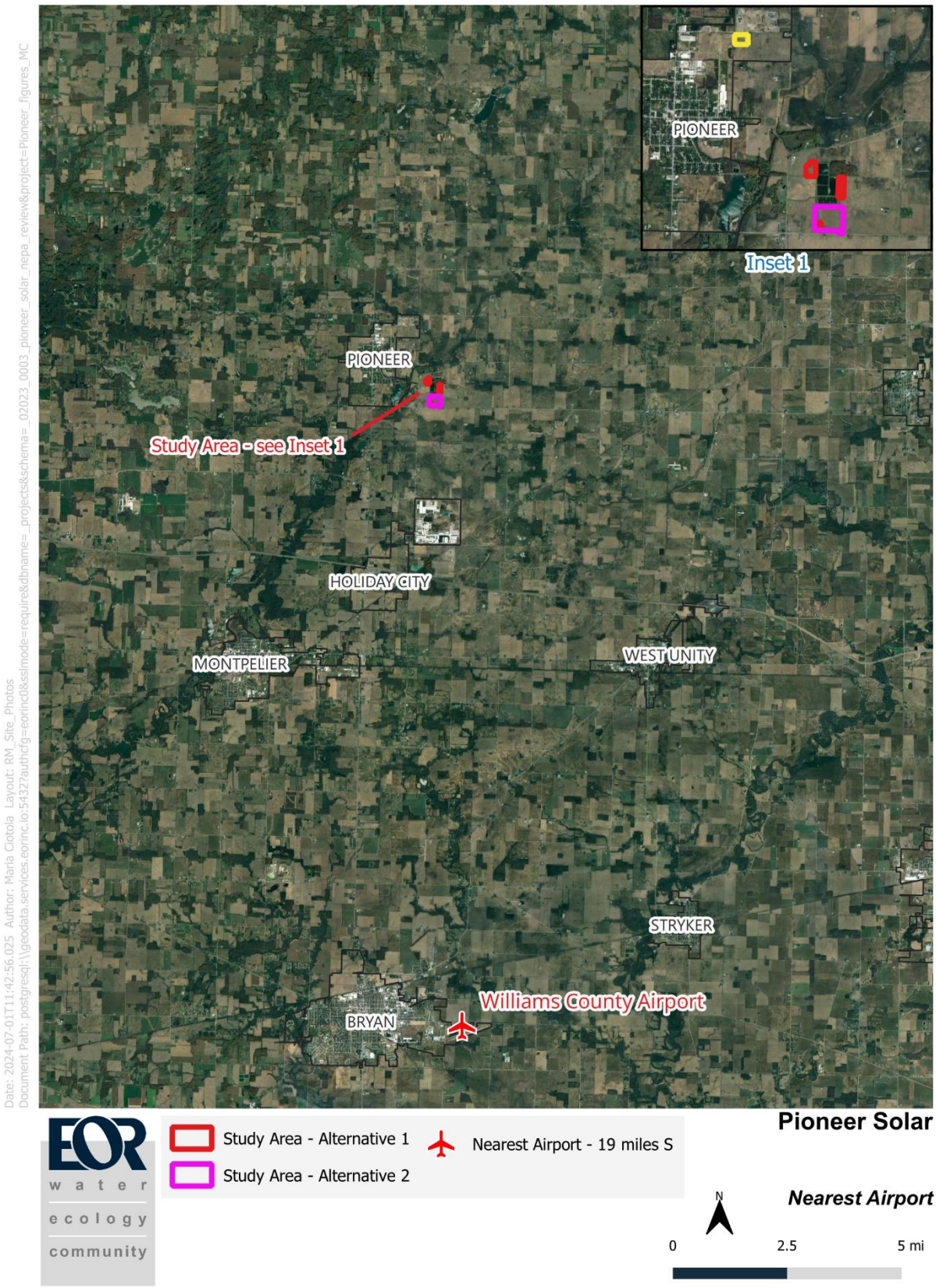


Figure 13. Airports.

of undeveloped agricultural land and rural residences and businesses. Pioneer is located 2 miles west of the solar facility and Alvord is located approximately 3 miles west.

Anticipated viewer groups include nearby residents and travelers on U.S. Highway 20 and local county roads. The review area is bounded to the south by U.S. Highway 20 and one the west by County Road 16. County Road 17 is approximately 0.5 miles to the east. Residences are sporadically located along the western, southern, and eastern boundary of the Project, as well as within approximately 0.5 mile north and east of the boundary. The Village of Pioneer wastewater treatment facility abuts alternatives 1 on the east, west, and south and Alternative 2 on the on the south.

Environmental Consequences

The Project will be visible from U.S. Highway 20 and Couty roads 15 and 16, which are the main thoroughfares near the project site. While the proposed action and associated infrastructure have the potential to introduce visual contrast and have the potential to change the character of this rural landscape, no significant adverse visual impacts are expected to occur based on the following factors:

- All project components will have a relatively low profile and are not expected to significantly change the current character of the landscape.
- The project will include minimal lighting and will not substantially degrade the existing visual character or quality of the land within the project boundary and its surroundings.
- The project will include screening measures such as vegetative buffers along the property boundary to shield the view of the project site from adjacent residences.

Based on these factors, Alternatives 1 and 2 would introduce long-term changes to the character of the existing landscape. However, the adverse visual impacts to sensitive receptors are expected to be low because of the factors listed above. These impacts are anticipated to be minor as well as both temporary direct and indirect impacts. During the operation phase of the proposed action, minor visual impacts would continue to occur. The project site would be managed to be a low-growth grasses. While there would be a change in agricultural to industrial use, visual impacts from the proposed action are anticipated to be minor due to the low population density in the vicinity of the review area and existing industrial facilities (including the substation) within the viewshed.

The Kexon Substation is within a developed, industrial area on the eastern edge of Pioneer.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV electrical transmission line would be within or adjacent to public and private rights-of-way within an existing utility corridor.

Environmental Commitments

The project site would be setback 100 feet from front and side property lines and 50 feet from rear property lines.

The construction stage of the proposed action would result in temporary impacts. Dust would be controlled with dust suppression measures such as truck-mounted water sprayers during the hours of construction activities. Travelers on nearby roads are expected to make up the majority of viewers.

The vegetation management plan would include the planting of high-quality, large-diameter evergreen species along the perimeter of the facility to provide screening.

Climate Change

Climate change refers to any significant changes in average climatic conditions (such as mean temperature, precipitation, or wind) or variability (such as seasonality and storm frequency) lasting for an extended period (century or longer). Although some effects of climate change are considered known or likely to occur, many potential impacts are unknown. Climate change science is a rapidly advancing field, and new information is being collected and released continually. Construction activities associated with implementation of the proposed action would contribute to increased greenhouse gases emissions, but such emissions would be short term, ending with the project completion. It is not possible to meaningfully link the greenhouse gases emissions of such individual project actions to quantitative effects on regional or global climatic patterns. Any effects on climate change would not be discernible at a regional scale.

Affected Environment

Temperatures in Ohio are similar to those across the north-central and eastern United States, with summer highs seldom reaching 100° F (38° C) and winter lows rarely dropping below −20° F (−29° C). On a typical July day, the temperature will rise from the mid-60s F (upper 10s C) to the mid-80s F (about 30 °C), while in January it will reach a high in the mid-30s F (about 2° C) from a low of about 20 °F (about −7° C). The state is open to cold, dry fronts from Canada and warm, moist fronts from the Gulf of Mexico. The frequent meeting of such fronts causes much of the state's precipitation, which typically totals about 40 inches (1,000 mm) annually, including an average annual snowfall of 28 inches (700 mm). Ohio occasionally experiences mild earth tremors and destructive tornadoes.

Although annual precipitation projections are uncertain, winter and spring precipitation is projected to increase, and extreme precipitation is projected to increase as well, potentially causing more frequent and intense floods. Heavier precipitation and higher temperatures increase the risk of springtime flooding, posing a threat to Ohio's agricultural industry by delaying planting and resulting in a loss of yield. The intensity of future droughts is projected to increase. Even if precipitation increases in the future, rising temperatures will increase the rate of loss of soil moisture during dry spells. Consequently, future summer droughts – a natural part of the Ohio climate – are likely to be more intense (NOAA 2022).

In 2016, CEQ issued Guidance on Considering Climate Change in NEPA Reviews, which provides Federal agencies with direction on when and how to consider the effects of greenhouse gas emissions and climate change in their evaluation of proposed Federal actions. The guidance characterizes climate change as a global issue exacerbated by a series of small decisions and uses projected GHG emissions as a proxy for assessing a proposed action's potential climate change

impacts. The guidance also establishes 25,000 tons per year as a reference point under which a quantitative analysis of greenhouse emissions is not warranted "unless quantification below that reference point is easily accomplished." The guidance states that the reference point relates to the disclosure of impacts, not to the determination of the significance of those impacts and notes that NEPA requires agencies to consider "the potential significance of the climate change impacts of their proposed actions, [based on] both context and intensity, as they do for all other impacts" (CEQ 2016).

GHG emissions from the project will result from operation of construction equipment. Emissions from construction equipment emissions were calculated by using methods identified in the standard metrics from the EPA's Greenhouse Gas Emission Factors Hub (https://www.epa.gov/climateleadership/ghg-emission-factors-hub). Project construction is estimated to take 220 days to complete and require the use of five diesel construction vehicles per day (two excavators, one skid steer, one bulldozer, and one tractor). Fuel consumption at an average of four gallons per hour and eight-hour working days was used to calculate total fuel use of 35,200 gallons: Fuel use = days * hours * fuel use per hour * number of vehicles

Emissions were calculated using this equation from the EPA guidance document: Tons CO_2 = fuel use in physical units *CO_2 Emission Factor (kg CO_2/physical unit of fuel use) * conversion of kg to short tons Emissions rates in Table were retrieved from the Emissions Factors for Greenhouse Gas Inventory (EPA, 2023) for diesel nonroad construction vehicles (Table 5).

Table 5. – Emissions.

CO_2 (kg/gallon)	CH_4 (grams/gallon)	N_2O (grams/gallon)
10.21	1.01	0.94

Totals emissions from construction equipment equate to 408.0 short tons of carbon dioxide equivalents (CO_2e), which were calculated using the appropriate global warming potential (GWP) for each GHG and the appropriate unit conversion factor.

Environmental Consequences

Alternatives 1 and 2 would not affect the climate, as impacts would be minimal and limited to construction (nine months) and decommissioning and positive during the operation of the facility. The system is designed to be resilient and to withstand extreme weather events, so environmental exposure stemming from a systems failure is not anticipated. It is estimated that project would generate 370.1 metric tons (or 408.0 short tons) of CO_2, which is less than 0.001 percent of the 185.8 million metric tons CO_2 equivalent generated in Ohio in 2020 (USEIA 2023).

Alternative 1 would not contribute significant amounts of GHGs, so it would not affect climate change. The generation of electricity from non-GHGs would have a positive effect.

Alternative 1 would not contribute significant amounts of GHGs, so it would not affect climate change. The generation of electricity from non-GHGs would have a positive effect.

The No Action Alternative would not affect the climate, because the project would not likely be constructed.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV electrical transmission line would also have a negligible impact on the climate.

Environmental Commitments

BMPs are not proposed.

Human Health and Safety

Environmental Risk Management

(*Resource Conservation and Recovery Act* [RCRA])

As defined by the RCRA, hazardous wastes are defined as a solid waste (or combination of solid wastes) that: 1) causes or significantly contributes to an increase in mortality; 2) increases serious irreversible or incapacitating reversible illness; or 3) poses a substantial hazard or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed. Hazardous materials and wastes are regulated through a combination of Federal and State laws. Federal regulations governing the assessment and disposal of hazardous wastes include RCRA, the *RCRA Hazardous and Solid Waste Amendments*, *Comprehensive Environmental Response, Compensation and Liability Act*, *Solid Waste Act*, and *Toxic Substances Control Act*.

Affected Environment

The environment affected by this project is mostly agricultural ground. The review area is a largely rural area consisting of a mix of large agricultural fields, farmsteads, and rural businesses.

NEPAssist does not include any Hazardous Waste (RCRAInfo), Air Pollution Sources (ICIS-AIR), Water Discharge site (NPDES), Toxic Release sites (TRI), Superfund (NPL), or Brownsfields (ACRES) sites within or adjacent to the review area. Hazardous Waste site is located on U.S. Highway 20 approximately 1.2 miles east of the review area. Four Hazardous Waste sites, three Toxic Release sites, three Water Dischargers, and one Air Pollution site are located within the Pioneer municipal boundary west of the review area.

Environmental Consequences

Human health or safety hazards are not anticipated as a result of operations. During decommissioning, health and safety hazards would be similar to construction hazards. Minor, temporary impacts are anticipated to human health and safety under Alternatives 1 and 2. The No Action Alternatives would not affect human health or create safety hazards. Location of EPA facilities is provided in Appendix J.

There is an increased risk for construction workers during the construction of the solar plant. Due to known hazards, contractors establish and maintain health and safety plans in compliance with OSHA regulations. These plans include BMPs to minimize potential risks to workers as well as protocols for safety management. Examples of BMPs include employee safety orientations; establishment of work procedures and programs for site activities; use of equipment guards;

emergency shut-down procedures; lockout procedures; site housekeeping; personal protective equipment; regular safety inspections; and plans and procedures to identify and resolve hazards.

Although photovoltaic panels used in solar facilities are not classified as hazardous waste, photovoltaic panels waste can include heavy metals such as silver, lead, arsenic, and cadmium, which may be classified as hazardous waste. The specific type of panels used would be determined during final engineering and design. The panels would likely be recycled or repurposed after 35 years. The panels used typically have 70 to 75 percent efficiency after 35 years and would likely be able to be used by a secondary market at that point. If there is no secondary market for the panels at that point, the panels would be donated or recycled. Any broken and unrepairable photovoltaic panels or photovoltaic panels at the end of their life cycle would be recycled or disposed of in accordance with the applicable laws that address the handling, storage, transport, and disposal of solid waste or hazardous waste. The proposed action would be decommissioned in accordance with a decommissioning plan. Consequently, no impacts are expected under Alternatives 1 and 2.

Under Alternative 1, there could be potential public health and safety hazards resulting from construction traffic along public roadways (U.S. Highway 20 and County Road 15). Access for construction traffic to the area surrounding the review area from outside the rural area would occur from I-90. Due to the amount of precipitation in the region, routine washings are not likely to be necessary. In the event a panel washing is needed, less than 2-acre feet of water is expected to be necessary; thus, runoff water would be absorbed into the soil. Module cleaning will use purified water only, so detergents or other agents would not be used.

Under Alternative 2, there could be potential public health and safety hazards resulting from construction traffic along public roadways (U.S. Highway 20 and County Road 15). Access for construction traffic to the area surrounding the review area from outside the rural area would occur from I-90. Due to the amount of precipitation in the region, routine washings are not likely to be necessary. In the event a panel washing is needed, less than 2-acre feet of water is expected to be necessary; thus, runoff water would be absorbed into the soil. Module cleaning will use purified water only, so detergents or other agents would not be used.

Alternative 2 would also involve the removal of a rural residence north of U.S. Highway 20. If selected, a Phase I Environmental Site Assessment (Phase I ESA) would need to be completed in accordance with the American Standards of Testing and Materials (ASTM) *Standard E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* to identify any recognized environmental conditions in connection with the project site, and remediation and recovery of any identified hazardous material would need to be undertaken.

Indirect and cumulative effects are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV electrical transmission line could also produce some minimal hazardous waste. The amounts and kinds for both projects is unknown, and it is assumed excepted BMPs would be used to handle and dispose of any potentially hazardous waste in accordance with state and federal regulations.

The No Action Alternative would not impact environmental risks, because the project would not likely be constructed.

Environmental Commitments

Disposal of solar panels using currently accepted BMPs at the time of decommissioning.

A Phase I Environmental Site Assessment of the house at U.S. Highway 20 should be completed prior to be acquired by the Village in accordance with the American Society for Testing and Materials (ASTM Standard Practice E1527-13) and the USEPA All The purpose of these reports was to assess potential environmental concerns and to identify Areas of Environmental Interest (AEI) and Recognized Environmental Conditions (RECs) related to past and present activities and current conditions of the property. Recommendation should be adhered to.

Electromagnetic Fields and Interference

Affected Environment

The review area is a largely rural area consisting of a mix of large agricultural fields, farmsteads, and rural businesses. The review area is in agricultural production and is situated in row-crop agricultural fields. The site placement was considered as part of the planning process, and the site is not located near sensitive receptors including schools. The closest residential receptor is over 350 feet to the south of the site. The Village is in the process of purchasing a residence within the South Unit of Alternative 1 and Alternative 2.

Environmental Consequences

The electromagnetic fields produced by the proposed project are expected to be highly localized and confined to the project site. Every device that carries an electrical charge or produces electricity creates electromagnetic fields. At a solar facility, the inverters create the strongest electromagnetic fields. However, at a distance of 30 feet, the electromagnetic field strength is indistinguishable and less than the electromagnetic fields produced by regular overhead power lines. The solar arrays would be located at least 350 feet from the nearest existing dwelling. The proposed solar facility was designed to eliminate or minimize overhead distribution lines by burying electrical lines within the project site. The proposed solar facility and Kexon Substation are not expected to create potential health risks from induced currents, electric shock, effects on cardiac pacemakers, and nuisance factors due to corona effect. The solar arrays and substation would not disrupt cell phones, television, or radio signals.

There are no densely populated areas or public schools located within 1,000 feet of the review area for either Alternative 1 or Alternative 2 that could be affected by ambient electromagnetic fields. The proposed project would have no direct, indirect, or cumulative impacts related to electromagnetic fields under either alternative. Electromagnetic fields produced by the proposed project would be confined to the facility and are unlikely to affect nearby residents.

Indirect and cumulative effects on land use are not anticipated as a result of these activities. The construction of the proposed AMPT 69-kV electrical transmission line would be designed to minimize EMF exposure by using and meeting current design and regulatory requirements.

The No Action Alternative would not impact electromagnetic fields, because the project would not likely be constructed.

Environmental Commitments

A security fence would restrict access to all project components. All personnel and visitors would be required to follow Occupational Safety and Health Administration guidelines during construction and operation of the proposed solar facility. Hazardous materials or wastes would not be generated during construction or required for the operation of the solar facility. The proposed project has been designed to eliminate overhead distribution lines by burying electrical lines within the facility.

Cumulative Effect Analysis

The cumulative effects analysis includes actions that meet the following criteria:

- The action impacts a resource potentially affected by the proposed action.
- The action causes impacts within all or parts of the same geographic scope of the proposed action.

The action causes impacts within all or part of the temporal scope for the potential impacts from the proposed action. The proposed action is not expected to have significant impacts to land use, floodplains, wetlands, water resources, biological resources, cultural and historic properties and cultural resources, aesthetics, air quality, socioeconomics/environmental justice, noise, transportation, health and safety, corridors, or prime farmland (Table 6). Impacts to the resources analyzed in the EA would mostly be localized to the project area, and most of the impacts would occur during the construction period. Village and county officials and agency personnel were asked about future and planned development in the area. Other than the transmission line and the Aquabounty facility, no projects were specified.

Apart from AMPT 69-kV transmission line, the Aquabounty facility is directly north of the proposed action could contribute to cumulative impacts that extend beyond the project limits. The impacts of projects that comprise the cumulative scenario combined with the proposed action could contribute to minor cumulative effects on certain resources.

Table 6. – Summary of Cumulative Impacts.

Resource	Potential Impacts	Contribution of Proposed Action to Cumulative Effects
Land Use	Change in land use	Minimal, localized impacts from conversion of undeveloped land to utility infrastructure
Important Farmland	Potential localized impacts from during construction and operation	Short-term, localized, and minor
Floodplain	None	None
Wetlands	None	None
Water Resources	Potential stream crossing	None anticipated – activity covered under nationwide permit
Biological Resources – Invasive Species	Potential introduction of invasive species	None anticipated with BMPs
Biological Resources – Protected Species and Migratory Birds	Localized impacts	None anticipated with BMPs
Cultural Resources and Historic Properties	Potential impacts from construction activities and loss of integrity of setting and feeling of any	No historic properties affected

Resource	Potential Impacts	Contribution of Proposed Action to Cumulative Effects
	cultural and historic resources through the undesirable elements in the viewshed	
Visual Resources	Potential short-and long-term impacts from modification of the landscape	Minor
Air Quality and Greenhouse Gases	Potential localized emissions fugitive dust	Short-term, localized, and minor – impacts lessened with BMPs
Environmental Justice	None	None
Noise	Potential temporary construction increases in noise levels during	Short-term, minor to moderate, and localized – impacts reduced with BMPs
Transportation	Potential temporary increases in traffic associated with construction workers and movement of construction equipment	Short-term, minor to moderate, and localized – impacts reduced with BMPs
Human Health and Safety	Potential increase public health and safety impacts from construction activities and increased EMF radiation levels from solar development	Minor and long term – impacts lessened with BMPs
Airport Hazards	None	None
Climate Change	None	None

Land Use

Cumulative effects on land use could occur where lands are converted from one use to another (for instance, when undeveloped land is converted to utility infrastructure). Land in the analysis area is predominantly agricultural. The proposed action would result in minor temporary impacts to land use. The transmission line reroute would overlap with the project and could result in minor temporary impacts to land use from the changing the location of utility infrastructure, similar to those associated with the proposed action. The proposed action in combination with other projects would have minimal, localized, incremental effects. The cumulative effect of the AMPT 69-kV transmission line and the proposed action would result in minor temporary cumulative impacts to land use. The Aquabounty facility is in an industrial and commercial area and would not affect land use.

Important Farmland

Impacts to soils from the proposed action could result in increased erosion potential, loss of soil productivity, and increased likelihood of establishment of noxious weeds. Environmental impacts to soils would generally be localized where they occur. Any projects that disturb soil resources would contribute to the cumulative adverse impacts that may occur as a result of added erosion, compaction, or disturbance of shallow and sensitive soils. This assessment identified no other actions that have measurably impacted soils within the project area. The cumulative effect of the AMPT 69-kV transmission line, the proposed action, and Aquabounty facility would result in minor cumulative impacts to soils.

Biological Resources

Cumulative effects on vegetation could occur where the proposed action results in vegetation removal and/or disturbance, impacts to special status species, and/or the introduction of invasive species. Any project that involves surface-disturbing activities could contribute to the cumulative adverse impacts. BMPs are proposed to avoid and minimize direct impacts to prevent the introduction and spread of invasive species. The project is in an agricultural field, so vegetation is minimum and limited to cool-season grasses and small diameter nuisance trees along the fence row. At this time, the transmission line reroutes are the only reasonably foreseeable development planned within the vegetation and invasive species analysis areas. The cumulative effect of the transmission line reroute and the proposed action would result in minor temporary cumulative impacts to vegetation and invasive species.

The project area does not contain suitable habitat for state- or federally protected species. As the proposed action would result in no direct or indirect impacts to those species, no cumulative impacts to ESA-listed threatened and endangered species are anticipated.

Cultural Resources and Historic Properties

While future projects would vary in scope and impacts, the principal types of impacts that may have an effect on cultural resources would be the physical impact (demolition, fill, grading, blasting, subsurface excavation, and vibration) to historic properties or other cultural resources. These types of activities could impact the integrity of one or more of the elements needed to convey the significance of historic properties. Additionally, other impacts affecting the integrity of setting and feeling of the viewshed or environment of the historic property. Cultural and archaeological resource inventories for the Aquabounty facility, AMPT 69-kV transmission line, and the proposed action resulted in a no historic properties affected determination. No cumulative impacts to cultural resources or historic properties are anticipated.

Visual Resources

Impacts to aesthetics from the proposed action would range from no perceivable visual impact to strong contrast. The proposed action is adjacent to an existing industrial site (Pioneer's wastewater treatment facility) and would not affect the area's aesthetics. The AMPT 69-kV transmission line would result in minor modifications to the visual landscape but would not result in strong contrast

and would not dominate the landscape. The Aquabounty facility is within a developed industrial and commercial area. It is unlikely that construction of these projects could contribute cumulatively to impacts on aesthetics. The cumulative effect of the AMPT 69-kV transmission line and the proposed action would result in minor cumulative impacts to aesthetics.

Air Quality

The proposed action, the ATP transmission line, and Aquabounty facility would not affect Air quality, so cumulative impacts the area's air quality are not expected.

Noise

Noise impacts would be temporary and minor and would last only during construction. Noise impacts from construction activities are generally localized where they occur. Adverse noise impacts may result from the construction of infrastructure improvement projects and new energy development, including ATP transmission line reroute. Construction noise is temporary and would end upon completion of project construction. Operation and maintenance of the transmission line and proposed action could generate periodic levels of noise. The magnitude of that noise is not considered significant and would dissipate with increasing distance from the project area. Therefore, those adverse impacts likely would be infrequent, of short duration, and minor. The cumulative effects on noise from the proposed action and other projects listed would be short term, minor to moderate, and localized. Based on the periodic nature of operational noise, ongoing cumulative effects would occur only for a short time during construction and routine maintenance, so no long-term cumulative noise impacts from the proposed action are anticipated.

Traffic

Impacts to transportation would be temporary and would last during construction. Impacts to transportation network from construction of the projects would include increased traffic associated with construction workers and delivery of construction equipment and materials to the worksites. The cumulative effects on transportation from the proposed action and the other projects could be short term, minor to moderate, and localized. All projects would be required to comply with all applicable roadway management standards and policies during construction. Consequently; the potential cumulative effects would not significantly change the transportation trends around the Pioneer area.

Human Health and Safety

Impacts to human health and safety from the proposed action would be minor. Potential cumulative impacts to public health and safety could result from construction activities that would increase the potential for accidents in construction areas – affecting worker safety. The ATP transmission line reroute would result in similar impacts as the proposed action. Because the levels of EMF created by the proposed project would be relatively low when compared to the recommended public and occupational exposure guidelines, the cumulative impact from EMF radiation would be minor and long term.

Summary of Environmental Commitments

BMPs would be implemented prior to and during the design and construction of this project to reduce potential negative environmental impacts. Additionally, several common design and/or construction management measures would be implemented in accordance with currently accepted. BMPS and management measures are summarized below:

- The selected alternative would avoid wetlands.
- Under the NPDES storm water program, a permit is required for land clearing activities that exceed 1.0 acre.
- A SWPPP will be developed for the construction of the facility and the construction activity would conform to the plan. Erosion and sedimentation control measures would be installed before the start of construction activities. After work has been completed, disturbed areas throughout the proposed project site would be re-established with vegetation as described in the SWPPP. Water, eroded materials and other potential pollutants would be prevented from entering streams or watercourses as described in the SWPPP. Construction activities would be performed by methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing streams and underground water sources.
- If archeological materials are encountered during construction, the applicant would contact RUS, SHPO, and THPOs immediately (Archeological material consists of any man-made items 50 years or older). If human remains are encountered, construction activities should cease immediately, and the applicant should contact the Williams County Sheriff and Williams County Coroner to inform them of the situation and to ensure proper handling of the remains. This stipulation should be placed on the construction plans to ensure contractors are aware of it.
- BMPs be implemented to minimize erosion and prevent debris deposition and sedimentation in the project site in accordance with the site-approved SWPPP.
- Lights at the Kexon Substation would use a downward-facing system to lessen potential impacts to migratory birds.
- USFWS should be notified if a Bald or Golden eagle or Whooping crane are observed within 660 feet of the project site.
- Construction planning would avoid any impacts to delineated wetlands through redesign. A minimum of a 120-foot buffer should be maintained for Wetland 1. If Wetland 1 cannot be avoided if Alternative 1 is selected, then a Preconstruction Notification would be required to determine if impacts fall within the minimal allowable wetland impacts under Nationwide Permit 51 – Land-Based Renewable Energy Generation Facility. If modification of the unnamed ditch/stream is required, then a Preconstruction Notification should be submitted to the USACE to determine if the action is within the parameters of Nationwide Permit 57 – Electric Utility Line and Telecommunication Activities. . Stipulations under the nationwide or regional *Clean Water Act* permit would be integrated into the project plans.

- Dust mitigation measures will be required during the construction of the proposed facility. Measures may include watering of disturbed areas and sweeping or other methods to control tire track-out at intersections with construction and paved areas.
- BMPs for construction vehicle and equipment emissions include limiting vehicle idling time, using low or ultra-low sulfur fuel (including biodiesel), conducting proper vehicle maintenance, and using electric-powered tools (instead of gas-powered tools). It is anticipated that construction contractors will properly maintain their fleet of vehicles/equipment so that air emissions are kept to a minimum over time.
- Stipulation in the Right-of-Way permit from the ODOT would be included in the project plans.
- Large caliber, high-quality evergreen stock would be planted along the south, west, and east perimeter of the project site to reduce glare and visual impacts.
- A Phase I Environmental Site Assessment would be undertaken at the residence north of U.S. Highway 20 adjacent to Alternative 1 and within Alternative 2.
- Disposal of solar panels using currently accepted BMPs at the time of decommissioning, as outlined in the Decommissioning Plan. A security fence should be installed to restrict access to all project components. All personnel and visitors would be required to follow Occupational Safety and Health Administration guidelines during construction and operation of the proposed solar facility. Hazardous materials or wastes would not be generated during construction or required for the operation of the solar facility.

Conclusions

The No Action Alternative would have no significant impact on environmental resources. The solar farm would not be constructed and no social, economic, or health-related benefits would occur from this project for Williams County.

Alternative 1 consists of the development of an approximately 48.9-acres of agricultural land within four tracts needed to construct the solar facility and the Kexon Substation. No significant impacts would be expected under this alternative.

Alternative 2 consists of the development of an approximately 39.0 acre within two tracts of land within the solar facility and the Kexon Substation. Alternative 2 was selected as it prevents significant short-term and long-term adverse environmental impacts. The selected site also has numerous desirable aspects that aided in its selection:

- Centrally located off of U.S. Highway 20 which provides easy access to the facility;
- No known contamination issues;
- Approximately 39.0 acres of property the Village currently owns or is in the process of acquiring;
- Access to utilities;
- Attainable compliance with applicable laws and development permits; and
- Reasonable land and development costs.

The majority of potential impacts associated with Alternative 2 are considered to be negligible or temporary, occurring mostly during construction and decommissioning. The remaining impacts would be lessened through the implementation of permitting and currently accepted BMPs. Assuming the appropriate measures, no significant impacts are anticipated. The proposed solar facility would result in positive socioeconomic impacts on the immediate area and surrounding community. It is anticipated that the facility would employ approximately one full-time employee and four part-time employees. Located within an area that needs additional electrical resources, the facility will service Pioneer and portions of north-central Williams County. It is anticipated that the development project will result in positive health and economic effects including reduction of GHG emissions and air pollution from other sources; fewer potential safety hazards from producing other sources of energy; and creation of revenue and jobs for the local community.

If BMPs and regulatory compliance permits and requirements described in this EA are implemented, the analysis performed in this EA concludes that the proposed action would not have a significant adverse impact – either individually or cumulatively – on the environment.

Coordination, Consultation, and Correspondence

The following agencies have been contacted for review and comments regarding the environmental aspects of the Pioneer Solar Project. The agencies were asked to review the project based on the Environmental Review Guide.

USDA NRCS Ohio State Office
T. Riley Dayberry
Assistant State Soil Scientist

U.S. Department of Housing and Urban Development – HUD.GOV

Community Planning and Development - https://egis.hud.gov/tdat/Tribal.aspx

Tribal Directory Assessment Tool (TDAT) v2.3

TDAT v2.2 was developed by the Office of Environment and Energy (OEE) to help users identify tribes that may have an interest in the location of a HUD-assisted project and provide tribal contact information to assist users with initiating Section 106 consultation under the NHPA (54 U.S.C. § 300101 et seq.). The following tribes and nations were invited to participate in the Section 106 review process:

Citizen Potawatomi Nation, Oklahoma
Tracy Wind, Acting Tribal Historic Preservation Officer
1601 S. Gordon Cooper Drive
Shawnee, OK 74801

Eastern Shawnee Tribe of Oklahoma
Paul Barton, Tribal Historic Preservation Officer
70500 E 128 Rd., Wyandotte, OK 74370

Forest County Potawatomi Community, Wisconsin
Olivia Nunway, Assistant Tribal Historic Preservation Officer
P.O. Box 340, Crandon, WI - 54520

Hannahville Indian Community, Michigan
The Honorable Kenneth Meshigaud, Chairman
N14911 Hannahville B1 Road,
Wilson, MI 9896-9728

Miami Tribe of Oklahoma
Logan York, Tribal Historic Preservation Officer
P.O. Box 1326, Miami, OK - 74355

Ottawa Tribe of Oklahoma
Rhonda Hayworth, Tribal Historic Preservation Officer
13 South Highway 69a, Miami, OK - 74354

Peoria Tribe of Indians of Oklahoma
The Honorable Craig Harper, Chief
118 South Eight Tribes Trail,
Miami, OK - 74355

Pokagon Tribe of Potawatomi Indians, Michigan and Indiana
Matthew Bussler, Tribal Historic Preservation Officer
.O. Box 180, Dowagiac, MI - 49047

Prairie Band Potawatomi Nation
Raphael Wahwassuck Tribal Historic Preservation Officer
16281 Q Road, Mayetta, KS - 66509

Ohio Office of Archaeology and Historic Preservation
Ms. Diana Welling
State Historic Preservation Officer
Ohio History Connection
800 E. 17th Avenue
Columbus, OH 43211

Ohio Department of Commerce

David Merrick, NCARB, Chief Building Official
Division of Industrial Compliance
6606 Tussing Rd., Reynoldsburg, OH 43068

Ohio Department of Natural Resources

Mike Pettegrew, Environmental Services Administrator
Ohio Department of Natural Resources, Office of Real Estate & Land Management
2045 Morse Road, Building E-2
Columbus, Ohio 43229

U.S. Fish and Wildlife Service

Information for Planning and Conservation
Consultation Code: 2024-0080703

References (Consulted or Cited)

CT Consultants. 2024. Wetland Determination/Delineation Approximately 56 Acres of Agricultural Land County Road 15 Pioneer, Ohio. Report submitted to the Village of Pioneer on June 20, 2024.

Department of *Defense*, 2014. Memorandum for: Mitigation Oversight Committee Members - Procedures Memo #4: Glint/Glare Issues on or near Department of Defense (DoD) Aviation Operations. Retrieved in May 2024 from the Department of Defense website: https://www.acq.osd.mil/dodsc/library/Procedures_Memo_4_Glint%20Glare%20Issues%20on%20or%20near%20DoD%20Aviation%20Operations.pdf.

Favret, A. C. and M. Kall. 2022. *Phase I Cultural Resources Survey for the Pioneer Phase 1 Reinforcement Project, Williams County, Ohio.* Report submitted to American Municipal Power Transmission, LLC, by POWER Engineers.

2023 *Phase I* Archaeological *Reconnaissance Survey, for the Phase I Reinforcement Project CR 15 Re-Route, Williams County, Ohio.* Report submitted to American Municipal Power Transmission, LLC, by POWER Engineers.

Federal Aviation Administration. 2013. *Interim Policy, Federal Aviation Administration (FAA) Review of Solar Energy System Projects on Federally Obligated Airports. Notices. Vol. FR Vol. 78, No. 205*. Retrieved in May 2024 from the FAA website: https://www.gpo.gov/fdsys/pkg/FR-2013-10-23/pdf/2013-24729.pdf.

Federal Emergency Management Agency. (2022). *Current FEMA issued Flood Maps*. Retrieved from the Federal Emergency Management Agency website: https://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?storeId=10001&catalogId=10001&langId=.

Mannik Smith Group. 2024. *Results of a Phase I Cultural Resources Survey for the Proposed Pioneer Solar Project in Madison Township (Township 9 South, Range 2 West, Section 22), Williams County, Ohio*. Report submitted to the Village of Pioneer.

National Oceanic and Atmospheric Administration. (n.d.) *Coastal Zone Management Act*. Retrieved in April 2022 from the National Oceanic and Atmospheric Administration website: https://coast.noaa.gov/czm/act/.

National Park Service (NPS). 2022. *National Register of Historic Places*, Retrieved in April 2024 from the NPS website: https://www.nps.gov/nr/research/.

NPS. (n.d.a.). Wild *and Scenic Rivers*. Retrieved in April 2024 from the NPS website: Wild & Scenic Rivers (arcgis.com).

NPS. (n.d.b.). *Find a Park / Ohio.* Retrieved in April 2024 from the NPS website: https://www.nps.gov/state/oh/index.htm.

NPS. (n.d.c.). *Rivers for All*. Retrieved in April 2024 from the NPS website: https://www.nps.gov/subjects/rivers/index.htm.

Natural Resources Conservation Service (NRCS). (n.d.). *Web Soil Survey*. Retrieved in April 2024 from the NRCS website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

NatureServe. (n.d.). *Conservation Status Assessment*. Retrieved in April 2024 from NatureServe website: https://www.natureserve.org/conservation-tools/conservation-status-assessment.

2024. *Grus americana*. Retrieved in April 2024 from the NatureServe website: Grus americana | NatureServe Explorer.

National Atmospheric Administration. 2022. NOAA National Centers for Environmental Information, State Climate Summaries, 2022 – Ohio. Retrieved in April 2024 from NOAA website: Ohio - State Climate Summaries 2022 (ncics.org)

Ohio Department of Natural Resources (n.d.). Guide & Map – Ohio State Parks. Retrieved May 2024 from ODNR website: Guide & Map - Ohio State Parks | Ohio Department of Natural Resources (ohiodnr.gov).

Ohio Department of Transportation. Traffic Counts (TCDS). Retrieved in May 2024 from the ODOT website: Transportation Data Management System (ms2soft.com).

U.S. Census Bureau (USCB). (n.d.a.). *Census Data*. Retrieved in April 2024 from the USCB website: https://data.census.gov/cedsci/.

USCB. (n.d.b.). *American Fact Finder*. Retrieved in April 2024 from the USCB website: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk.

U.S. Energy Information Administration. 2023. Current Issues and Trends. Retrieved in April 2024 from the USEIA website: Environment - U.S. Energy Information Administration (EIA).

U.S. Environmental Protection Agency (USEPA). (n.d.a.). *EJSCREEN: Environmental Justice Screening and Mapping Tool*. Retrieved in April 2024 from the USEPA website: https://www.epa.gov/ejscreen.

USEPA. (n.d.b.). *NEPAssist*. Retrieved in April and May 2024 from the USEPA website: http://epa.gov/compliance/nepa/nepassist-mapping.html, Website accessed May 2022.

USEPA. (n.d.c.). *Green Book: Ohio Nonattainment/Maintenance Status for Each County by Year and for All Criteria Pollutants*. Retrieved in April 2022 from the USEPA website: https://www3.epa.gov/airquality/greenbook/anayo_co.html.

U.S. Fish and Wildlife Service (USFWS). (n.d.a.). *Information for Planning and Conservation*. Retrieved in April and May 2024 from the USFWS website: https://ecos.fws.gov/ipac/.

USFWS. (n.d.b.). *National Wetland Inventory*. Retrieved in April 2024 from the USFWS website: http://www.fws.gov/wetlands/Data/Mapper.html.

USFWS. (n.d.c.). *National Wildlife Refuge Locator – Ohio*. Retrieved in April 2024 from the USFWS website: http://www.fws.gov/refuges/refugeLocatorMaps/Ohio.html.

U.S. Department of Housing and Urban Development (USHUD). 2022. *Tribal Directory Assessment Tool*. Retrieved in April 2022 from USHUD website: https://egis.hud.gov/tdat/.

Williams County Park Board (n.d.) Williams County, OH Parks. Retrieved May 2024 from Park Board website: Williams County, OH Parks (arcgis.com).

List of Preparers

This EA was prepared by:

Will Martin, CEP, RPA – Senior Environmental Planner and NEPA and Cultural Resources Lead – Emmons & Olivier Resources, Inc.
Ethan Hau, Environmental Scientist – Emmons & Olivier Resources, Inc.
Maria Ciotola, Environmental Scientist – Emmons & Olivier Resources, Inc.
Stu Grubb –Senior Scientist and Regulatory and Compliance Lead – Emmons & Olivier Resources, Inc.
John Sarafolean, Environmental Scientist – Emmons & Olivier Resources, Inc.
Dr. Evan Murdoch, PE, Water Resource Engineer – Emmons & Olivier Resources, Inc.
Martha Lamp – Project Manager – Powers Systems Engineering, Inc.
Kevin McCutcheon, PE – Vice President – Powers System Engineering, Inc.

APPENDIX A. PRELIMINARY CONCEPTUAL PLANS

Pioneer Solar Project – Pioneer, Ohio – Alternative 1 Solar-generating Component

Pioneer Solar Project – Pioneer, Ohio – Alternative 2 Solar-generating Component

APPENDIX B. AERIAL OVERVIEW PHOTOGRAPHS

Photo 1 – Overview of the Kexon Substation – view to the north.

Photo 2 – Overview of the North Unit – Alternative 1 – view to the north

Photo 3 – Overview of the Central Unit – Alternative 1 – view to the west.

Photo 4 – Overview of the North Unit – Alternative 1 and Alternative 2 – view to the southwest.

Photo 5 – Overview of the North Unit – Alternative 1 and Alternative 2 – view to the northwest.

APPENDIX C. FARMLAND CONSERSION IMPACT RATING (FORM AD-1006)

Appendix C.1. Alternative 1

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request May 30, 2024	
Name of Project Pioneer Solar Project		Federal Agency Involved USDA(RUS)	
Proposed Land Use Solar Field		County and State Williams County Ohio	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 05/30/2024	Person Completing Form: Jeff Glanville
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 3844	Average Farm Size 239
Major Crop(s) corn, soybeans, wheat	Farmable Land In Govt. Jurisdiction Acres: 265049 % 97.9	Amount of Farmland As Defined in FPPA Acres: 23666 % 87.4	
Name of Land Evaluation System Used OH	Name of State or Local Site Assessment System OH	Date Land Evaluation Returned by NRCS 06/06/2024	

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	43.9			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	43.9			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	43.8			
B. Total Acres Statewide Important or Local Important Farmland	0.0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.02			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	51.2			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	76			

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)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	76	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	76	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

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

Appendix C.2. Alternative 2

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request April 4, 2024	
Name of Project Pioneer Solar Project		Federal Agency Involved USDA(RUS)	
Proposed Land Use Solar Field		County and State Williams County Ohio	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 04/04/2024	Person Completing Form: Jeff Glanville
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 3844	Average Farm Size 239
Major Crop(s) corn, soybeans, wheat	Farmable Land In Govt. Jurisdiction Acres: 265049 % 97.9	Amount of Farmland As Defined in FPPA Acres: 23666 % 87.4	
Name of Land Evaluation System Used OH	Name of State or Local Site Assessment System OH	Date Land Evaluation Returned by NRCS 04/12/2024	

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				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	26.3			
B. Total Acres Statewide Important or Local Important Farmland	0.0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.01			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	22.9			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	80			

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)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	80	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	80	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

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

Appendix C.3. Kexon Substation

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request January 17, 2024	
Name of Project Pioneer Solar Project		Federal Agency Involved USDA(RUS)	
Proposed Land Use Substation		County and State Williams County Ohio	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 01/17/2024	Person Completing Form: Jeff Glanville
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 3844	Average Farm Size 239
Major Crop(s) corn, soybeans, wheat	Farmable Land In Govt. Jurisdiction Acres: 265049% 97.9	Amount of Farmland As Defined in FPPA Acres: 23666% 87.4	
Name of Land Evaluation System Used OH	Name of State or Local Site Assessment System OH	Date Land Evaluation Returned by NRCS 01/24/2024	

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	8.4			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	8.4			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	8.4			
B. Total Acres Statewide Important or Local Important Farmland	0.0			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.004			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	22.9			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	79			

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)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	79	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	79	0	0	0

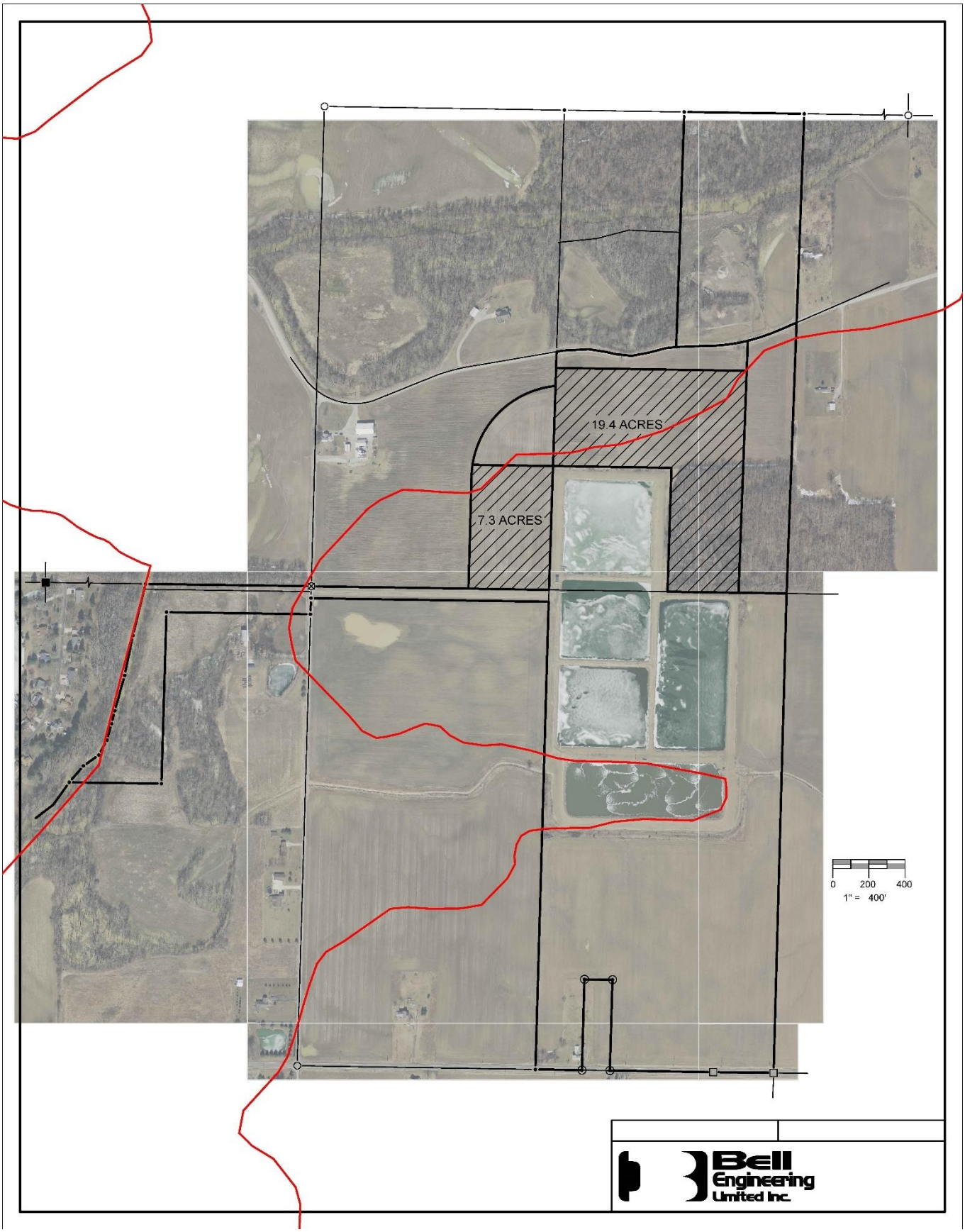
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

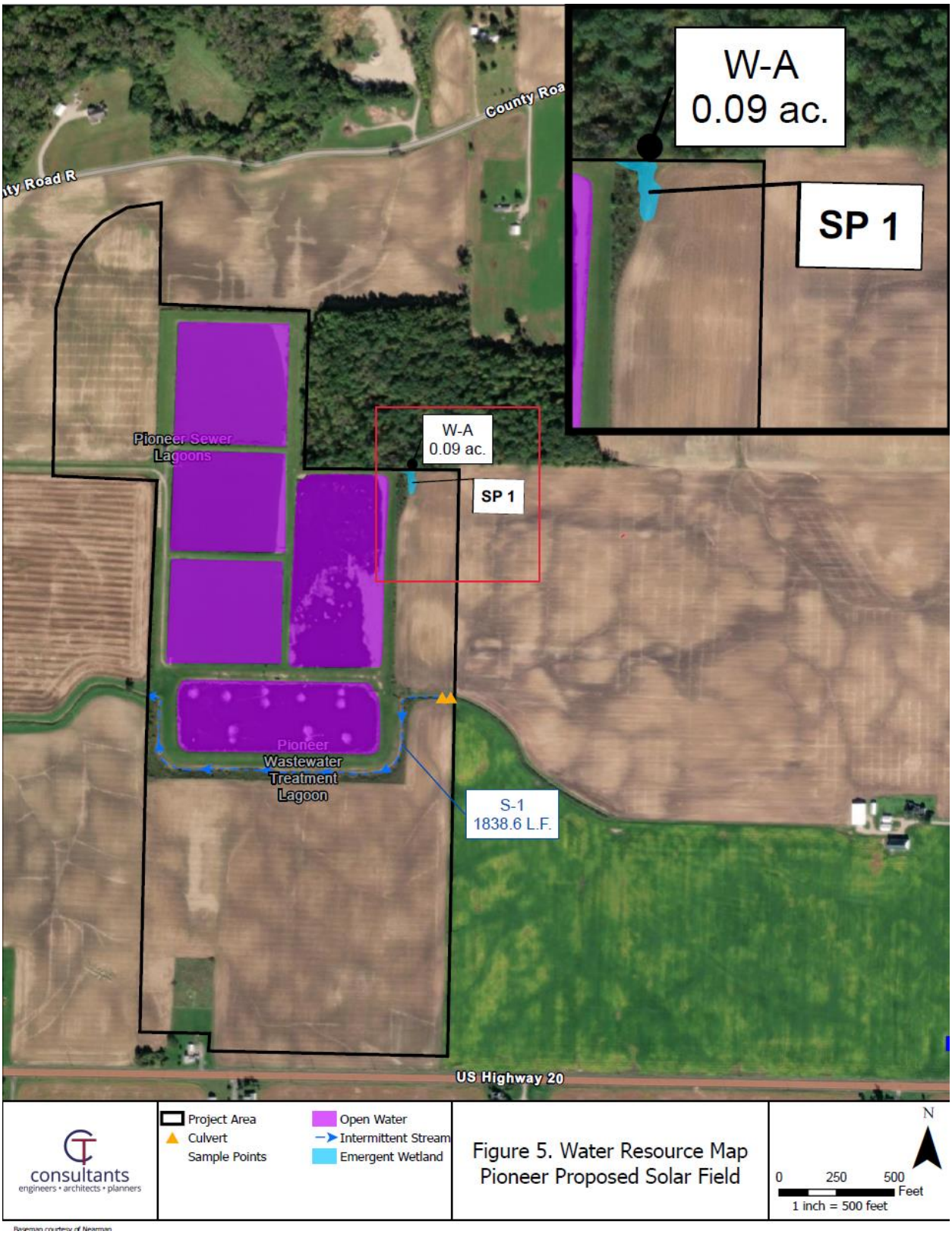
Name of Federal agency representative completing this form:	Date:

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

APPENDIX D. FLOODPLAIN PLAT


19.4 ACRES
7.3 ACRES
0
200
400
1" = 400'
Bell Engineering Limited Inc.

APPENDIX E. WATERS OF THE UNITED SATES AND WETLANDS


W-A
0.09 ac.
SP 1
County Roa
ty Road R
Pioneer Sewer
Lagoons
W-A
0.09 ac.
SP 1
Pioneer
Wastewater
Treatment
Lagoon
S-1
1838.6 L.F.
US Highway 20
consultants
engineers • architects • planners
Project Area
Culvert
Sample Points
Open Water
Intermittent Stream
Emergent Wetland
Figure 5. Water Resource Map
Pioneer Proposed Solar Field
N
0
250
500
Feet
1 inch = 500 feet

APPENDIX F. BIOLOGICAL RESOURCES

Appendix F.1. U.S. Fish and Wildlife Service IPaC

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To:
Project Code: 2024-0080703
Project Name: Pioneer Solar

04/23/2024 15:46:23 UTC

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

To Whom It May Concern:

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

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the 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 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:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

PROJECT SUMMARY

Project Code: 2024-0080703
Project Name: Pioneer Solar
Project Type: Power Gen - Solar
Project Description: The proposed project will construct 3 solar arrays across three different parcels, totaling 8.38 MW. The final dimensions of the fenced area around the solar panels is yet to be determined.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.6674455,-84.52680857966054,14z

Counties: Williams County, Ohio

Project code: 2024-0080703 04/23/2024 15:46:23 UTC

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 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. Note that 2 of these species should be considered only under certain conditions.

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.

Project code: 2024-0080703 04/23/2024 15:46:23 UTC

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

REPTILES

NAME	STATUS
Copperbelly Water Snake *Nerodia erythrogaster neglecta* Population: Indiana north of 40 degrees north latitude, Michigan, Ohio No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7253	Threatened

CLAMS

NAME	STATUS
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species.	Candidate

Project code: 2024-0080703 04/23/2024 15:46:23 UTC

NAME	STATUS

Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Maria Ciotola
Address: 1334 Dewey Ct
City: Madison
State: WI
Zip: 53703
Email mciotola@eorinc.com
Phone: 6082927841

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To:
Project code: 2024-0080703
Project Name: Pioneer Solar

04/23/2024 15:49:01 UTC

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Pioneer Solar'

Dear Maria Ciotola:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 23, 2024, for 'Pioneer Solar' (here forward, Project). This project has been assigned Project Code 2024-0080703 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Copperbelly Water Snake *Nerodia erythrogaster neglecta* Threatened
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Ohio Ecological Services Field Office and reference Project Code 2024-0080703 associated with this Project.

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

1. Name

Pioneer Solar

2. Description

The following description was provided for the project 'Pioneer Solar':

> The proposed project will construct 3 solar arrays across three different parcels, totaling 8.38 MW. The final dimensions of the fenced area around the solar panels is yet to be determined.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.6674455,-84.52680857966054,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Maria Ciotola
Address: 1334 Dewey Ct
City: Madison
State: WI
Zip: 53703
Email mciotola@eorinc.com
Phone: 6082927841

Appendix F.2. Ohio Department of Natural Resources Correspondence

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR — MARY MERTZ, DIRECTOR

Office of Real Estate
Tara Paciorek, Chief
2045 Morse Road – Bldg. E-2
Columbus, Ohio 43229
Phone: (614) 265-6661
Fax: (614) 267-4764

May 28, 2024

Will Martin
Emmons & Olivier Resources
1002 Quartz Avenue
Boone, Iowa 50036

Re: 24-0633_Village of Pioneer Solar Facility

Project: The proposed project involves the installation of a solar facility.

Location: The proposed project is located in Madison Township, Williams County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state, or federal agency nor relieve the applicant of the obligation to comply with any local, state, or federal laws or regulations.

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW

recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species.
Federally Endangered
clubshell (*Pleurobema clava*)
northern riffleshell (*Epioblasma torulosa rangiana*)
rayed bean (*Villosa fabalis*)
white cat's paw (*Epioblasma obliquata perobliqua*)
purple lilliput (*Toxolasma lividus*)
rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Endangered
sharp-ridged pocketbook (*Lampsilis ovata*)
long-solid (*Fusconaia maculata maculata*)

State Threatened
Salamander Mussel (*Simpsonaias ambigua*)

Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the following listed fish species.
State Endangered
gilt darter *(Percina evides)*
Iowa darter *(Etheostoma exile)*
pugnose minnow (*Opsopoeodus emiliae*)
western banded killifish (*Fundulus diaphanous menona*)

State Threatened
greater redhorse (*Moxostoma valenciennesi*)
lake chubsucker (*Erimyzon sucetta*)

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the copperbelly water snake (*Nerodia erythrogaster neglecta*), a state endangered and federally threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Blanding's turtle (*Emydoidea blandingii*), a state threatened species. This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (Circus hudsonius), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Thank you for affording us the opportunity to comment.

Geological Survey: The Division of Geological Survey has the following comments.

Impacts on Public and Private Water Supplies
The proposed project area is in Madison Township, Williams County. The construction of this facility is not expected to have significant impacts on public or private well yields. The Groundwater Vulnerability Index for the project area ranges from 147 to 177 (Nelson and Others, 2022), which equates to a high groundwater vulnerability (OEPA, 2014). The construction of the facility is not expected to pose a significant groundwater contamination risk.

Groundwater Inventory
Groundwater resources in the unconsolidated glacial material are plentiful throughout the project area. Wells developed in the Williams Complex Aquifer are likely to yield between 100 to 500 gallons per minute (Ohio Department of Natural Resources, Division of Water, Statewide Unconsolidated Aquifer Map, 2000). Bedrock aquifer resources below the project area are limited. The underlying Coldwater Shale yields range from 5 to 25 gallons per minute (Haiker, 1996 and Ohio Department of Natural Resources, Division of Water, Bedrock Aquifer Map, 2000). ODNR has record of 57 water wells drilled within one mile of the project area. These wells range in depth from 45 to 204 feet, with an average depth of 98 feet. The most common aquifer reported is sand and gravel with 56 of these wells being completed in the unconsolidated material. One well is completed in the underlying Coldwater Shale. Sustainable yields of 25 to 70 gallons per minute have been reported for 6 wells within one mile of the project area, with the average sustainable yield being 48 gallons per minute (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Water Wells).

Oil, Gas and Mining
ODNR has record of one oil and gas well within one mile of the proposed project area. This well is listed as plugged and abandoned (Ohio Department of Natural Resources, Division of Oil and Gas, Ohio Oil and Gas Wells Locator).

ODNR has record of one mine within 1 mile of the project area. This mine is a sand and gravel mine, located 0.8 miles west of the project area, which is owned by Gerken Materials, Inc. (Ohio Department of Natural Resources, Division of Mineral Resources, Mines of Ohio).

Geohazards
ODNR does not have record of any earthquakes recorded within 15 miles of the project area (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Earthquake Epicenters).

Karst
ODNR has no record of karst features within one mile of the project area. The nearest verified karst location is 60 miles east of the project area. Karst features usually form in areas that are covered by thin or no glacial drift and the bedrock is limestone or dolomite. Karst formation under the project area is unlikely due to substantial glacial deposits within the area. The underlying Coldwater Shale is not susceptible to the formation of karst features (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Karst).

Drift Thickness and Bedrock Geology
There are significant deposits of glacial drift within the project area. Drift is thinnest in the northwestern portion of the proposed project area (199 feet) and drift is thickest in the southern portion of the proposed project area (231 feet) (Powers and Swinford, 2004). The uppermost bedrock unit under the proposed project areas is Coldwater Shale (Ohio Department of Natural Resources, Division of Geological Survey, Bedrock Geology Map of Ohio).

Soils
The project area consists primarily of soils derived from till, outwash, and glaciolacustrine deposits. Blount, Glynwood, and Mermill are the most common soil series found within the boundaries of the project area. These soils have a clay loam to sandy loam texture and together cover over 93% of the project area. The Mermill Soil which makes up approximately 5% of the project area is a hydric soil and is frequently ponded from December through May. There is a moderate to high risk of shrink-swell potential in these soils (USDA Web Soil Survey)

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

APPENDIX G. SECTION 106 CONSULTATION CORRESPONDENCE

Appendix G.1. Consultation Letter Sent to the Ohio State Historic Preservation Officer

USDA
United States Department of Agriculture

6/13/2024

Rural Development
Rural Utilities Service
1400 Independence Ave SW
Mail Stop 1570,
Washington, DC,
20250

Ms. Diana Welling
State Historic Preservation Officer
Ohio History Connection
800 E. 17th Avenue
Columbus, OH 43211

Subject: USDA RD Rural Utilities Service Finding of No Historic Properties Affected
PACE Program Village of Pioneer Solar Project
Village of Pioneer, Williams County, Ohio

Dear Ms. Welling:

The Village of Pioneer plans to seek financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its under its Powering Affordable Clean Energy (PACE) Program] for the Village of Pioneer Solar Project (Project).. This Project will not be using the NPA.[10]

In February of this year, Power System Engineering, on behalf of the RUS, provided initial information concerning the project as it was then proposed. In brief, the project entailed the construction of a solar array, substation, and connecting electrical line. Since that letter, the scope of the project has been revised to move the location of the proposed solar array. Because of the change in siting, the proposed solar array is situated next to existing electrical lines that can connect it to the proposed new substation. The construction of electrical line connecting the substation and the solar array is no longer part of the project.

The current proposal entails the construction of a new substation (the Kenox Substation) and the construction of a 4.9 MW solar generation facility. While the location of the substation is known, there are currently two alternative layouts under consideration for the solar field. Both alternatives include the construction of the proposed Kenox Substation. Alternative 1 would additionally include a dispersed arrangement of solar panels spread over three areas. Alternative 2 would consist of one contiguous solar field. Most of the area that would be affected by Alternative 1 is contained within the limits of Alternative 2. Both alternative layouts are located in the same vicinity surrounding the existing Village sewer treatment lagoons. The solar array

[10] *Nationwide Programmatic Agreement among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on Historic Preservation for Sequencing Section 106* (NPA).

will consist of a series of panels that will extend approximately 10 feet in height. The substation equipment will reach approximately 40 feet in height.

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.

RUS defines the area of potential effect (APE), as an area that includes all Project construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the Project; all areas used for excavation of borrow material and habitat creation; all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas. Impacts that come from the undertaking at the same time and place with no intervening causes, are considered "direct" regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). "Indirect" effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

The APE presented here, and the subsequent assessment of effect, includes both solar array alternatives. The portion of the APE where ground disturbance could result from the construction of either of the alternatives includes approximately 95.7 acres of land, including approximately 8.6 acres within which the substation will be constructed and 87.1 acres of land where construction activities for the solar array may occur. The APE also includes a 500-foot radius surrounding the substation and the potential solar arrays. Maps of the APE are enclosed with this letter. The RUS does not anticipate that additional direct or indirect effects will result from the proposed project. The APE does not include any federal or tribal lands as defined pursuant to 36 CFR § 800.16(x).

The RUS identified the following as consulting parties for the proposed project: the Ohio History Connection (SHPO),the Citizen Potawatomi Nation of Oklahoma, the Eastern Shawnee Tribe of Oklahoma, the Forest County Potawatomi Community of Wisconsin, the Hannahville Indian Community of Michigan, the Miami Tribe of Oklahoma, the Ottawa Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Pokagon Band of Potawatomi Indians of Michigan and Indiana, and the Prairie Band Potawatomi Nation.

The Village of Pioneer contracted cultural resources professionals with the Mannik & Smith Group, Inc. to conduct archaeological and architectural survey within the APE. The results of their work are presented in *Phase I Cultural Resources Survey, Pioneer Solar Project, Madison Township, Williams County, Ohio* (Hinkle et al. 2024). During review of information concerning Previously identified cultural resources and cultural resources surveys maintained by the Ohio SHPO's office, the investigators found that the site of the proposed substation and portions of the area where the two solar array alternatives would be located was previously surveyed for archaeological resources (Favret and Kall 2022). No previously identified architectural

resources are present within the APE of the project. One previously identified archaeological resource – 31Wi0124 – is located within the APE. The site, a late 19th to 20th Century scatter of refuse, was recommended as not eligible for the National Register of Historic Places (NRHP).

During the survey, the investigators did not revisit the location of 31Wi0124, but performed shovel testing to the west of the site location, in areas that were outside of Favret and Kall's 2022 survey area. The investigators did not observe additional artifacts or features associated with 31WI0124. During the survey, the investigators identified 16 new archaeological find locations, including 14 sites and two isolated find locations. These resources are assigned resource number 33WI0127-33WI0137 and 33WI0139-33WI0143. Resources 33WI0129 and 33WI0140 are pre-Contact isolated finds. Sites 33WI0128, 33WI0130-33WI0134, 33WI0136, 33WI0137, 33WI0139, and 33WI0141-33WI0143 are pre-Contact lithic scatters. In general, several of these sites produced tools, debitage, and cores. The investigators recommended that these sites produced no evidence of sub-surface integrity, and no temporally diagnostic artifacts were recovered at any of the sites. Site 33WI0127 is a multi-component site consisting of a small pre-Contact lithic scatter and a Historic refuse dump. Site 33WI0135 is a Historic-era refuse scatter. The investigators recommended that none of the archaeological sites identified during their survey are eligible for the NRHP.

The investigators additionally performed architectural survey in the area surrounding the proposed solar arrays. Their study area extended beyond the APE of the project. Within the APE, the investigators revisited three previously identified resources WIL0051303, WIL0051403, and WIL0051503. These resources were previously recommended to be not eligible (Favret and Kall 2022), and the investigators continue to make these eligibility recommendations for these three resources. No standing architectural resources are present within the visual impact area for the proposed substation.

Based on the findings of the report, a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project. Accordingly, the RUS is submitting a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for your review and consideration. Please provide your concurrence or objection, **electronically** within 30 days of your receipt of this recommended finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days.

Should you have any questions, please contact Christopher Gunn at Christopher.gunn@usda.gov or 202-255-3525 (mobile).

Sincerely,

Christopher M. Gunn

Digitally signed by Christopher M. Gunn
Date: 2024.06.13 11:21:33 -05'00'

Christopher M. Gunn
Archaeologist
Environmental and Historic Preservation Division
Rural Utilities Service
United States Department of Agriculture

Enclosures:
- Project Area Map
- Cultural Resources survey report
-

Appendix G.2. SHPO Correspondence – July 11, 2024

In reply refer to:
2024-WIL-60167

July 11, 2024

Christopher M. Gunn
Archaeologist
Environmental and Historic Preservation Division
Rural Utilities Service
United States Department of Agriculture
1400 Independence Avenue SW
Mail Stop 1570
Washington, DC, 20250
Email: christopher.gunn@usda.gov

RE: Section 106 Review – Pioneer Solar Project, Madison Township, Williams County, Ohio

Dear Mr. Gunn:

This letter is in response to the receipt on June 14, 2024, of *Results of a Phase I Cultural Resources Survey for the Proposed Pioneer Solar Project in Madison Township (Township 9 South, Range 2 West, Section 22), Williams County, Ohio* by The Mannik & Smith Group, Inc. (MSG 2024). We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]). The Village of Pioneer is seeking financial assistance from the USDA Rural Development, Rural Utilities Service (RUS) through its' Powering Affordable Clean Energy (PACE) program. The USDA, RUS is the lead federal agency for the undertaking.

The Phase I cultural resource survey involved a literature review, visual inspection, surface collection, and shovel test unit excavations within 61.2-acres of the total 78.7-acre direct Area of Potential Effect (APE). The difference, 17.5-acres, was previously surveyed in 2022/2023 for cultural resources. The direct APE is composed of a mixture of open agricultural fields and secondary growth timber/scrub. The survey also included a history/architectural survey for above-ground resources within the APE.

The results of the Phase I archaeological survey identified 16 previously unrecorded archaeological sites. These sites have been recorded in the Ohio Archaeological Inventory (OAI) as 33WI127-33WI137 and 33WI139-33WI143. These sites consist of isolated finds, low-density precontact lithic scatters, and historic-era refuse dump sites. As currently delineated, these sites have been recommended as not eligible for the National Register of Historic Places (NRHP). The SHPO agrees with these recommendations. One previously recorded site, 33WI124, was documented within the larger 78.7-acre APE. However, this site was not relocated during this survey. The site was previously determined not eligible for the NRHP, and the SHPO continues to agree with this determination. The history/architectural survey identified 13 resources fifty years of age or older in the APE. It is MSG's recommendation that none of these resources are eligible for listing in the National Register of Historic Places. Our office agrees with MSG's recommendations of eligibility.

After careful review of the cultural resource report, the SHPO concurs with the USDA, RUS that the project will have no effect on historic properties. No further coordination is required for this project

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July 11, 2024
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unless the scope of work changes or new/additional archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as required by 36 CFR § 800.13. If you have any questions concerning this review, please contact either myself by email at sbiehl@ohiohistory.org or Ms. Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Stephen M. Biehl, Project Reviews Manager (archaeology)
Resource Protection and Review
State Historic Preservation Office RPR Serial No. 1103620

cc: William Martin, CEP, RPA (*via email*)

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

Appendix G.3. Tribal Consultation Letters

These tribal representatives received the following letter from the Rural Utility Service staff as part of the Section 106 consultation for the project:

Citizen Potawatomi Nation, Oklahoma
Tracy Wind, Acting Tribal Historic Preservation Officer
1601 S. Gordon Cooper Drive
Shawnee, OK 74801

Eastern Shawnee Tribe of Oklahoma
Paul Barton, Tribal Historic Preservation Officer
70500 E 128 Rd., Wyandotte, OK 74370

Forest County Potawatomi Community, Wisconsin
Olivia Nunway, Assistant Tribal Historic Preservation Officer
P.O. Box 340, Crandon, WI - 54520

Hannahville Indian Community, Michigan
The Honorable Kenneth Meshigaud, Chairman
N14911 Hannahville B1 Road, Wilson, MI 9896-9728

Miami Tribe of Oklahoma
Logan York, Tribal Historic Preservation Officer
P.O. Box 1326, Miami, OK - 74355

Ottawa Tribe of Oklahoma
Rhonda Hayworth, Tribal Historic Preservation Officer
13 South Highway 69a, Miami, OK - 74354

Peoria Tribe of Indians of Oklahoma
The Honorable Craig Harper, Chief
118 South Eight Tribes Trail, Miami, OK - 74355

Pokagon Tribe of Potawatomi Indians, Michigan and Indiana
Matthew Bussler, Tribal Historic Preservation Officer
.O. Box 180, Dowagiac, MI - 49047

Prairie Band Potawatomi Nation
Raphael Wahwassuck Tribal Historic Preservation Officer
16281 Q Road, Mayetta, KS - 66509

USDA
United States Department of Agriculture

6/13/2024

Rural Development
Rural Utilities Service
1400 Independence
Ave SW
Mail Stop 1570,
Washington, DC,
20250

Subject: USDA RD Rural Utilities Service Finding of No Historic Properties Affected
PACE Program Village of Pioneer Solar Project
Village of Pioneer, Williams County, Ohio

Dear :

The Village of Pioneer plans to seek financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its under its Powering Affordable Clean Energy (PACE) Program] for the Village of Pioneer Solar Project (Project).. This Project will not be using the NPA.[1]

In February of this year, Power System Engineering, on behalf of the RUS, provided initial information concerning the project as it was then proposed. In brief, the project entailed the construction of a solar array, substation, and connecting electrical line. Since that letter, the scope of the project has been revised to move the location of the proposed solar array. Because of the change in siting, the proposed solar array is situated next to existing electrical lines that can connect it to the proposed new substation. The construction of electrical line connecting the substation and the solar array is no longer part of the project.

The current proposal entails the construction of a new substation (the Kenox Substation) and the construction of a 4.9 MW solar generation facility. While the location of the substation is known, there are currently two alternative layouts under consideration for the solar field. Both alternatives include the construction of the proposed Kenox Substation. Alternative 1 would additionally include a dispersed arrangement of solar panels spread over three areas. Alternative 2 would consist of one contiguous solar field. Most of the area that would be affected by Alternative 1 is contained within the limits of Alternative 2. Both alternative layouts are located in the same vicinity surrounding the existing Village sewer treatment lagoons. The solar array

[1] *Nationwide Programmatic Agreement among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on Historic Preservation for Sequencing Section 106* (NPA).

will consist of a series of panels that will extend approximately 10 feet in height. The substation equipment will reach approximately 40 feet in height.

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.

RUS defines the area of potential effect (APE), as an area that includes all Project construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the Project; all areas used for excavation of borrow material and habitat creation; all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas. Impacts that come from the undertaking at the same time and place with no intervening causes, are considered "direct" regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). "Indirect" effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

The APE presented here, and the subsequent assessment of effect, includes both solar array alternatives. The portion of the APE where ground disturbance could result from the construction of either of the alternatives includes approximately 95.7 acres of land, including approximately 8.6 acres within which the substation will be constructed and 87.1 acres of land where construction activities for the solar array may occur. The APE also includes a 500-foot radius surrounding the substation and the potential solar arrays. Maps of the APE are enclosed with this letter. The RUS does not anticipate that additional direct or indirect effects will result from the proposed project. The APE does not include any federal or tribal lands as defined pursuant to 36 CFR § 800.16(x).

The RUS identified the following as consulting parties for the proposed project: the Ohio History Connection (SHPO),the Citizen Potawatomi Nation of Oklahoma, the Eastern Shawnee Tribe of Oklahoma, the Forest County Potawatomi Community of Wisconsin, the Hannahville Indian Community of Michigan, the Miami Tribe of Oklahoma, the Ottawa Tribe of Oklahoma, the Peoria Tribe of Indians of Oklahoma, the Pokagon Band of Potawatomi Indians of Michigan and Indiana, and the Prairie Band Potawatomi Nation.

The Village of Pioneer contracted cultural resources professionals with the Mannik & Smith Group, Inc. to conduct archaeological and architectural survey within the APE. The results of their work are presented in *Phase I Cultural Resources Survey, Pioneer Solar Project, Madison Township, Williams County, Ohio* (Hinkle et al. 2024). During review of information concerning Previously identified cultural resources and cultural resources surveys maintained by the Ohio SHPO's office, the investigators found that the site of the proposed substation and portions of the area where the two solar array alternatives would be located was previously surveyed for archaeological resources (Favret and Kall 2022). No previously identified architectural

resources are present within the APE of the project. One previously identified archaeological resource – 31Wi0124 – is located within the APE. The site, a late 19th to 20th Century scatter of refuse, was recommended as not eligible for the National Register of Historic Places (NRHP).

During the survey, the investigators did not revisit the location of 31Wi0124, but performed shovel testing to the west of the site location, in areas that were outside of Favret and Kall's 2022 survey area. The investigators did not observe additional artifacts or features associated with 31WI0124. During the survey, the investigators identified 16 new archaeological find locations, including 14 sites and two isolated find locations. These resources are assigned resource number 33WI0127-33WI0137 and 33WI0139-33WI0143. Resources 33WI0129 and 33WI0140 are pre-Contact isolated finds. Sites 33WI0128, 33WI0130-33WI0134, 33WI0136, 33WI0137, 33WI0139, and 33WI0141-33WI0143 are pre-Contact lithic scatters. In general, several of these sites produced tools, debitage, and cores. The investigators recommended that these sites produced no evidence of sub-surface integrity, and no temporally diagnostic artifacts were recovered at any of the sites. Site 33WI0127 is a multi-component site consisting of a small pre-Contact lithic scatter and a Historic refuse dump. Site 33WI0135 is a Historic-era refuse scatter. The investigators recommended that none of the archaeological sites identified during their survey are eligible for the NRHP.

The investigators additionally performed architectural survey in the area surrounding the proposed solar arrays. Their study area extended beyond the APE of the project. Within the APE, the investigators revisited three previously identified resources WIL0051303, WIL0051403, and WIL0051503. These resources were previously recommended to be not eligible (Favret and Kall 2022), and the investigators continue to make these eligibility recommendations for these three resources. No standing architectural resources are present within the visual impact area for the proposed substation.

Based on the findings of the report, a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project. Accordingly, the RUS is submitting a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for your review and consideration. Please provide your concurrence or objection, **electronically** within 30 days of your receipt of this recommended finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days.

Should you have any questions, please contact Christopher Gunn at Christopher.gunn@usda.gov or 202-255-3525 (mobile).

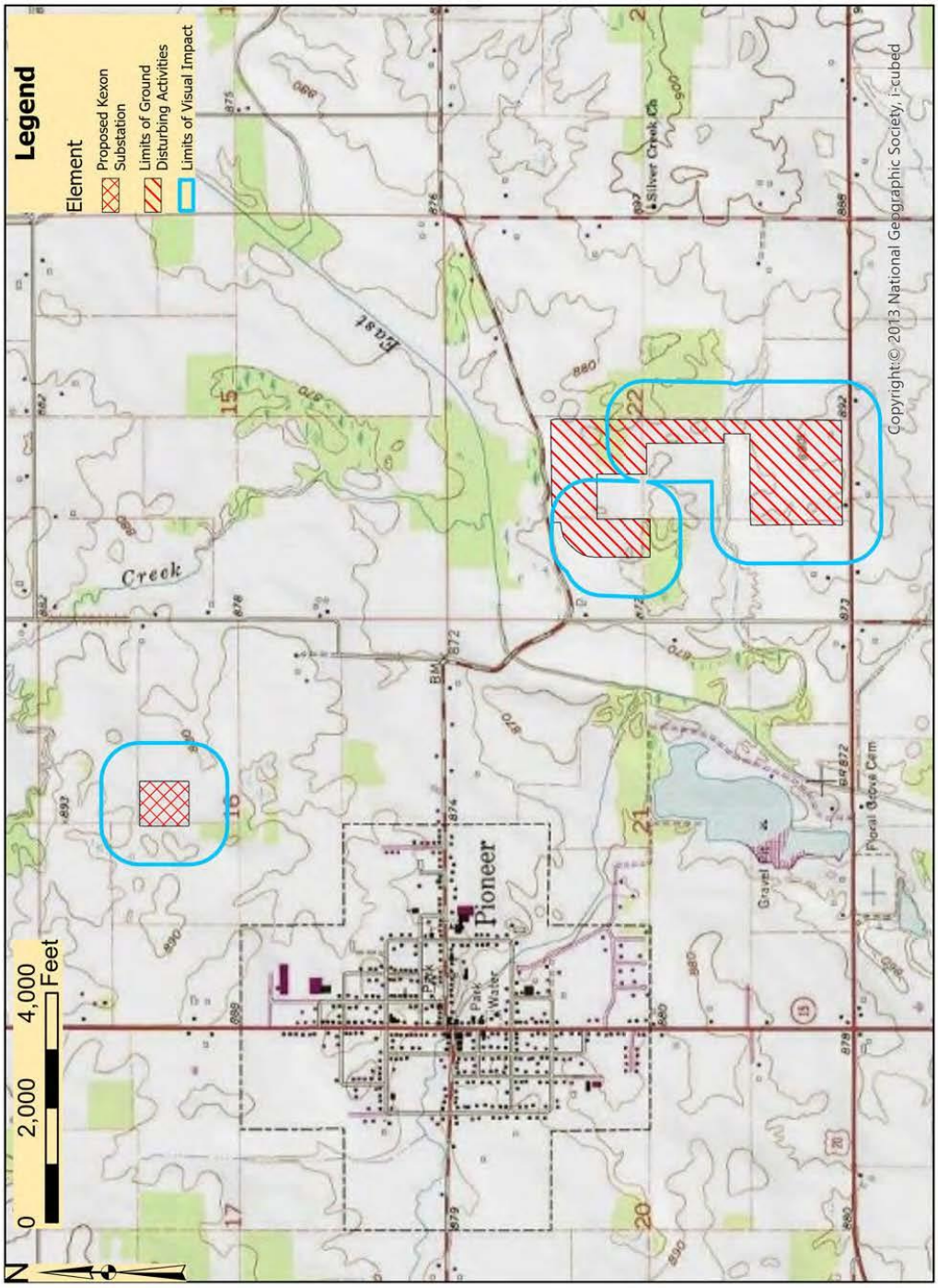
Sincerely,

Christopher M. Gunn Digitally signed by Christopher M. Gunn
Date: 2024.06.13 11:18:55 -05'00'

Christopher M. Gunn
Archaeologist
Environmental and Historic Preservation Division
Rural Utilities Service
United States Department of Agriculture

Enclosures:
- Project Area Map
- Cultural Resources survey report

Appendix G.4. Area of Potential Effects Maps


Legend
Element
Proposed Kexon Substation
Limits of Ground Disturbing Activities
Limits of Visual Impact
Pioneer
Silver Creek Ch
Creek
Floral Grove Cem
Gravel Pit
Park
Water
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2,000
4,000
Feet
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Copyright © 2013 National Geographic Society, i-cubed

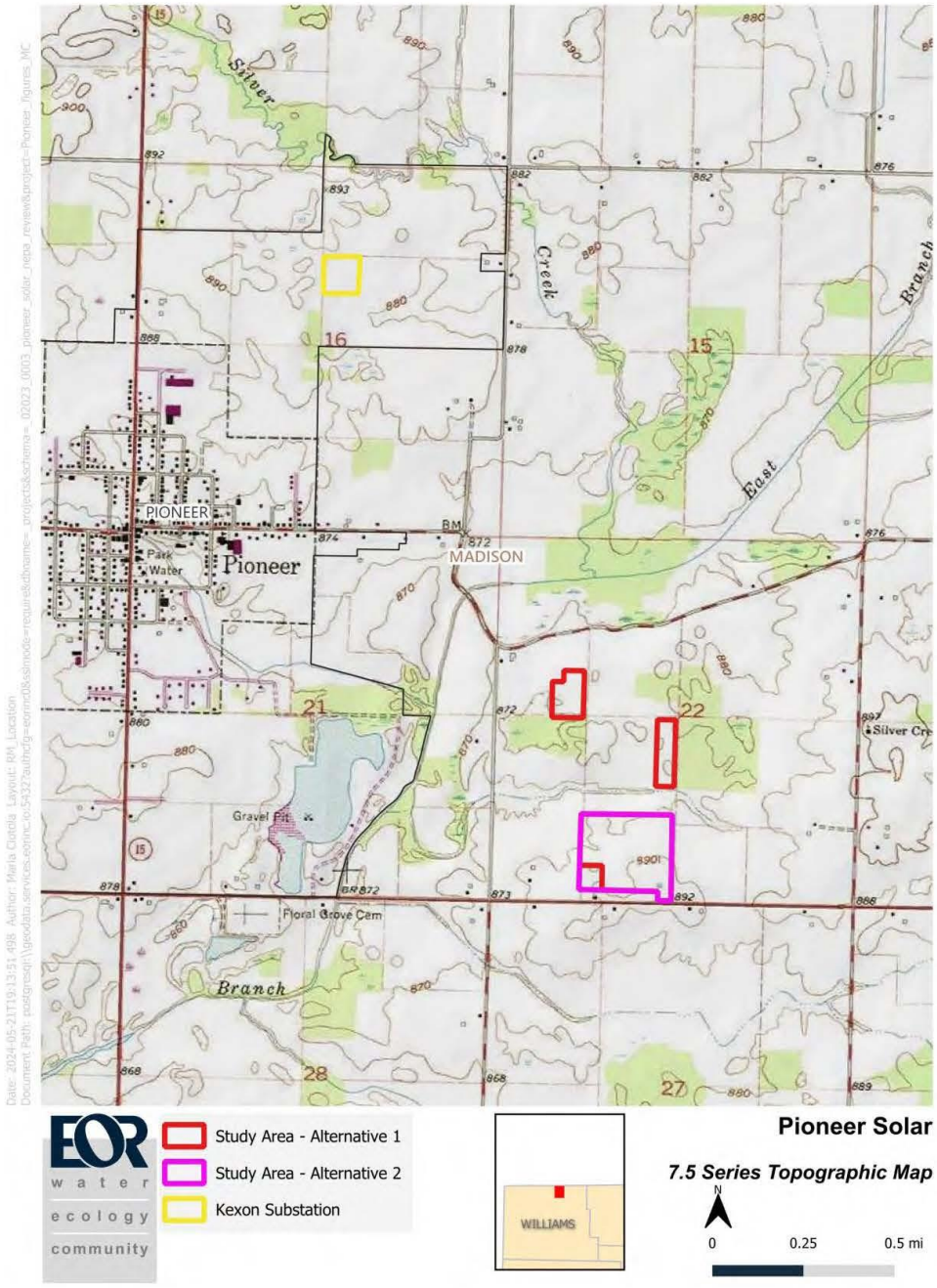
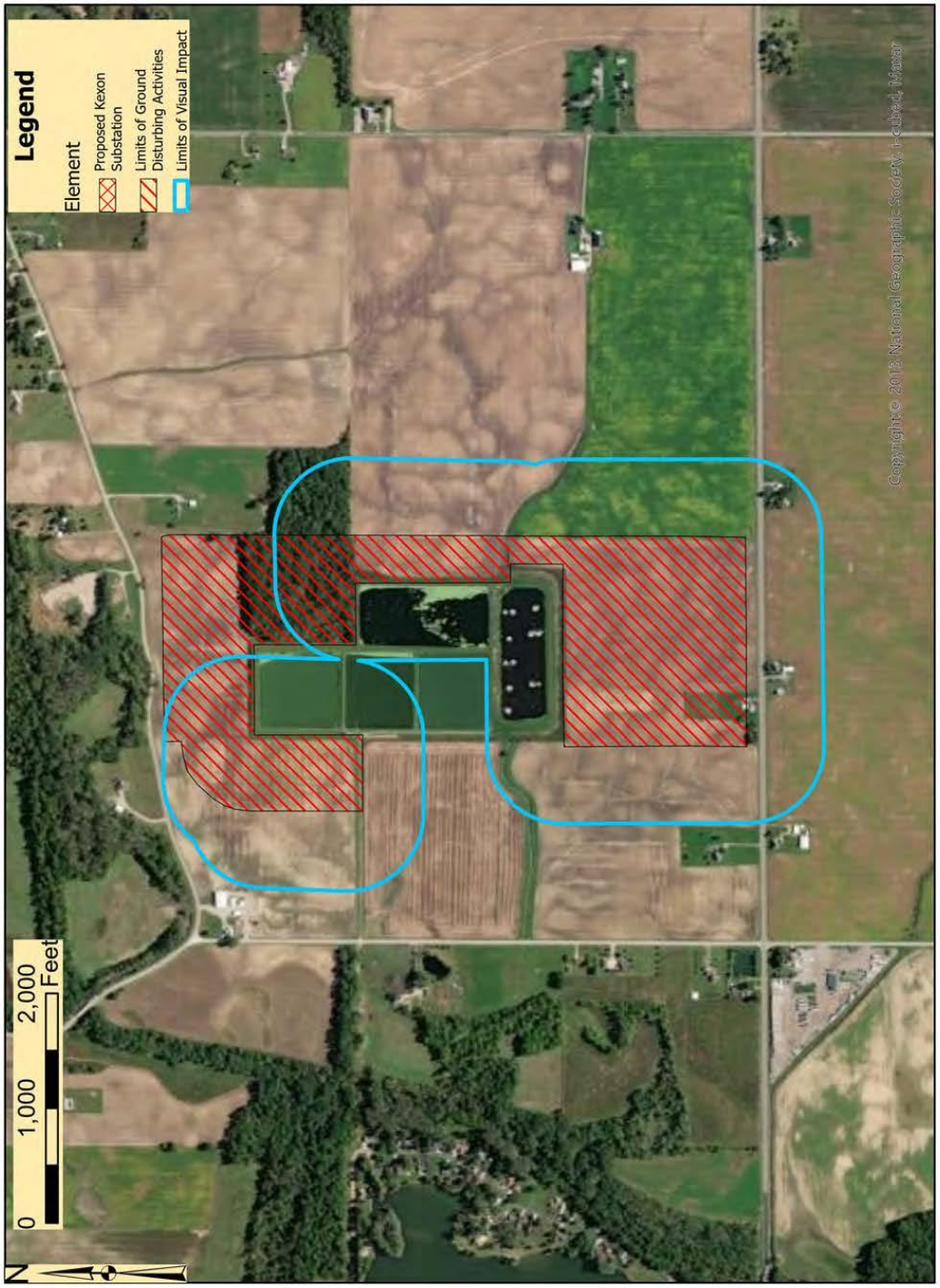


Figure 2. Project Overview.


Legend
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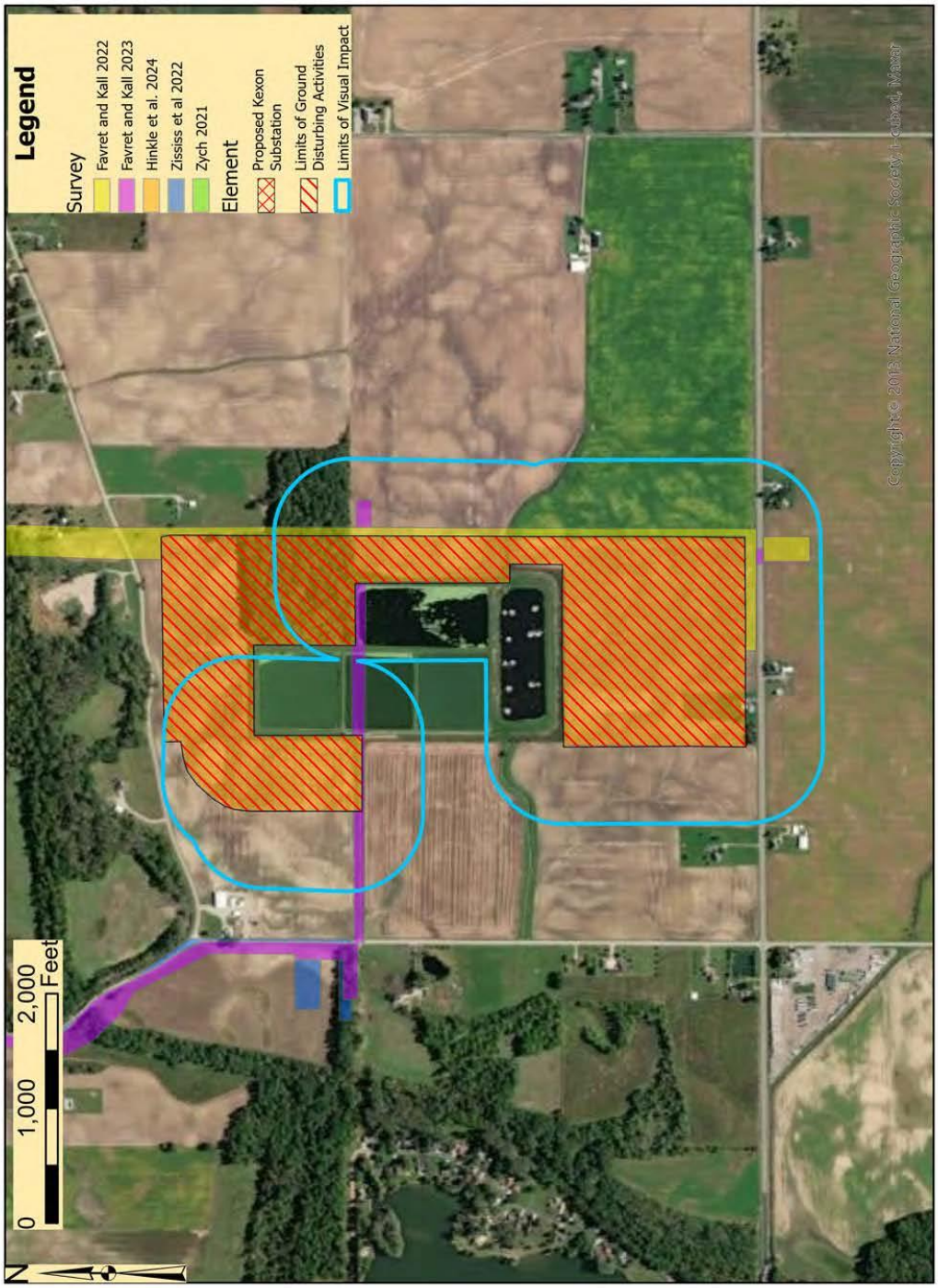
Legend
Survey
Favret and Kall 2022
Favret and Kall 2023
Hinkle et al. 2024
Zissis et al 2022
Zych 2021
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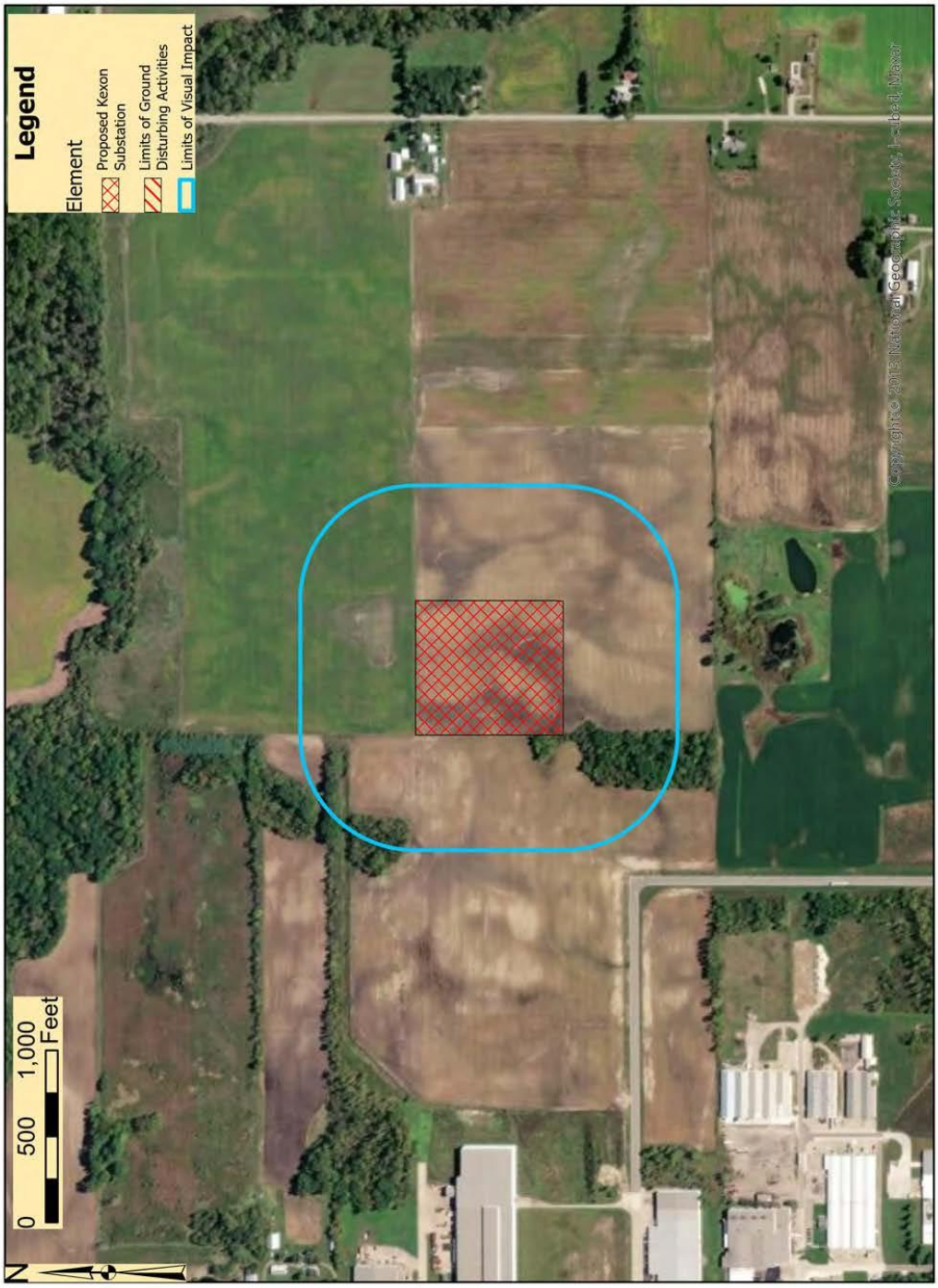
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Proposed Kexon Substation
Limits of Ground Disturbing Activities
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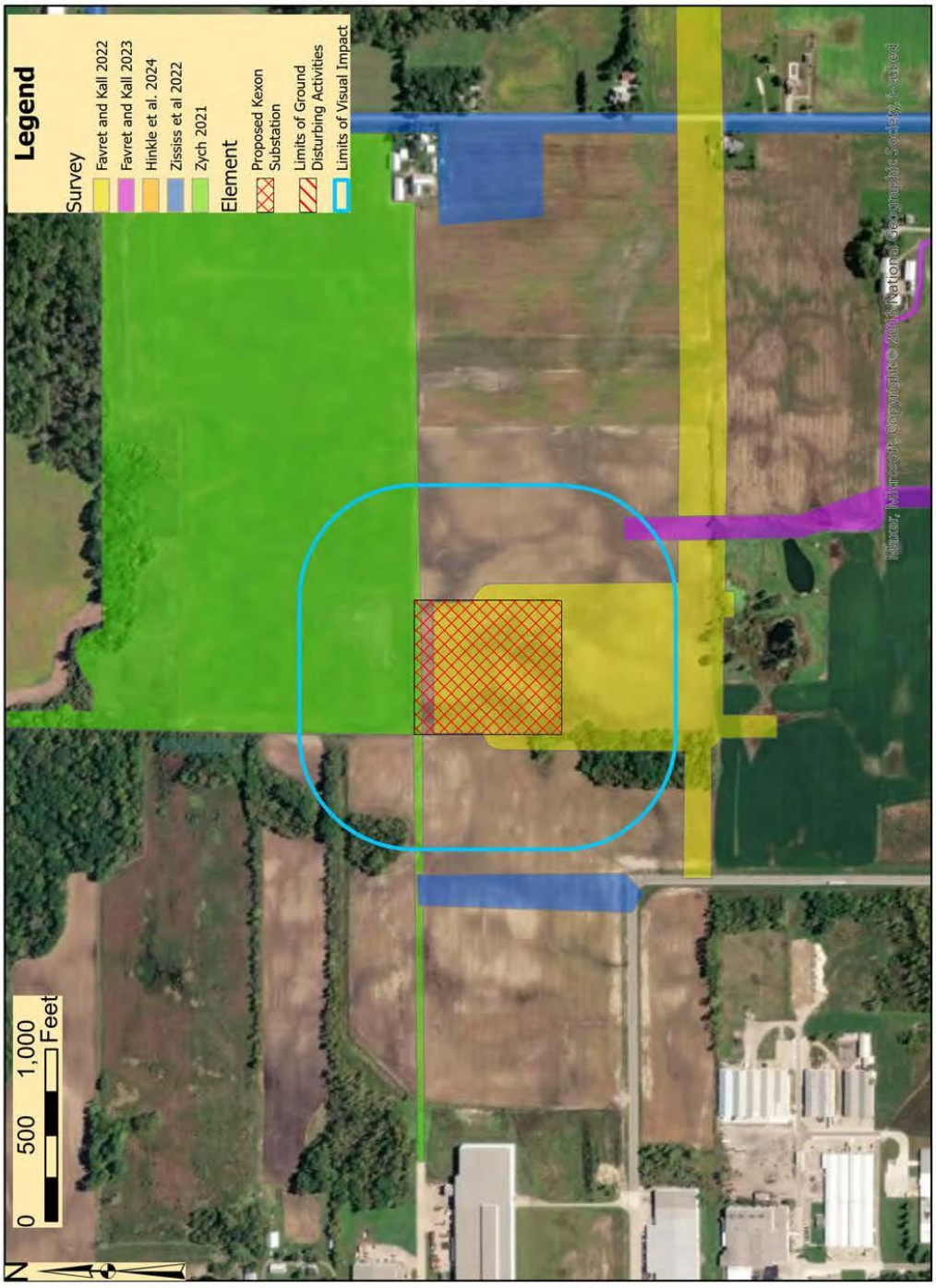
Copyright © 2013 National Geographic Society, i-cubed, Maxar


Legend
Survey
Favret and Kall 2022
Favret and Kall 2023
Hinkle et al. 2024
Zississ et al 2022
Zych 2021
Element
Proposed Kexon Substation
Limits of Ground Disturbing Activities
Limits of Visual Impact
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Appendix G.5. Pokagon Band of Potawatomi Indians Correspondence

Pokégnek Bodéwadmik
POKAGON BAND OF POTAWATOMI
HISTORY & CULTURE CENTER

07/15/2024

Christopher Gunn
1400 Independence Avenue SW
Washington
D.C.
20250
202-255-3525
Christopher.Gunn@usda.gov

PACE Program – Village of Pioneer Solar Project – Williams County, OH

Dear Responsible Party:

Migwètth for contacting me regarding this project. As THPO, I am responsible for handling Section 106 Consultations on behalf of the tribe. I am writing to inform you that I have reviewed the details for the project referenced above. The proposed work is occurring within a mile of known archaeological sites, historic sites or features that are considered sensitive or recorded in the Pokagon Band Historic Inventory Database. I have made the determination that the project will have **No Adverse Effect** on any historic, religious, or culturally significant resources to the Pokagon Band of Potawatomi Indians.

If any cultural or archaeological resources are uncovered during construction, please stop work, and contact me immediately. Should you have any other questions, please don't hesitate to contact me at your earliest convenience.

Sincerely,

Matthew Bussler

Matthew J.N. Bussler
Tribal Historic Preservation Officer
Pokagon Band of Potawatomi Indians
Office: (269) 462-4316
Cell: (269) 519-0838
Matthew.Bussler@Pokagonband-nsn.gov

59291 Indian Lake Road • PO Box 180 • Dowagiac, MI 49047 • www.PokagonBand-nsn.gov
(269) 462-4325 • (800) 517-0777 toll free • (269) 783-2499 fax

APPENDIX H. EJ REPORT

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter ($\mu g/m^3$)	8.36	9.18	10	8.08	54
Ozone (ppb)	58.1	61.4	13	61.6	25
Diesel Particulate Matter ($\mu g/m^3$)	0.175	0.261	23	0.261	38
Air Toxics Cancer Risk* (lifetime risk per million)	20	22	0	25	5
Air Toxics Respiratory HI*	0.2	0.25	0	0.31	4
Toxic Releases to Air	1,300	10,000	23	4,600	64
Traffic Proximity (daily traffic count/distance to road)	4.1	110	12	210	10
Lead Paint (% Pre-1960 Housing)	0.58	0.44	65	0.3	79
Superfund Proximity (site count/km distance)	0.017	0.094	12	0.13	13
RMP Facility Proximity (facility count/km distance)	0.068	0.49	7	0.43	17
Hazardous Waste Proximity (facility count/km distance)	0.086	1.3	12	1.9	17
Underground Storage Tanks (count/km^2)	0.21	2.9	25	3.9	32
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.032	0.47	74	22	76
SOCIOECONOMIC INDICATORS					
Demographic Index	22%	28%	51	35%	36
Supplemental Demographic Index	15%	14%	61	14%	60
People of Color	4%	24%	21	39%	10
Low Income	40%	33%	67	31%	69
Unemployment Rate	3%	6%	41	6%	39
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	14%	10%	75	12%	69
Under Age 5	6%	6%	63	6%	64
Over Age 64	14%	18%	38	17%	42
Low Life Expectancy	18%	21%	22	20%	37

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/ha...

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	3
Air Pollution	1
Brownfields	0
Toxic Release Inventory	5

Other community features within defined area:

Schools	2
Hospitals	0
Places of Worship	1

Other environmental data:

Air Non-attainment	No
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	No
Selected location contains an EPA IRA disadvantaged community	No

Report for City: Pioneer

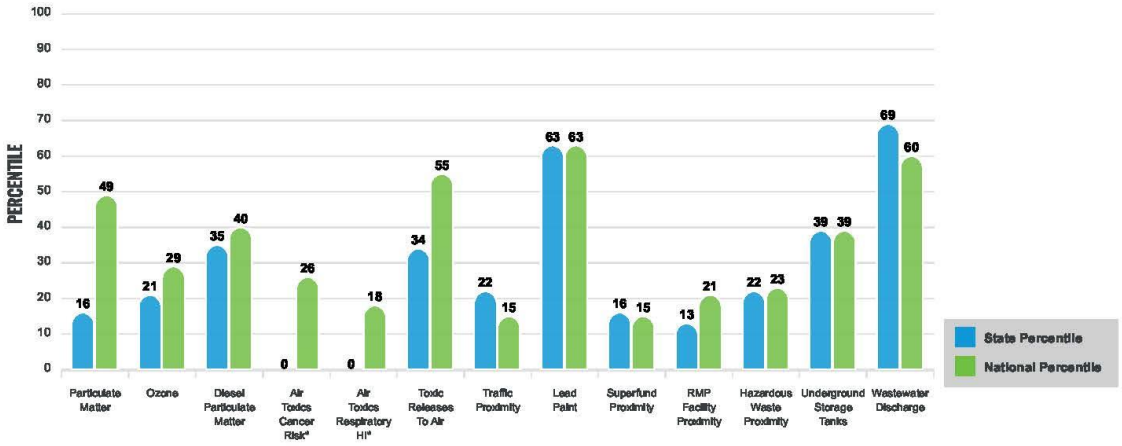
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ Indexes help users screen for potential EJ concerns. To do this, the EJ Index combines data on low income and people of color populations with a single environmental indicator.

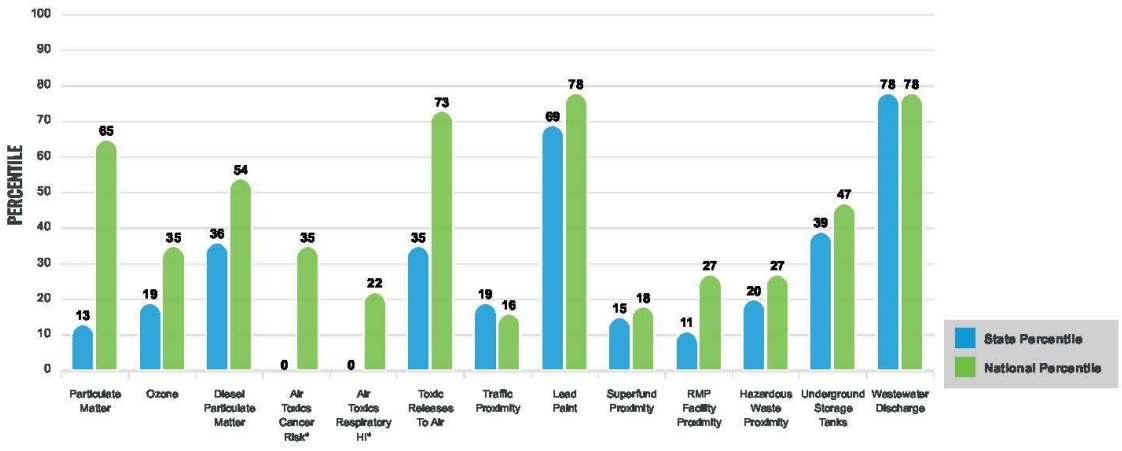
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for City: Pioneer

EPA

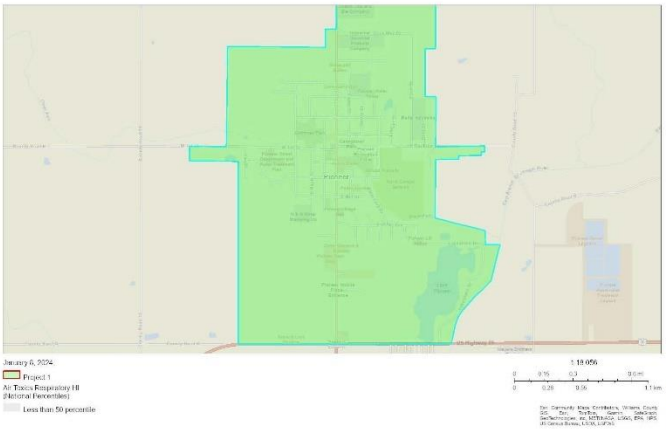
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Pioneer, OH

City: Pioneer
Population: 1,454
Area in square miles: 1.86

A3 Landscape



COMMUNITY INFORMATION

Low income: 40 percent	People of color: 4 percent	Less than high school education: 14 percent	Limited English households: 0 percent
Unemployment: 3 percent	Persons with disabilities: 18 percent	Male: 46 percent	Female: 54 percent
80 years Average life expectancy	$22,306 Per capita income	Number of households: 593	Owner occupied: 71 percent

BREAKDOWN BY RACE

White: 96%	Black: 1%	American Indian: 0%	Asian: 1%
Hawaiian/Pacific Islander: 0%	Other race: 0%	Two or more races: 1%	Hispanic: 2%

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
No language data available.	

BREAKDOWN BY AGE

From Ages 1 to 4	6%
From Ages 1 to 18	27%
From Ages 18 and up	73%
From Ages 65 and up	14%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017-2021. Life expectancy data comes from the Centers for Disease Control.

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	18%	21%	22	20%	37
Heart Disease	7.5	7.2	56	6.1	77
Asthma	10.4	10.7	51	10	66
Cancer	6.8	6.6	50	6.1	64
Persons with Disabilities	17%	14.8%	68	13.4%	75

CLIMATE INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	7%	7%	64	12%	51
Wildfire Risk	0%	0%	0	14%	0

CRITICAL SERVICE GAPS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	15%	15%	59	14%	62
Lack of Health Insurance	4%	7%	38	9%	32
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Footnotes

Report for City: Pioneer

APPENDIX I. FEDERAL AVIATION ADMINISTRATION NOTIFICATION

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

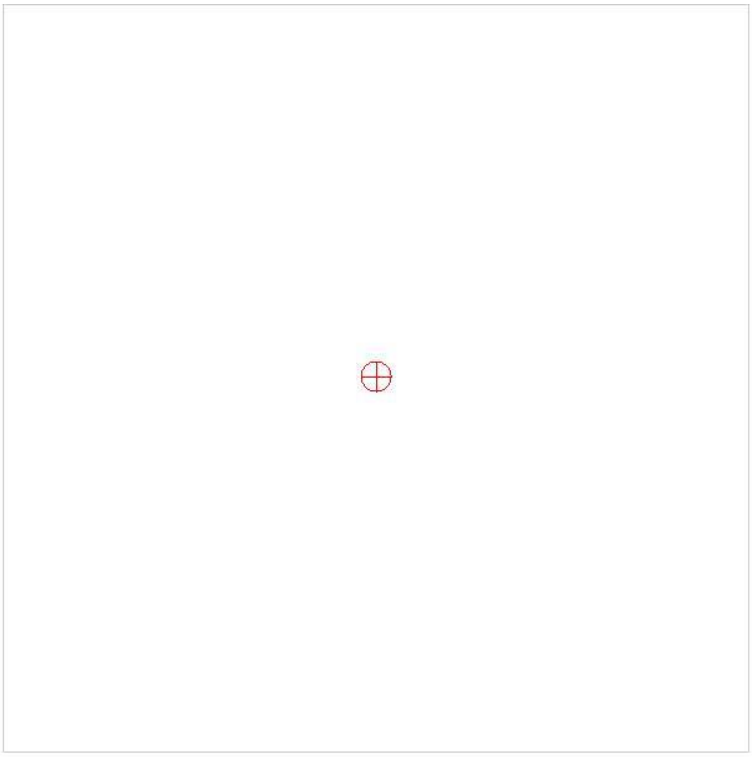
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

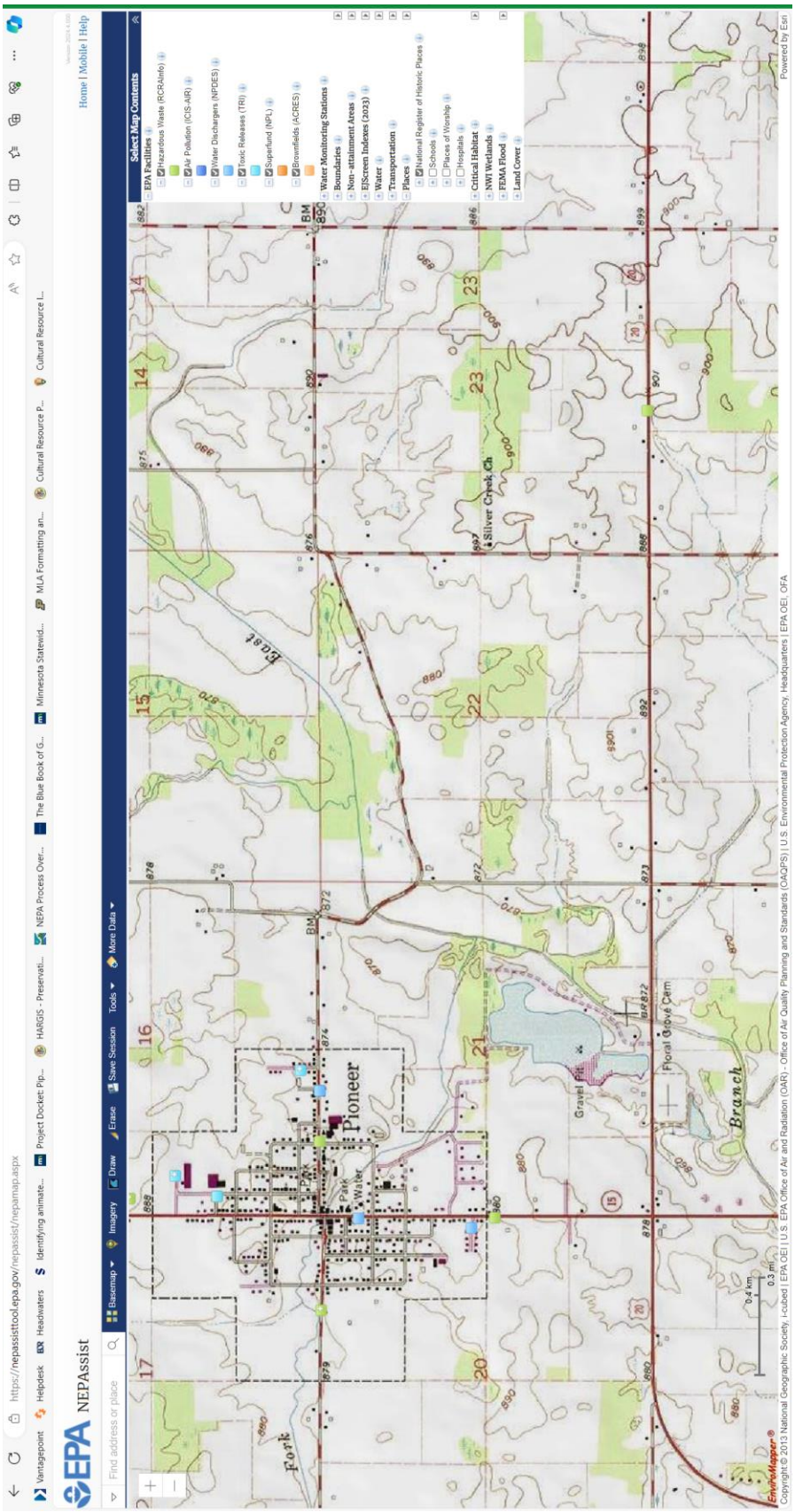
* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	41 Deg 40 M 00.5 S N
Longitude:	84 Deg 31 M 31.9 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	895 (nearest foot)
Structure Height :	14 (nearest foot)
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.



APPENDIX J. EPA FACILITIES MAP


https://nepassisttool.epa.gov/nepassist/nepamap.aspx
Vantagepoint
Helpdesk
Headwaters
Identifying animate...
Project Docket Pip...
HARGIS - Preservati...
NEPA Process Over...
The Blue Book of G...
Minnesota Statewid...
MLA Formatting an...
Cultural Resource P...
Cultural Resource I...
EPA NEPAssist
Home | Mobile | Help
Find address or place
Basemap
Imagery
Draw
Erase
Save Session
Tools
More Data
Select Map Contents
EPA Facilities
Hazardous Waste (RCRAInfo)
Air Pollution (ICIS-AIR)
Water Discharges (NPDES)
Toxic Releases (TRI)
Superfund (NPL)
Brownfields (ACRES)
Water Monitoring Stations
Boundaries
Non-attainment Areas
EJScreen Indexes (2023)
Water
Transportation
Places
National Register of Historic Places
Schools
Places of Worship
Hospitals
Critical Habitat
NWI Wetlands
FEMA Flood
Land Cover
Pioneer
Park
Water
Gravel Pit
Floral Grove Cem
Silver Creek Ch
Branch
Fork
EnviroMapper®
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