

APPLICATION
TO THE
OHIO POWER SITING BOARD
FOR A
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
FOR THE
Union Ridge Solar Facility
Licking County, Ohio
Case No. 20-1757-EL-BGN
March 2020



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March 26, 2021

Via Electronic Filing

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Union Ridge Solar, LLC, Case No 20-1757-EL-BGN

Dear Ms. Troupe:

Enclosed for filing in the above-referenced case is a copy of the Application of Union Ridge Solar, LLC for a Certificate of Environmental Compatibility and Public Need to develop, construct, and operate a 108 megawatt ("MW") solar-powered electric facility in Harrison Township, Licking County, Ohio.

Name of Applicant: Union Ridge Solar, LLC
whose authorized representative is:
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Vice President - Development
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**Name/Location of
Proposed Facility:** Union Ridge Solar Farm
Harrison Township
Licking County, Ohio

Case No. 20-1757-EL-BGN

March 26, 2021

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Authorized

Representative:

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Since the pre-application notification letter was filed, there have been no revisions that appear in the application.

Notarized Statement:

See Attached Affidavit of Andrew Flanagan,
on behalf of Union Ridge Solar, LLC

Sincerely on behalf of
UNION RIDGE SOLAR, LLC



Dylan F. Borchers
Sommer Sheely

Enclosure

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **Union Ridge Solar, LLC** for a Certificate of Environmental Compatibility and Public Need for a Solar Facility Located in Fulton County, Ohio.)
)
)
)
)
)

Case No. 20-1757-EL-BGN

AFFIDAVIT OF CHIEF DEVELOPMENT OFFICER OF LEEWARD RENEWABLE ENERGY, LLC

STATE OF TEXAS :
: ss.
COUNTY OF DALLAS :

I, Andrew Flanagan, being duly sworn and cautioned, state that I am over 18 years of age and competent to testify to the matters stated in this affidavit and further state the following based upon my personal knowledge:

1. I am the Chief Development Officer of Leeward Renewable Energy, LLC (“Leeward”), which indirectly owns 100% of Union Ridge Solar, LLC (“Union Ridge”). I am making this statement in my capacity as an officer of Leeward and not in my individual capacity.

2. Union Ridge’s Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need to develop, construct, and operate a 108 MW solar-powered electric facility was prepared and reviewed by Leeward employees that are the primary individuals in charge of the development of the Union Ridge Application on whom I reasonably rely as subject matter experts.

3. To the best of my knowledge, information, and belief, the information and materials contained in the above-referenced Application are true and accurate.



4. To the best of my knowledge, information, and belief, the above-referenced Application is complete.

Andrew Flanagan

Andrew Flanagan

Leeward Renewable Energy, LLC

03/08/2021

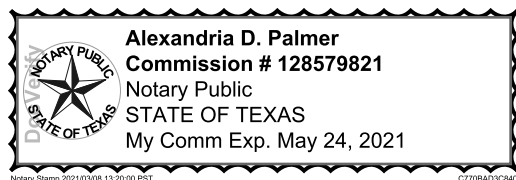
Sworn to before and signed in my presence this ____ day of March 2021.

Alexandria D. Palmer

Notary Public

Alexandria D. Palmer

[SEAL]





Union Ridge Affidavit for Application 20210308.pdf

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E-Signature Summary

E-Signature 1: Andrew Flanagan (ATF)

March 08, 2021 14:20:00 -6:00 [12D2AD288FAA] [187.189.63.85]

Andrew.Flanagan@LeewardEnergy.com (Principal) (Personally Known)

E-Signature Notary: Alexandria D. Palmer (ADP)

March 08, 2021 14:20:00 -6:00 [C770BAD3C840] [70.120.145.5]

eNotary@LeewardEnergy.com

I, Alexandria D. Palmer, did witness the participants named above electronically sign this document.



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Exhibit M	Solar Glare Analysis Report
Exhibit N	Noise Assessment
Exhibit O	Geology and Hydrogeology Report
Exhibit P	Ecological Assessment
Exhibit Q	Phase I History Architecture Reconnaissance Survey
Exhibit R	Phase I Archaeological Reconnaissance (submitted under seal)
Exhibit S	Visual Resource Assessment and Mitigation Plan

ACRONYMS AND ABBREVIATIONS

AC	Alternating Current	NREL	National Renewable Energy Laboratory
AEP	American Electric Power, Inc.	NRHP	National Register of Historic Places
ANSI	American National Standards Institute	O&M	Operations and Maintenance
BMP	Best Management Practices	OAC	Ohio Administrative Code
CAUV	Current Agricultural Use Value	ODOT	Ohio Department of Transportation
dBA	Decibels (A-Weighted)	ODNR	Ohio Department of Natural Resources
DC	Direct Current	OHI	Ohio Historic Inventory
DSM	Digital Surface Model	OHPO	Ohio Historic Preservation Office
EAP	Emergency Action Plan	OPSB	Ohio Power Siting Board
EDR	Environmental Design and Research	OW/OS	Overweight/Oversize
EMF	Electromagnetic Fields	PJM	PJM Interconnection, LLC
EPA	Environmental Protection Agency	POI	Point of Interconnection
FAA	Federal Aviation Administration	PV	Photovoltaic
FTE	Full Time Equivalent	ROW	Right(s)-of-Way
gen-tie	Generation Interconnection	RSG	Resources Systems Group, Inc
GIS	Geographic Information System	SCADA	Supervisory Control and Data Acquisition
gpm	Gallons Per Minute	SPCC	Spill Prevention Control and Countermeasures
IEEE	Institute of Electrical and Electronics Engineers	SR	State Route
JEDI	Jobs and Economic Development Impact	SWPA	Source Water Protection Area
kV	Kilovolt	SWPPP	Storm Water Pollution Prevention Plan
kW	Kilowatt	US	U.S. Route
MW	Megawatt	USACE	U.S. Army Corps of Engineers
MWh	Megawatt-hour	USDOE	U.S. Department of Energy
NLCD	National Land Cover Database	USFWS	U.S. Fish and Wildlife Service
NEC	National Electrical Code	USGS	U. S. Geological Survey
NESC	National Electric Safety Code	VRA	Visual Resource Assessment
NOI	Notice of Intent	VSA	Visual Study Area
NPDES	National Pollutant Discharge Elimination System		

4906-4-01 PURPOSE AND SCOPE

(A) REQUIREMENTS FOR FILING OF CERTIFICATE APPLICATIONS

This chapter sets forth the rules governing standard certificate applications for electric generation facilities.

Union Ridge Solar, LLC, (the Applicant or Union Ridge) is proposing construction of the Union Ridge Solar Facility (the Project), an up to 107.7 megawatt (MW) photovoltaic generation facility (Facility). The materials contained herein and attached hereto constitute the Applicant's submittal (Application) for a Certificate of Environmental Compatibility and Public Need (Certificate), prepared in accordance with the requirements for the filing of standard certificate applications for electric generation facilities, as prescribed in Chapter 4906-4 of the Ohio Administrative Code (OAC). This Application has been prepared by the Applicant, with support from Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services (EDR). EDR has 20 years of experience siting and permitting renewable energy facilities.

(B) WAIVERS

The board may, upon an application or motion filed by a party, waive any requirement of this chapter other than a requirement mandated by statute.

The Ohio Power Siting Board (OPSB) may, upon an application or motion filed by a party, waive any requirement of its rules other than a requirement mandated by statute. By motion filed separate from this Application, the Applicant requested a waiver, in part, from the provisions of Ohio Administrative Code (OAC) 4906-3-03(B), which requires that an applicant conduct a public information meeting in the area in which the project is located. In lieu of holding a local public meeting, the applicant proposed to hold both web-based and phone-based public information meetings. The waiver was granted on December 16, 2020.

Additionally, by motion filed separate from this Application, the Applicant requested a waiver, in part, from the provisions of OAC 4906-4-08(D)(2)-(4), which requires the study of impacts to cultural resources within 10 miles of the project area. The waiver request seeks to reduce the cultural resources study area to 2 miles and the visual impact study area to 5 miles, due to the reduced visual impact of solar facilities in comparison to wind turbines or other tall facilities.

4906-4-02 PROJECT SUMMARY AND APPLICANT INFORMATION

(A) PROJECT SUMMARY

The applicant shall provide a summary of the proposed project. The summary should be suitable as a reference for state and local governments and for the public. The summary shall include the following:

- (1) A statement explaining the general purpose of the facility.*
- (2) A description of the general location, size, and operating characteristics of the proposed facility.*
- (3) A discussion of the suitability of the site for the proposed facility.*
- (4) An explanation of the project schedule (a Gantt chart is acceptable).*

The Applicant proposes construction of an up to 107.7 MW solar photovoltaic (PV) generation facility. The Facility will consist of PV modules, steel racking and support structures, single-axis solar tracking system, underground and aboveground medium voltage electrical collection lines, inverters with medium voltage transformers, access roads, perimeter fencing, a high voltage electrical substation, an operations and maintenance (O&M) building, meteorological data collection system, and supervisory control and data acquisition (SCADA). The point of interconnection (POI) for the Facility will be American Electric Power's existing 138 kilovolt (kV) Kirk substation, located approximately 1,500 feet northwest of the proposed Facility. Interconnection with the POI will be accomplished with a 138 kV interconnection (gen-tie) line, following one of two potential routes, which are shown on Figure 03-2 and described in detail in section 4906-6-05 of this application.

(1) General Purpose of the Facility

The general purpose of the Facility is to maximize energy production from solar resources to deliver clean, renewable electricity to the Ohio bulk power transmission system to serve the needs of electric utilities and their customers. The electricity generated by the Facility will be transferred to the transmission grid operated by PJM Interconnection, LLC (PJM).

(2) Description of the Facility

The Facility will be located on approximately 523 acres of private land in Harrison Township, Licking County, Ohio (Project Area). The total generating capacity of the Facility will not exceed 107.7 MW. The Facility is expected to operate with an average annual capacity factor of 22% to 24%, generating a total of approximately 210,000 to 225,000 megawatt-hours (MWh) of electricity each year, depending on the final equipment models selected for the Facility. Figure 03-2 depicts an overview of the Facility. A detailed description of the Facility, including each Facility component, can be found in section 4906-4-03(B) of this Application.

(3) Description of the Suitability of the Site for the Proposed Facility

An analysis of the Project Area concluded that it meets all factors necessary to support a viable solar energy facility. The proposed site possesses a regionally competitive solar resource, strong electrical transmission characteristics (i.e., available capacity, proximity to New Albany data center load), good access and close proximity to the bulk power transmission system, positive feedback from local officials, compatible land use,

and few environmentally sensitive areas. For more details regarding the suitability and selection of the site, refer to section 4906-4-04(A).

(4) Project Schedule

Acquisition of land and land rights began in 2020 and was completed prior to submittal of this Application. During this time, meetings were held with local stakeholders, and outreach was conducted to landowners near the Project Area. Public information meetings were held on February 25, 2021 to provide information to the public about the Applicant, the Facility, and solar technology, and to provide opportunities for the public to ask questions about the Project. Final design will be completed prior to construction, as early as the first quarter of 2022. Construction is anticipated to begin shortly thereafter and be completed as early as the fourth quarter of 2022, at which point the Facility will be in service. Additional information about the Project schedule can be found in section 4906-4-03(C)(1) of this Application.

(B) APPLICANT INFORMATION

The applicant shall provide information regarding its future plans for additional generation units or facilities in the region, if any.

(1) Plans for Future Generation Capacity at the Site

The applicant shall provide a description of any plans for future additions of electric power generation units for the site (including the type and timing) and the maximum electric power generation capacity anticipated for the site.

The Applicant currently has no plans for development of additional capacity at this site. The maximum energy generation capability evaluated for the POI is 107.7 MW.

(2) Description of Applicant and Operator

The applicant shall provide a brief description of the applicant's history, affiliate relationships and current operations, and a description of the company that will construct and operate the facility, if different from the applicant.

Union Ridge Solar is a wholly owned subsidiary of Leeward Renewable Energy, LLC (Leeward). Leeward is a leading North American renewable energy producer, dedicated to sustainable power production. Leeward, headquartered in Dallas, Texas, currently owns and operates renewable energy facilities across nine states, with a total installed capacity of more than 1,700 MW. The Applicant currently plans to develop, construct, own, and operate the Facility for the life of the Project.

4906-4-03 PROJECT DESCRIPTION AND SCHEDULE

(A) PROJECT AREA DESCRIPTION

The applicant shall provide a description of the project area's geography, topography, population centers, major industries, and landmarks.

The following sub-sections provide information on the Project Area's geography, topography, population centers, major industries, and landmarks.

(1) Geography and Topography Map

The applicant shall provide a map of at least 1:24,000 scale containing a two-mile radius from the project area and showing the following features:

- (a) The proposed facility.*
- (b) Population centers and administrative boundaries.*
- (c) Transportation routes and gas and electric transmission corridors.*
- (d) Named rivers, streams, lakes, and reservoirs.*
- (e) Major institutions, parks, and recreational areas.*

Figure 03-1 depicts the geography and topography within a 2-mile radius of the Project Area, including the following features:

(a) The Proposed Facility

Figure 03-1 illustrates the primary components of the project, including the: fenceline, PV module area, electrical collection system, inverters, access roads, substation, O&M building, and laydown yards contained within the Project Area. While the Applicant expects that the final layout will remain substantially similar to the preliminary Facility layout, due to ongoing technological innovations in the solar industry, continued engineering and survey work, public feedback, and communications during the OPSB certification process, the precise location of these features within the Project Area is subject to change. While the layout is subject to change, all Facility components will be located within the Project Area and will be subject to the various conditions and constraints laid out in this Application, as well as any conditions that are incorporated by the OPSB into the Certificate.

(b) Population Centers and Administrative Boundaries

The proposed Facility location is in Harrison Township, Licking County, Ohio. The Project Area is approximately 0.5 mile southeast of City of Pataskala. A developed residential area and school are approximately 0.6 mile south of the Project Area, a developed residential area is approximately 0.4 mile northeast of the Project Area, and scattered residences and small developed areas surround the Project Area. The closest large city is Columbus, located approximately 6.5 miles west of the Project Area.

(c) Transportation Routes and Gas and Electric Transmission Corridors

The Project Area is surrounded by York Road on the east, Refugee Road on the south, and Lake Drive and Blacks Road on the north. Watkins Road transects the western Project Area in a north-south direction. Other nearby major routes include State Route (SR) 16 approximately 1.1 miles north of the Project Area, and U.S. Route (US) 40 and Interstate (I) 70, approximately 0.9 mile and 1.7 miles south of the Project Area, respectively. A Columbus and Ohio River Railroad line runs east-west approximately 1,000 feet north of the Project Area. Buckeye Intra-National Airport, a paved private use airport, is approximately 5 miles east of the Project Area. John Glenn Columbus International Airport is approximately 12 miles west of the Project Area. American Electric Power's (AEP) Kirk substation is approximately 1,500 feet north of the western Project Area. AEP's Jug Street to Kirk 345 kV transmission line runs north-south about 1,000 feet west of the Project Area, and Tap line 152756, at 138 kV, from AEP's Kirk substation runs east-west through the northern Project Area (EIA, n.d.). A gas transmission pipeline runs north-south along Outville Road, approximately 1.5 miles east of the Project Area (USDOT, 2020).

(d) Named Rivers, Streams, Lakes, and Reservoirs

There are two named rivers and streams within 2 miles of the Project Area. South Fork Licking River flows southwest through the southwestern Project Area. Muddy Fork converges with South Fork Licking River approximately 1.1 miles west-northwest of the Project Area, in the City of Pataskala. Bell Run and Beaver Run flow approximately 3 miles east of the Project Area. Ramp Creek is approximately 3.5 miles northeast of the Project Area.

(e) Major Institutions, Parks, and Recreation Areas

U.S. 40 (National Road), approximately 0.9 mile south of the Project Area, is designated as a Historic National Road, the first federally funded interstate highway in the nation (USDOT-FHA, n.d.). There are no U.S. or Ohio designated bike routes within 2 miles of the Project Area (ODOT, 2018). Pataskala Lions Park is approximately one quarter mile southwest of the Project Area. Watkins Middle School and Watkins Memorial High School are approximately 0.6 mile south of the Project Area. Local schools, churches, a museum, and a library are in Pataskala, approximately 1.5 miles west of the Project Area. Additional churches are scattered throughout the 2-mile radius from the Project Area.

(2) Area of All Owned and Leased Properties

The applicant shall provide the area, in acres, of all owned and leased properties that will be used for construction and/or operation of the project, and the number of properties.

Table 03-1 shows the number and approximate area of properties leased within the Project Area. The Facility substation and gen-tie line are proposed to be constructed on leased land. All other portions of the Project Area will be leased for the life of the Facility.

Table 03-1. Area of Property Used for Project

	Number of Properties	Area (acres)
Leased	4	507.5
Right-of-way property easements	3	15.9

(B) DETAILED DESCRIPTION OF PROPOSED FACILITY

The applicant shall provide a detailed description of the proposed generation facility.

A detailed description of the Facility is provided in the sub-sections below. The equipment specifications presented in this Application are representative of the options that will be selected for the final procurement of Facility components and materials. Final equipment specifications, characteristics, and dimensions will be provided to OPSB Staff prior to construction. Any changes in equipment specifications from what is presented here are not expected to increase potential impacts.

(1) Description Details for the Project

The applicant shall submit the following for each generation equipment alternative, where applicable:

- (a) Type, number of units, estimated net demonstrated capacity, heat rate, annual capacity factor, and hours of annual generation.*
- (b) For wind farms, the turbine hub height, tip height, rotor diameter, and blade length for each model under consideration.*
- (c) Fuel quantity and quality (i.e., ash, sulfur, and British thermal unit value).*
- (d) A list of types of pollutant emissions and estimated quantities.*
- (e) Water volume requirement, source of water, treatment, quantity of any discharge and names of receiving streams.*

(a) Type and Characteristics of Generation Equipment

Generation equipment is anticipated to include approximately 250,000 monocrystalline bifacial PV panels, mounted on single-axis trackers and installed in linear arrays. Polycrystalline or thin film panels may be used depending on final procurement of equipment and equipment availability prior to construction. Representative solar panels under consideration are provided in Exhibit A. Improving technologies could dictate the use of an alternative panel as identified during the final procurement process. The panels will operate continuously but will not produce electricity during nighttime hours. The annual net capacity factor for the 107.7 MW proposed Facility is estimated to be 22% to 24%. The Facility will generate approximately 210,000 to 225,000 MWh of electricity each year. Heat rate is not applicable to solar energy facilities.

(b) Turbine Dimensions

This section is not applicable to the Facility.

(c) Fuel Quantity and Quality

Solar panels generate electricity without burning fuels; therefore, this section is not applicable to the Facility.

(d) List of Pollutants Emissions and Quantities

Solar panels generate clean, emission-free electricity without releasing pollutants; therefore, this section is not applicable to the Facility.

(e) Water Requirement, Source, and Discharge Information

Solar panels generate electricity without the use of water; therefore, no water is treated or discharged, and this section is not applicable to the Facility.

(2) Construction Method and Description of Major Facility Equipment

The applicant shall describe, in as much detail as is available at the time of submission of the application, the construction method, site preparation and reclamation method, materials, color and texture of surfaces, and dimensions of all facility components, including the following:

- (a) Electric power generation plant or wind-powered electric generation turbines, including towers and foundations.*
- (b) Fuel, waste, water, and other storage facilities.*
- (c) Fuel, waste, water, and other processing facilities.*
- (d) Water supply, effluent, and sewage lines.*
- (e) Associated electric transmission and distribution lines and gas pipelines.*
- (f) Electric collection lines.*
- (g) Substations, switching substations, and transformers.*
- (h) Temporary and permanent meteorological towers.*
- (i) Transportation facilities, access roads, and crane paths.*
- (j) Construction laydown areas.*
- (k) Security, operations, and maintenance facilities or buildings.*
- (l) Other pertinent installations.*

The primary steps for Facility construction include the following: (1) installation of storm-water, erosion control, and vegetation protection measures, (2) securing the perimeter of the construction area, (3) vegetation clearing, (4) minor earthwork and grading, as necessary, (5) access roads construction, and (6) installation of equipment such as pilings, racking, panels, inverters and electrical cables, weather stations, the substation, generation tie line, and fencing to secure the site. Additional details on construction, site preparation, and reclamation methods are included in the sub-sections below, and in section 4906-4-07 and section 4906-4-08 of this Application.

(a) Electric Power Generation Equipment

Following the installation of access roads, installation of foundations and racking will commence.

Thereafter, PV module, electrical collection, inverter, and transformer installation will begin, as well as

the high voltage substation. Limited site preparation may be necessary to accommodate PV panel module installation via grading due to localized variability in topography. Where grading is necessary, topsoil will be segregated and redistributed following grading activities to maintain soil productivity.

PV panel modules will be approximately 4 feet wide by 7.5 feet long. The panels will be secured on steel racking and support structures affixed to single-axis solar tracking systems, with up to two modules stacked end-to-end, centered on the horizontal crossbar of the tracker, for a total width of approximately 15 feet. The panels will rotate up to 60 degrees in either direction from horizontal, centered along the horizontal crossbar of the tracker. The height of the crossbar will be approximately 8.5 feet. Under flat conditions found across most of the Project Area, panels will reach approximately 15 feet off the ground when tilted to their highest position.

Single-axis solar tracking system designs vary by manufacturer, but generally consist of a series of mechanically linked horizontal steel support beams, with a drive train system usually located in the center of the rows, dividing the array into two sides. Rows are aligned north to south and the PV panels pivot, tracking the sun's motion from east to west throughout the day. Manufacturer's specifications for representative PV panels and racking systems under consideration are provided in Exhibit A, which is submitted under confidential seal. Improving technologies could dictate the use of an alternative racking system as identified during the final procurement process.

The racking and panels are supported on steel piles that will be driven into the ground to a depth generally between 7 and 10 feet. Geotechnical test borings have confirmed the adequacy of this pile depth (see Exhibit C). Based on test borings, it is anticipated that piles will be driven across the site. Single pile lengths are anticipated for pile driving that do not require welding of pile sections.

Upon completion of the installation of access roads, piles, steel racking, and panels, disturbed soils will be de-compacted via tilling to prepare for the establishment of vegetation. Vegetation will be established per the Vegetation Management Plan in Exhibit D. All permanent or temporary stabilization associated with the Facility will be completed to meet the requirements of Ohio Environmental Protection Agency (Ohio EPA) Permit No. OHC000005 (Ohio EPA, 2018).

(b) Fuel, Waste, Water, and Other Storage Facilities

PV panels generate electricity without the use of fuel or water, and without generating waste. During construction, contractors will likely use temporary fuel tanks at some laydown yards for re-fueling construction equipment.

Oil used for transformer cooling and insulation at the Facility substation may be stored within an aboveground storage tank which will likely exceed 1,320 gallons. Per federal regulations (40 CFR Part 112), should the tank exceed 1,320 gallons, a Spill Prevention Control and Countermeasures Plan (SPCC Plan) will be prepared for the storage tank prior to its placement onsite. Oil that is removed from the transformers during maintenance activities will be disposed in compliance with applicable local, state, and federal regulations. Other onsite storage at the O&M building may include hydraulic oil stored in plastic jugs or 55-gallon drums on secondary containment pallets, and potentially a double walled fuel tank with additional secondary containment for maintenance vehicle use.

(c) Fuel, Waste, Water, and Other Processing Facilities

PV panels generate electricity without the use of fuel or water, and without generating waste. Therefore, the proposed Facility does not include any fuel, waste, water, or other processing facilities.

(d) Water Supply, Effluent, and Sewage Lines

No Facility components will use significant quantities of water or discharge significant quantities of wastewater. An onsite well potentially may be used to provide potable water to employees and others at the Facility. Prior to development of the water supply system, a permit from the local health district will be obtained, pursuant to OAC 3701-28-03(A). A septic system, sized for a small office setting, potentially may be installed for wastewater disposal. Prior to construction of any septic system, the Applicant will obtain an Ohio EPA wastewater permit-to-install, and any other required state and local permits.

(e) Associated Electric Transmission and Distribution Lines and Gas Pipelines

The Facility will interconnect to AEP's Kirk substation, approximately 1,500 feet northwest of the Project Area. The 138 kV gen-tie line from the Facility substation to AEP's Kirk substation will be described in detail in section 4906-6-05 of this Application. There are no new electric distribution lines or gas pipelines associated with the Facility.

(f) Electric Collection Lines

The electrical collection system primarily will be installed underground. Final engineering and procurement will help determine the construction method for the electrical collection system. The electrical cables that would be used for each type of electrical collection system are described below. A total of approximately 5.8 miles of 34.5 kV collection line will be installed for the Facility.

Underground alternating current (AC) collection systems from the inverter skids to the substation will be installed in trenches or ploughed into place at a depth of at least 36 inches below grade. During all trench excavations, the topsoil and subsoil will be removed and stockpiled separately. Once the cables are laid

in the trench, the area will be backfilled with subsoil, followed by topsoil. Trenching or ploughing using these methods are preferred for installation of buried collection lines. If these methods are not feasible for installation due to site conditions, trenching via backhoe may be used in some circumstances. Installation of collection lines via backhoe will result in soil disturbance averaging approximately 15 feet in width to accommodate machinery and backfill/spoil storage. Other methods of installation would disturb a smaller area.

Any damaged drain tile lines will be assessed for prompt repair per the Drain Tile Mitigation Plan in Exhibit E. All areas adjacent to the open trench will be restored to original grade and surface condition. Revegetation of these areas will be completed in accordance with the Vegetation Management Plan (Exhibit D).

(g) Substations, Switching Substations, and Transformers

The preliminary Facility design identifies 34 inverters throughout the Project Area. A skid supported by piles or a gravel inverter pad, approximately 15 feet wide by 30 feet long, will provide the foundation for the inverters, transformer, equipment cabinet, and associated Supervisory Control and Data Acquisition (SCADA) system. Inverter structures will be approximately 25 feet long, 7 feet wide, and 7 feet tall. Manufacturer's specifications for representative inverters under consideration are provided in Exhibit A.

Inverters will transmit medium voltage electricity through underground collection lines to the Facility substation. The Project substation will be either in the northwest or north-central portion of the Project Area on a parcel that is under a lease agreement with a participating landowner. It is currently anticipated that the footprint of the substation will be approximately 275 feet long by 250 feet wide and will include structures up to approximately 65 feet in height. The footprint will house the transformers and necessary infrastructure to increase the electricity voltage from 34.5 kV to 138 kV. At 138 kV, electricity will be transmitted to existing electric transmission infrastructure via a gen-tie line to the POI. The gen-tie line is discussed in detail in section 4906-6-05 of this Application.

The Facility substation will be designed according to regional utility practices, PJM Standards, Reliability First Organization Standards, the National Electrical Code (NEC), and the Rural Utility Service Code. The area within the substation will be graveled to minimize vegetation growth and reduce fire risk. The substation will be enclosed by a 7-foot-tall chain link fence with 1 foot of barbed wire strands. Fence panels typically will be 10 feet wide and made from galvanized steel. The substation will contain concrete foundations for large equipment, a main power transformer, circuit breakers, surge arrestors, insulators, electrical bus-work, and lighting necessary to meet various electric codes and standards.

(h) Weather Stations

Three meteorological data collection stations, with equipment up to 15 feet in height, will be mounted adjacent to inverters. These weather stations will be used to measure various aspects of the weather, including solar irradiance and wind speed.

(i) Transportation Facilities, Access Roads

The Facility will require the construction of approximately 7.2 miles of access roads. Access roads will be gravel surfaced and up to 16 feet wide along straight portions of the roads, and wider along curves and at internal road intersections.

During construction, access road installation and use could result in temporary soil disturbance of up to approximately 25 feet in width. Road construction will involve topsoil stripping. Stripped topsoil will be stockpiled along the road corridor for use during site restoration. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with gravel or crushed stone at a depth to be later determined. A geotextile fabric or grid may be installed beneath the road surface, if necessary, to provide additional support. Once construction is complete, temporarily disturbed areas will be restored and revegetated. Rock construction entrances will be installed to reduce dirt and sediment on area public roads.

(j) Construction Laydown Areas

Two temporary laydown areas, approximately 4.6 acres each, are proposed along Watkins Road for use during Facility construction. The laydown areas will be used for material and equipment storage, construction worker parking, and construction management trailer placement. The laydown areas will be stripped of topsoil and erosion and sediment control measures will be implemented. Woodchips or construction matting may be used to cover the laydown area; no gravel use is anticipated. Following construction, laydown areas will be de-compacted, topsoil will be redistributed, and the area will be reseeded per the specifications of the Vegetation Management Plan.

(k) Security, Operations, and Maintenance Facilities or Buildings

The Facility will be surrounded by an approximately 7-foot-tall woven wire agricultural fence. Fence panels will be approximately 10 feet wide and made from galvanized steel, supported on wooden posts. Minimal downlit security lighting will be used at Facility entrances, the O&M building, substation, and inverters.

The O&M building will be approximately 50 feet long by 50 feet wide and up to 20 feet tall and located next to the Facility substation. Adjacent parking and staging, subject to additional design steps, is anticipated to be in adjacent upland area. Parking is anticipated to be up to 1,000 square feet in size. The

exterior of the O&M building will consist of metal siding, of similar look and material as a pole barn. The O&M building facilities may potentially include an on-site well and septic system to accommodate normal business office usage. Construction of the O&M building will follow all applicable building codes.

The Facility will use a SCADA system, which allows remote control and monitoring of the status of the Facility. The monitoring system provides status views of electrical and mechanical data, operation and fault status, meteorological data, and grid station data. For security, the Facility will be fenced and have site security cameras. Access to the Facility will be through lockable gates.

(I) Other Pertinent Installations

Permanent storm water and erosion control measures will be implemented at the Facility to meet all requirements of Ohio EPA Permit No. OHC000005 (Ohio EPA, 2018). Permanent storm water and erosion control measures, as shown on the preliminary Facility design, are anticipated to be minimal and will consist primarily of infiltration swales and ditches adjacent to access roads. These measures will be reassessed upon development of a final Facility design.

(3) Need for New Transmission Lines

The applicant shall submit a brief description of the need for new electric transmission line(s) or gas pipelines associated with the proposed facility.

The Facility will interconnect to AEP's Kirk substation, approximately 1,500 feet northwest of the Facility. Two collection substations, gen-tie lines, and O&M facilities are represented in the Facility design. The final location of these components will be determined during the Application review, prior to completeness. Details of the gen-tie line from the Facility substation to the Kirk substation are discussed in detail in section 4906-6-05 of this Application.

(4) Project Area Map

The applicant shall supply a map of at least 1:12,000 scale of the project area, showing the following features:

- (a) An aerial photograph.*
- (b) The proposed facility, including all components listed in paragraph (B)(2) of this rule.*
- (c) Road names.*
- (d) Property lines.*

Prepared at a 1:9,000 scale, Figure 03-2 illustrates the following features:

(a) Aerial Photograph

Mapping was developed using the Ohio Statewide Imagery Program 1-foot resolution aerial photographs map service.

(b) The Proposed Facility

The preliminary Facility layout includes components described above in section 4906-4-03(B)(2).

(c) Road Names

Road data was obtained from the Ohio Department of Transportation (ODOT).

(d) Property Lines

Property line data was provided by the Licking County Auditor.

(C) DETAILED PROJECT SCHEDULE

The applicant shall provide a detailed project schedule.

(1) Schedule

The applicant shall provide a proposed project schedule in Gantt chart format covering all major activities and milestones, including:

- (a) Acquisition of land and land rights.*
- (b) Wildlife and environmental surveys/studies.*
- (c) Receipt of grid interconnection studies and other critical path milestones for project construction.*
- (d) Preparation of the application.*
- (e) Submittal of the application for certificate.*
- (f) Issuance of the certificate.*
- (g) Preparation of the final design.*
- (h) Construction of the facility.*
- (i) Placement of the facility in service.*

The Project schedule in Gantt chart format is provided as Inset 03-1 below.

(a) Acquisition of Land and Land Rights

Acquisition of land and land rights began in 2020 and was completed prior to submittal of this Application.

(b) Wildlife Surveys/Studies

Ecological surveys/studies were completed in September 2020.

(c) Receipt of Grid Interconnection Studies

Grid interconnection studies were initiated in February 2020 (see section 4906-4-05). The feasibility study was issued in July 2020. The system impact study was issued in February 2021.

(d) Preparation of the Certificate Application

Preparation of the Application began during the second half of 2020 and was completed in March 2021. The virtual public information meeting and telephone conference meeting were held on February 25, 2021.

(e) Submittal of the Application for Certificate

This Application was officially submitted in March of 2021.

(f) Issuance of the Certificate

It is anticipated that the Certificate will be issued in the third quarter of 2021.

(g) Preparation of the Final Design

The Applicant expects that final designs and detailed construction drawings will be completed as early as the third quarter of 2021.

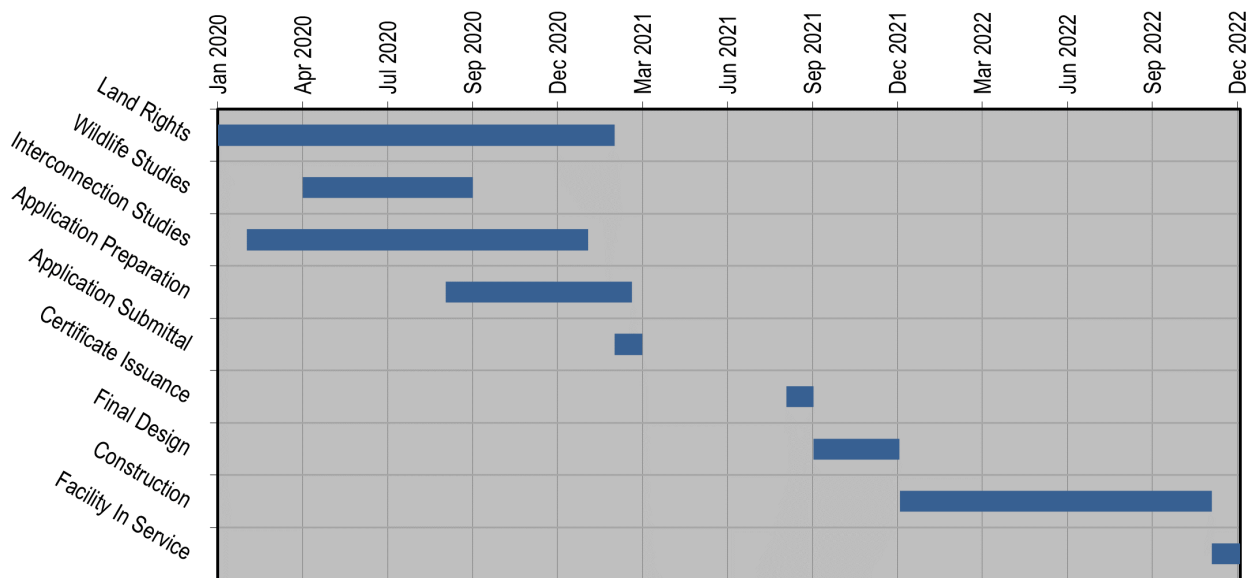
(h) Construction of the Facility

The Applicant expects that construction will begin in the first quarter of 2022 and be completed in the fourth quarter of 2022.

(i) Placement of the Facility in Service

The Facility will be placed in service upon completion of construction, anticipated for the fourth quarter of 2022.

Inset 03-1. Estimated Project Schedule



(2) Construction Sequence

The applicant shall describe the proposed construction sequence.

Project construction is anticipated to proceed in the following sequence, with multiple activities being performed concurrently:

- Installing storm water and erosion control measures;
- Securing the perimeter of the areas in which construction will occur;
- Clearing the Project Area as necessary, particularly at PV arrays, access roads, laydown yards, and substation locations;
- Demolition of any structures to facilitate build out;
- Survey, Layout, and Staking of access roads and equipment locations;

- Grading access roads, PV arrays, laydown yards, and substation areas;
- Constructing access roads;
- Installing piles and racking for PV panel support;
- Installing PV panels;
- Installing the electrical collection system;
- Constructing and installing the substation;
- Constructing and installing the gen-tie line;
- Installing inverters;
- Installing weather stations;
- Commissioning and energizing the Facility;
- Completing final grading and drainage; and
- Completing restoration activities.

Installation of PV module foundations, access roads, and collection lines is described above in section 4906-4-03(B)(2). Once construction is complete, temporarily disturbed areas will be restored, which will include removal of excess road material, rock removal in agricultural areas, de-compaction of soil, and restoring areas to their approximate pre-construction contours. Exposed soils in the Project Area will be stabilized by seeding, mulching, and/or plantings per the Vegetation Management Plan (Exhibit D).

(3) Impact of Critical Delays

The applicant shall describe the potential impact of critical delays on the in-service date.

The in-service date is dependent on the Applicant's ability to timely acquire PV panels, racking, inverters, and transformers. Timely acquisition of these components could affect the in-service date of the Facility. Considerable costs would be incurred if delays prevent the Facility from meeting deadlines for federal incentive programs such as the Investment Tax Credit for Solar.

4906-4-04 PROJECT AREA SELECTION AND SITE DESIGN

(A) PROJECT AREA SELECTION

The applicant shall describe the selection of the project area.

The sub-sections below describe the Project Area selection process.

(1) Description and Rationale for Selecting Project Area

The applicant shall provide a description of the study area or the geographic boundaries of the area considered for development of the project, including the rationale for the selection.

The proximity to the bulk power transmission system, available electrical injection capability, and site conditions, are the main site selection criteria utilized for solar power projects.

Available capacity and adequate access to the bulk power transmission system is also an important siting criterion. As depicted in Figure 04-1, existing bulk transmission lines are within the vicinity of the Project Area. The transmission lines in the area are owned and operated by AEP Ohio Transmission Company, Inc., (AEP) within the PJM regional transmission organization footprint. To establish a generation facility, the electrical grid must be able to accommodate a new facility's generating capacity at a selected point of interconnection (POI). The POI is the location on the specified transmission line or infrastructure where the Facility will transmit power to the greater electric grid. The capacity of the nearby transmission lines and costs of upgrades to accommodate a new POI were evaluated and it was determined that a 107.7 MW project was viable in the general area of the proposed Facility.

General topography and land use characteristics of the Project Area were also considered. The land in the immediate area is characterized with open spaces and is primarily used for agriculture, which is suitable for hosting a utility-scale solar power project. Ideal solar development areas are flat with limited variations in topography. Initial site visits provided visual verification that the predominant land use in the study area is agricultural, making this project location compatible with solar project development. Proximity to major transportation routes and supply chains were also reviewed to ensure accessibility. The Project Area is approximately 0.8 mile north of US 40, 1.1 miles south of SR 16, and 1.3 miles east of SR 310. Additional county and township roads surround the Project Area. These roads provide accessibility for emergency medical services, as well as the transportation of Facility components, construction equipment, and staff.

(2) Map of Study Area

The applicant shall provide a map of suitable scale that depicts the boundary of the study area and the general sites which were evaluated.

A contiguous assemblage of land is essential to the success of any solar project. After a suitable geographic area was established, the Applicant identified a group of willing landowners adjacent to a suitable POI that

met the various other siting criteria listed in this section. With a group of engaged participants, the study area for the Facility was developed based on the POI. As such, there were no additional sites considered for the Project. A map of the Project Area with a 2-mile radius is included as Figure 03-1 and is representative of the area considered.

(3) List and Description of all Qualitative and Quantitative Siting Criteria

The applicant shall provide a comprehensive list and description of all qualitative and quantitative siting criteria utilized by the applicant, including any weighting values assigned to each.

Adequate solar resource

The Applicant determined through an initial screening process using the NREL National Solar Radiation Database that global horizontal irradiance was likely to be at a level of 3.9 kW/m²/day (Sengupta, et al., 2018). Solar irradiance was determined to be adequate to support the development of the Facility.

Adequate access to the bulk power transmission system

The Applicant determined that the system interconnection and upgrades to accommodate the interconnection could be attained at a reasonable cost. This determination was made via internal assessments and subsequent interconnection requests filed with PJM. See section 4906-4-05 of this Application for additional details.

Willing land lease participants and host communities

Solar generation facilities can only be sited on property where the landowner has agreed to allow such construction. The Applicant obtained private lease and easement agreements for contiguous areas of land necessary to support the Facility. See section 4906-4-06(A) of this Application for additional detail on property ownership and lease status. The Applicant has also engaged local community and state stakeholders to educate and share information. See section 4906-4-06(F)(1) of this Application for additional detail on public interaction.

Site accessibility

The Project Area is served by an existing network of public roads, which will facilitate component delivery, construction, and operation and maintenance activities. See section 4906-4-06(F)(3) for more information regarding site accessibility.

Appropriate geotechnical conditions

The Applicant determined that geotechnical conditions are suitable for the development of a solar facility. Preliminary desktop data was used to analyze the site for suitable geotechnical conditions. See section 4906-4-08(A)(5) of this application for additional details regarding geotechnical conditions.

Distance from airports

Solar panels are typically compatible with airports, as many airports have successfully implemented solar panels within airport boundaries. Nonetheless, airports were considered during the siting process. The proposed Facility is sited approximately 9.2 miles from the nearest public-use airport (Newark-Heath Airport) and more than 12 miles from the John Glenn Columbus International Airport. See section 4906-4-07(E) of this Application for additional detail on aviation facilities.

Compatible land use

The Project Area consists of predominantly rural, agricultural land, which is compatible with the proposed Facility. See section 4906-4-08(C) of this Application for more information on land use.

Topography

The Project Area is relatively flat, which more easily accommodates the installation of solar panels.

Limited sensitive ecological resources

Preliminary desktop evaluations indicated that the Project Area has adequate open space available to avoid impacting sensitive ecological resources such as large tracts of forested land, wetlands, or streams. See section 4906-4-08(B) of this Application for more information on ecological resources.

Cultural resources

The Project Area was shown to have minimal known cultural resources during initial siting efforts. For additional information on cultural resources, see section 4906-4-08(D) of this Application.

Once the Applicant determined that the Project Area was suitable for development of a solar power facility, various siting factors and constraints were identified and evaluated to appropriately site the Facility components. These efforts are discussed in detail below in 4906-4-04(B).

(4) Description of Process by Which Siting Criteria Were Used

The applicant shall provide a description of the process by which the applicant utilized the siting criteria to determine the proposed project area and any alternative area(s).

The Applicant completed desktop evaluations of the siting criteria to identify the Project Area. As noted in 4906-4-04(2), no other sites were considered for the Project.

(5) Description of Project Area Selected for Evaluation

The applicant shall provide a description of the project area(s) selected for evaluation, and the factors and rationale used by the applicant for selecting the proposed project area and any alternative area(s).

Based on the criteria in section 4906-4-04(A)(3) of this Application, the Applicant concluded that the site presented herein meets all the factors necessary to support a viable solar energy facility.

(B) FACILITY LAYOUT DESIGN PROCESS

The applicant shall describe the process of designing the facility layout.

The Applicant considered the siting criteria identified in 4906-4-04(A)(1) when developing the preliminary Facility layout. Due to ongoing technological innovations in the solar industry, continuing detailed engineering and survey work, public feedback, and communications during the OPSB certification process, the precise location of these features within the Project Area is subject to change. The fenceline, PV panel arrays, electrical collection system, inverters, access roads, substation, O&M building, and laydown yards are subject to change within the Project Area but will still meet the various constraints identified below.

(1) Constraint Map

The applicant shall provide a constraint map showing setbacks from residences, property lines, utility corridors, and public rights-of-way, and any other constraints of the site design.

A constraint map of the Project Area showing setbacks, public roads, utility corridors, streams, and wetlands is included as Figure 04-1. This illustrative graphic cannot appropriately show all the site-specific constraints and considerations, such as landowner preferences, PV panel engineering factors, and access road engineering requirements, all of which are considered within the Project Area.

In addition to the Project Area selection criteria, numerous expert analyses and field studies have been conducted to ensure that the PV panel arrays are sited to minimize environmental impacts to the extent practicable. The siting constraints identified in those studies are discussed in further detail below.

(2) Criteria Used to Determine Site Layout and Comparison of Alternative Site Layouts

The applicant shall provide a description of the criteria used to determine the facility layout and site design, and a comparison of any site design alternatives considered, including equipment alternatives where the use of such alternatives influenced the site design.

The Applicant worked with various consultants to conduct detailed assessments that identified and defined the siting factors and constraints discussed below. Using geographic information system (GIS) tools and consultant assessments, the Applicant performed numerous layout design iterations to develop the proposed Facility layout as presented and described in this Application.

Equipment

As stated in section 4906-4-03, representative models of Facility panels, racking, and inverters have been filed under seal. Improving technologies could dictate the use of an alternative equipment model as identified during the final procurement process. All models selected will be analyzed for suitability of the various siting criteria and constraints listed herein and submitted to OPSB Staff prior to construction. The equipment selection is subject to internal analysis of costs and availability of equipment during the procurement process.

Noise Constraints

No existing national, state, county, or local laws specifically limit noise levels produced by solar energy facilities. The preliminary Facility layout is designed to minimize noise impacts to non-participating sensitive receptors. For additional information on noise, see section 4906-4-08(A)(3) of this Application and Exhibit N.

Agricultural Constraints

Agriculture is the predominant land use within the Project Area. The Applicant has designed the Facility footprint to minimize impacts to active agricultural land primarily by co-locating collection lines and access roads when practicable. The Project Area can be fully restored to agricultural use upon decommissioning per the desires of participating landowners. For additional information on agricultural land, see section 4906-4-08(E) of this Application.

The Applicant worked with participating landowners, soil and water conservation districts, a drain tile consultant, and Licking County representatives to identify known drain tile locations across the site. This data has been aggregated and will be utilized to inform final Facility design. The Facility's Drain Tile Mitigation Plan (Exhibit E) identifies avoidance measures and procedures for repair of drain tile on the site.

Cultural Resources Constraints

The Applicant completed a History/Architecture Investigation and a Phase I Archaeological Investigation for the Project Area. No cultural resources or historic landmarks that should be avoided or require additional archaeological work were identified within the Project Area or surrounding area; therefore, no cultural resource constraints are anticipated during Project construction or operation. For additional information regarding cultural resources, see section 4906-4-08(D) and Exhibit Q and Exhibit R.

Ecological Constraints

Because the Facility is located entirely on private land, there will be no impacts to recreational areas, parks, wildlife areas, nature preserves, or other conservation areas. An Ecological Assessment (Exhibit P) was completed for the Project and according to ODNR and USFWS and field surveys, no federal or state listed species are likely to be impacted by the Project. Therefore, no ecological constraints are anticipated during Project construction or operation. Section 4906-4-08(B) provides a summary of the Ecological Assessment findings (Exhibit P).

Geotechnical Considerations

Geotechnical conditions across the site were found to be generally suitable for solar development. Geotechnical conditions will be considered in the final Facility design to ensure proper engineering of Facility components. For additional information regarding geotechnical considerations, see section 4906-4-08(A)(5) and Exhibit C.

Glare Considerations

Form 7460-1 will be filed with the Federal Aviation Administration (FAA), and a Determination of No Hazard finding is anticipated. A glare study was also completed for the Project. In order to conservatively model potential glare from the Project, a maximum panel height of 16 feet was used for the study. The results of this study showed that no impacts to flight paths or nearby airports are anticipated. Additionally, four primary thoroughfares near the Project, and 92 residences within 1,500 feet of the Project, were analyzed for potential impacts. No issues associated with glare were found. To limit reflection and maximize efficiency, solar PV panels are constructed of dark, anti-reflective, light-absorbing glass that minimize glare impacts to the surrounding area. For additional information regarding glare and aviation, see section 4906-4-07(E).

Hydrologic Constraints

A Geology and Hydrology Report was completed for the Project (Exhibit O). A 100-year floodplain is mapped along South Fork Licking River, in the western Project Area. No facility structures will be placed within the 100-year floodplain; therefore, no impacts to floodplains are anticipated.

Additionally, nine wetlands and six streams were identified and delineated within the Project Area. Aquatic resources have been avoided to the maximum extent possible during Project design.

No hydrologic constraints are anticipated during Project construction and operation. For additional information regarding hydrological resources, see section 4906-4-08(A)(4).

Landowner Considerations

The Applicant has and will continue to meet with participating landowners to review the Facility footprint on their property. Among other things, these meetings often involve field analyses to ensure that Facility components are sited in a manner that allows continued agricultural use and avoids any important site features.

Trees, Shrubs, and Vegetation

Vegetation clearing for the Project will primarily consist of agricultural crop cover and volunteer vegetation in agricultural fields. Less than 1 acre of tree clearing is anticipated for the Project. No tree, shrub, and vegetation constraints are anticipated. Any tree and shrub clearing that may be necessary will be completed from October 1 through March 31 to avoid potential impacts to bat species.

Setbacks

The Applicant used setbacks in designing the preliminary Facility layout for the placement of panels and inverters. Setbacks were established based on the Applicant's knowledge of previously established precedent in the industry. Setbacks for the Facility are as follows:

- 100 feet from non-participating sensitive receptors (residence, church, school)

- 25 feet from non-participating properties
- 75 feet from the centerlines of public roads

Wetland and Stream Constraints

Nine wetlands and six streams were identified and delineated in the Project Area during field surveys. These resources have been avoided to the maximum extent possible during Project design. Wetland and stream impacts will be limited to temporary impacts associated with Facility construction, and to permanent impacts associated with the installation of support piles, collection lines, and access roads at select locations. For all identified stream and wetland crossing points, appropriate construction techniques will be used to minimize impacts. As a result, the majority of stream and wetland impacts will be temporary in nature. For additional information on estimated wetland and stream impacts, see section 4906-4-08(B)(2)(a) of this Application.

(3) Description of Number and Type of Comments Received

The applicant shall provide a description of how many and what types of comments were received.

Written and oral comments were received prior to and during the public information meeting, which was held on February 25, 2021. The public comments generally focused on potential impacts to adjacent property values, visual and sound impacts, Facility drainage, impacts to wildlife, and economic benefits and job opportunities. All written comments submitted for the public meeting are attached hereto as Exhibit F.

4906-4-05 ELECTRIC GRID INTERCONNECTION

(A) CONNECTION TO THE REGIONAL ELECTRIC GRID

The applicant shall describe how the facility will be connected to the regional electric grid.

To interconnect new generation facilities to the electric transmission grid, the Facility owner must obtain approval from PJM. PJM is a regional transmission organization that coordinates the movement of wholesale electricity in all of Ohio and all or parts of surrounding states. The interconnection process includes completion of a series of studies by PJM that determine the transmission upgrades required for a project to interconnect to the PJM grid reliably. The Feasibility Study, the System Impact Study, and the Facilities Study are completed to provide developers with increasingly more refined information regarding the scope of required upgrades, completion deadlines, and implementation costs (PJM, n.d.). The OPSB requires the Feasibility Study and System Impact Study (Exhibit G) to be submitted with the Application.

The Facility will connect to AEP's existing Kirk 138 kV substation, approximately 1,500 feet northwest of the Facility. The Applicant has selected two alternative locations – referred to herein as western alternative and eastern alternative – to install the Facility collection substation, gen-tie line, and O&M building during the preliminary Project design (Figure 03-2). Alternative West would place the collection substation and O&M building on the northwestern Project Area and the gen-tie line would extend north and connect to the west side of the Kirk substation. Alternative East would place the collection substation and O&M building on the northern Project Area and the gen-tie line would extend west to connect to the east side of the Kirk substation. One connection alternative will be selected during the OPSB completeness review period for this Application. The interconnection will consist of a new 138 kV circuit breaker, along with associated protection and control equipment, 138 kV line risers, SCADA, and 138 kV revenue metering. AEP will continue to own and operate the Kirk substation once construction is complete.

(B) INTERCONNECTION INFORMATION

The applicant shall provide information on interconnection of the facility to the regional electric power grid.

(1) Generation Interconnection Request Information

The applicant shall provide information relating to their generation interconnection request, including interconnection queue name, number, date, and website.

The Applicant has one PJM queue position related to the Facility, named "Kirk 138 kV." The queue number is AF2-122, dated February 28, 2020, with 107.7 MW of output and 64.62 MW of capacity. The website for the PJM interconnection queue is <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx> and the specific queue positions can be found by entering the queue position ID into the search box under the "Queue/OASIS ID" column.

(2) System Studies

The applicant shall provide system studies on their generation interconnection request. The studies shall include, but are not limited to, the feasibility study and system impact study.

The Kirk 138 kV Feasibility Study and System Impact Study are complete, and the Facilities Study is in progress. The completed PJM interconnection studies are included as Exhibit G to this Application.

4906-4-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

(A) OWNERSHIP

The applicant shall state the current and proposed ownership status of the proposed facility, including leased and purchased land, rights-of-way, structures, and equipment.

The Applicant will construct and own all structures and equipment associated with the Facility. As depicted on Figure 03-2, limited portions of the 34.5 kV electrical collection lines, and potentially the 138 kV transmission line to the POI substation, will be located within private easements or within public road rights-of-way (ROW). All leases and easement agreements between the Applicant and property owners within the Project Area have been executed. For public ROW crossing, the Applicant will work with the applicable local authority to obtain necessary crossing permits and permissions. The proposed Facility will not change the ownership status within the Project Area. As noted in section 4906-4-03(A)(2), two parcels have easement options available to accommodate substation and transmission line infrastructure. All other components of the Facility will be located entirely on privately-owned land, and voluntary lease agreements between the Applicant and private landowners will accommodate the Facility.

(B) CAPITAL AND INTANGIBLE COSTS

The applicant shall provide information regarding capital and intangible costs.

(1) Estimated Capital and Intangible Costs by Alternative

The applicant shall provide estimates of applicable capital and intangible costs for the various alternatives. The data submitted shall be classified according to federal energy regulatory commission uniform system of accounts prescribed by the public utilities commission of Ohio for utility companies, unless the applicant is not an electric light company, a gas company or a natural gas company as defined in Chapter 4905. of the Revised Code (in which case, the applicant shall file the capital and intangible costs classified in the accounting format ordinarily used by the applicant in its normal course of business).

Due to the sensitive nature of economic data and the potential advantage it could provide to industry competition, capital and intangible costs are included in Part III, section 2, of the unredacted version of the Socioeconomic Report (Exhibit H), filed under seal with this Application. As described in section 4906-4-04, the Applicant has not proposed alternative project areas. Therefore, no cost comparison between alternatives is available.

(2) Cost Comparison with Similar Facilities

The applicant shall provide a comparison of the total costs per kilowatt with the applicant's similar facilities, and explain any substantial differences.

Installed project costs compiled by the U.S. Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Laboratory) in December 2019 indicate that the capital costs of the Facility are in line with recent industry trends. The Berkeley Laboratory compilation shows that capacity weighted average installed costs in 2018 averaged roughly \$1,640/kW_{AC} (Bolinger, Seel, & Robson, 2019).

By way of further comparison, solar facilities installed in 2018 with capacities from 100 to 200 MW had a median cost of around \$1,400/kW_{AC} (Bolinger, Seel, & Robson, 2019). These costs are higher than the cost estimated for the Facility, which could be attributed to locational and system size differences. The estimated cost of the Facility is not anticipated to substantially differ from other facilities completed the Applicant.

(3) Present Worth and Annualized Capital Costs

The applicant shall provide a tabulation of the present worth and annualized cost for capital costs and any additional cost details as required to compare capital cost of alternates (using the start of construction date as reference date), and describe techniques and all factors used in calculating present worth and annualized costs.

Capital costs will include development costs, construction design and planning, equipment costs, and construction costs. The costs will be incurred within a year or two of start of construction. Therefore, a present worth analysis is essentially the same as the costs presented in the Socioeconomic Report. As alternative project areas and facilities were not considered in this Application, the capital cost information in this section is limited to the proposed Facility.

(C) OPERATION AND MAINTENANCE EXPENSES

The applicant shall provide information regarding operation and maintenance expenses.

(1) Estimated Annual Operation and Maintenance Expenses

The applicant shall provide applicable estimated annual operation and maintenance expenses for the first two years of commercial operation. The data submitted shall be classified according to federal energy regulatory commission uniform system of accounts prescribed by the public utilities commission of Ohio for utility companies, unless the applicant is not an electric light company, a gas company or a natural gas company as defined in Chapter 4905. of the Revised Code (in which case, the applicant shall file the operation and maintenance expenses classified in the accounting format ordinarily used by the applicant in its normal course of business).

Estimated annual operation and maintenance expenses are included in the unredacted version of the Socioeconomic Report (Exhibit H), filed under seal with this Application.

(2) Operation and Maintenance Cost Comparisons

The applicant shall provide a comparison of the total operation and maintenance cost per kilowatt with applicant's similar facilities and explain any substantial differences.

O&M costs are a significant component of the overall cost of solar projects but can vary widely between facilities. The Berkeley Laboratory has compiled O&M cost data for 48 installed utility-scale solar power projects in the United States, totaling 900 MW_{AC} of capacity, with commercial operation dates of 2011 through 2018. In general, facilities installed more recently have incurred lower O&M costs than those installed in 2011. Specifically, capacity-weighted average O&M costs for projects constructed in 2011 were approximately \$32/kW_{AC}year. The O&M costs decreased to around \$19/kW_{AC}year for projects installed in 2018 (Bolinger, Seel, & Robson, 2019). According to the Berkeley Laboratory, this decrease could be the result of utility companies capturing economies of scale as their solar operations grow over time.

The O&M costs for the Facility are anticipated to be consistent with the average costs compiled by Berkeley Laboratory, and with O&M costs at other facilities developed by the Applicant. More information on the estimated O&M costs for the Facility is included in the unredacted version of the Socioeconomic Report (Exhibit H), filed under seal with this Application.

(3) Present Worth and Annualized Operation and Maintenance

The applicant shall provide a tabulation of the present worth and annualized expenditures for operating and maintenance costs as well as any additional cost breakdowns as required to compare alternatives, and describe techniques and factors used in calculating present worth and annualized costs.

The annual O&M costs will be subject to real and inflationary increases. Therefore, these costs are expected to increase with inflation after the first two years. Additional details are included in the unredacted version of the Socioeconomic Report (Exhibit H), filed under seal with this Application. As alternative project areas and facilities were not considered in this Application, the O&M cost information in this section is limited to the Facility.

(D) COST OF DELAYS

The applicant shall submit an estimate of the cost for a delay prorated to a monthly basis beyond the projected in-service date.

Hypothetical monthly delay costs would depend on various factors. If a delay were to occur in the permitting stage, the losses would be associated with the time value of money resulting from a delay in the timing of revenue payments. If the delay were to occur during construction, costs would include lost construction schedule days and those associated with idle crews and equipment.

There could also be penalties associated with failing to meet a delivery deadline under a potential power purchase agreement. In addition, significant losses would be incurred if the delays prevented the Facility from meeting deadlines to qualify for the existing federal investment tax credit. Prorating these one-time delay costs monthly would not be meaningful, as the lost opportunity is triggered at a single deadline and does not accrue over time. Delays would also impact local communities by delaying the receipt of PILOT benefits, including revenue to local school districts. Estimates of the cost of delays during the permitting process and during the construction process are provided in the unredacted version of Exhibit H, filed under seal with this application.

(E) ECONOMIC IMPACT OF THE PROJECT

The applicant shall provide information regarding the economic impact of the project.

Information provided in this section was obtained from the Socioeconomic Report, prepared by EDR (Exhibit H). The proposed Facility is anticipated to have local and statewide economic benefits. Solar power development, like other commercial development projects, can expand the local, regional, and statewide economies through both direct and indirect means.

Operation of the Facility will result in payment to local landowners in association with the lease agreements executed to host Facility components. These annual lease and easement payments will offer direct benefits to participating landowners, which will be in addition to any income generated from the surrounding land use (e.g., agricultural production). These lease payments will have a positive impact on the region, to the extent that landowners will spend their revenue locally. Operation of the Facility will also result in increased revenue to taxing districts, likely through a PILOT agreement. PILOT program revenue and landowner lease payments are further discussed in the Socioeconomic Report, (Exhibit H).

Income generated from direct employment during the construction and operation of the Facility is used to purchase local goods and services, creating a ripple effect throughout the state and county. Local economic impacts of constructing and operating the Facility were quantified by using the Photovoltaics Job and Economic Development Impact (JEDI) model (version PV12.23.16), which was created by the NREL, a branch of the USDOE. See the Socioeconomic Report (Exhibit H) for a description of impacts and indicators used in the JEDI model.

(1) Construction and Operation Payroll

The applicant shall provide an estimate of the annual total and present worth of construction and operation payroll.

Annual estimated construction and operation payroll is provided in Table 06-1 below. For additional discussion of inputs used to calculate these estimates, see the Socioeconomic Report.

Table 06-1. Local Economic Impacts

	Jobs (Full-Time Equivalent)	Earnings (Millions)	Output (Millions)
Construction			
Project Development and Onsite Labor Total	279	\$19.6	\$21.3
Construction & Installation Labor	223	\$16.2	-
Construction and Installation Related Services	56	\$3.4	-
Module & Supply Chain Impacts	126	\$8.2	\$25.7
Induced Impacts	108	\$5.8	\$17.9
Total Construction Impacts	513	\$33.6	\$65.0
Annual Operation			
Onsite Labor Impacts	2	\$0.3	\$0.4
Local Revenue & Supply Chain Impacts	3	\$0.2	\$0.5
Induced Impacts	5	\$0.3	\$0.8
Total Annual Operation Impacts	10	\$0.8	\$1.7

Source: NREL JEDI model (version PV12.23.16) (USDOE NREL, 2016). Cost values verified by the Applicant in June 2020. Notes: Earnings and Output values are millions of dollars in 2020 dollars. Construction and operating period jobs are full-time equivalent for one year (1 FTE = 2,080 hours). Impact totals and subtotals are independently rounded, and therefore may not add up directly to the integers shown in this table.

Based on the values above, it is anticipated that construction of the Facility could directly generate 279 on-site construction and project development personnel FTE positions, with a projected wage rate of \$24 per hour and 45.6% employer payroll overhead. The present worth of construction payroll during the first year of construction is estimated to total \$19.6 million. It is anticipated that operation of the Facility could generate two FTE jobs for monitoring Facility performance and performing routine maintenance. The present worth of operation payroll during the first year of operation is estimated to total \$0.3 million. Economic impacts associated with the construction and operation of the Facility are further discussed in the Socioeconomic Report (Exhibit H).

(2) Construction and Operation Employment

The applicant shall provide an estimate of the construction and operation employment and estimate the number that will be employed from the region.

Demand for new jobs will be created during both the initial construction period and the years in which the Facility is in operation. The money injected into the statewide economy through the creation of these jobs will have long term, positive impacts on individuals and businesses in Ohio. Table 06-1 provides estimates of the number of construction and operation jobs created by the Facility in Ohio. General skilled labor is expected to be available locally to serve the Facility's basic infrastructure and site development needs. Specialized labor will be required for the installation of some Facility components. It is anticipated that highly-specialized workers may need to come from outside the immediate area, but many will still be local to Ohio, and they will remain in the local area only for the duration of construction.

(3) Local Tax Revenues

The applicant shall provide an estimate of the increase in county, township, and municipal tax revenue accruing from the facility.

The proposed Facility will have a significant positive impact on revenue to local taxing districts, including local school districts and other taxing districts in the area. The Applicant assumes that a payment-in-lieu of tax agreement (PILOT) would be executed, which would require annual PILOT payments to Licking County. These funds would be apportioned to Southwest Licking Local School District, Harrison Township, and other jurisdictions in Licking County. Based on the minimum payment of \$7,000/MW and Facility capacity of 107.7 MW, the PILOT amount will total approximately \$753,900 annually for the lifespan of the Facility. The Facility is expected to achieve commercial operation as early as 2022 and have a lifespan of approximately 35 years.

(4) Economic Impacts on Local Commercial and Industrial Activities

The applicant shall provide an estimate of the economic impact of the proposed facility on local commercial and industrial activities.

The proposed Facility will have a beneficial impact on the local economy. In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on economic output, a measurement of the

value of goods and services produced and sold by backward linked industries. Economic output provides a general measurement of the amount of industry sector production connected to a given project. The value of economic output associated with Facility construction is estimated in the Socioeconomic Report to be \$65.0 million. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors of the statewide economy.

(F) PUBLIC RESPONSIBILITY

The applicant shall provide information regarding public responsibility.

As described above, changes to the current Facility layout may occur, but any such changes will not alter the Project Area, will not require the leasing of additional properties, and will not impact new property owners or create additional impacts for existing adjacent property owners.

(1) Public Interaction

The applicant shall describe the applicant's program for public interaction during the siting, construction, and operation of the proposed facility. This description shall include detailed information regarding the applicant's public information and complaint resolution programs as well as how the applicant will notify affected property owners and tenants about these programs at least seven days prior to the start of construction.

Throughout the development process, the Applicant has interacted with multiple landowners, including those within and neighboring the Project Area, as well as local officials and community organizations. Information has also been shared through direct landowner mailings, and through a web based public information meeting and a teleconference call, both held on June 25, 2021. The Applicant will continue to make general information about solar power and specific information about the proposed Facility available to community members, elected officials, the media, and local civic organizations during the Application process. Notifications for public hearings will be distributed as part of the Application process, and pre-construction and pre-operation notification will be distributed at least seven days prior to the commencement of construction or operation per the Public Interaction Program (Exhibit I).

The Project website, unionridgesolar.com, provides an additional opportunity for residents to learn more about the Project and engage with Union Ridge representatives. The website also contains information applicable to the OPSB public participation and permitting processes, the public information meeting, and Project maps. Union Ridge's contact information is also provided on the Project website.

If questions or complaints arise during construction or operation of the Facility, they can be submitted to the Applicant through the process outlined in the Complaint Resolution Plan (Exhibit J), using the Complaint Resolution Form, and submitting the complaint information by mail, phone, or in-person. Complaints received will be recorded by an Applicant representative in a complaint logbook. The Applicant will follow up with

complainants via phone within two business days, excluding holidays. The Applicant is committed to resolving complaints within 30 days of receipt, unless extenuating circumstances require a longer time period, or it is determined that the complaint is unresolvable. A copy of the complaint logbook will be submitted to the OPSB on the 15th day of the month throughout construction and the initial 5 years of operation.

(2) Liability Insurance

The applicant shall describe any insurance or other corporate programs for providing liability compensation for damages to the public resulting from construction, operation, or decommissioning of the proposed facility.

The limits of the insurance policy described will, at a minimum, insure against claims of \$1,000,000 per occurrence and \$2,000,000 in the aggregate. In addition, the Applicant shall acquire and maintain throughout the construction operation and decommissioning period, at its sole cost, Umbrella Coverage against claims and liability for personal injury, death, and property damage arising from the operation of the Facility. The limits of the excess liability insurance will, at a minimum, insure against claims of \$10,000,000 per occurrence and \$10,000,000 in the aggregate.

(3) Roads and Bridges

The applicant shall evaluate and describe the anticipated impact to roads and bridges associated with construction vehicles and equipment delivery. Describe measures that will be taken to improve inadequate roads and repair roads and bridges to at least the condition present prior to the project.

Information provided in this section was obtained from the Route Evaluation Study and Traffic Control Plan prepared by Hull & Associates, Inc. (Hull), attached hereto as Exhibit K. The Route Evaluation Study identifies vehicle use and probable delivery and transportation routes, evaluates existing characteristics of and potential impacts to roadways, bridges, and culverts, identifies mitigation measures for potential impacts, and identifies potential permits required. The Traffic Control Plan identifies safety measures and strategies to manage traffic associated with the Project.

Construction/Delivery Vehicles

During the construction phase, impacts to local traffic are anticipated to be minimal due to the low volume of existing traffic near the Project Area. Traffic will consist of construction equipment and flatbed or tractor-trailer equipment delivery, multi-axle dump trucks, and conventional pickup trucks or automobiles for workers. Most vehicles will be of legal weight and dimensions; however, some overweight/oversize (OW/OS) vehicles may be required for the delivery of the switchgear or substation transformer. For additional information regarding equipment and deliveries, refer to section 4.0 of the Route Evaluation Study and section 8.0 of the Traffic Control Plan in Exhibit K.

Delivery Route

Delivery routes have not been finalized, but it is likely that the delivery of Facility components to the Project Area will be from the south via I-70 to SR 310 to US 40 to Watkins Road or York Road. An alternate route from the south is via I-70 to SR 158 to US 40 to Watkins Road or York Road. Once at the Project Area, county and township roads will be utilized. For additional information regarding delivery routes, refer to section 3.0 and section 4.0 of the Route Evaluation Study in Exhibit K.

Road Conditions

Hull conducted a visual analysis of roads along potential transportation routes serving the Project Area to identify hazardous conditions. Roadway conditions within the Project Area were categorized as good or fair. Additional details regarding road conditions are identified in section 2.0 of the Route Evaluation Study in Exhibit K.

Overhead clearance was also assessed along local roadways. Nothing was noted as posing a hazard. Overhead cables will be assessed again prior to construction. If an obstruction is noted, utility providers can temporarily or permanently raise the cable and/or move the poles. Therefore, overhead cables are not considered a limiting factor for roadway use. No other obstructions were noted along potential transportation routes to and from the Facility, such as bridges or overhanging structures that could lead to height or width restrictions.

Impacts and Mitigation

The Route Evaluation Study found no issues with local road conditions. All the analyzed roads can be used for equipment delivery and construction traffic in their current condition. However, Hull noted that flooding caution signs posted along Watkins Road indicate that access via Watkins Road may be limited at times due to potential floodwaters during large storm events. Should road conditions change in the future, mitigation techniques have been identified in the Route Evaluation Study for use on an as-needed basis.

Once identified, final transportation routes on local roads will be monitored during construction to ensure safe and drivable conditions for both local and Facility traffic. Following the completion of construction activities, roadways will be repaired to preconstruction conditions. Requirements for roadway repairs and improvements will be coordinated with Licking County engineers. Additionally, the Applicant will coordinate with the Licking County engineers to develop a Road Use and Maintenance Agreement to accommodate Facility construction.

(4) Transportation Permits

The applicant shall list all transportation permits required for construction and operation of the project, and describe any necessary coordination with appropriate authorities for temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility.

Prior to construction, the selected transportation provider will obtain all necessary permits from ODOT, and county engineers. Most vehicles used for Facility construction and operation meet current legal dimensions and weight (see Table 2 of Exhibit K). Therefore, very few transportation related permits are anticipated. Special Hauling Permits may be required for vehicles that will transport switchgears and substation transformers. Each vehicle must receive an individual Special Hauling Permit from ODOT, as the specifications of the permit depend on the characteristics of the vehicle, its cargo, and duration of the delivery schedule. Additional permits will be required for driveway access along county roads and crossings of roads and county-maintained ditches by buried collection lines. These permits will be obtained from the county engineers or ODOT, as required.

In addition to coordinating with state, county, and township authorities to obtain transportation permits, the Applicant will also coordinate with appropriate authorities regarding necessary traffic control during the construction of the Facility. A Traffic Control Plan is included in Exhibit K. The plan will be finalized upon receipt of the final Facility design prior to construction.

(5) Decommissioning

The applicant shall describe the plan for decommissioning the proposed facility, including a discussion of any financial arrangements designed to assure the requisite financial resources.

A Decommissioning Plan is included as Exhibit L of this Application and includes details on decommissioning activities, site restoration, cost estimates, and financial assurance. The Applicant will notify OPSB Staff 30 days prior to the commencement of decommissioning activities. Decommissioning activities will include the removal of panels, weather stations, inverters, electrical equipment, racking, scrap, piles, access roads, electrical collection lines, fencing and the Facility substation. Some components may remain in place such as electrical collection lines buried at least 36 inches underground, or the substation and gen-tie line if other agreements necessitate their continued use. Additionally, landowner agreements may specify other components that can remain in place (e.g., access roads). Support piles that cannot be removed will be cut and removed to at least 36 inches below grade, or at bedrock if higher than 36 inches. Equipment that is removed from the site will be salvaged or recycled to the greatest extent practicable. Other waste materials that hold no value or cannot be recycled will be disposed of via a licensed solid waste disposal facility. Following the completion of decommissioning activities, the site will be graded and de-compacted as necessary to allow the site to be converted to pre-construction land uses. Decommissioning of the Facility, including the removal of materials and site restoration, will last approximately 8 months.

An initial decommissioning cost estimate is provided in the Decommissioning Plan. The decommissioning cost estimate will be updated prior to construction, in year 10 of commercial operation, and every 5 years thereafter. If the total decommissioning cost (decommissioning cost minus salvage value) becomes a net

positive number, the Applicant will post financial assurance in an amount consistent with the decommissioning cost estimate. Upon each 5-year evaluation, the financial assurance amount will be adjusted to be consistent with the current total decommissioning cost.

4906-4-07 COMPLIANCE WITH AIR, WATER, SOLID WASTE, AND AVIATION REGULATIONS

(A) PURPOSE

The information requested in this rule shall be used to determine whether the facility will comply with regulations for air and water pollution, solid and hazardous wastes, and aviation. Where appropriate, the applicant may substitute all or portions of documents filed to meet federal, state, or local regulations. Existing data may be substituted for physical measurements.

This section provides information regarding air, water, solid waste, and aviation regulations, including potential impacts of the proposed Facility, and any proposed mitigation measures.

(B) AIR

The applicant shall provide information on compliance with air quality regulations.

(1) Pre-construction

The applicant shall submit information regarding preconstruction air quality and permits.

The Facility does not require any pre-construction air permits. Therefore, this section does not apply.

(2) Plans to Control Air Quality During Site Clearing and Construction

The applicant shall describe plans to control emissions and fugitive dust during the site clearing and construction phase.

BMPs will be implemented to minimize dust generated during construction activities. Exposed/disturbed areas will be minimized to the greatest extent practicable and restored/stabilized per the requirements of Ohio EPA Permit No. OHC000005. During construction, water or a dust suppressant such as calcium carbonate will be applied on Facility access roads and unpaved transportation routes, as needed. Any unanticipated construction-related dust problems will be identified and immediately reported to the construction manager and contractor. Should any complaints regarding dust generation be received via the complaint resolution process, the Applicant will work to resolve them as quickly as practicable. All construction vehicles will be maintained in good working condition to minimize construction related emissions.

(3) Plans to Control Air Quality During Facility Operation

Except for wind farms, the applicant shall provide information regarding air quality for the operation of the proposed facility.

(a) Describe ambient air quality monitoring plans for air pollutants regulated by the federal or state environmental protection agency.

(b) On a map of at least 1:24,000 scale, show three isopleths of estimated concentrations that would be in excess of the U.S. environmental protection agency-defined "significant emission rates" when the facility is operating at its maximum rated output. The intervals between the isopleths shall depict the concentrations within a five-mile radius of the proposed facility. A screening analysis may be used to estimate the concentrations.

(c) Describe procedures to be followed in the event of failure of air pollution control equipment, including consideration of the probability of occurrence, expected duration and resultant emissions.

As per OAC 4906-4-07(B)(3), this requirement does not apply to wind farms. Likewise, the proposed Facility is a renewable energy project that will not produce any air pollution. Therefore, this requirement does not apply to the proposed Facility.

(C) WATER

The applicant shall provide information on compliance with water quality regulations.

(1) Pre-construction

The applicant shall provide information regarding preconstruction water quality and permits.

Nine wetlands and six streams were identified and delineated within the Project Area. One perennial stream was noted in the western portion of the Project area and another intermittent stream was noted in the north eastern portion of the Project Area. Generally, wetland and waterbody features have been impacted by agricultural activities that have traditionally occurred within the Project Area. Existing pre-construction conditions of area waterbodies are discussed in section 4906-4-08(A)(4).

(a) List of Required Permits to Install and Operate the Facility

Provide a list of all permits required to install and operate the facility, including water pollution control equipment and treatment processes.

Prior to the start of construction, the Applicant will obtain the following water-related permits. These permits are discussed in more detail in section 2 of the Ecological Assessment (Exhibit P):

- The Ohio National Pollutant Discharge Elimination System (NPDES) construction storm water general permit, Ohio EPA Permit No. OHC000005;
- An individual permit or nationwide permit under section 404 of the Clean Water Act, (if necessary, as determined after final engineering);
- A Water Quality Certification from the Ohio EPA (if necessary, as determined after final engineering); and
- An Ohio Isolated Wetland Permit (if necessary, as determined after final engineering).

(b) Water Quality Map

On a map of at least 1:24,000 scale, show the location and sampling depths of all water monitoring and gauging stations used in collecting preconstruction survey data. Samples shall be collected by standard sampling techniques and only in bodies of water likely to be affected by the proposed facility. Information from U.S. geological survey (USGS), Ohio environmental protection agency, and similar agencies may be used where available, but the applicant shall identify all such sources of data.

The Facility will not discharge water or waste into streams or waterbodies, nor will Facility operation require the use of water for cooling or any other activities. Impervious surfaces will be limited and consist of access roads and gravel pads to accommodate inverters, the O&M building, and the substation. These will have a negligible effect on surface water runoff and groundwater recharge. Therefore, significant impacts on the quality of surrounding water resources are not anticipated. Because no bodies of water will be used for discharge of waste or wastewater by the proposed Facility, this section is not applicable.

(c) Description of Water Monitoring and Gauging Stations

Describe the ownership, equipment, capability, and sampling and reporting procedures of each station.

As described above, because no bodies of water will be used for discharge of waste or wastewater by the proposed Facility, this section is not applicable.

(d) Existing Water Quality of Receiving Stream

Describe the existing water quality of the receiving stream based on at least one year of monitoring data, using appropriate Ohio environmental protection agency reporting requirements.

The Facility will not discharge waste or wastewater into streams or other waterbodies. Therefore, there will be no receiving streams, and this section is not applicable.

(e) Permit Application Data

Provide available data necessary for completion of any application required for a water discharge permit from any state or federal agency for this project. Comparable information shall be provided for the proposed site and any proposed alternative site(s).

The Facility will not discharge any waste or wastewater into streams or other waterbodies. Therefore, this section is not applicable.

(2) Construction

The applicant shall provide information regarding water quality during construction.

(a) Water Quality Map

Indicate, on a map of at least 1:24,000 scale, the location of the water monitoring and gauging stations to be utilized during construction.

As described above in section 4906-4-07(C)(1)(b), significant impacts on the quality of surrounding water resources are not anticipated. Because there are no bodies of water likely to be affected by the proposed Facility, this section is not applicable.

(b) Quantity/Quality of Construction Runoff

Provide an estimate of the quality and quantity of aquatic discharges from the site clearing and construction operations, including runoff and siltation from dredging, filling, and construction of shoreside facilities.

Construction of the proposed Facility will have minimal, localized impacts to groundwater. Soil compaction caused by construction equipment could limit surface water infiltration to groundwater. When soils are compressed, the pore spaces within the soil are decreased, which reduces water percolation. Construction of access roads will result in minor increases in storm water runoff that otherwise would have infiltrated into the ground at the road locations. Potential storm water discharges will be addressed through the Applicant's general storm water permit, discussed in the following section.

(c) Mitigation

Describe any plans to mitigate the above effects in accordance with current federal and Ohio regulations.

The Applicant will obtain a “General Permit Authorization for Storm Water Discharges Associated with Construction Activity” (also known as a Permit No. OHC000005) (Ohio EPA, 2018). To meet NPDES requirements, a qualified engineer will utilize the final Facility layout to develop a Storm Water Pollution Prevent Plan (SWPPP). The SWPPP will identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges associated with construction activities. If applicable, the SWPPP will clearly identify all activities that will be authorized under section 401 of the Clean Water Act and be subject to an anti-degradation review. The SWPPP will also describe and ensure the implementation of BMPs that reduce pollutants in storm water discharges during construction.

Exhibit B illustrates typical BMP drawings that are anticipated to be utilized across the site. These controls are based on evaluation of topography, flow direction, and locations of soil disturbing activities. BMPs will be used to protect topsoil and adjacent resources and to minimize soil erosion, whether the erosion is caused by water or wind. Practices may include containment of excavated material, protection of exposed soil, stabilization of restored material, implementation of rock pads at construction exits, and treating stockpiles to control fugitive dust. These practices and those described in the Ohio EPA document “Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays” will also mitigate any potential impacts that soil compaction could have on infiltration of rain and snowmelt, thereby further reducing any potential impact to groundwater recharge (Ohio EPA, 2019). Other BMPs may be implemented, as necessary, to comply with OHC000005. BMPs will be reassessed upon receipt of the final Facility layout during SWPPP preparation to ensure compliance with Ohio law.

On-site investigations were conducted to establish the locations of streams and wetlands. The Facility components were sited to avoid impacts to these resources to the maximum extent practicable. Panels and inverters predominantly will be placed outside of wetland and waterbody features. All impacts associated with collection lines will be temporary in nature. The substation location and build are anticipated to be designed to avoid impacts to wetland or waterbody features. Permanent impacts to stream and wetland features from access road crossings are anticipated to be minor and will be permitted in accordance with state and federal regulations, as applicable. Equipment restrictions, herbicide use restrictions, and erosion and sediment control measures will also be utilized to reduce adverse impacts to water quality, surface water hydrology, and aquatic organisms. See section 4906-4-08(B)(2)(b) for additional details regarding wetlands and waterbodies.

(d) Changes in Flow Patterns and Erosion

Describe any changes in flow patterns and erosion due to site clearing and grading operations.

As a result of the limited impacts discussed in section 4906-4-07(C)(2)(b) and the mitigation measures discussed above in section 4906-4-07(C)(2)(c), changes to flow patterns are not anticipated.

(e) Equipment for Control of Effluents

Describe the equipment proposed for control of effluents discharged into bodies of water and receiving streams.

Facility operation will not involve the discharge of effluents into streams or waterbodies. Therefore, this section is not applicable.

(3) Operation

The applicant shall provide information on water quality during operation of the facility.

(a) Water Quality Map

Indicate, on a map of at least 1:24,000 scale, the location of the water quality monitoring and gauging stations to be utilized during operation.

As described above in section 4906-4-07(C)(1)(b), measurable impacts on the quality of surrounding water resources are not anticipated. Because there are no bodies of water likely to be affected by the proposed Facility, this section is not applicable.

(b) Water Pollution Control Equipment and Treatment Processes

Describe the water pollution control equipment and treatment processes planned for the proposed facility.

The Facility will not require any water pollution control equipment or treatment processes. Storm water measures that will be implemented during Facility operations are described below.

The proposed Facility will not result in wide-scale conversion of land to impervious surfaces. While PV panels themselves are impervious, they are disconnected from the ground surface and allow rainwater to fall from the panel and permeate into the underlying surface. Impervious surfaces found at the site will include the substation, O&M building, inverter and inverter pad, and access roads. The Applicant will perform pre- and post-construction storm water calculations to determine if post-construction BMPs are required based on requirements contained in Ohio EPA's Permit No. OHC000005. Per the preliminary Facility layout, post-construction BMPs for the impervious surface across the site are anticipated to include ditches and swales adjacent to Facility access roads. An evaluation of post-construction storm water calculations will be re-evaluated prior to submission of the final Facility layout to ensure compliance with Ohio law.

As noted in 4906-4-03(2)(b), oil utilized for the cooling and insulation of transformers at the Facility substation may be stored within an aboveground storage tank, which will likely exceed 1,320 gallons, within the substation footprint. Per federal regulations (40 CFR Part 112), should the tank exceed 1,320

gallons, an SPCC Plan will be prepared prior to the tank's placement onsite. Oil that is removed from the transformers during maintenance activities will be disposed per the applicable local, state, and federal regulations.

(c) NPDES Permit Schedule

Describe the schedule for receipt of the national pollution discharge elimination system permit.

Facility construction will require an Ohio NPDES construction storm water general permit, Ohio EPA Permit No. OHC000005. The Applicant anticipates full and complete compliance with this permit. The Notice of Intent (NOI) and associated fee for Permit No. OHC000005 will be filed at least 21 days prior to commencement of construction activities.

(d) Quantitative Flow Diagram

Provide a quantitative flow diagram or description for water and water-borne wastes through the proposed facility, showing the following potential sources of pollution, including:

- (i) Sewage.*
- (ii) Blow-down.*
- (iii) Chemical and additive processing.*
- (iv) Waste water processing.*
- (v) Run-off and leachates from fuels and solid wastes.*
- (vi) Oil/water separators.*
- (vii) Run-off from soil and other surfaces.*

As explained in the following sub-sections, flow diagram information is not applicable to the proposed Facility.

(i) Sewage

The O&M building may potentially be served by a septic system developed to meet the needs of onsite employees. Prior to construction of a septic system, the Applicant will obtain an Ohio EPA wastewater permit-to-install, and any other required state and local permits. No other sewage is anticipated to be produced.

(ii) Blow-down

This section is not applicable, as PV panels do not utilize blow-down equipment.

(iii) Chemical and Additive Processing

The Facility will not require the use of chemical and/or additive processing. Therefore, this section is not applicable.

(iv) Waste Water Processing

The Facility will not process or generate wastewater. Therefore, this section is not applicable.

(v) Run-off and Leachates

The Facility is not expected to generate any run-off or leachates. Therefore, this section is not applicable.

(vi) Oil/water Separators

This section is not applicable because the Facility will not utilize any oil/water separators.

(vii) Run-off from Soil and Other Surfaces

Following completion of construction, temporarily-impacted areas will be stabilized, restored, and revegetated. Facility operation will not result in further soil disturbance, aside from occasional repair activities. Therefore, this section is not applicable.

(e) Water Conservation Practices

Describe how the proposed facility incorporates maximum feasible water conservation practices considering available technology and the nature and economics of the various alternatives.

Aside from very limited quantities of water that may be used for the occasional cleaning of solar panels, the only Facility component requiring water sources will be the O&M building. Staff operating out of the O&M building will use water at a rate comparable to a typical small business or office. The Facility will incorporate water conservation practices by including installation of modern, efficient water fixtures for all water usage, and by regular maintenance to keep water fixtures in proper working order.

Overall, when compared to conventional coal and nuclear power, there are water conservation benefits of solar energy. According to a study supported by NREL, the total life cycle water use is lower for PV panels than other generation technologies (Meldrum, Nettles-Anderson, Heath, & Macknick, 2013).

(D) SOLID WASTE

The applicant shall provide information on compliance with solid waste regulations.

(1) Pre-construction

The applicant shall provide information regarding preconstruction solid waste.

(a) Nature and Amount of Solid Waste

Describe the nature and amount of debris and solid waste in the project area.

A Quonset hut and two adjacent silos located east of Watkins road approximately 0.58 mile north of Refugee Road will be demolished and removed. The Applicant is not aware of any other structures, large debris, or solid waste within the Project Area that would require removal for Facility development. Should any other waste be encountered, it will be disposed as described below.

(b) Plans for Waste Removal

Describe any plans to deal with such wastes.

No waste removal is necessary or planned. Any unanticipated waste removal will be handled, managed, and disposed in accordance with federal, state, and local regulations.

(2) Construction

The applicant shall provide information regarding solid waste during construction.

(a) Nature and Amounts of Construction Waste

Provide an estimate of the nature and amounts of debris and other solid waste generated during construction.

(b) Facility construction will generate an estimated 10,000 cubic yards of solid waste, primarily plastic, wood, cardboard, and metal packing/packages materials, construction scrap, and general refuse. Methods for Storage and Disposal of Construction Waste

Describe the proposed method of storage and disposal of these wastes.

Construction waste will be collected and disposed in accordance with federal, state, and local regulations. Dumpsters will be strategically located throughout the site for refuse collection, and a private contractor will empty them on an as needed basis. The refuse will then be disposed at a licensed solid waste disposal facility. Waste materials will be recycled when possible. Used automotive fluids resulting from construction vehicles, and universal waste, if any, will be handled, managed, and disposed in accordance with federal, state, and local regulations.

(3) Operation

The applicant shall provide information regarding solid waste during operation of the facility.

(a) Nature and Amounts of Waste

Provide an estimate of the amount, nature, and composition of solid wastes generated during the operation of the proposed facility.

Facility operation will not result in the significant generation of debris or solid waste. Waste generated from the O&M facilities could include wood, cardboard, metal packing/packages materials, used oil, general refuse, universal waste, and used automotive fluids. The O&M facility offices will generate solid wastes comparable to a typical small business office.

(b) Methods for Storage and Disposal of Waste

Describe proposed methods for storage, treatment, transport, and disposal of these wastes.

The O&M facilities will utilize local solid waste disposal and recycling services. Used automotive fluids resulting from construction vehicles, and universal waste will be handled, managed, and disposed in accordance with federal, state, and local regulations.

(4) Licenses and Permits

The applicant shall describe its plans and activities leading toward acquisition of waste generation, storage, treatment, transportation and/or disposal permits. If any such permit(s) have been issued more than thirty days prior to the submittal of the certificate application, the applicant shall provide a list of all special conditions or concerns attached to the permit(s).

Facility operation will not require acquisition of waste generation, storage, treatment, transportation, and/or disposal licenses or permits.

(E) COMPLIANCE WITH AVIATION REGULATIONS

The applicant shall provide information on compliance with aviation regulations.

(1) Aviation Facilities List and Map

List all public use airports, helicopter pads, and landing strips within five miles of the project area and all known private use airports, helicopter pads, and landing strips or property within or adjacent to the project area, and show these facilities on a map(s) of at least 1:24,000 scale. Provide confirmation that the owners of these airports have been notified of the proposed facility and any impacts it will have on airport operations.

Figure 08-2 illustrates all airports, helicopter pads, and landing strips within 5 miles of the Project Area. This mapping was developed from Esri ArcGIS World Topographic Map service at a 1:24,000 scale. The proposed Facility is approximately 6.5 miles from the nearest public airport (Miller Farm Landing Strip) and more than 12 miles from the John Glenn Columbus International airport. Two private airstrips were identified within 5 miles of the Facility: Lee's Dogpatch Airport, located approximately 1 mile south of the Project Area, and Buckeye Intra-National Airport, located approximately 5 miles east of the Project Area. No helicopter pads were identified within 5 miles of the Facility.

(2) FAA Filing Status and Potential Conflicts

Provide the FAA filing status of each airport and describe any potential conflicts with air navigation or air traffic communications that may be caused by the proposed facility.

The Federal Aviation Administration (FAA) requires notification for objects affecting navigable airspace per 14 CFR Part 77. Any person/organization who intends to sponsor any of the following construction or alteration activities must notify the Administrator of the FAA:

- Any construction or alteration exceeding 200 ft above ground level
- Any construction or alteration
 - within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft.
 - within 10,000 ft of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft.
 - within 5,000 ft of a public use heliport which exceeds a 25:1 surface

- Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards
- When requested by the FAA
- Any construction or alteration located on a public use airport or heliport regardless of height or location

Because the proposed Facility does not meet any of the above criteria, the FAA does not need to be notified. However, out of an abundance of caution, form 7460-1 will be filed with the Federal Aviation Administration (FAA), and a Determination of No Hazard finding is anticipated. In addition to potential obstruction, reflectivity or glare is a concern criterion from the FAA regarding solar facilities. Given that no public airports, helicopter pads, or landing strips are located within 2 miles of the Facility, impacts from glare are not anticipated. Additionally, PV modules for this Project will use anti-reflective glass coating and are designed to absorb the light, reducing the potential for glare. More information on potential glare from the Project can be found in the Solar Glare Analysis Report (Exhibit M). Glare from solar panels has the potential to cause brief loss of vision for pilots during their final approach to a runway or to air traffic controllers (Rogers, et al., 2015). In 2013, the FAA established an Interim Policy that reviewed the impacts of solar energy systems on federally-obligated airports. This review states that, in order to receive FAA notice of “no objection,” there should be no potential for glare from the solar facility in the Airport Traffic Control Tower or along the final approach path, defined as “two miles from fifty feet above the landing threshold using a standard three-degree glidepath” (FAA, 2013, p. 2).

In order to evaluate the potential impacts of glare, the Applicant contracted with EDR to conduct a Solar Glare Analysis (Exhibit M). EDR analyzed potential glare at potentially sensitive airport receptor locations using ForgeSolar, a commercial software model based on the Solar Glare Hazard Analysis Tool (SGHAT) that was developed by the U.S. Department of Energy’s (USDOE’s) Sandia National Laboratories, and reviewed results relative to the FAA Interim Policy detailed above. To assess airport sensitive receptors, the FAA requires an evaluation of potential glare for pilots on final approach and at the air traffic control towers. No public airports were identified within two miles of the Project. However, the three closest public airports (Miller Farm Landing Strip, at 6.5 miles; Newark-Heath Airport, at 9.5 miles; and, John Glenn Columbus International Airport, at 12 miles) were analyzed. One private airport was analyzed, Lee’s Dogpatch Airport, located approximately 1 mile from the Facility. In order to conservatively model potential glare from the Project, a maximum panel height of 16 feet was used for the study. No glare was detected at any observation points along the flight path at any airport, meaning that the Facility design meets FAA standards for aircraft final approach and glare impacts from the Facility are not anticipated.

4906-4-08 HEALTH AND SAFETY, LAND USE, AND ECOLOGICAL INFORMATION

(A) HEALTH AND SAFETY

The applicant shall provide information on health and safety.

(1) Equipment Safety and Reliability

Equipment safety. The applicant shall provide information on the safety and reliability of all equipment.

(a) Major Public Safety Equipment

Describe all proposed major public safety equipment.

To protect safety of the public, the Applicant will implement various measures to limit access to the Facility during construction and operation. Temporary, highly visible mesh fencing will be used around staging and storage areas. Signage will be placed around active and inactive construction areas warning of potential dangers and discouraging entrance by the public. The Traffic Control Plan (Exhibit K) identifies safety measures that will be implemented near public roads. For example, personnel exposed to public vehicular traffic shall be provided with and shall wear warning vests or other suitable reflective or high-visibility garments. Lighting will be used as necessary for safe operation of equipment, to provide adequate lighting for active work areas, and for security to protect Facility components and equipment, and will be downlit wherever feasible.

In addition, electronic security systems and remote monitoring will be employed. Motion and switch activated downlit lighting will be placed at Facility entrances, the O&M building, and near inverters. Per the Public Information Program (Exhibit I), Union Ridge's complaint resolution process and contact information will be readily available to address public inquiries, safety concerns, or complaints regarding the Facility.

(b) Equipment Reliability

Describe the reliability of the equipment.

Equipment reliability is an important criterion when selecting solar equipment. The Applicant will only select reliable, certified equipment for all Facility components, including but not limited to PV modules, inverters, racking systems, wiring, and transformers. All equipment will follow applicable industry code(s) (e.g., Institute of Electrical and Electronics Engineers [IEEE], NEC, National Electric Safety Code [NESC], American National Standards Institute [ANSI]).

(c) Generation Equipment Manufacturer's Safety Standards and Setbacks

Provide the generation equipment manufacturer's safety standards. Include a complete copy of the manufacturer's safety manual or similar document and any recommended setbacks from the manufacturer.

Generation equipment manufacturer's safety standards will be provided after PV solar module technology has been selected for the Project. All Project equipment is expected to be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings. Internal setbacks, defined by the Applicant, are discussed in section 4906-4-08(C)(2) of this Application.

(d) Measures to Restrict Public Access

Describe the measures that will be taken to restrict public access to the facility.

To further restrict public access, an approximately 7-foot-tall woven wire agricultural fence will be installed around the Facility. During operation, security of the Project Area will be maintained by a combination of perimeter security fencing, controlled access gates, electronic security systems, and potentially remote monitoring. Additionally, "No Trespassing" and "High Voltage Equipment" signs will be placed around the fence perimeter, warning the public of the potential hazards within the fenced Project Area. Downward-facing lighting that is switch or motion activated will be installed at Facility entrances, the O&M building, and near inverters for additional safety and security. Remote monitoring and security cameras will be installed at the Facility.

(e) Fire Protection, Safety, and Medical Emergency Plans

Describe the fire protection, safety, and medical emergency plan(s) to be used during construction and operation of the facility, and how such plan(s) will be developed in consultation with local emergency responders.

A site-specific Health and Safety Plan will be followed during the Facility construction and operation. The Health and Safety Plan will include an emergency action plan (EAP) and will identify preventive measures to reduce emergency occurrences and actions to address medical emergencies, fires, or spills, as necessary. The Applicant will coordinate with first responders prior to construction to ensure that they are familiar with the EAP and the general layout of the Facility. As noted in the Traffic Control Plan, a map denoting the location of safety muster points, office locations, first aid kits, and spill kits will be available onsite for contractor review. Fire suppressants, spill kits, and first aid kits will be available in vehicles and construction equipment in case of inadvertent release of fluids or fire during both Facility construction and operation. All personnel will undergo a safety training program, and depending on their position, training may include site orientation, first aid/CPR/AED, qualified electrical worker (NFPA 70E), and equipment specific training. The Applicant will maintain communication with emergency responders regarding the EAP throughout the life of the Facility.

(2) Probable Impacts due to Failures of Pollution Control Equipment

Air pollution control. Except for wind farms, the applicant shall describe in conceptual terms the probable impact to the population due to failures of air pollution control equipment.

Solar panels generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, this section is not applicable.

(3) Noise

The applicant shall provide information on noise from the construction and operation of the facility.

Resource Systems Group, Inc (RSG) was retained by the Applicant to conduct a Noise Assessment to evaluate potential noise impacts from the proposed Facility. The study examined current background sound levels, modeled results of sound levels from the Facility on nearby residences, and provided typical sound levels from construction activities. The Noise Assessment is included as Exhibit N and summarized below.

(a) Construction Noise Levels at the Nearest Property Boundary

Describe the construction noise levels expected at the nearest property boundary. The description shall address:

- (i) Blasting activities.*
- (ii) Operation of earth moving equipment.*
- (iii) Driving of piles, rock breaking or hammering, and horizontal directional drilling.*
- (iv) Erection of structures.*
- (v) Truck traffic.*
- (vi) Installation of equipment.*

Table 3 of the Noise Assessment (Exhibit N) identifies commonly used construction equipment for solar facilities, conservatively assuming no attenuation from trees or terrain. This table identifies the sound level at 15 meters (50 feet) for equipment, which can be applied to Facility construction nearby to property boundaries. The table identifies that the loudest emissions at this distance for any type of equipment used onsite at 50 feet is anticipated to be 85 A-weighted decibels (dBA). Construction of the Facility could lead to short durations of these sound levels from construction equipment at nearby adjacent property boundaries. However, these activities will be short in duration, and most construction will be set back significantly from property boundaries. The Project has also incorporated setbacks of 100 feet from non-participating sensitive receptors to further reduce noise impacts to areas where people are more likely to be present, and these impacts are considered below.

(i) Blasting activities

No blasting activities are anticipated for the construction or operation of the Facility, and thus no noise emissions are anticipated.

(ii) Operation of earth moving equipment

Earth moving equipment is not anticipated to exceed 76 dBA at 25 meters (82 feet), which is less than the approximate distance from the nearest solar array to the nearest non-participating sensitive receptors (100 feet). Equipment could occasionally operate nearer to sensitive receptors but should generally be limited to equipment travel between work areas, or limited grading activities for short

durations of time. As panels are set back at least 100 feet from non-participating sensitive receptors, and earth moving activities in any one area are completed in a relatively short duration, noise impacts from earth moving equipment are anticipated to be minimal.

(iii) Driving of piles, rock breaking or hammering, and horizontal drilling

Pile driving is not anticipated to exceed 73 dBA at 25 meters (82 feet), which is less than the approximate distance from the nearest solar panel to the nearest non-participating sensitive receptors (100 feet). As panels are set back at least 100 feet from residences, and pile driving activities in any one area are completed in a relatively short duration, noise impacts from pile driving are anticipated to be minimal.

(iv) Erection of structures

Erection of structures such as PV panels, inverters, the O&M building, and substation will utilize equipment such as pickup trucks, man lifts, cranes, and flatbed trucks. None of these are anticipated to exceed 76 dBA at 25 meters (82 feet), which is less than the approximate distance from the nearest solar panel to the nearest non-participating sensitive receptors (100 feet). As panels, inverters, the O&M building, and the substation are set back at least 100 feet from non-participating sensitive receptors, noise impacts associated with erection of structures are anticipated to be minimal.

(v) Truck traffic

Truck traffic will be necessary to accommodate delivery of Facility components during construction. Deliveries will occur relatively infrequently during regular working hours. Once they have reached the Project Area, transportation of materials will follow access routes that are primarily set back from non-participating sensitive receptors. Noise impacts from truck traffic are anticipated to be minimal.

(vi) Installation of equipment

As noted above, the equipment utilized for the installation of the Facility primarily will be set back at least 100 feet from non-participating sensitive receptors. Additionally, this equipment will only operate for the duration necessary to complete installation in any one area of the Project. Therefore, the noise impacts associated with construction activities are anticipated to be minimal.

Table 3 of the Noise Assessment presents the maximum sound pressure levels for various pieces of construction equipment at 15 meters (50 feet), 25 meters (82 feet), and 91 meters (300 feet) away from receptors (Exhibit N). Sound levels for construction equipment operating 25 meters (82 feet) from a non-participating residence range from 69 dBA to 76 dBA. Sound levels for construction

equipment operating 91 meters (300 feet) from a non-participating residence range from 51 dBA to 62 dBA.

(b) Operational Noise Levels at the Nearest Property Boundary

Describe the operational noise levels expected at the nearest property boundary. The description shall address:

(i) Operational noise from generation equipment. In addition, for a wind farm, cumulative operational noise levels at the property boundary for each property adjacent to or within the project area, under both day and nighttime operations. The applicant shall use generally accepted computer modeling software (developed for wind turbine noise measurement) or similar wind turbine noise methodology, including consideration of broadband, tonal, and low-frequency noise levels.

(ii) Processing equipment.

(iii) Associated road traffic.

(i) Operational noise from generation equipment

Sound propagation modeling was performed in accordance with the standard ISO 9613-2 "Acoustics – Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation" using CadnaA modeling software. Modeling inputs assumed the use of the Power Electronics FS-3430M inverter and the substation transformer that is proposed to be used for the Project. Results from sound modeling showed that all non-participating residences are anticipated to receive sound levels of approximately 48.5 dBA or lower during the day and 43.0 dBA or lower at night. Both levels are below the Project design thresholds of 49.8 dBA for daytime and 43.1 dBA for nighttime, which were set as 5 dBA above measured daytime and nighttime equivalent continuous (L_{eq}) ambient sound levels. For the daytime configuration transformers, trackers, and inverters were set to operate and for the nighttime configuration, transformers and inverters were set to operate. The model results also assume the installation of sound barriers at some inverters. Figures 15 and 16 of the Noise Assessment (Exhibit N) illustrate surrounding residences and anticipated sound levels to be produced by the Facility.

The sound propagation model was also used to determine anticipated operational sound levels at property boundaries around the Facility. Property boundary sound levels were found to range from a low of 34 dBA to a high of 56 dBA for daytime operation. A sound level of 56 dBA is somewhat lower than the sound level of conversational speech. For nighttime operation, property boundary sound levels were found to range from 34 dBA to 49 dBA. A sound level of 49 dBA is lower than the sound level of a field of insects.

(ii) Processing equipment

The Facility does not include processing equipment; therefore, this section is not applicable.

(i) Associated road traffic

Traffic during operations is limited and will primarily be associated with operations personnel traveling to and from the Facility site and will not be a significant source of noise. Traffic inside the Facility will be dispersed from occasional maintenance activities and inspections. Noise from these activities is anticipated to be minimal.

(c) Location of Noise-Sensitive Areas within One-Mile of the Facility

Indicate the location of any noise-sensitive areas within one mile of the facility, and the operational noise level at each habitable residence, school, church, and other noise-sensitive receptors, under both day and nighttime operations. Sensitive receptor, for the purposes of this rule, refers to any occupied building.

Sensitive receptors within the immediate vicinity of the Facility are mapped with sound level data in Figures 15 and 16 of the Noise Assessment (Exhibit N). Sound levels are mapped out to 25 dBA, a sound level that is equivalent to a quiet winter night (see Appendix A of the Noise Assessment). Noise sensitive receptors within 1 mile of the Project are included on Figure 08-1, although as noted in Figures 15 and 16 of the Noise Assessment, sound produced by the Facility is localized to areas directly adjacent to Facility equipment and impacts to a 1-mile area are anticipated to be negligible. The highest modelled sound level from noise generating equipment at a non-participating sensitive receptor, a residence located northeast of the substation location A, was determined to be 48.5 dBA during daytime conditions. During nighttime conditions, the highest modelled sound level is 43.0 dBA, at a residence near the northern part of the array, just east of Watkins Road SW.

(d) Mitigation of Noise Emissions during Construction and Operation

Describe equipment and procedures to mitigate the effects of noise emissions from the proposed facility during construction and operation, including limits on the time of day at which construction activities may occur.

Construction will occur between the hours of 7:00 a.m. and 7:00 p.m. or until dusk when sunset occurs after 7:00 p.m. Limited construction that does not contribute to excess noise at sensitive receptors may occur outside of these hours. Pile driving operations will be limited to 8:00 a.m. to 7:00 p.m., Monday through Saturday. These extended pile driving hours, rather than limiting pile driving to 9:00 a.m. to 5:00 p.m., and the use of Saturdays, will increase efficiency and reduce the total number of days necessary for pile driving activities. As most construction occurs during normal working hours, noise impacts are anticipated to be minimal. Facility setbacks assist in the mitigation of sound during construction, as installation will mostly be at least 100 feet from non-participating sensitive receptors. Equipment will be kept in good working condition to minimize excess noise emissions.

During operation, setbacks have been implemented that will reduce sound impacts from the Facility, including a 100-foot setback from non-participating residences. Representative equipment was modeled

and is not anticipated to exceed 5 dBA above daytime and nighttime ambient sound levels at non-participating sensitive receptors. Routine maintenance of the Facility, such as mowing, typically will be completed between 7:00 a.m. and 7:00 p.m. Occasional maintenance activities during nighttime hours may be necessary to maximize energy collection during the day. These activities will be limited in nature and scope, and are not anticipated to produce excessive noise or disturbance.

(e) Pre-construction Background Noise Study

Submit a preconstruction background noise study of the project area that includes measurements taken under both day and nighttime conditions.

Continuous background noise was measured at three locations representative around the Project Area, during the period of September 29 through October 6, 2020. Sound level microphones were mounted at a height of 1.5 meters (5 feet) and covered with a 7-inch weather-resistant windscreen. Data was summarized into 10-minute, overall day, overall night, and full monitoring period length durations. Data that represented false readings or artificially high levels were omitted from the sound data sets. Such events include wind speeds above 5 meters per second, thunderstorms, anomalous events, or interactions with equipment by people or animals.

Table 1 of the Noise Assessment shows the L_{eq} , upper 10th percentile (L_{10}), median (L_{50}), and lower 10th percentile (L_{90}) background noise levels. The nighttime L_{eq} across the Project Area is 38.1 dBA and the daytime L_{eq} across the Project Area is 44.8 dBA.

Although the OAC does not define sound level limits for solar projects, a design goal of 5 dBA over ambient level (L_{eq}) was established. Given the ambient levels referenced above, 5 dBA over those values results in a nighttime L_{eq} of 43.1 dBA and a daytime L_{eq} of 49.8 dBA.

(4) Water Impacts

Water impacts. The applicant shall provide information regarding water impacts.

(a) Impacts to Public and Private Water Supplies from Construction and Operation

Provide an evaluation of the impact to public and private water supplies due to construction and operation of the proposed facility.

Water wells in the vicinity of the Facility are displayed on Figure 7 of Hull's Geology and Hydrogeology Report (Exhibit O). Water well data, obtained from the ODNR, shows that six water wells are located within the Project Area, all of which are assumed to be private wells. However, based on Hull's well survey questionnaire response, there are currently no working wells located on Project Area property. Additional water wells are located near the northern, eastern, and southern boundaries of the Project Area. Most of these wells are within close proximity to residences. Hull reviewed over 25 well log and drilling reports for wells drilled in the vicinity of the Project Area (Attachment A of the Geology and Hydrogeology Report).

Most of the wells were installed in sand/gravel at depths of 45 feet or greater, but some were installed in sandstone, shale, or limestone bedrock. Sandstone was encountered in one well at a depth of 45 feet, while another well was completed at 213 feet without encountering bedrock. The principal groundwater sources for the Project Area are the Johnstown-Groveport Complex Aquifer and the South Fork Licking Buried Valley Aquifer. Yields from these aquifers can range from 20 to 200 gallons per minute (gpm).

With no active water wells in the Project Area, and given that water bearing units in the Project Area appear to be a minimum of 45 feet bgs, it is unlikely that the construction and operation of the Facility will impact public and private water supplies. The Applicant will utilize this information and will coordinate with landowners to further identify specific well locations, and any necessary avoidance or mitigation measures, including potential capping. Additionally, given that the Facility will not be constructed within the immediate vicinity of residences, impacts to water wells are not anticipated.

(b) Impacts to Public and Private Water Supplies from Pollution Control Equipment Failures

Provide an evaluation of the impact to public and private water supplies due to pollution control equipment failures.

Solar panels generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, this section is not applicable.

(c) Water Resources Map

Provide existing maps of aquifers, water wells, and drinking water source protection areas that may be directly affected by the proposed facility.

Aquifers and existing water wells are shown on Figure 7 of the Geology and Hydrogeology Report (Exhibit O), and source water protection area (SWPAs) in the vicinity of the Project Area are shown on Attachment B of the Geology and Hydrogeology Report.

(d) Compliance with Local Water Source Protection Plans

Describe how construction and operation of the facility will comply with any drinking water source protection plans near the project area.

Based on information from the Ohio EPA, there are two SWPAs that overlap the western and southern portions of the Project Area. As discussed in the Geology and Hydrogeology Report (Exhibit O), the Ohio EPA and other regulatory agencies have adopted regulations that restrict specific activities within SWPAs. These include activities such as concentrated animal feeding operations, wastewater treatment land application systems, residual waste landfills, leaking underground storage tanks, and voluntary action program cleanups. Based on a review of programs that have adopted rules related to the presence of SWPAs, construction of the Facility would not constitute an activity that would be restricted within a SWPA.

(e) Prospects of Floods in the Area

Provide an analysis of the prospects of floods for the area, including the probability of occurrences and likely consequences of various flood stages, and describe plans to mitigate any likely adverse consequences.

The Geology and Hydrology Report (Exhibit O) analyzed the risk of flooding in the Project Area. Mapped 100-year floodplain areas exist within the Project Area, primarily surrounding the South Fork Licking River in the western side of the Project Area. No Facility structures will be placed within the 100-year floodplain; therefore, there should be minimal impacts to the Facility as a result of flooding, and the Facility should have minimal impacts to floodplains.

(5) Geological Features Map

Geological features. The applicant shall provide a map of suitable scale showing the proposed facility, geological features of the proposed facility site, topographic contours, existing gas and oil wells, and injection wells. The applicant shall also:

Oil and gas wells in the vicinity of the Project Area are depicted in Figure 7 of Hull's Geology and Hydrogeology Report (Exhibit O). Topographic contours are included on Figure 1 of Attachment C of the Ecological Assessment. Maps of geological features are also included in the Geotechnical Report (Exhibit C) and the Ecological Assessment (Exhibit P).

(a) Geologic Suitability

Describe the suitability of the site geology and plans to remedy any inadequacies.

The Geotechnical Report (Exhibit C) provides a geotechnical description of the Project Area, as well as recommendations based on subsurface exploration, engineering analysis, support design considerations, frost heave considerations, seismic considerations, electrical earth resistivity test results, thermal resistivity test results, and corrosivity test results. The Project Area appears to be geotechnically suitable for PV solar development; however, recommendations of the report were considered when selecting a viable Facility location and are used during the Facility design, engineering, and construction processes.

The Project Area and surrounding area is relatively flat; therefore, extensive grading is not anticipated. Additionally, borings and test pits did not encounter bedrock, boulders, or other layers that would hinder excavation or pile drivability. Groundwater was encountered in one boring at a depth of approximately 17 feet below ground surface (bgs), and at a depth of 5 feet bgs prior to backfilling. Because groundwater levels may fluctuate with climate and seasons, dewatering may be required during excavations. BMPs such as filter bags or straw bale structures will be implemented, during dewatering activities, to capture sediment and better diffuse water flow. Water will be directed to a well vegetated upland area, wherever possible, and all Ohio EPA Permit No. OHC000005 requirements will be followed.

The Facility will be designed to meet seismic requirements. According to the U.S. Geological Survey (USGS), seismic hazard levels are relatively low for Ohio (USGS, 2008). Information presented in the Geology and Hydrogeology report (Exhibit O), shows that no earthquake epicenters are mapped within the Project Area or within Licking County. The nearest seismic events have been in Fairfield County, with magnitudes of 1.5 and 2.9. Analyses presented in the Geotechnical Report (Exhibit C) found that soil liquefaction due to seismic shaking in the Project Area is unlikely.

(b) Soil Suitability

Describe the suitability of soil for grading, compaction, and drainage, and describe plans to remedy any inadequacies and restore the soils during post-construction reclamation.

Soils encountered in six borings in the Project Area generally consisted of approximately 6 inches of topsoil, followed by medium stiff to very stiff lean clays with varying amounts of sand and gravel to a maximum explored depth of 18 feet. One boring found loose to dense silty and clayey sand with varying amounts of gravel to a depth of 48 feet bgs, where stiff lean clay with sand was encountered. Another boring found loose silty and clayey sand to a depth of 5 feet bgs. Two test pits, which extended to 8 feet bgs, found soils generally similar to those observed in the borings. Additional testing was conducted to determine the corrosivity, thermal resistivity, and electrical earth resistivity of the soils. Results for those tests can be found as attachments in Exhibit C.

Soils on site were found to have medium shrink-swell potential. On-site soils were found generally to be suitable for use as structural fill, provided they are properly moisture conditioned. Based on soils encountered within the Project Area and the potential for frost heave, support piles are recommended to be driven to a minimum depth of 7.5 feet below grade. Foundation design recommendations, as well as additional design considerations are provided in Exhibit C.

(c) Plans for Test Borings

Describe plans for the test borings, including closure plans for such borings. Plans for the test borings shall contain a timeline for providing the test boring logs and the following information to the board:

- (i) Subsurface soil properties.*
- (ii) Static water level.*
- (iii) Rock quality description.*
- (iv) Percent recovery.*
- (v) Depth and description of bedrock contact.*

To meet the requirements of OAC 4906-04-08(5)(c), test borings were collected within the Project Area. Boring logs are included within the Geotechnical Report (Exhibit C). Boring locations are shown in Figure 1 of Exhibit C. Groundwater was encountered in one boring at a depth of approximately 17 feet bgs, and at a depth of 5 feet bgs prior to backfilling. Soil characteristics identified from the geotechnical borings

are discussed in section 4906-4-08(A)(5)(b). No bedrock was encountered from any of the test borings, and shallow bedrock is not anticipated to be encountered during construction.

As test borings have been provided as part of this Application, and additional borings would be collected to inform very specific engineering considerations, it is not proposed that any additional geotechnical boring logs or data will be provided to OPSB staff. If additional borings are deemed necessary, the onsite contractor will prepare and follow a specific boring plan and will use standard methods for boring closure. The results of any additional borings are not anticipated to significantly alter the placement of Facility components.

(6) Prospects of High Winds in the Area

Wind velocity. The applicant shall provide an analysis of high wind velocities for the area, including the probability of occurrences and likely consequences of various wind velocities, and describe plans to mitigate any likely adverse consequences.

The Facility will be engineered and installed to withstand typical high-wind occurrences, as defined by the local wind speed requirements in the structural design codes. These codes have safety factors built into them as well. The solar arrays are tightly secured to steel piles that are driven approximately 7 to 10 feet deep into the ground. The Facility is designed using Risk Category I maps and is based on the maximum expected three-second gust from the building codes. The module tracker system also has a wind stow mode, when high winds are detected, the modules are moved to a position that lowers the structural loads. The wind stow velocity is typically set below the maximum design wind speed as a precaution.

(7) Blade Shear

Blade shear. For a wind farm, the applicant shall evaluate and describe the potential impact from blade shear at the nearest property boundary and public road.

Given the nature of the Facility, this section is not applicable.

(8) Ice Throw

Ice throw. For a wind farm, the applicant shall evaluate and describe, by providing a site-specific ice throw risk analysis and assessment study, the potential impact from ice throw at the nearest property boundary and public road.

Given the nature of the Facility, this section is not applicable.

(9) Shadow Flicker

Shadow flicker. For a wind farm, the applicant shall evaluate and describe the potential cumulative impact from shadow flicker at the property boundary and sensitive receptors within a distance of ten rotor diameters or at least one-half mile, whichever is greater, of a turbine, including its plans to minimize potential impacts.

Given the nature of the Facility, this section is not applicable.

(10) Radio and Television Reception

Radio and TV reception. The applicant shall evaluate and describe the potential for the facility to interfere with radio and TV reception and describe measures that will be taken to minimize interference.

The Applicant is not aware of any research conducted to date that indicates utility-scale solar generation facilities interfere with communication systems. PV arrays generate weak electromagnetic fields (EMFs) during the day that dissipate at short distances. These EMFs are “generated in the same extremely low frequency range as electrical appliances and wiring found in most homes and buildings” (Massachusetts Department of Energy Resources, 2015, p. 10). In a study of three solar projects in Massachusetts, electric field levels measured along the boundary of each project did not exceed background levels (Massachusetts Clean Energy Center, 2012, p. iv). Accordingly, the Applicant does not anticipate interference with radio or television reception due to weak EMFs produced by the proposed solar Facility.

(11) Radar Interference

Radar interference. The applicant shall evaluate and describe the potential for the facility to interfere with military and civilian radar systems and describe measures that will be taken to minimize interference.

As stated above, solar facilities produce weak EMF signals that quickly dissipate off site. Additionally, according to the FAA, PV systems represent little risk of interfering with radar transmission due to their low profile (Lawrence & Magnotta, 2018). As a result, the Facility is not anticipated to interfere with radar communication systems.

(12) Navigable Airspace Interference

Navigable airspace interference. The applicant shall evaluate and describe the potential for the facility to interfere with navigable airspace and describe measures that will be taken to minimize interference. The applicant shall coordinate such efforts with appropriate state and federal agencies.

Due to the low profile of the Facility, where the tallest structure will be the substation support structures, with a height of approximately 65 feet, impacts to navigable airspace are not anticipated. See section 4906-4-07(E) of this Application for a discussion of potential aviation impacts from glare.

(13) Communication Interference

Communication interference. The applicant shall evaluate and describe the potential for the facility to interfere with microwave communication paths and systems and describe measures that will be taken to minimize interference. Include all licensed systems and those used by electric service providers and emergency personnel that operate in the project area.

Interference in microwave communication signals occurs when the line-of-sight between two microwave transmitters is blocked (Polisky, 2005). Microwave communication interference is a common concern in development of a wind facility due to the presence of large structures. However, components of this Facility are low in profile with the tallest structure being the substation. Due to the lack of tall structures that may

interfere with the line-of-sight of microwave transmitters, interference with microwave communications from the Facility is not anticipated.

(B) ECOLOGICAL IMPACT

The applicant shall provide information on ecological resources.

(1) Ecological Resources in the Project Area

Ecological information. The applicant shall provide information regarding ecological resources in the project area.

An Ecological Assessment (Exhibit P), including a review of applicable literature and desktop information, consultations with the ODNR and USFWS, results of field studies in the Project Area, and anticipated Facility impacts, was completed for the Project.

(a) Open Spaces and Facility Map

Provide a map of at least 1:24,000 scale containing a one half-mile radius from the project area, showing the following:

- (i) The proposed facility and project area boundary.*
- (ii) Undeveloped or abandoned land such as wood lots or vacant tracts of land subject to past or present surface mining activities, not used as a registered game preserve or in agricultural production.*
- (iii) Wildlife areas, nature preserves, and other conservation areas.*
- (iv) Surface bodies of water, including wetlands, ditches, streams, lakes, reservoirs, and ponds.*
- (v) Highly-erodible soils and slopes of twelve percent or greater.*

The features required to be mapped by OAC 4906-4-08(B)(1)(a) are described below, with references to the corresponding figure or exhibit that includes a map of the feature.

(i) The proposed Facility and Project Area boundary

The preliminary Facility layout and Project Area boundary are both depicted on Figure 03-2.

(ii) Undeveloped or abandoned land such as wood lots or vacant tracts of land subject to past or present surface mining activities

Undeveloped land is mapped in Figure A.1 of the Ecological Assessment (Exhibit P) and includes wooded areas, shrub/scrub communities, and herbaceous land. Undeveloped land data was derived from the USGS National Land Cover Database (NLCD). Mining activities are shown on Figure 9 of the Geology and Hydrogeology Report (Exhibit O).

(i) Wildlife areas, nature preserves, and other conservation areas

No wildlife areas were noted within 0.5 mile of the Project Area. Wildlife areas, nature preserves, and other conservation areas are depicted on both Figure 08-2 of this Application and Figure A.4 of the Ecological Assessment (Exhibit P).

(ii) Surface bodies of water

Various surface bodies of water, including wetlands, ponds, and streams, are within 0.5 mile of the Project Area. The South Fork Licking River and its tributaries are along the western and southern sections of the Project Area. All named waterbodies are illustrated on Figure 03-1. Field delineated waterbodies are shown on Figure A.5 of the Ecological Assessment.

(iii) Highly erodible soils and steep slopes

The Project Area is relatively flat, lacking steep slopes or erodible soils. Soil units, with corresponding descriptions including slope and erodibility, are listed in Table 4-2 of the Ecological Assessment and mapped in Figure 4 of Attachment C of the Ecological Assessment (Exhibit P). Soil slopes are further discussed in the Geology and Hydrogeology Report (Exhibit O). Topographic contours are shown on Figure 1 of Attachment C of the Ecological Assessment.

(b) Field Survey and Map of Vegetative Communities and Surface Waters within 100 Feet of Construction

Provide the results of a field survey of the vegetation and surface waters within one-hundred feet of the potential construction impact area of the facility. The survey should include a description of the vegetative communities, and delineations of wetlands and streams. Provide a map of at least 1:12,000 scale showing all delineated resources.

Vegetative Communities

Vegetative communities are characterized in sections 4.1 and 6.1.1 of the Ecological Assessment (Exhibit P). The Project Area consists primarily of cultivated crops (94.10%). Fewer areas of deciduous forest (2.25%), hay/pasture (1.84%), developed/open space (1.08%), low intensity development (0.49%), and woody wetlands (0.25%) were also identified. A map of vegetative communities is provided as Figure A-1 of the Ecological Assessment.

Wetland and Stream Delineations

A surface water delineation was completed for the Project Area (Attachment C of the Ecological Assessment). A total of 9 wetlands and 6 streams were identified and delineated within the Project Area. A map of delineated wetlands and streams is included as Figures 6 and 6A through 6H in Attachment C of the Ecological Assessment.

(c) Literature Review of Plant and Animal Life within 0.25 Mile of Construction

Provide the results of a literature survey of the plant and animal life within at least one-fourth mile of the project area boundary. The literature survey shall include aquatic and terrestrial plant and animal species that are of commercial or recreational value, or species designated as endangered or threatened.

A literature review and field survey of plant and animal life within 0.25 mile of the Project Area is included in the Ecological Assessment (Exhibit P). This information is summarized below.

Plants

The majority of the Project Area consists of cultivated crops. Aside from crops, no known plant species of commercial or recreational value occur within 0.25 mile of the Project Area.

Animals

The majority of the Project Area consists of cultivated crops. No known animal species of commercial or recreational value occur within 0.25 mile of the Project Area. A literature review showed no bald eagle or sensitive raptor nests for the Project Area. Additionally, consultation with USFWS and ODNR did not identify bald eagle nests for the Project Area.

State and Federal Listed Species

The existing Project Area consists primarily of active and disturbed agricultural land; therefore, no high-quality habitat suitable for rare, threatened, or endangered animal species occurs. Hull's consultation of the USFWS IPaC system showed no critical habitat for rare, threatened, or endangered species to be present in the vicinity of the Project Area. According to ODNR and USFWS (Attachment A of the Ecological Assessment), no state or federal listed plant or animal species are known to occur within 1 mile of the Project Area.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state and federal endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federal threatened species, and the little brown bat (*Myotis lucifugus*) and tricolored bat (*Perimyotis subflavus*), state endangered species.

The Project Area is within the range of the state threatened fawnsfoot mussel (*Truncilla donaciformis*) and lake chubsucker fish (*Erimyzon sucetta*). No Ohio Mussel Survey Protocol listed streams are within the Project Area.

The Project is within the range of three state protected bird species: least bittern (*Ixobrychus exilis*), northern harrier (*Circus hudsonis*), and upland sand piper (*Bartramia longicauda*). Six additional species of birds were listed as Birds of Conservation Concern.

Game Species

Common game species that are typical of central Ohio could occur in the Project Area. These species are mobile and therefore incidental injury or mortality to these species are not anticipated.

(d) Results of Field Surveys for Plant and Animal Life Identified in Literature Review

Conduct and provide the results of field surveys of the plant and animal species identified in the literature survey.

No state or federal listed plant species were identified during the field survey. The Project Area consists primarily of active and disturbed agricultural land. During the field survey, agricultural land was planted with corn and soybeans. Small areas of deciduous forest were identified adjacent to an agricultural field in the northern Project Area and along the South Fork Licking River, in the southwestern Project Area.

No state or federal listed animal species were identified during the field survey. Minimal areas of forested land identified in the northern and southwestern sections of the Project Area could potentially provide suitable habitat for the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). Additionally, the shell of a common snapping turtle (*Chelydra serpentina*) was discovered near the South Fork Licking River, indicating potential stream habitat. Habitat quality in the remainder of the Project Area was considered minimal due to active agricultural use.

Although South Fork Licking River is classified a Group 1 mussel stream where listed mussel species are not expected, the field component of a mussel reconnaissance survey was completed. No live or fresh dead native mussels were observed.

No additional wildlife surveys are anticipated for the Facility. Based on adherence to agency avoidance and mitigation guidelines, consultation with the ODNR and USFWS did not result in the suggestion of additional surveys. Those guidelines, along with other avoidance and minimization techniques, are provided below in section 4906-4-08(B)(2)(b).

(e) Summary of Additional Ecological Impact Studies

Provide a summary of any additional studies which have been made by or for the applicant addressing the ecological impact of the proposed facility.

Based on agency consultation and field survey results, no additional ecological studies are proposed.

(2) Construction Impacts

Ecological impacts. The applicant shall provide information regarding potential impacts to ecological resources during construction.

(a) Estimation of Impact of Construction on Undeveloped Areas, Plants, and Animals

Provide an evaluation of the impact of construction on the resources surveyed in response to paragraph (B)(1) of this rule. Include the linear feet and acreage impacted, and the proposed crossing methodology of each stream and wetland that would be crossed by or within the footprint of any part of the facility or construction equipment. Specify the extent of vegetation clearing, and describe how such clearing work will be done so as to minimize removal of woody vegetation. Describe potential impacts to wildlife and their habitat.

Because the Facility is located entirely on private land, there will be no construction-related impacts to recreational areas, parks, wildlife areas, nature preserves, or other conservation areas.

No state or federal listed plant or animal species are known to occur within 1 mile of the Project Area and no quality habitat exists in the Project Area; therefore, impacts to state and federal listed species are

unlikely. To further avoid any potential impacts, vegetation clearing will be limited primarily to previously disturbed agricultural crop cover and volunteer vegetation in agricultural fields, with less than 1 acre of tree clearing anticipated for the Project. Any tree clearing that may be necessary will be completed from October 1 through March 31 to avoid potential impacts to bat species.

Through careful design and avoidance measures, the Applicant anticipates little impact to delineated wetlands or streams within the Project Area. Detailed listings of anticipated wetland and stream impacts are provided in Tables 7-2 and 7-3 of the Ecological Assessment. Approximately 0.363 acre of wetlands will be temporarily impacted by access road and gen-tie line installation. Permanent impacts to wetlands will be limited to 0.006 acre of emergent wetlands, from access roads and array piles. Approximately 74.22 linear feet of streams will be temporarily impacted by access road and gen-tie line construction, while permanent impacts to streams will be limited to 32.0 linear feet for access road installation. Additionally, impacts to one wetland and one stream will be avoided by installation of underground collection lines by horizontal directional drilling (HDD). An HDD inadvertent return (frac out) contingency plan was developed pursuant to OAC 4906-4-08(B)(2)(b)(ii) and is included as Attachment E to the Ecological Assessment (Exhibit P).

Potential impacts to wildlife and their habitat are anticipated to be negligible. These potential impacts are also discussed further in the Ecological Assessment.

(b) Description of Short-term and Long-term Mitigation Procedures

Describe the mitigation procedures to be utilized to minimize both the short-term and long-term impacts due to construction, including the following:

(i) Site restoration and stabilization of disturbed soils

Plans for post-construction site restoration and stabilization of disturbed soils, especially in riparian areas and near wetlands. Restoration plans should include details on the removal and disposal of materials used for temporary access roads and construction staging areas, including gravel.

Restoration activities are anticipated to include the following:

- Soil above the underground collection lines will be restored to pre-construction contours as necessary and allowed to regenerate naturally;
- Disturbed soils within the Facility's fenceline will be re-seeded with a low-growth, native seed mix to stabilize exposed soils and control sedimentation and erosion; and
- The laydown yards will be de-compacted, topsoil redistributed, and seeded with a low-growth, native seed mix to stabilize exposed soils and control sedimentation and erosion.

All waste material and debris will be stockpiled in designated locations. Each stockpile will be transported off site to either a recycling center, when feasible, or to an approved landfill depending on the material type. Debris will be broken down into manageable sizes to aid in their transportation.

To minimize surface water runoff during construction, BMPs will be implemented, and storm water controls will be kept in place through the completion of construction and removed once permanent stabilization measures have been installed.

The objectives of reclamation and revegetation are to allow for the efficient establishment of vegetation on the Project site, and to ensure that disturbed land that is not used as part of the Facility can be reverted to pre-construction agricultural uses, per the wishes of the landowners. In excavated areas, topsoil and subsoil will be segregated and separately backfilled, and soil will be treated if necessary, to preserve approximate pre-construction capability.

(ii) Frac out contingency plan

A detailed frac out contingency plan for stream and wetland crossings that are expected to be completed via horizontal directional drilling.

Impacts to one wetland and one stream will be avoided by installation of underground collection lines by HDD. An HDD frac out contingency plan was developed pursuant to OAC 4906-4-08(B)(2)(b)(ii) and is included as Attachment E to the Ecological Assessment (Exhibit P).

(iii) Methods to demarcate surface waters and wetlands during construction

Methods to demarcate surface waters and wetlands and to protect them from entry of construction equipment and material storage or disposal.

The boundaries of streams and wetlands within and immediately adjacent to the construction limits of disturbance will be demarcated by silt/exclusionary fencing to clearly indicate avoidance areas. These will also be marked on final construction documents. Other sensitive resources will be marked as “Environmentally Sensitive Areas” on final construction documents. All contractors and subcontractors working on-site will be provided with training to understand the significance of the types of indicators used, and the importance of staying within defined limits of work areas.

(iv) Inspection procedures for erosion control measures

Procedures for inspection and repair of erosion control measures, especially after rainfall events.

As noted previously, the Applicant will seek coverage for the Facility under Ohio EPA Permit No. OHC000005. The permit requires development of a SWPPP for erosion control and storm water management, and requires the regular inspection of erosion control measures, as described below.

Erosion and sediment control measures will be inspected by a qualified individual throughout the construction phase to assure that they are functioning properly. These features will be inspected until 70% permanent vegetated cover has been established across disturbed areas. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence

of, or the potential for, pollutants entering the drainage system. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking. Inspections will be conducted at least once every seven calendar days, and within 24 hours after any storm event with 0.5 inch or greater of rain. This inspection frequency may be reduced to once every month if the entire site is temporarily stabilized and runoff is unlikely due to weather conditions such as snow, ice, or frozen ground.

Following each inspection, the qualified inspector will complete and sign a checklist and inspection report. At a minimum, the inspection report shall include:

- the inspection date;
- names, titles, and qualifications of personnel making the inspection;
- weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
- weather information and a description of any discharges occurring at the time of the inspection;
- locations of any BMPs that need to be maintained; and
- any corrective actions recommended.

The inspection report will be distributed to the contractor, and any corrective actions will be promptly addressed by onsite staff to ensure permit compliance.

Following site stabilization, a notice of termination form will be submitted to the Ohio EPA, in accordance with NPDES permit requirements. For three years following the submittal of a notice of termination form, the Applicant will maintain a record summarizing the results of the SWPPP inspections described above, including the names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, and a signed certification as to whether the Facility is in compliance with the SWPPP.

(v) Measures to protect vegetation

Methods to protect vegetation in proximity to any project facilities from damage, particularly mature trees, wetland vegetation, and woody vegetation in riparian areas.

The Project Area consists primarily of active agricultural land. Limited forested areas exist on the northern and southwestern Project Area. Less than 1 acre of tree clearing is anticipated for the Project. Any tree and shrub clearing that may be necessary will be completed from October 1 through March 31. In addition to siting the Facility on agricultural land, measures to protect vegetation include: identifying sensitive areas such as wetlands where no disturbance or vehicular activities will be

allowed; limiting areas of disturbance to the smallest size practicable; preserving mature trees to the maximum extent practicable; educating the construction workforce on respecting and adhering to the physical boundaries of off-limit areas; and employing BMPs during construction. Following construction activities, temporarily disturbed areas will be re-established with native vegetation. Seed mixes for the Facility have incorporated suggestions from the ODNR and Ohio Pollinator Habitat Initiative, to reestablish vegetative cover in these areas. Two seed mixes will be used, one within the PV array areas (both underneath and between arrays) and the other for buffer areas. Refer to the Vegetation Management Plan (Exhibit D) for more information.

(vi) Options for clearing methods and disposing of brush

Options for disposing of downed trees, brush, and other vegetation during initial clearing for the project, and clearing methods that minimize the movement of heavy equipment and other vehicles within the project area that would otherwise be required for removing all trees and other woody debris off site.

Less than 1 acre of tree clearing is anticipated for the Project. Any tree clearing that may be necessary will be completed from October 1 through March 31 to avoid potential impacts to bat species. Disposal of cleared trees and shrubs will likely consist of chipping or grinding, then using as woodchips for temporary ground cover or mulch. Offsite transport of woody material is not anticipated; however, if necessary, such disposal will be completed by a qualified contractor in accordance with local, state, and federal regulations.

(vii) Avoidance measures for state or federally listed and protected species and their habitats

Avoidance measures for state or federally listed and protected species and their habitat, in accordance with paragraph (D) of rule 4906-4-09 of the Administrative Code.

Based on consultations with the ODNR and USFWS and field surveys, habitat for state or federal listed species within the Project Area is minimal; therefore, it is unlikely that any state or federally listed species will be impacted by the Project. No post-construction wildlife monitoring is proposed. Coordination letters are included in the Ecological Assessment as Appendix A. Per agency guidance, any tree clearing that may be necessary will be completed from October 1 through March 31 to avoid potential impacts to bat species.

The Applicant will contact OPSB Staff and the applicable federal or state agency within 24 hours if federal or state listed species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals will be halted until an appropriate course of action has been agreed upon by the Applicant, OPSB Staff, and other applicable agencies.

(3) Operational Impacts

Operational ecological impacts. The applicant shall provide information regarding potential impacts to ecological resources during operation and maintenance of the facility.

(a) Estimation of Impact of Operation on Undeveloped Areas, Plants, and Animals

Provide an evaluation of the impact of operation and maintenance on the undeveloped areas shown in response to paragraph (B)(1) of this rule.

Aside from minor disturbances associated with routine maintenance and occasional repair activities, no additional disturbance to plants, vegetative communities, wetlands, or surface waters is anticipated from Facility operation. The Facility will not result in physical disturbance or impacts to recreational areas, parks, wildlife areas, nature preserves, or other conservation areas as identified in section 4906-4-08(B)(1)(a).

(b) Procedures to Avoid/Minimize/Mitigate Short-term and Long-term Operational Impacts

Describe the procedures to be utilized to avoid, minimize, and mitigate both the short- and long-term impacts of operation and maintenance. Describe methods for protecting streams, wetlands, and vegetation, particularly mature trees, wetland vegetation, and woody vegetation in riparian areas. Include a description of any expected use of herbicides for maintenance.

Once operational, no additional ecological impacts are anticipated. The Applicant has sited the Facility to avoid wetlands and streams to the maximum extent practicable, and no additional impacts to these resources are anticipated following construction.

Vegetation management efforts such as hand weeding, mowing, and herbicide application will be required for continued maintenance of the Project Area. Mowing activities will occur regularly within the first three years, to discourage the establishment of invasive species. Such activities will be conducted with care, specifically during the nesting period for grassland birds (April 15 through July 31). If herbicide application is required, it will be applied by a licensed applicator. The Applicant is considering grazing as a form of natural vegetation management to restrict the spread of non-native species, prevention of access litter accumulation, improve forage production, and accelerate decomposition and nutrient cycling. Additional information on grazing and other vegetation management methods and impacts are provided in the Vegetation Management Plan provided in Exhibit D. Definitive plans for grazing as vegetation management have not been made and are contingent on a willing community partner, and the development of an amenable agreement between the Applicant and partner.

The potential for direct impacts to wildlife from an operational solar facility in Ohio is low. Solar facilities do not have the same collision risk for avian and bat species as wind facilities due to their low-profile and lack of rapidly moving parts. Because no significant operational impacts to these resources are anticipated, no mitigation measures are proposed.

(c) Post-Construction Monitoring Plans

Describe any plans for post-construction monitoring of wildlife impacts.

The Applicant has no plans for post-construction monitoring of wildlife impacts because no significant impacts from the construction or operation of the Facility are anticipated. The Facility does not include any rapidly moving parts and will not result in environmental discharges during operation that may impact wildlife and their habitat.

(C) LAND USE AND COMMUNITY DEVELOPMENT

The applicant shall provide information on land use and community development.

(1) Land Use

Existing land use. The applicant shall provide information regarding land use in the region and potential impacts of the facility through the following maps and related information.

(a) Land Use Map

Provide a map of at least 1:24,000 scale showing the following within one-mile of the project area boundary:

(i) The proposed facility.

(ii) Land use, depicted as areas on the map. Land use, for the purposes of paragraph (C) of this rule, refers to the current economic use of each parcel. Categories should include residential, commercial, industrial, institutional, recreational, agricultural, and vacant, or as classified by the local land use authority.

(iii) Structures, depicted as points on the map. Identified structures should include residences, commercial centers or buildings, industrial buildings and installations, schools, hospitals, churches, civic buildings, and other occupied places.

(iv) Incorporated areas and population centers.

Land uses within 1 mile of the Facility are shown on Figure 08-1, which shows the following features:

(i) The proposed Facility

The proposed Facility layout, including collection lines, access roads, fenceline, the two alternate substation locations, O&M building, laydown yards, and inverter locations. PV panel areas were removed from this figure in order to show the land use information more clearly. The fenceline is representative of areas where panels will be located.

(ii) Land use

Land use was mapped in Figure 08-1 within a 1 mile radius of the Project Area. Most of the land use in the area is agricultural, with substantial numbers of residential, commercial, and tax-exempt parcels.

(iii) Structures

Structures within a 1 mile radius of the Project Area primarily include residences, except for two schools, two churches, a few commercial buildings, and a fire station. Structures were digitized via aerial imagery and confirmed during site visits and through existing databases, and include residences and other buildings where people congregate for extended periods of time.

(iv) Incorporated areas and population centers

The City of Pataskala is located approximately a half mile west of the Project Area, and also extends approximately 1 mile north of the Project Area. Developed residential areas are also located to the south and northwest of the Project Area, with smaller residential areas scattered around the 1 mile study area.

(b) Structures Table

Provide, for the types of structures identified on the map in paragraph (C)(1)(a) of this rule, a table showing the following:

- (i) For all structures and property lines within one thousand five hundred feet of the generation equipment or wind turbine, the distance between both the structure or property line and the equipment or nearest wind turbine.*
- (ii) For all structures and property lines within two hundred and fifty feet of a collection line, access road, or other associated facility, the distance between both the structure or property line and the associated facility.*
- (iii) For each structure and property in the table, whether the property is being leased by the applicant for the proposed facility.*

(i) Structures and Property Lines within 1,500 Feet of PV Panels

Distances between the PV panels and existing structures within 1,500 feet are shown in Table 08-1 below, which includes the distance to the nearest PV panel and the lease status of the underlying parcel (i.e., participating or non-participating). There are 92 structures within 1,500 feet of a PV panel.

Table 08-1. Structures Within 1,500 Feet of a PV Panel

Structure Type	Distance to PV Panel (Feet)	Lease Status of Underlying Parcel¹
Residence	133	Non-participating
Residence	147	Non-participating
Residence	149	Non-participating
Residence	152	Non-participating
Residence	184	Non-participating
Residence	197	Non-participating
Residence	204	Non-participating
Residence	222	Non-participating
Residence	241	Non-participating
Residence	259	Non-participating
Residence	279	Non-participating
Residence	287	Non-participating
Residence	295	Non-participating
Residence	301	Non-participating
Residence	342	Non-participating
Residence	356	Participating
Residence	357	Non-participating
Residence	449	Non-participating
Residence	454	Non-participating
Residence	464	Non-participating

Structure Type	Distance to PV Panel (Feet)	Lease Status of Underlying Parcel¹
Residence	464	Non-participating
Residence	518	Non-participating
Residence	546	Non-participating
Residence	560	Non-participating
Residence	560	Non-participating
Residence	576	Non-participating
Residence	579	Non-participating
Residence	583	Non-participating
Residence	592	Non-participating
Residence	610	Non-participating
Residence	623	Non-participating
Residence	632	Non-participating
Residence	634	Non-participating
Residence	636	Non-participating
Residence	641	Non-participating
Residence	664	Non-participating
Residence	666	Non-participating
Residence	686	Non-participating
Residence	695	Non-participating
Residence	735	Non-participating
Residence	738	Non-participating
Residence	739	Non-participating
Residence	760	Non-participating
Residence	786	Non-participating
Residence	792	Non-participating
Residence	809	Non-participating
Residence	809	Non-participating
Residence	813	Non-participating
Residence	823	Non-participating
Residence	850	Non-participating
Residence	859	Non-participating
Residence	863	Non-participating
Residence	869	Non-participating
Residence	870	Non-participating
Residence	885	Non-participating
Residence	895	Non-participating
Residence	923	Non-participating
Residence	977	Non-participating
Residence	986	Non-participating
Residence	989	Non-participating
Residence	1006	Non-participating

Structure Type	Distance to PV Panel (Feet)	Lease Status of Underlying Parcel¹
Residence	1009	Non-participating
Residence	1011	Non-participating
Residence	1018	Non-participating
Residence	1021	Non-participating
Residence	1028	Non-participating
Residence	1037	Non-participating
Residence	1073	Non-participating
Residence	1088	Non-participating
Residence	1115	Non-participating
Residence	1169	Non-participating
Residence	1172	Non-participating
Residence	1181	Non-participating
Residence	1246	Participating
Residence	1264	Non-participating
Residence	1270	Non-participating
Residence	1299	Non-participating
Residence	1306	Non-participating
Residence	1307	Non-participating
Residence	1307	Non-participating
Residence	1323	Non-participating
Residence	1324	Non-participating
Residence	1344	Non-participating
Residence	1362	Non-participating
Residence	1377	Non-participating
Residence	1407	Non-participating
Residence	1422	Non-participating
Residence	1426	Non-participating
Residence	1438	Non-participating
Residence	1458	Non-participating
Residence	1459	Non-participating
Residence	1497	Non-participating

1. Parcels anticipated to be under a lease or easement agreement at the time of Facility construction are identified as participating parcels.

Distance between PV panels and property lines within 1,500 feet are shown in Table 08-2, which presents the distance to the nearest PV panel and the lease status of the parcel (i.e., participating or non-participating). There are 153 parcel boundaries within 1,500 feet of a PV panel.

Table 08-2. Parcel Boundaries Within 1,500 Feet of a PV Panel

Parcel ID	Distance to PV Panel (Feet)¹	Lease Status
025-068892-00.001	0	Participating
025-068208-00.001	0	Participating
025-069396-01.000	0	Participating
025-069396-01.001	0	Participating
025-069246-00.003	19	Non-Participating
025-069396-00.003	24	Non-Participating
025-069318-00.000	27	Non-Participating
025-069318-02.000	29	Non-Participating
025-069396-01.002	31	Non-Participating
025-068892-02.003	44	Participating
025-069396-01.003	44	Non-Participating
025-069042-00.000	44	Non-Participating
025-069168-00.001	45	Participating
025-069390-00.000	45	Non-Participating
025-076578-00.000	46	Non-Participating
025-068892-02.000	49	Non-Participating
025-069246-00.027	49	Non-Participating
025-068208-00.009	49	Non-Participating
025-079122-00.000	54	Non-Participating
025-068208-00.007	55	Non-Participating
025-068208-00.004	55	Non-Participating
025-068892-03.000	55	Non-Participating
025-068892-00.000	56	Non-Participating
025-068208-00.010	56	Non-Participating
025-067998-00.000	56	Non-Participating
025-068208-00.000	57	Non-Participating
025-069246-00.009	59	Non-Participating
025-067998-00.001	59	Non-Participating
025-075912-00.000	60	Non-Participating
025-067950-00.000	61	Non-Participating
025-067998-01.000	62	Non-Participating
025-068208-00.006	64	Non-Participating
025-068208-00.003	67	Non-Participating
025-072168-00.000	68	Non-Participating
025-069246-00.008	73	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Lease Status
025-072186-00.000	76	Non-Participating
025-069396-01.004	77	Non-Participating
025-077826-00.000	78	Non-Participating
025-068388-00.000	82	Non-Participating
025-072192-00.000	88	Non-Participating
025-067944-00.000	88	Non-Participating
025-072174-00.000	97	Non-Participating
025-072162-00.000	100	Non-Participating
025-068208-00.002	108	Non-Participating
025-077940-00.000	108	Non-Participating
025-069246-00.007	128	Non-Participating
025-068208-00.005	142	Non-Participating
025-068208-00.008	173	Non-Participating
025-071382-00.000	191	Non-Participating
025-069246-00.026	200	Non-Participating
025-069246-00.010	209	Non-Participating
025-068892-02.001	211	Non-Participating
025-068892-02.004	273	Non-Participating
025-069246-00.006	330	Non-Participating
025-079188-00.000	347	Non-Participating
025-069246-00.011	359	Non-Participating
025-069246-00.012	367	Non-Participating
025-069246-00.013	374	Non-Participating
025-069246-00.014	375	Non-Participating
025-069390-00.001	378	Non-Participating
025-071898-00.000	408	Non-Participating
025-069246-00.025	411	Non-Participating
025-079116-00.000	420	Non-Participating
025-068892-02.002	423	Non-Participating
025-069246-00.028	434	Non-Participating
025-070500-00.000	455	Non-Participating
025-069396-02.000	471	Non-Participating
025-069396-00.001	472	Non-Participating
025-070506-00.000	480	Non-Participating
025-072852-00.000	488	Non-Participating
025-072180-00.000	497	Non-Participating

Parcel ID	Distance to PV Panel (Feet)¹	Lease Status
025-076734-00.000	514	Non-Participating
025-069246-00.015	522	Non-Participating
025-069246-00.005	523	Non-Participating
025-079386-01.001	535	Participating
010-017598-00.002	540	Non-Participating
025-069246-00.024	556	Non-Participating
010-017598-00.000	557	Non-Participating
025-072516-00.000	641	Non-Participating
025-069246-00.016	654	Non-Participating
025-069246-00.023	662	Non-Participating
025-069246-00.004	683	Non-Participating
025-068280-00.000	689	Non-Participating
025-069246-00.022	709	Non-Participating
025-069246-00.021	717	Non-Participating
025-069246-00.020	726	Non-Participating
010-017598-00.004	728	Non-Participating
025-069246-00.019	761	Non-Participating
025-068892-00.006	774	Non-Participating
025-068892-01.000	774	Non-Participating
025-069246-00.017	777	Non-Participating
025-068892-00.004	810	Non-Participating
025-069246-00.001	831	Non-Participating
025-069246-02.028	852	Non-Participating
025-069246-00.002	859	Non-Participating
025-069246-00.000	863	Non-Participating
025-068892-00.005	865	Non-Participating
025-068388-00.002	896	Non-Participating
025-068892-00.002	898	Non-Participating
010-017598-00.001	909	Non-Participating
025-068790-00.001	920	Non-Participating
025-068892-00.003	928	Non-Participating
025-069246-00.018	928	Non-Participating
025-077928-00.000	946	Non-Participating
025-075894-00.000	949	Non-Participating
025-067770-00.000	992	Non-Participating
025-068574-00.000	1030	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Lease Status
025-068994-00.000	1040	Non-Participating
025-079386-01.000	1078	Participating
025-069168-00.000	1099	Non-Participating
025-068790-00.000	1101	Non-Participating
010-018516-00.000	1119	Non-Participating
025-067920-00.003	1145	Non-Participating
025-067920-00.000	1146	Non-Participating
025-067920-00.001	1160	Non-Participating
025-068874-06.000	1176	Non-Participating
025-069198-00.001	1178	Non-Participating
025-068874-07.000	1180	Non-Participating
025-068874-08.001	1184	Non-Participating
025-067866-00.000	1185	Non-Participating
025-068874-05.000	1187	Non-Participating
025-068874-04.000	1195	Non-Participating
025-068946-00.000	1195	Non-Participating
025-068874-09.000	1199	Non-Participating
025-068748-00.000	1207	Non-Participating
025-069168-00.002	1211	Non-Participating
025-071760-00.000	1219	Non-Participating
025-068748-04.000	1220	Non-Participating
025-068748-03.000	1235	Non-Participating
025-075900-00.000	1239	Non-Participating
025-068874-10.000	1239	Non-Participating
025-068748-02.000	1239	Non-Participating
025-079092-00.000	1251	Non-Participating
025-068748-01.000	1252	Non-Participating
025-076386-00.000	1285	Non-Participating
025-069252-00.000	1286	Non-Participating
025-068382-00.000	1293	Non-Participating
010-017652-00.054	1317	Non-Participating
025-069048-00.000	1351	Non-Participating
025-069198-00.000	1352	Non-Participating
025-069198-00.002	1387	Non-Participating
025-069204-00.000	1388	Non-Participating
025-077772-00.000	1428	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Lease Status
025-075618-00.000	1463	Non-Participating
025-069204-00.001	1463	Non-Participating
025-075618-01.000	1466	Non-Participating
010-017598-01.003	1495	Non-Participating

1. Distances that equal zero represent parcels that contain PV panels.

(ii) Structures and Property Lines within 250 Feet of Facility Components

Distances between associated facilities and existing structures within 250 feet are shown in Table 08-3. There are eight structures within 250 feet of a Facility component, including collection line, access road, gen-tie line, or substation.

Table 08-3. Structures within 250 Feet of an Associated Facility Component

Structure Type	Distance to Facility Component (Feet)	Facility Component	Lease Status of Underlying Parcel ¹
Residence	149 159	Underground Collection Line Access Road	Non-participating
Residence	169	Access Road	Non-participating
Residence	172 231	Access Road Underground Collection Line	Non-participating
Residence	178	Gen-tie Line	Non-participating
Residence	180	Gen-tie Line	Participating
Residence	189	Access Road	Non-participating
Residence	191 210	Collection Substation Underground Collection Line	Non-participating
Residence	245	Gen-tie Line	Non-participating

1. Parcels anticipated to be under a lease or easement agreement at the time of Facility construction are identified as participating parcels.

Distances between the Facility components and property lines within 250 feet are shown in Table 08-4, which presents the distance to the parcel boundary and the lease status of the parcel (i.e., participating or non-participating). There are 43 parcels within 250 feet of a Facility component. This total includes 27 parcels that are within 250 feet of multiple Facility components.

Table 08-4. Parcel Boundaries Within 250 Feet of an Associated Facility Component

Parcel ID	Distance to Facility Component (Feet) ¹	Facility Component	Lease Status of Underlying Parcel ²
025-067944-00.000	203	Access Road	Non-participating

025-067950-00.000	70 103 192	Collection Substation O&M Building Access Road	Non-participating
025-067998-00.000	39 249	Access Road Underground Collection Line	Non-participating
025-067998-00.001	32	Access Road	Non-participating
025-067998-01.000	30	Access Road	Non-participating
025-068208-00.001	0 0 15	Underground Collection Line Access Road Inverter Area	Participating
025-068208-00.004	97	Access Road	Non-participating
025-068208-00.006	129	Access Road	Non-participating
025-068208-00.007	46	Access Road	Non-participating
025-068892-00.000	30	Access Road	Non-participating
025-068892-00.001	0 0 0 0 0 0	Gen-tie Line O&M Building Underground Collection Line Access Road Inverter Area Collection Substation	Participating
025-068892-02.000	89 153	Access Road Underground Collection Line	Non-participating
025-068892-02.001	12 12	Gen-tie Line Underground Collection Line	Non-participating
025-068892-02.002	92 92	Gen-tie Line Underground Collection Line	Non-participating
025-068892-02.003	0 0 151 209 223	Gen-tie Line Underground Collection Line O&M Building Collection Substation Access Road	Participating
025-068892-02.004	129 241 241	Access Road Gen-tie Line Underground Collection Line	Non-participating
025-068892-03.000	116 118 118 199	O&M Building Gen-tie Line Underground Collection Line Collection Substation	Non-participating
025-069168-00.001	0 0 5 19 49 148 232	Gen-tie Line Underground Collection Line Collection Substation Access Road O&M Building Gen-tie Line Inverter Area	Participating
025-069246-00.003	31	Access Road	Non-participating
025-069318-00.000	25 34	Access Road Underground Collection Line	Non-participating
025-069390-00.000	82	Access Road	Non-participating

025-069396-00.003	41 220 231	Access Road Inverter Area Underground Collection Line	Non-participating
025-069396-01.000	0 0 0 0	Temporary Laydown Yard Underground Collection Line Access Road Inverter Area	Participating
025-069396-01.001	0 0 0 0 0 0 0	Gen-tie Line Underground Collection Line O&M Building Temporary Laydown Yard Access Road Inverter Area Collection Substation Area	Participating
025-069396-01.003	36 45	Access Road Underground Collection Line	Non-participating
025-069396-01.004	78 222 235	Access Road Inverter Area Underground Collection Line	Non-participating
025-070500-00.000	238 238	Gen-tie Line Collection Line	Non-participating
025-071382-00.000	86 193 193	Access Road Gen-tie Line Underground Collection Line	Non-participating
025-071898-00.000	197 197	Gen-tie Line Underground Collection Line	Non-participating
025-072162-00.000	94	Underground Collection Line	Non-participating
025-072168-00.000	61	Underground Collection Line	Non-participating
025-072174-00.000	91	Underground Collection Line	Non-participating
025-072186-00.000	69	Underground Collection Line	Non-participating
025-072192-00.000	81	Underground Collection Line	Non-participating
025-075912-00.000	45 56 211	Underground Collection Line Access Roads Inverter Area	Non-participating
025-076578-00.000	33 117 145	Underground Collection Line Access Road Underground Collection Line	Non-participating
025-077772-00.000	235 235	Gen-tie Line Collection Line	Non-participating
025-077826-00.000	71	Underground Collection Line	Non-participating
025-077940-00.000	103	Underground Collection Line	Non-participating
025-079116-00.000	40 40	Gen-tie Line Underground Collection Line	Non-participating
025-079122-00.000	37 37 55	Gen-tie Line Underground Collection Line Collection Substation Area	Non-participating
025-079386-01.000	0 0	Gen-tie Line Underground Collection Line	Participating

025-079386-01.001	0 0	Gen-tie Line Underground Collection Line	Participating
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1. Distances that equal zero represent parcels that contain associated Facility components.

2. Parcels anticipated to be under a lease or easement agreement at the time of Facility construction are identified as participating parcels.

(iii) Lease Status of Each Structure

The participation status for each structure and property within 1,500 feet of a PV panel and each structure and property within 250 feet of a Facility component is presented in the tables above.

(c) Land Use Impacts

Provide an evaluation of the impact of the proposed facility on the above land uses identified on the map in this rule. Include, for each land use type, the construction impact area and the permanent impact area in acres, in total and for each project component (e.g., turbines, collection lines, access roads), and the explanation of how such estimate was calculated.

Agricultural land is the primary land use directly impacted by the Facility. Table 08-5 presents the total, temporary, and permanent land use impacts on agricultural and residential land use by Facility component. For additional detail on agricultural land use impacts, see section 4906-4-08(E).

Facility related impacts to land use were calculated based on the assumptions described in Table 08-5. Facility components were overlain with parcel data, resulting quantifiable impacts associated with each component. The impact areas or lengths for all Facility components were aggregated into a spreadsheet, which was used to calculate temporary and permanent impact areas. For example, all land use impacts from PV panels are considered permanent due to the change in potential uses of the PV panel area during the life of the Facility. For linear components such as access roads and collection lines, the appropriate impact widths, as described in Table 08-5, were multiplied by the lengths to create an area of impact. Finally, using the spreadsheet, the separate areas of impact for each Facility component were added together, resulting in the temporary, permanent, and total areas of impact associated with each component.

Table 08-5. Total Land Use Impacts

Facility Components	Temporary Impact⁵ (Acres)	Permanent Impact (Acres)	Total Impact (Acres)
Agricultural			
Area Inside Fenceline ¹	0.0	438.8	438.8
Area Outside Fenceline	0.7	6.1	6.8
Access Road ²	0.2	0.1	0.3
Collection Line ³	0.1	0.0	0.1
Collection Substation	0.4	0.0	0.4
Gen-tie Line ⁴	0.0	6.0	6.0
Total Agricultural Impact	0.7	444.9	445.6
Residential			
Area Outside Fenceline	0.0	3.3	3.3
Gen-tie Line	0.0	3.3	3.3
Total Residential	0.0	3.3	3.3
Total Land Use Impact	0.7	448.2	448.9

1. As the entire fenced area is anticipated to be unavailable to landowners, permanent land use impacts include the entire area within the fenceline.

2. Access roads will have a temporary width of 25 feet, and a permanent width of 16 feet.

3. A temporary, 15-foot-wide work area will be required for underground collection line installation.

4. The gen-tie line will result in a permanently maintained ROW, 100-feet in width.

5. Temporary impact areas represent only the additional impact area during construction and do not include the permanent impact area. The temporary and permanent impact areas are added together in the total impact column.

Changes in agricultural land use are anticipated within the Project Area as a result of Facility operation, and no changes are predicted outside the Project Area. The presence of the PV panels, substation, and other ancillary structures will result in the cumulative conversion of approximately 445 acres of land from agricultural use, which represents approximately 85% of the Project Area (approximately 523 acres).

Table 08-6 presents the total, temporary, and permanent land use impacts by Facility components. Facility components were overlain with parcel data, resulting in quantifiable impacts associated with each component. The impact areas or lengths for all Facility components were aggregated into a spreadsheet, which was used to calculate temporary and permanent impact areas. For linear components such as access roads and collection lines, the appropriate impact widths, as described in the table footnotes, were multiplied by the lengths to create an area of impact. Finally, using the spreadsheet, the separate areas of impact for each Facility component were added together, resulting in the temporary, permanent, and total areas of impact associated with each component.

Table 08-6. Land Use Impacts by Facility Components

Facility Components	Temporary Impact (Acres)⁶	Permanent Impact (Acres)	Total Impact (Acres)
Agricultural			
Solar Arrays ¹	0.0	375.8	375.8
Access Roads ²	7.5	13.8	21.3
Underground Collection lines ³	2.7	0.0	2.7
Inverter Pads ⁴	0.5	0.5	1.0
Collection Substation ⁵	2.5	2.9	5.4
O&M Building	0.0	0.1	0.1
Laydown Yard	0.3	0.0	0.3
Gen-tie Line	0.0	6.3	6.3
Total Agricultural	13.5	399.4	412.9
Residential			
Gen-tie Line	0.0	3.4	3.4
Total Residential	0.0	3.4	3.4
Total Impacts for Components	13.5	402.8	416.3

1. Permanent land use impacts from solar arrays include the entire area underneath and between the panels, because that area will be taken out of its current use for the life of the Facility.

2. Access roads will have a temporary disturbance area of 25 feet, and a permanent width of 16 feet, except where additional width is needed along curves, turning radii, at intersections, or to support deliveries.

3. A temporary, 15-foot-wide work area will be required for underground collection line installation. In areas where collection lines and access roads overlap, the impact area of the access road was used in the calculations, because it represents the larger, permanent impact.

4. Includes 34 inverter pads each with an approximate permanent footprint of 600 square feet.

5. Includes eastern and western collection substation alternatives.

6. Temporary impact areas represent only the additional impact area during construction and do not include the permanent impact area. The temporary and permanent impact areas are added together in the total impact column.

Construction impacts will be temporary in nature and confined to the properties of participating landowners. As described in section 4906-4-08(E)(2)(b), the Applicant has developed construction specifications for construction activities occurring partially or wholly on privately owned agricultural land. These specifications, along with special siting considerations, will minimize impacts to agricultural land uses in the Project Area.

(d) Structures That Will Be Removed or Relocated

Identify structures that will be removed or relocated.

A Quonset hut and two adjacent silos located east of Watkins road approximately 0.58 mile north of Refugee Road will be demolished and removed. The landowner has agreed to removal of these structures. The Applicant is not aware of any other structures that would require removal for Facility development.

(2) Parcel Status Map

Wind farm maps. For wind farms only, the applicant shall provide a map(s) of at least 1:24,000 scale showing the proposed facility, habitable residences, and parcel boundaries of all parcels within a half-mile of the project area. Indicate on the map, for each parcel, the parcel number and whether the parcel is being leased by the applicant for the proposed facility, as of no more than 30 days prior to the submission of the application. Include on the map the setbacks for wind turbine structures in relation to property lines, habitable residential structures, electric transmission lines, gas pipelines, gas distribution lines, hazardous liquid(s) pipelines, and state and federal highways, consistent with no less than the following minimum requirements:

(a) The distance from a wind turbine base to the property line of the wind farm property shall be at least one and one-tenth times the total height of the turbine structure as measured from its tower's base (excluding the subsurface foundation) to the tip of a blade at its highest point.

(b) The wind turbine shall be at least one thousand, one hundred, twenty-five feet in horizontal distance from the tip of the turbine's nearest blade at ninety degrees to the property line of the nearest adjacent property at the time of the certification application.

(c) The distance from a wind turbine base to any electric transmission line, gas pipeline, gas distribution line, hazardous liquid(s) pipeline, or public road shall be at least one and one-tenth times the total height of the turbine structure as measured from its tower's base (excluding the subsurface foundation) to the tip of a blade at its highest point.

(d) Minimum setbacks from property lines and residences may be waived pursuant to the procedures set forth in paragraph (C)(3) of this rule.

This requirement is not applicable to this Facility because the Facility is not a wind farm.

(3) Setback Waiver

Setback waivers. The setback shall apply in all cases except those in which all owner(s) of property adjacent to the wind farm property waive application of the setback to that property. The waiver(s) must meet the following requirements:

This requirement is not applicable to this Facility because the Facility is not a wind farm.

(4) Land Use Plans

Land use plans. The applicant shall provide information regarding land use plans.

(a) Formally Adopted Plans for Future Use of Site and Surrounding Lands

Describe formally adopted plans for future use of the project area and surrounding lands for anything other than the proposed facility.

The surrounding 5-mile Study Area includes two counties (Licking and Fairfield), nine townships (Violet, Liberty, Walnut, Union, Harrison, Etna, Jersey, St. Albans, and Granville), two cities (Reynoldsburg and Pataskala), and one village (Kirkersville). Seven out of nine townships, both cities, and one of the two counties (Fairfield County) have existing land use plans.

The 1993 Harrison Township Comprehensive Plan is focused on land use and growth management under the concept of "preserving the land and the rural character of the community." The land underlying the Facility is expected to remain intact, be maintained, and eventually decommissioned and allowed to return to prior agricultural use. Therefore, the Facility supports this goal by preventing urban sprawl or permanent development. Additionally, this Facility is compatible with the overall rural character of the area by providing supplemental income for existing landowners to encourage and continue existing agricultural practices.

The Comprehensive Plan for St. Albans Township and the Village of Alexandria was adopted in 1995 and amended in 2007. Land use goals encourage agricultural uses balanced with orderly development. The plan seeks to maintain current farming and agricultural activities as the township's main commercial/industrial activity. The proposed Facility is not in St. Albans Township and, therefore, is not anticipated to impact land use or development patterns within the township.

The 1998 Union Township Comprehensive Plan's goals encourage the protection of agricultural activities and preservation of land uses to maintain the township's rural character. The Facility is located outside the limits of Union Township, therefore is not anticipated to impact land use within the township.

The 2005 Violet (Township) Land Use and Transportation Plan addresses recent local growth patterns. The plan's established vision accommodates growth (residential, commercial, and industrial) and enhances the quality of life. This continuous growth is expected due to encroachment from the City of Columbus and along highway corridors (Interstate 70 and State Route 33). The proposed Facility is not located in the Township but is compatible with the plan's land use goals.

In the 2010 Jersey Township Comprehensive Plan, housing, commercial, and industrial development are balanced with the goal to preserve the Township's rural and small-town characteristics. Agricultural goals discussed in the plan aim to protect and preserve farmland, particularly from urban sprawl and development. The proposed Facility is not located in Jersey Township and therefore is not anticipated to impact land use or development patterns within the township.

The 2011 Etna Township Comprehensive Plan's purpose is to guide future growth and development for the next 20 years. Given development encroaching from the Columbus metropolitan area, it is the community's desire to maintain a rural and agricultural atmosphere balanced with economic development and new job opportunities. Preservation of farmland and the promotion of environmentally friendly energy enterprise development are considered as strategies to implement natural resource and economic development goals. The Facility is compatible with the Township's vision for economic development, green energy, and farmland preservation by developing infrastructure that provides renewable energy to the region.

The 2012 Granville Township/Village Comprehensive Plan Update aims to guide decision making for up to 10 years within the township and Village of Granville. Considering the ongoing development pressures from the Columbus metropolitan area and the potential loss of the rural character of the township, the plan presents goals of farmland preservation, green development, and conservation designs. The proposed Facility is to be located well outside the Township's boundary; however, the Facility does not affect adversely the plan's goals.

The 2017 Fairfield County Land Use Plan's purpose is to guide future growth, preservation, and revitalization efforts within Fairfield County. Farmland preservation programs and other tools are identified as strategies to prevent farmland loss to growth and development. The proposed Facility is not in Fairfield County; however, the Facility does not affect adversely the plan's goals.

The goals discussed within the 2018 City of Reynoldsburg Comprehensive Plan aim to improve the residents' quality of life by expanding housing options, supporting economic development, and diversifying transportation networks. The majority of the City of Reynoldsburg lies outside the 5-mile Study Area; therefore, the Facility does not affect adversely the plan's vision for the City.

A draft of the 2019 City of Pataskala Comprehensive Plan promotes the use of renewable energy. Outlined in the plan are many strategies incorporating renewable energy/energy efficiency, including revisions to development guidelines, zoning code allowed uses, and financing tools for individuals who wish to invest in energy efficient improvements. Additionally, the plan encourages the conservation of existing agricultural lands and the small-town character of the city. The Facility is outside the City of Pataskala; however, the Facility aligns with the plan's initiative to encourage renewable energy practices.

(b) Applicant's Plans for Concurrent or Secondary Uses of the Site

Describe the applicant's plans for concurrent or secondary uses of the site.

The Applicant is considering grazing as a form of natural vegetation management to restrict the spread of non-native species, prevent excess litter accumulation, improve forage production, and accelerate decomposition and nutrient cycling. Additional information on grazing and other vegetation management methods and impacts are provided in the Vegetation Management Plan provided in Exhibit D. Definitive plans for the use of grazing as vegetation management have not been made and are contingent on a willing community partner and the development of an amenable agreement between the Applicant and partner. The Applicant has no other plans for concurrent or secondary use of the Facility.

(c) Impact on Regional Development

Describe the impact of the proposed facility on regional development, including housing, commercial and industrial development, schools, transportation system development, and other public services and facilities.

The regional economy surrounding the Study Area is shaped in large part by both the rural economy of Licking and Fairfield counties and the manufacturing economy of the greater Columbus metropolitan region. As a primarily agricultural economy in close proximity to one of the strongest manufacturing hubs in the U.S., this area has made substantial progress toward stabilization and growth as it continued to

emerge from the recession in the 2010s.¹ The regional context for the development of this Facility is discussed in further detail below in the Socioeconomic Report provided as Exhibit H. The need for public services to serve the Facility is minimal, and per the Route Evaluation Study, only minor impacts to area roadways are anticipated, and impacts the regional transportation system are negligible (Exhibit J).

(d) Regional Plan Compatibility

Assess the compatibility of the proposed facility and the anticipated resultant regional development with current regional plans.

As discussed in section 4906-4-08(C)(3)(a), ten entities within 5 miles of the Project Area have adopted comprehensive land use plans and/or economic development plans applicable to development of the Facility. Review of those plans showed that the Facility is either compatible with the plans or is not anticipated to adversely impact the plans.

(e) Current and Projected Population Data

Provide current population counts or estimates, current population density, and ten-year population projections for counties and populated places within five miles of the project area.

Population estimates and projections are included in Table 08-7 below. At a local level, eleven of the twelve communities within the 5-mile Study Area have increased their population in the past 18 years with one jurisdiction demonstrating a decrease in population. County populations are expected to continue the overall trend of an annual population increase ranging from 1.0% and 1.4%. Although employment related to the construction of the Facility will be substantial, this employment is relatively short-term and is not expected to result in the permanent relocation of construction workers to the area. Therefore, the Facility is not anticipated to generate significant population growth within the Study Area. The number of potential short- and long-term employment opportunities associated with the construction and operation of the Facility is discussed in section 4906-4-06 and in the Socioeconomic Report (Exhibit H).

¹ It is noted, however, that economic data used within this report reflect pre-COVID-19 conditions and therefore may not represent current economic conditions.

Table 08-7. Population of Jurisdictions within a 5 Mile Radius of the Facility

Jurisdiction within a 5-Mile Radius of Facility	2000 Population	2018 Population	Annual Growth Rate (2000-2018)	Projected 2030 Population	Projected Total Growth (2018-2030)	2018 Population Density (people per square mile)
Licking County	145,491	172,293	1.0%	194,685	13.0%	251
Fairfield County	122,759	152,910	1.4%	179,915	17.7%	301
Etna Township	5,410	16,880	11.8%	64,221	280.5%	721
City of Reynoldsburg	32,069	37,644	1.0%	42,246	12.2%	3432
Harrison Township	6,494	7,885	1.2%	9,088	15.3%	263
Village of Kirkersville	520	405	-1.2%	349	-13.8%	214
Union Township	8,339	9,060	0.5%	9,596	5.9%	204
City of Pataskala	10,249	15,465	2.8%	21,610	39.7%	547
Jersey Township	2,841	2,881	0.1%	2,908	0.9%	106
St. Albans Township	2,060	2,513	1.2%	2,907	15.7%	95
Granville Township	8,994	10,017	0.6%	10,804	7.9%	359
Liberty Township	7,265	8,137	0.7%	8,813	8.3%	162
Walnut Township	6,436	6,979	0.5%	7,382	5.8%	138
Violet Township	26,914	41,117	2.9%	58,159	41.4%	950

Source: U.S. Census Bureau Decennial Census (2000), ACS 5-Year Estimates (2014-2018), population projections based on respective 2000-2018 growth rates.

(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES

The applicant shall provide information on cultural and archaeological resources.

Weller and Associates, Inc. (Weller) conducted a History/Architecture Reconnaissance Survey (Exhibit Q), within a 2-mile study area, defined as the area of potential effect, in November 2020. Prior to the field survey, a 5-mile study area was investigated using the Ohio Historic Preservation Office (OHPO) desktop database. Within the 5-mile study area 13 NRHP archaeological resources, 104 Ohio Historic Inventory (OHI) structures, 9 determination of eligibility properties, and 3 cemeteries were identified. No national historic landmarks were identified within the 2-mile study area.

The field survey identified a total of 23 residential properties over 50 years old within the 2-mile study area. These properties were then evaluated to determine potential eligibility for listing in the NRHP. No previously recorded resources were reidentified. One resource was determined to be potentially eligible for listing in the NRHP due to its exceptional or important architectural characteristics. This resource has been documented on OHI forms and provided in Appendix A of the History/Architecture Reconnaissance Survey. No direct impacts to this resource are anticipated, and based on a combination of aerial mapping and field verification, visual impacts are not anticipated.

The History/Architecture Reconnaissance Survey was submitted to OHPO for review on February 8, 2021. Weller recommended a finding of “no adverse effect” for the Project and no further architectural work was recommended. OHPO’s response to the document will be provided to OPSB Staff when available. Following OHPO review, and anticipated concurrence of results, the Applicant does not anticipate mitigation.

Weller completed a Phase I Archaeological Reconnaissance for the Project Area in October 2020. Due to the sensitive nature of archaeological resources, the study has been filed under seal as [REDACTED] revealed 45 archaeological sites, three OHI resources, and three cemeteries within 1 mile of the Project Area. Following the literature review, a field survey of the Project Area was completed, using methods consistent with OHPO guidelines and consultations. Additional detail on survey methods can be found in the Phase I Archaeological Reconnaissance.

The study noted that there were no resources within the Project Area that should be avoided, or otherwise would require additional archaeological work. The Phase I Archaeological Reconnaissance was submitted to the OHPO on January 8, 2021, and concurrence of the results is anticipated approximately 30 days following submittal.

(1) Landmarks of Cultural Significance Map

Landmark mapping. The applicant shall indicate, on a map of at least 1:24,000 scale, any formally adopted land and water recreation areas, recreational trails, scenic rivers, scenic routes or byways, and registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance within ten miles of the project area. Landmarks to be considered for purposes of paragraph (D) of this rule are those districts, sites, buildings, structures, and objects that are recognized by, registered with, or identified as eligible for registration by the national registry of natural landmarks, the state historic preservation office, or the Ohio department of natural resources.

Figure 08-2 depicts formally adopted land and water recreation areas, recreational trails, scenic routes or byways, and registered landmarks of historic, religious, archaeological, scenic, natural, or other culturally significant resources within 10 miles of the Project Area.

(2) Impact to Landmarks and Mitigation Plans

Impacts on landmarks. The applicant shall provide an evaluation of the impact of the proposed facility on the preservation and continued meaningfulness of these landmarks and describe plans to avoid or mitigate any adverse impact.

Impacts to historic architectural and archaeological resources are summarized in paragraph (D) above and detailed in Exhibit Q and Exhibit R. No direct impacts are anticipated, as all identified resources can be avoided. Based on the viewshed analysis, aerial mapping, and field verification, the Facility will not be visible from any potentially eligible architectural resources. The Applicant has submitted the cultural resource studies to the OHPO. Impacts to recreational and scenic resources are discussed in paragraphs (3) and (4) below and in the Visual Resource Assessment and Mitigation Plan (Exhibit S).

(3) Impact to Recreational Areas and Mitigation Plans

Recreation and scenic areas. The applicant shall describe the identified recreation and scenic areas within ten miles of the project area in terms of their proximity to population centers, uniqueness, topography, vegetation, hydrology, and wildlife. Provide an evaluation of the impact of the proposed facility on identified recreational and scenic areas within ten miles of the project area and describe plans to mitigate any adverse impact.

Existing scenic and recreational areas within a 5-mile radius of the Project Area are depicted on Figure 08-2 and listed in Table 08-8 below. Recreational areas were identified using ODNR, ODOT, Esri Topographic Map, Ohio Statewide Imagery Program, and local municipal websites. Additional details on visual impacts to these resources within 5 miles of the Project Area are included in Exhibit S.

Table 08-8. Scenic and Recreational Areas within 5 Miles

Recreational Area	Location	Distance from Project Area (Miles)
South Fork Licking River	Harrison, Etna, Union townships; City of Pataskala, Village of Kirkersville, Licking County	0.00
Pataskala Lion's Baseball Park	Harrison Township, Licking County	0.26
Historic National Road	Etna, Harrison, and Union townships, Licking County	0.83
Pataskala Municipal Park Trail	City of Pataskala, Licking County	0.92
Pataskala Municipal Park	City of Pataskala, Licking County	0.99
Muddy Fork	City of Pataskala, Licking County	1.08
Broadview Golf Course	City of Pataskala, Licking County	1.42
Beechwood Trails Park and Pool	Harrison Township, Licking County	1.82
Cumberland Trail Golf Club	Etna Township, Licking County	2.02
The Thomas J. Evans Foundation Park	City of Pataskala, Licking County	2.06
William V. Karr Park	City of Pataskala, Licking County	2.15
Poplar Creek	Liberty Township, Fairfield County	2.91
Bell Run	Union Township, Licking County	3.50
Clean Ohio Farmland 55	Union Township, Licking County	4.01
Sycamore Creek	City of Pataskala, Etna Township, Licking County; Violet Township, Fairfield County	4.19
Pawpaw Creek	Liberty Township, Fairfield County	4.22
Beaver Run	Union Township, Licking County	4.37

South Fork Licking River is an approximately 30-mile river that forms in Jersey Township, flows southeast through Pataskala and Kirkersville, and then flows north to converge with Licking River. South Fork Licking River traverses the VSA from the northwest to the southeast. There is potential visibility of the Facility along the river from the west to the south of the Project Area where breaks in the streamside vegetation and open agricultural fields present the opportunity for open views. Outside of these areas, there is limited visibility along the river due to existing streamside vegetation and residences which effectively screen the Facility.

Pataskala Lion's Baseball Park is located approximately 0.6 mile southwest of the Project Area. The northwest portion of the park could have potential views of the Facility across open agricultural fields. Existing vegetation

on the east side of the park blocks views of the Facility in the eastern and southern portions of the park, and existing vegetative screening will prevent views of the full Project Area from any location within the park. It may be difficult to perceive the panels from the Park even without screening at this distance.

The Historic National Road, a national scenic byway, traverses the VSA to the south of the Project Area and passes within 0.9 mile of the nearest PV panel at its closest point. Potential Facility visibility along the scenic byway will vary based on proximity to the Project Area, elevation, and roadway orientation. Potential views of the Facility will be available along the scenic byway to the southwest of the Project Area with views across open agricultural fields, and to the south of the Project Area, where the road is at a slightly higher elevation than the Facility.

Pataskala Municipal Park Trail is a 0.35-mile trail located 0.9 mile west of the Project Area, in southwest Pataskala, which is used for both biking and walking. The trail spans the length of Pataskala Municipal Park, follows the South Fork Licking River, and ends at the trail's intersection with Shawnee Loop Street. Visual impacts to the trail are not anticipated based on the viewshed analysis.

Pataskala Municipal Park is a 15-acre park located approximately 1-mile northwest of the Project Area in Pataskala, Licking County. The park consists of a softball diamond, volleyball court, baseball court, soccer fields, pool, playground, picnic area, and open space (Pataskala Parks and Recreation, 2021b). Visual impacts to the park are not anticipated based on the viewshed analysis.

Muddy Fork Creek is a 5.4-mile creek located in Pataskala, Licking County. The creek flows southeast into South Fork Licking River, a tributary of Licking River. Muddy Fork has points of public fishing access and is 1.1 miles northwest of the Project Area at its closest point. Visual impacts to the creek are not anticipated based on the viewshed analysis.

The Broadview Golf Course is a 68.5-acre, 8-hole, golf course located approximately 1.6 miles northwest of the Project Area (Broadview Golf Course, 2021). Visual impacts to the golf course are not anticipated based on the viewshed analysis.

Beechwood Trails Park and Pool is a 7.8-acre park located approximately 1.9 miles north of the Project Area. The park offers a pool, a baseball diamond, and open space for other recreation activities. Visual impacts to the park are not anticipated based on the viewshed analysis.

Cumberland Trail Golf Club is located approximately 3.0 miles west of the Project Area. The 18-hole course also provides a restaurant, and event space (Cumberland Trail, 2021). Above-ground electrical components may be visible to those using the golf course, but views of these components from this distance will be partially screened and softened by intervening vegetation and other landscape features.

The Thomas J. Evans Foundation Park is a 78-acre park located 2.3 miles northwest of the Project Area in Pataskala. The park has baseball diamonds, tennis courts, a playground, pond, open space for other recreational activities, and a 1.4-mile trail under installation (Pataskala Parks and Recreation, 2021a). Visual impacts to the park are not anticipated based on the viewshed analysis.

William V. Karr Park is a 9-acre park located 2.3 miles northwest of the Project Area in Pataskala. The park is in the center of a business park behind the City Administration Building. The park consists of sheltered picnic area, a volleyball court, playground, walking path, and open space for other recreation activities (Pataskala Parks and Recreation, 2021c). Visual impacts to the park are not anticipated based on the viewshed analysis.

Poplar Creek is an approximately 8-mile creek located in Fairfield County. The creek flows south into Walnut Creek. Poplar Creek has points of public fishing access and is located approximately 3.0 miles south of the Project Area at its closest point. Visual impacts to the creek are not anticipated based on the viewshed analysis.

Bell Run is an approximately 4.7-mile creek located in Licking County. The creek flows south to meet with South Fork Licking River. Bell Run has points of public fishing access and is approximately 3.7 miles east of the Project Area at its closest point. Visual impacts to the creek are not anticipated based on the viewshed analysis.

Clean Ohio Farmland 55 is a 254-acre farm located approximately 4.0 miles northeast of the Project Area. The property is a participant in The Clean Ohio Local Agricultural Easement Program, which provides funding to farmers in exchange for placing an easement on their property (Ohio Department of Agriculture, 2018). While primarily agricultural fields, the property also contains wooded areas and several small ponds. Portions of the farmland are accessible to the public. Visual impacts to the facility are not anticipated based on viewshed analysis.

Sycamore Creek is an approximately 14-mile creek that begins in Pataskala and flows south, merging with Walnut Creek in Fairfield County. Sycamore Creek has points of public fishing access and is located, at its closest point, 4.2 miles west of the Project Area. Visual impacts to the creek are not anticipated based on the viewshed analysis.

PawPaw Creek is an approximately 7.75-mile creek located in Liberty Township, Fairfield County. The creek is a tributary to Walnut Creek. PawPaw Creek has points of public fishing access and is, at its closest point, approximately 4.3 miles south of the Project Area. Visual impacts to the creek are not anticipated based on the viewshed analysis.

Beaver Run is an approximately 5-mile creek located in Licking County. The creek flows east into South Fork Licking River. Beaver Run has points of public fishing access and, at its closest point, is approximately 4.3 miles east of the Project Area. Visual impacts to the creek are not anticipated based on the viewshed analysis.

(4) Visual Impact

Visual impact of the facility. The applicant shall evaluate the visual impact of the proposed facility within at least a ten-mile radius from the project area. The evaluation shall be conducted or reviewed by a licensed landscape architect or other professional with experience in developing a visual impact assessment. The applicant shall:

EDR prepared a Visual Resource Assessment (VRA) for the proposed Facility (Exhibit S). Although OAC 4906-4-08(D)(4) requires that visual impacts to recreational, scenic, and historic resources be evaluated within a 10-mile radius, based on the low profile of the proposed equipment, and the results of the visibility analysis presented herein, it was determined that areas of potential Facility visibility do not extend beyond 4 miles (see Figures 2.1 and 2.2 of the VRA). Additionally, the visibility analysis determined only extremely limited corridors and pockets of visibility extend beyond 1.5 miles of the Project and visibility will be largely concentrated within 0.5 mile of the proposed Facility components. Based on this viewshed analysis, it was determined that a 5-mile radius from the Project would be a sufficient VSA for the study. The VSA encompasses approximately 103.6 square miles, including portions of southwestern Licking County and northern Fairfield County.

(a) Project Visibility and Viewshed Analysis

Describe the visibility of the project, including a viewshed analysis and area of visual effect, shown on a corresponding map of the study area. The viewshed analysis shall not incorporate deciduous vegetation, agricultural crops, or other seasonal land cover as viewing obstacles. If the viewshed analysis includes atmospheric conditions, it shall incorporate the atmospheric conditions under which the facility would be most visible.

The Facility viewshed analysis incorporated screening effects of topography, structures, and vegetation. A digital surface model (DSM) of the VSA was created from lidar data, which included the elevations of buildings, trees, and other objects large enough to be resolved by lidar technology. Transmission line corridors and areas within 50 feet of road centerlines were set to bare earth elevation values to correct screening errors introduced by overhead utility lines. Additionally, all areas within the PV array fencelines were set to bare earth elevations. This modified DSM was used as a base layer for the Project viewshed analysis.

Based on the results of the viewshed analysis, PV panels will be screened from approximately 96.7% of the VSA by intervening landforms, vegetation, and structures. Similarly, the substation will be screened from approximately 96.3% of the of the VSA. Visibility of significant portions of the Project will be concentrated within the Project Area and the open fields immediately adjacent. The viewshed analysis also suggests that PV panel visibility is highest within 0.5 mile, substantially diminishes between 0.5 and

1.5 miles, and is minimal beyond 1.5 miles. Additional information on methods and results of the viewshed analysis is provided in the VRA (Exhibit S).

(b) Description of Scenic Quality of Existing Landscape

Describe the existing landscape and evaluate its scenic quality. This description shall include documentation of a review of existing plans, policies, and regulations of the communities within the study area, and list all references to identified visual resources or other indications of the visual preferences of the community.

Landscape types within the VSA were categorized by various features including landform, vegetation, water, and/or land use patterns, in accordance with established visual assessment methods. Approximately 64.3% of the VSA and the majority of the Project Area is dominated by cropland/pasture. Given the fact that agricultural land in this region typically offers the greatest potential for long distance views, this landscape type is likely to have the greatest opportunities for views of the Facility. Approximately 20.0% of the VSA is developed landscape, including cities, villages, residential areas, organized recreational areas, and development along I-70 and SR 40. In developed areas, the potential to view the Facility may be limited due to the presence of buildings, utility poles, visual clutter, and intervening forested areas. Approximately 13.2% of the VSA is forest land. Potential views of the Facility will be limited due to the presence of dense vegetation. Approximately 2.3% of the VSA is grassland/shrubland landscape, typically as scattered areas associated with forest or pasture/cropland. Finally, approximately 0.2% of the VSA is open water/wetland, primarily south and west of the Project Area, where long-distance views are typically limited by tree-lined banks and adjacent forest areas.

In addition to these landscape types, the VRA reviewed visually-sensitive resources within the VSA, including historic properties, scenic resources, public lands, recreational resources, and high use public areas. Additional information on these visually sensitive resources is included in paragraph (d) below and in the VRA.

(c) Landscape Alterations and Impact on Scenic Quality of the Landscape

Describe the alterations to the landscape caused by the facility, including a description and illustration of the scale, form, and materials of all facility structures, and evaluate the impact of those alterations to the scenic quality of the landscape.

Construction and operation of the proposed Facility will alter the existing landscape; however, the visibility and visual impact of the Facility will be highly variable depending on landscape setting, the extent of natural screening, the presence of other man-made features, and distance from the Facility. Previously viewed long distance landscapes may be reduced; however, as distance increases from the PV panels, the panels become more difficult to perceive and begin to appear as thin horizontal lines of neutral color. The tallest structures include Facility substation components and poles for overhead lines; however, the

narrow profile and neutral colors of these components will likely make these structures difficult to discern at a distance. For additional details on landscape alterations and visual impacts, see Exhibit S.

(d) Visual Impacts to Landmarks of Cultural Significance

Evaluate the visual impacts to the resources identified in paragraph (D) of this rule, and any such resources within ten miles of the project area that are valued specifically for their scenic quality.

A total of 238 visually-sensitive resources were identified within the VSA, including 204 properties of historic significance, 1 designated scenic resource, 17 public lands and recreational resources, and 16 high-use public areas. Appendix D of the VRA shows the locations of visually-sensitive resources relative to the Project Area. Of the 238 resources identified within the VSA, the Facility would be visible from only 22 resources. Appendix E of the VRA (Exhibit S) includes a list of all identified resources, their distance from the Facility, and estimated visibility of the Facility from the identified resources.

(e) Photographic Simulations

Provide photographic simulations or artist's pictorial sketches of the proposed facility from public vantage points that cover the range of landscapes, viewer groups, and types of scenic resources found within the study area. The applicant should explain its selection of vantage points, including any coordination with local residents, public officials and historic preservation groups in selecting these vantage points.

To illustrate anticipated visual changes associated with the proposed Facility, photographic simulations of the Facility were developed for seven selected viewpoints. These simulations allow a viewer to better evaluate visibility, appearance, and contrast with the existing landscape, with and without vegetative mitigation. The visual simulation methods and results are presented in section 2.2, and in Appendix C, of the VRA (Exhibit S). Viewpoints were selected to show representative locations at various distances from the Facility from public vantage points near the Project Area.

(f) Impact Minimization Measures

Describe measures that will be taken to minimize any adverse visual impacts created by the facility, including, but not limited to, project area location, lighting, turbine layout, visual screening, and facility coloration. In no event shall these measures conflict with relevant safety requirements.

Project Area Location and Facility Layout

The proposed Facility is in a rural, sparsely populated area. To further reduce impacts from those living in the area, the Applicant designed the Facility to account for setbacks to the fenceline from non-participating sensitive receptors (100 feet), centerlines of public roads (75 feet), and non-participating parcel boundaries (25 feet).

Lighting

Lighting during construction is anticipated to be minimal and will be restricted to construction hours (7:00 AM to 7:00 PM, or until dusk when the sun sets after 7:00 PM). To the extent practicable, lighting will be

oriented toward the interior of the Facility, away from roadways and adjacent residences. Security lighting used during Facility operation will be limited to a few critical areas and will consist of motion-activated, downward-facing lights. Motion-activated downlit security lighting will be used at Facility entrances, the O&M building, and inverters.

Visual Screening

The introduction of screening will lessen the visual impact of the Facility. Native vegetation will be used to blend the Facility into the existing landscape, also creating ecological habitat. Visual screening introduces natural, vertical elements that break up the horizontal lines created by the PV arrays and fenceline. This helps the Facility to fall into the background vegetation rather than stand out as a foreground element. For additional information, see the Landscape Mitigation Plan included as Appendix B to Exhibit S.

Facility Materials and Coloration

PV modules use anti-reflective glass and are designed to absorb the light, reducing the potential for glare. Facility fencing will be agricultural fencing with wire mesh supported on wooden posts, a form of fencing more traditionally used in agricultural settings. The PV panel racking system allows panel rows to follow topography, limiting the landscape alteration.

(E) AGRICULTURAL LAND

The applicant shall provide information regarding agricultural districts and potential impacts to agricultural land.

(1) Agricultural Land and Agricultural District Land Map

Mapping of agricultural land. The applicant shall identify on a map of at least 1:24,000 scale the proposed facility, all agricultural land, and separately all agricultural district land existing at least sixty days prior to submission of the application located within the project area boundaries. Where available, distinguish between agricultural uses such as cultivated lands, permanent pasture land, managed woodlots, orchards, nurseries, livestock and poultry confinement areas, and agriculturally related structures.

Crop cover is shown on Figure 08-3. Information on agricultural districts and Current Agricultural Use Value (CAUV) parcels was obtained from the Licking County Auditor's Office in November of 2020. All agricultural parcels within the Project Area are in the Agricultural District and CAUV programs and, therefore, are not depicted as such in Figure 08-3. Additionally, the PV panels are not depicted on Figure 08-3 to allow visibility of crop cover below the PV panels; however, the fenceline is representative of the agricultural area that will be covered by PV panels.

(2) Potential Impacts and Proposed Mitigation

Agricultural information. The applicant shall provide, for all agricultural land, and separately for agricultural uses and agricultural districts identified under paragraph (E)(1) of this rule, the following:

(a) Acreage Impacted

A quantification of the acreage impacted.

Table 08-9 quantifies the loss in agricultural land use due to Project construction and operation and is estimated using the area within the fenceline. Agricultural impacts from Facility components outside the fenceline were calculated separately and added to the total. Table 08-10 presents agricultural land use impacts by Facility components. All parcels within the Project Area are enrolled in the agricultural district and CAUV programs; therefore, impacts to agricultural districts are identical to those presented in Table 08-9 and Table 08-10. Agricultural land use and CAUV data was derived from land use codes included in parcel data.

Table 08-9. Total Agricultural Land Use Impacts

Facility Components	Temporary Disturbance (Acres)⁴	Permanent Disturbance (Acres)	Total Disturbance (Acres)
Agricultural Vacant (110)			
Area Inside Fenceline ¹	0.0	303.1	303.1
Area Outside Fenceline	0.2	2.5	2.7
Access Road ²	<0.1	<0.1	<0.1
Underground Collection Line ³	<0.1	0	<0.1
Collection Substation	0.2	0	0.2
Gen-tie Line	0	2.4	2.4
Total Agricultural Vacant (100)	0.2	305.6	305.8
Cash Grain (111)			
Area Outside Fenceline	0.2	3.5	3.7
Collection Substation	0.2	0	0.2
Gen-tie Line	0	3.5	3.5
Total Cash Grain (110)	0.2	3.5	3.7
Other Agricultural Use (190)			
Area Inside Fenceline	0.0	135.8	135.8
Area Outside Fenceline	0.2	<0.1	0.2
Access Road	0.1	<0.1	0.1
Underground Collection Line	0.1	0	0.1
Total Other Agricultural Use (190)	0.2	136.0	136.2
Total Agricultural Land Use Impact	0.6	445.1	445.7

1. As the entire fenced area is anticipated to be unavailable to landowners, permanent land use impacts include the entire area within fenceline.

2. Access roads will have a temporary disturbance area of 25 feet, and a permanent width of 16 feet, except where additional width is needed along curves, turning radii, at intersections, or to support deliveries.

3. A temporary, 15-foot-wide work area will be required for underground collection line installation. In areas where collection lines and access roads overlap, the impact area of the access road was used in the calculations, because it represents the larger, permanent impact.

4. Temporary impact areas represent only the additional impact area during construction and do not include the permanent impact area. The temporary and permanent impact areas are added together in the total impact column.

Table 08-10. Agricultural Land Use Impacts by Facility Components

Facility Components	Temporary Impact (Acres)⁵	Permanent Impact (Acres)	Total Impact (Acres)
Agricultural Vacant (110)			
Solar Arrays ¹	0.0	250.6	250.7
Access Roads ²	4.0	7.2	11.2
Underground Collection lines ³	1.4	0.0	1.4
Inverter Pads ⁴	0.3	0.3	0.6
Collection Substation	2.3	2.9	5.2
O&M Building	0.0	0.1	0.1
Laydown Yard	0.2	0.0	0.2
Gen-tie Line	0.0	2.8	2.8
Total Agricultural Vacant Impacts (110)	8.2	263.9	272.1
Cash Grain (111)			
Collection Substation	0.2	0.0	0.2
Gen-tie Line	0.0	3.5	3.5
Total Cash Grain Impacts (111)	0.2	3.5	3.7
Other Agricultural Use (190)			
Solar Arrays	0.0	125.2	125.2
Access Roads	3.5	6.6	10.1
Underground Collection lines	1.3	0.0	1.3
Inverter Pads ⁴	0.2	0.2	0.4
Laydown Yard	0.1	0.0	0.1
Total Other Agricultural Use (190)	5.1	132.0	137.1
Total Agricultural Land Use Impacts	13.5	399.4	412.9

7. Permanent land use impacts from solar arrays include the entire area underneath and between the panels, because that area will be taken out of its current use for the life of the Facility.
8. Access roads will have a temporary disturbance area of 25 feet, and a permanent width of 16 feet, except where additional width is needed along curves, turning radii, at intersections, or to support deliveries.
9. A temporary, 15-foot-wide work area will be required for underground collection line installation. In areas where collection lines and access roads overlap, the impact area of the access road was used in the calculations, because it represents the larger, permanent impact.
10. Includes 34 inverter pads each with an approximate permanent footprint of 600 square feet.
11. Temporary impact areas represent only the additional impact area during construction and do not include the permanent impact area. The temporary and permanent impact areas are added together in the total impact column.

(b) Impacts on Agricultural Facilities and Practices

An evaluation of the impact of the construction, operation, and maintenance of the proposed facility on the land and the following agricultural facilities and practices within the project area:

- (i) Field operations such as plowing, planting, cultivating, spraying, aerial applications, and harvesting.*
- (ii) Irrigation.*
- (iii) Field drainage systems.*
- (iv) Structures used for agricultural operations.*
- (v) The viability as agricultural district land of any land so identified.*

(i) Field operations

The Facility will occupy approximately 455 acres of agricultural land and will take it out of agricultural use for approximately 35 years. Agricultural activities such as plowing, planting, cultivating, spraying, aerial applications, and harvesting will be halted on the land occupied by the Facility for its lifetime. Once the Facility has reached the end of its useful life, Facility components will be removed, and the underlying Project Area will be restored for potential agricultural use, pursuant to the Decommissioning Plan (Exhibit L).

(ii) Irrigation

Potential interference to irrigation systems on non-participating parcels is not anticipated. Irrigation systems on participating parcels will be identified via coordination with participating landowners prior to construction.

(iii) Field drainage systems

Construction of the Facility could result in impacts to drain tile systems in the Project Area. The Applicant has contracted with Huddleston McBride Land Drainage Company to support efforts to locate drain tiles in the Project Area. A map of known drain tiles in the Project Area is available for reference in the Drain Tile Mitigation Plan (Exhibit E). Some impacts to drain tile likely cannot be avoided; therefore, additional mitigation measures are outlined in Exhibit E.

Overland drainage within the Project Area is not anticipated to be significantly altered. Minimal grading is anticipated, and the Facility will follow existing contours to the extent practicable. Surface water flow in the Project Area is generally toward the south to southeast, eventually into the South Fork Licking River or its tributaries. Facility structures will not be placed within 100-year floodplain areas. Storm water controls will be implemented per Ohio EPA Permit No. OHC000005. It is anticipated that these controls will include the use of ditches or swales adjacent to Facility access roads. The Hydrology Study (Exhibit O) found that construction of the Facility should have minimal impact on the surface drainage and surface water flow in the Project Area.

(iv) Structures used for agricultural operations

Construction of the Facility will result in the removal of a Quonset hut and two adjacent silos located east of Watkins road approximately 0.58 mile north of Refugee Road. The landowner has agreed to removal of these structures. No other impacts to agricultural structures are anticipated.

(v) Viability as agricultural district land

All of the parcels within the Project Area are enrolled in the agricultural district program. Once the Facility is constructed and operating on these parcels, they will no longer be eligible for inclusion in the program. Upon decommissioning of the Facility, the parcels can be re-enrolled in the program.

(c) Proposed Mitigation Procedures

A description of mitigation procedures to be utilized by the applicant during construction, operation, and maintenance to reduce impacts to agricultural land, structures, and practices. The description shall illustrate how avoidance and mitigation procedures will achieve the following:

(i) Avoidance/minimization of damage to field tile drainage systems

Avoidance or minimization to the maximum extent practicable of any damage to field tile drainage systems and soils in agricultural areas.

Per the Drain Tile Mitigation Plan (Exhibit E), drain tiles will be avoided to the maximum extent practicable, and any known tiles will be illustrated on final construction drawings and flagged in the field for avoidance. Unavoidable damage to drain tile may occur during construction of the Facility. Additional details regarding assessment and repair of damaged tile are identified below.

(ii) Timely repair of damaged field tile systems

Timely repair of damaged field tile systems to at least original conditions, at the applicant's expense.

The Drain Tile Mitigation Plan identifies the procedures for assessing damaged drain tile for repair. The plan ensures that no adverse impacts to drain tile systems extend outside of the Project Area. If it is determined that a drain tile main was impacted, or if there is uncertainty regarding the impacted tile extending outside of the Project Area, repairs will be made to ensure the integrity of the greater drainage system. Lateral drain tile lines that are damaged and contained within the Project Area may not be repaired depending on the need to replace the lateral drain tile lines and subject to individual landowner agreements previously negotiated during the leasing process. Repairs will be completed by a qualified contractor within 30 days of the discovery of damage, as weather and soil conditions allow, unless otherwise agreed to by the landowner. Additional information regarding repairs and repair specifications to tiles is provided in the Drain Tile Mitigation Plan (Exhibit E).

(iii) Topsoil segregation, de-compaction, and restoration

Segregation of excavated topsoil, and decompaction and restoration of all topsoil to original conditions unless otherwise agreed to by the landowner.

The Applicant will take care to ensure that topsoil will be appropriately segregated and separately backfilled in areas where soil is to be disturbed. Topsoil segregation ensures that vegetation can quickly re-establish following construction and that agricultural production can commence following

Facility decommissioning. Topsoil that is displaced for laydown yards, workspaces, grading, or access roads will be stockpiled separately so that it can be redistributed prior to final restoration. Similarly, topsoil will be segregated during open trench installation of underground collection lines. Excess materials, such as rock utilized for entrance pads, will be removed following construction. Upon removal, soil will be de-compacted, regraded, and stabilized with a native, low-growth seed mix.

4906-6-05 ACCELERATED APPLICATION REQUIREMENTS FOR GEN-TIE LINE

(A) FORM AND DATA REQUIREMENTS

As permitted by OAC 4906-3-04, a major utility facility and any associated project that qualifies for accelerated review may be combined into a single standard certificate application. The Applicant proposes installation of a 138 kV gen-tie line connecting the Facility to the existing Kirk substation.

As part of the combined application, this section addresses the requirements of OAC 4906-6-05, accelerated application requirements, for the proposed Facility gen-tie line alternative locations.

(B) DATA AND INFORMATION REQUIREMENTS

(1) Applicant and Project Information

The gen-tie line (gen-tie Facility) will connect to AEP's existing Kirk 138 kV substation, approximately 1,500 feet northwest of the Facility. The Applicant has selected two alternative locations to install the Facility collection substation, gen-tie line, and O&M building during the preliminary Project design (Figure 03-2). The western alternative would place the collection substation and O&M building on the northwestern Project Area and the approximately 1,700-foot long gen-tie line would extend north and connect to the west side of the existing Kirk substation. The eastern alternative would place the collection substation and O&M building on the northern Project Area and the approximately 2,800-foot long gen-tie line would extend west to connect to the east side of the existing Kirk substation. One connection alternative will be selected during the OPSB completeness review period for this Application. Interconnection details are provided in section 4906-4-05 of this Application.

The gen-tie line meets the requirements of a letter of notification application as defined in Appendix A of OAC 4906-1-01 because it is an electric power transmission line greater than 0.2 miles but not greater than 2 miles in length.

(2) Need for the Proposed gen-tie Facility

The proposed gen-tie line is needed to connect the proposed Union Ridge Solar power generation project to the electric transmission grid. For more information on interconnection, see section 4906-4-05 of this Application.

(3) Location of the Project

The proposed gen-tie Facility locations, including the two gen-tie line alternative locations, are shown on Figure 03-1 and Figure 03-2.

(4) Route Alternatives

The Applicant has selected two alternative locations to install the Facility collection substation, gen-tie line, and O&M building during the preliminary Project design (Figure 03-2). Construction of both the western and eastern gen-tie alternatives would consist of the installation of wood or steel poles, not more than 75 feet in height. The western gen-tie location alternative would require installation of approximately 5 poles while the eastern gen-tie location alternative would require installation of approximately 6 poles. The two alternatives and associated impacts are discussed in section 4906-6-05(B)(10) below.

(5) Public Information Program

The gen-tie line alternative locations were included in all Union Ridge Solar maps, presentations, and public notices. Affected property owners will continue to be notified about the gen-tie line as part of the required notifications for the generation Facility. See section 4906-4-06(F) for more information on the Applicant's Public Interaction Program (Exhibit I) and Complaint Resolution Plan (Exhibit J).

(6) Construction Schedule

Construction is anticipated to begin in the first quarter of 2022. The generation Facility and gen-tie line will be placed in service upon completion of construction, anticipated for the fourth quarter of 2022.

(7) Facility Map

The gen-tie line alternatives are shown at 1:12,000 scale with roads and an aerial image on Figure 03-2.

(8) Easements

Portions of both gen-tie line alternative locations are proposed on leased land where the Applicant will retain an easement agreement.

Western Alternative: The gen-tie line and collection substation are proposed on parcels 025-069168-00.001 and 025-069396-01.001, respectively. The POI is proposed on Columbus Southern Power Company's (AEP) property (parcel 025-079386-01.001) and does not require a lease agreement or easement. All lease and easement agreements between the Applicant and property owners within the Project Area have been executed.

Eastern Alternative: The gen-tie line and collection substation are proposed on parcels 025-068892-00.001 and 025-068892-02.003, respectively. The POI is proposed on Columbus Southern Power Company's property (parcels 025-079386-01.000 and 025-079386-01.001) and does not require a lease agreement or easement. All lease and easement agreements between the Applicant and property owners with the Project Area have been executed.

(9) Technical Features of the Project

(a) Facility Characteristics

The gen-tie line will extend from the collection substation to the existing Kirk substation and will be supported by wooden or steel poles, no greater than 75 feet tall. The poles will be installed using typical installation techniques to carry 138 kV electric lines, such as a caisson foundation. The gen-tie line will operate at 138 kV and will have a right-of-way (ROW) width of approximately 100 feet. Portions of both gen-tie line and collection substation alternative locations are proposed on leased land where the Applicant has easement agreements.

(b) EMF

This section is not applicable to the Project because the gen-tie line is not within 100 feet of an occupied residence.

(c) Capital Cost

The capital cost of the gen-tie line is estimated to be in the range of \$200,000 to \$500,000 and will be dependent on the final design.

(10) Social and Ecological Impacts

(a) Land Use

Western Alternative: The gen-tie line, collection substation, and O&M building are proposed on agricultural land in Harrison Township, Licking County, Ohio. Parcels surrounding the gen-tie Facility consist primarily of agricultural uses with some residential development. Figure 08-1 illustrates land use within a 1-mile radius of the gen-tie Facility.

Eastern Alternative: The collection substation and O&M building are proposed on agricultural land. The gen-tie line extends through residential and agricultural land before connecting to the existing Kirk substation in Harrison Township, Licking County, Ohio. The ROW will be cleared and managed for the lifetime of the gen-tie Facility, resulting in a total permanent impact of 2.6 acres to agricultural land and 3.3 acres to residential land. Parcels surrounding the gen-tie Facility consist primarily of agricultural uses with some residential development. Figure 08-1 illustrates land use within a 1-mile radius of the gen-tie line.

(b) Agricultural Land

Crop cover within the Project Area is shown on Figure 08-3. Section 4906-4-08(E) provides details of Agricultural land use within the Project Area and Table 08-9 and Table 08-10 quantify the loss in agricultural land use due to Project construction and operation. All parcels within the Project Area are

enrolled in the agricultural district and CAUV programs. Agricultural land use and CAUV data was derived from land use codes included in parcel data.

Western Alternative: The collection substation, O&M building, and gen-tie line, including a 100-foot wide ROW, are proposed on agricultural land. The ROW will be cleared and managed for the lifetime of the gen-tie Facility, resulting in a total permanent impact of 3.7 acres of agricultural land, 3.5 acres of impact to cash grain farmland and 0.2 acre of impact to vacant agricultural land. Soil disturbance will be limited to the installation of gen-tie line support structures. Once the gen-tie Facility has reached the end of its useful life, the gen-tie line will be removed, and the underlying land may be restored for potential agricultural use.

Eastern Alternative: The collection substation and O&M are proposed on agricultural land. Approximately 600 feet of the 2,800-foot gen-tie line, including a 100-foot wide ROW, is proposed on residential and agricultural land. The ROW will be cleared and managed for the lifetime of the gen-tie Facility, resulting in a total permanent impact of 2.6 acres of vacant agricultural land. Soil disturbance will be limited to the installation of gen-tie line support structures (poles). Once the gen-tie Facility has reached the end of its useful life, the gen-tie line will be removed, and the underlying ROW may be restored for potential agricultural use.

(c) Cultural Resources

The Applicant completed a Phase I History Architecture Survey (Exhibit Q) and Phase I Archaeological Reconnaissance (Exhibit R) to locate cultural resources within the Project Area and surrounding area of potential effects. The study noted that there were no resources within the Project Area, including the gen-tie line alternative locations, that should be avoided, or otherwise would require additional archaeological work. Cultural and archaeological resources are discussed in more detail in section 4906-4-08(D).

(d) Other Agency Requirements

Environmental permits required for the Facility, including the gen-tie lines, are included in section 4906-4-07(C)(1)(a). Transportation permits are discussed in section 4906-4-06(F)(4).

(e) Federal and State Designated Species

For a complete review of federal and state designated species that may occur in the vicinity of the Facility, including the gen-tie lines, see section 4906-4-08(B)(1). Additional information on listed species can be found in the Ecological Assessment (Exhibit P), and through agency consultation with the ODNR and USFWS (Attachment A of Exhibit P).

(f) Areas of Ecological Concern

No national and state forests and parks, floodplains, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries are located within the immediate vicinity of the gen-tie line alternative locations. The Surface Water Delineation Report is included as Attachment C of the Ecological Assessment (Exhibit P). Impacts to aquatic resources within each gen-tie alternative location is described below.

Western Alternative: No wetlands or streams were identified within the gen-tie line ROW, collection substation, and O&M building locations; therefore, no impacts to aquatic resources are anticipated.

Eastern Alternative: Three wetlands and no streams were identified and delineated within the gen-tie ROW. No wetlands or streams were identified within the proposed collection substation and O&M building locations. Soil disturbance will be limited to the installation of gen-tie line support structures (poles). The support structures will be installed approximately 400 feet apart; therefore, impacts to aquatic resources will be avoided.

(g) Other Environmental, Social, Health, or Safety Impacts

Significant adverse environmental and socioeconomic impacts are not anticipated due to the construction and operation of the Facility or gen-tie line. Environmental impacts from the construction and operation of the Facility, including the gen-tie lines, are discussed in sections 4906-4-08(B)(2) and (3). Socioeconomic impacts for the Facility are discussed in sections 4906-4-06 and 4906-4-08(C)(4). The gen-tie line is not anticipated to result in adverse impacts to the health and safety of the public.

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