

# APPLICATION TO THE OHIO POWER SITING BOARD

FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR

## Dixon Run Solar

Bloomfield Township, Jackson County, Ohio

### Case No. 21-0768-EL-BGN

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- Exhibit A Manufacturer's Equipment Specifications
- Exhibit B Vegetation Management Plan
- Exhibit C Socioeconomic Report
- Exhibit D Geotechnical Engineering Investigation
- Exhibit E Decommissioning Plan
- Exhibit F Transmission Interconnection Studies
- Exhibit G Public Information Program and Complaint Resolution Plan
- Exhibit H Route Evaluation Study and Traffic Control Plan
- Exhibit I Wetland Delineation and Habitat Assessment
- Exhibit J BMP Typical Drawings
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- Exhibit L Noise Assessment
- Exhibit M Geology and Hydrogeology Report
- Exhibit N Phase IA Cultural Resources Survey
- Exhibit O Horizontal Directional Drilling Inadvertent Return Response & Contingency Plan
- Exhibit P Visual Resource Assessment and Mitigation Plan
- Exhibit Q Site Safety Plan





## ACRONYMS AND ABBREVIATIONS

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



## 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.*

Dixon Run Solar, LLC (the Applicant or Dixon Run Solar) is proposing to construct Dixon Run Solar (the Project), an up to 140 megawatt (MW) alternating current (AC) solar powered electric generation facility (the Facility) to be constructed primarily on reclaimed surface mine land in Jackson County, OH. 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 49064 of the Ohio Administrative Code (OAC).

In addition, 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. Dixon Run Solar, a major utility facility, has an associated 138 kilovolt (kV) generation interconnection (gen-tie) line of up to 100 feet. The gen-tie line meets the requirements of an accelerated construction notice application as defined in Appendix A of OAC 4906-1-01 because it is an electric power transmission line not greater than 0.2 mile in length. The requirements of OAC 4906-6-05, accelerated application requirements, are addressed throughout the Application.

This Application has been prepared by the Applicant, with support from Environmental Design & Research (EDR). EDR has over 20 years of experience with 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 this chapter 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 OAC 4906-4-08(D), which requires the study of impacts to cultural resources within 10 miles of

the Project Area. The waiver request seeks to reduce this 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 is proposing to construct an up to 140 MW solar powered electric generation Facility. The Facility will consist of the fenceline, photovoltaic (PV) panel arrays, electrical collection lines (overhead), inverters, transformers, access pathways, Facility substation, AEP switching station, weather stations, construction trailers, and laydown yards. The Facility will deliver power to a single point of interconnection (POI) on the Rio – Lick 138 kV circuit, owned by AEP Ohio Transmission Company, Inc. (AEP). The POI will consist of a new three circuit breaker 138 kV switching station and a short gen-tie line from the Facility substation to the AEP switching station (collectively, the POI). The POI is included in 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) for sale at wholesale or under a power purchase agreement.

#### (2) General Location, Size, and Operating Characteristics of the Proposed Facility

The Facility will be located on approximately 2,085 acres of private land in Bloomfield Township, Jackson County, Ohio (Project Area). The total generating capacity of the Facility will not exceed 140 MW. The Facility is expected to operate with an average annual capacity factor of 15.2% to 16.5%, generating a total of approximately 300,000 to 325,500 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 strong solar resources, manageable access to the bulk power transmission system, sufficiently low population density, positive feedback from landowners and local officials, agricultural 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 2016 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. A public information meeting was held on July 22, 2021 to facilitate public interaction with the Applicant and expert consultants, and included information about the Applicant, the Facility, and solar technology. Final design will be completed prior to construction, as early as the first quarter of 2022. Construction is anticipated to begin thereafter and be completed by the fourth quarter of 2023, at which point the Facility will be placed in service. Additional information about the Project schedule can be found in Section 4906-4-03(C)(1) of this Application.

**(B) FUTURE PLANS FOR ADDITIONAL GENERATION UNITS OR FACILITIES IN THE REGION**

*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 future plans for additional generation at Dixon Run Solar. This POI has a maximum capacity of 140 MW.

(2) Description of the Applicant's history, affiliate relationships, and current operations

*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.*

Dixon Run Solar, LLC is a wholly owned subsidiary of SunEnergy1, LLC (SunEnergy1). SunEnergy1 is a top U.S. solar developer, owner, and operator of utility-scale solar projects with over 1 GW of

installed solar power. SunEnergy1 has pioneered large-scale solar power on the East Coast for nearly a decade and has developed numerous record-breaking solar projects in the mid-Atlantic region. SunEnergy1 is vertically integrated and controls all stages of development in-house.

As a community focused company, SunEnergy1 is committed to fostering sustainable development and providing employment opportunities for thousands of families in the areas in which they operate. The Applicant currently plans to develop, construct, and operate the Facility.

## 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*

The preliminary Facility layout includes the fenceline, PV panel arrays, overhead collection lines, inverters, transformers, access pathways, Facility substation, AEP switching station, weather stations, and laydown yards contained within the Project Area (Figure 03-1). 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, 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. While the layout is subject to change, all Facility components will be located within the Project Area boundaries.

#### (b) *Population Centers and Administrative Boundaries*

The proposed Facility is in Bloomfield Township, Jackson County, Ohio. The nearest population center is the City of Jackson, approximately 3.5 miles northwest of the Project Area. The Project Area is located approximately 5.4 miles north of the Village of Oak Hill, 5.1 miles south of the City of Wellston, and 7.5 miles west of the Village of Vinton.



(c) *Transportation Routes and Gas and Electric Transmission Corridors*

The Project Area is bound by U.S. Route (US) 35 to the south, State Route (SR) 327 to the west, Keystone Furnace Road to the north, and Dixon Run Road to the east. All of the bounding roads are adjacent to or within 0.25 mile of the Project Area boundary. Luther Jones Road is the only road that bisects the Project Area, running east-west through the center and connecting SR 327 to Dixon Run Road. James A. Rhodes Airport is a general aviation airport located 2.2 miles southwest of the Project Area.

Two overhead electric transmission lines intersect the Project Area, a 345 kV line running east-west through the northern Project Area, and a 138 kV line running northwest-southeast through the center of the Project Area south of Luther Jones Road. There are five pipelines within 2 miles of the Project Area, including two pipelines that appear to pass through the Project Area. The Kinder Morgan Pipeline, which transports hydrocarbon gas liquids, runs north-south through the western portion of the Project Area, and a natural gas pipeline (the Tennessee Gas Pipeline) runs north-south through the eastern section of the Project Area. Outside of the Project Area, two sections of the Columbia Gas Trans Co. natural gas pipeline are located 0.8 and 1.8 miles to the west, the Marathon petroleum pipeline is located 1.0 mile west of the Project Area, and the Texas Eastern Trans Co. natural gas pipeline is located 1.1 miles east of the Project Area (U.S. Energy Information Administration, 2017; USDOT, 2020). Publicly available data concerning oil and gas pipelines intentionally lacks precision. The Applicant has conducted site surveys that conclude that there are no inter- or intra-state pipelines that intersect the Project Area, and the nearest pipeline was determined to be the Tennessee Gas Pipeline, shown in Figure 03-1.

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

There are no named lakes, ponds, reservoirs, or rivers within 2 miles of the Project Area. Seven named streams are located within 2 miles of the Project Area, with Dickason Run and Dixon Run located closest to the Project Area boundary. Dickason Run flows east-southeast less than 0.1 mile from the northern edge of the Project Area, and continues eastward, eventually draining into Kyger Run 0.7 mile east of the Project Area. At its closest point, Dixon Run flows northeast 0.1 mile south of the Project Area boundary, before draining into Dickason Run 0.5 mile east of the Project

Area boundary. Symmes Creek and Sugar Run both flow generally southward, with the closest sections located 0.4 mile west and 1.4 miles southeast of the Project Area, respectively. The closest section of Goose Run is 1.2 miles north of the Project Area, while the closest section of Little Raccoon Creek is located 1.7 miles northeast of the Project Area. None of these named streams traverse the Project Area. The only mapped streams within the Project Area consist of unnamed tributaries of Dickason Run, Dixon Run, and Symmes Creek.

(e) *Major Institutions, Parks, and Recreation Areas*

US 35, which bounds the Project Area to the southwest, is designated by the Ohio Department of Transportation (ODOT) as the Welsh Scenic Byway. There are two Ohio Department of Natural Resources (ODNR) wildlife areas within 2 miles of the Project Area that are used for outdoor recreation such as hunting, hiking, birding, and fishing. Cooper Hollow Wildlife Area is located approximately 1.2 miles south of the Project Area, while Broken Aro Wildlife Area is located 1.7 miles north of the Project Area. No major institutions or additional parks or recreational areas are within 2 miles of 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.*

A total of approximately 2,085 acres are within the Project Area, all of which are signed to purchase option agreements, including the Facility substation and AEP switching station locations. While approximately 2,085 acres are under contract in the Project Area, the Applicant only intends to use approximately 1,219 acres for construction and operation.

**(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 subsections below. The equipment specifications presented in this Application are representative of the options that might be selected for the final procurement of Facility components and materials. 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 450,500 PV panels installed in linear arrays. The actual type of panel chosen will be dependent 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 Facility is estimated to be 15.2% to 16.5%. Based on the total generating capacity of 140 MW and the annual capacity factor, the Facility will generate approximately 300,000 to 325,500 MWh of electricity each year. Heat rate is not applicable to solar energy facilities.

(b) *Turbine Dimensions*

This section is not applicable to solar facilities, and therefore, 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 airborne 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. However, water trucks may be used to manage dust particles during the construction of the Facility.

(2) Construction Method and Description of Major 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 resource protection measures, (2) securing the perimeter of the construction area, (3) vegetation clearing, (4) minor earthwork and grading as necessary, (5) construction and maintenance of access pathways, and (6) installation of equipment such as pilings, racking, panels, inverters, weather stations, AEP switching station, and the Generation Facility substation.

In areas where vegetation removal is required, trees cleared from the work area will be cut into logs and either left for the landowner or removed, while limbs and brush will be buried, chipped, or otherwise disposed of as directed by the landowner and as allowed under federal, state, and local regulations. Disturbed soil will be de-compacted, erosion and sediment control features will be installed, and topsoil will be replaced and re-seeded. Additional details on construction, site preparation, and reclamation methods are included in the subsections below, and in Section 4906-4-07 and Section 4906-4-08 of this Application.

(a) *Electric Power Generation Equipment*

Site preparation may be necessary to accommodate PV panel installation via minor grading due to localized variability in topography. Where grading is necessary, topsoil will be segregated and redistributed following grading activities to maintain soil productivity. Access pathways will be created as needed prior to construction of PV panels for the movement of equipment and materials.

Individual PV panel modules are anticipated to be approximately 8 feet wide by 4 feet long, with a portrait configuration. The panel modules will be secured on a fixed tilt system set at 15 degrees, with up to three modules stacked end-to-end, centered on the horizontal crossbar for a total width of approximately 24 feet. The maximum height of the crossbar will be approximately 6 feet, giving the panels a ground clearance of approximately 6 feet.

The racking and panels are supported on steel piles that will be driven into the ground to a minimum depth 8 feet. The required embedment depths of piles will be determined by the foundation design engineer (see Exhibit D).

Manufacturer's specifications for representative PV panels and racking systems under consideration are provided in Exhibit A. Improving technologies could dictate the use of an alternative racking system as identified during the final procurement process. Approximate dimensions of the racking system are shown in Exhibit A.

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

PV panels generate electricity without the use of fuel or water, and without generating waste. However, during construction, contractors will likely be utilizing temporary fuel tanks at some laydown yards for refueling of construction equipment, and water potentially for activities such as dust control and road construction.

utilized for the cooling and insulation of transformer at the Facility substation and inverter locations may be stored within an aboveground storage tank. Oil that is removed from the transformers during maintenance activities will be disposed of per the applicable local, state, and federal regulations. No more than three fuel tanks will remain on site for use by the O&M team

for landscaping and general site maintenance. Per federal regulations (40 CFR Part 112), should the aggregate aboveground storage exceed 1,320 gallons, a Spill Prevention Control and Countermeasures (SPCC) Plan will be prepared for the Project prior to the start of construction.

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

No fuel, waste, water, or other processing facilities will be installed for the Project.

(d) *Water Supply, Effluent, and Sewage Lines*

Facility components will not use measurable quantities of water or discharge measurable quantities of wastewater. Therefore, no other water, effluent, or sewage lines will be installed for the Facility. Based on average rainfall in the area, cleaning of panels is expected to be done by primarily natural weather events, although water may be needed dependent on weather and site conditions. For example, the Applicant anticipates the cleaning of panels might occur in a severe drought. It is anticipated that if panel washing would occur, it would occur in targeted and specific areas over several days or weeks and would not be necessary for the entire Project Area. Water for cleaning panels would not require installation of any additional water or sewage lines.

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

The Facility will interconnect to the existing AEP Rio – Lick County 138 kV line, which runs diagonally from northwest to southeast through the Project. The POI will consist of a new AEP 138 kV switching station, which will be connected to the Facility substation by a short gen-tie line. Because the AEP switching station is adjacent to the Facility substation, the gen-tie line is planned to consist of an overhead slack-span of a single ACSR conductor per phase running in-between two dead-end structures, one located inside the Facility substation the other located inside an AEP owned switching station that would be constructed to accommodate this project. The gen-tie conductor is expected to be 795 ACSR 26/7 Drake. OPGW will also be ran in-between these structures for protection and communication between the two stations. The gen-tie line is expected to be no more than approximately 100 feet as the Facility substation would be located directly adjacent to AEP's switching station, as shown on Figure 3-2.

The gen-tie line is located on the same property as the Facility substation. The Applicant has a purchase option for this property. The final design of the gen-tie line is dependent on the Facilities Study and Interconnection Service Agreement between Dixon Run Solar, PJM, and AEP. The POI is included in this Application. There are no electric distribution lines or gas pipelines associated with the Facility.

(f) *Electric Collection Lines*

The electrical collection system will be installed as overhead collection lines. Electrical collection technology is rapidly evolving and will be site specific depending on ongoing detailed design and constructability considerations, costs, and availability of materials. Final engineering and procurement will help determine the construction method for the electrical collection system. The electrical cables that would be used for the electrical collection system are described below. A total of approximately 8.2 miles of overhead 34.5 kV collection line will be installed for the Facility, depending on final engineering and layout.

Protected trees and limits of clearing will be marked by the installation of 48-inch height, high-visibility orange construction fencing, and individual specimens flagged with 1-inch orange vinyl tape at a height of 5 feet above grade for visibility. Fencing will be installed at a minimum of 1.5 times the drip line diameter of protected trees to prevent damage to the vegetation and/or limit soil compaction within the root zones. Revegetation of these areas will commence as outlined in the guidance within the Vegetation Management Plan (Exhibit B).

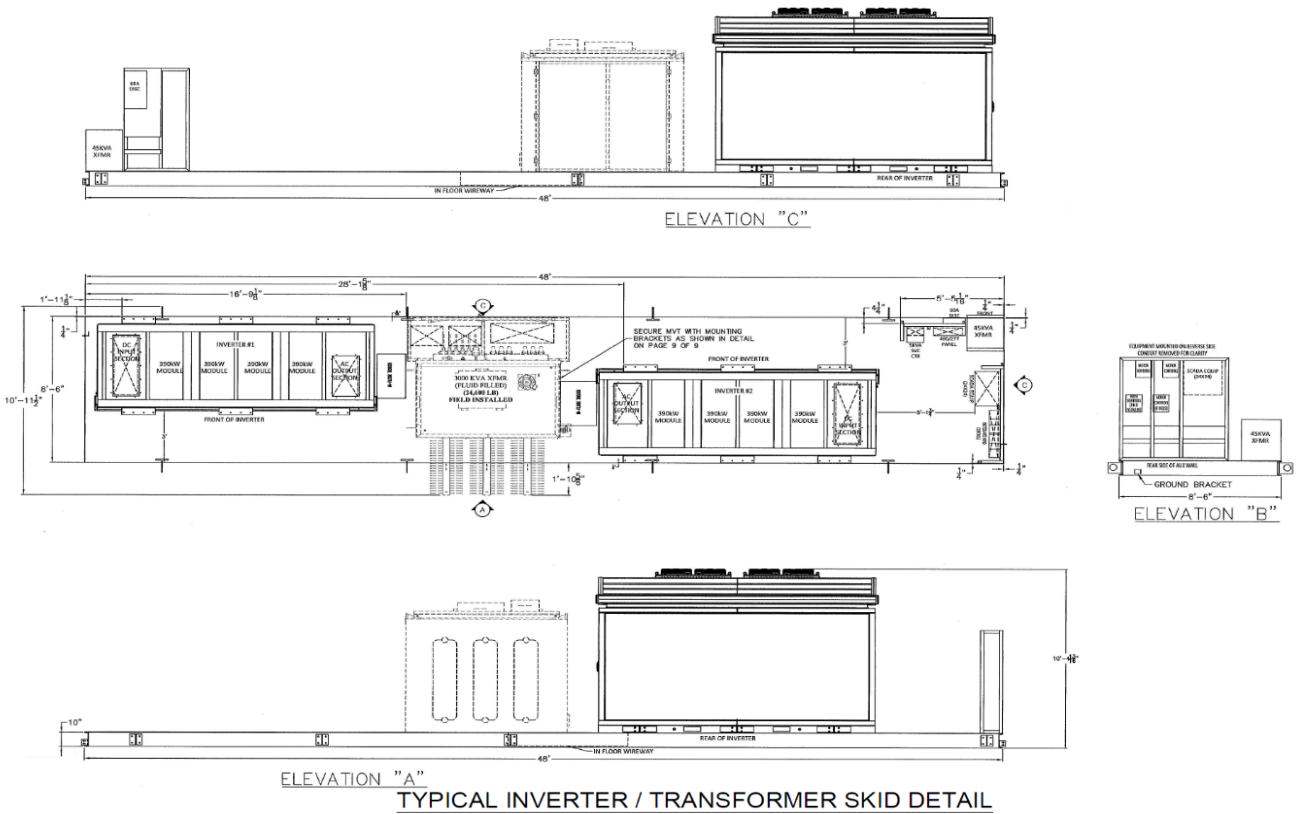
Overhead Electrical Collection System

An overhead electrical collection system is being considered for several reasons, including ease of access for operations and maintenance, reduced ground disturbance and impacts to sensitive resources, and cost considerations. The direct current (DC) collection cables will be strung under each row of panels on steel arms and a steel cable attached to the piles. At the end of each row, hanging brackets would connect several racks/rows of cables to a common collection point near their assigned inverter skid. . A short span of underground 3-phase 34.5kV AC line will connect the inverter to a riser pole, at which point the line will be carried to the project substation aboveground on single wooden poles at least 35 feet in height.

(g) *Substations, Switching Substations, and Transformers*

The preliminary Facility design identifies 39 inverters throughout the Project Area. Inverters will be placed on a skid that provides the foundation for the inverter, transformer, equipment cabinet, and Supervisory Control and Data Acquisition (SCADA) system. This skid will be placed on a gravel inverter pad of approximately 50 feet long by 25 feet wide. Inverters will be approximately 48 feet long, 11 feet wide, and 10 feet tall. The dimensions of the inverters and skid are subject to variation dependent on the final inverter selected and final site design. A depiction of a representative inverter and transformer is included in Inset 03-1 below. Manufacturer's specifications for representative inverters are provided in Exhibit A.

**Inset 03-1. Typical Inverter/Transformer Skid Detail**



The medium voltage electricity from the inverters is transmitted via the collection lines to the Facility substation. The substation will be located within a 12.6-acre area under purchase option agreement with a participating landowner. The preliminary design depicts the footprint of the substation to be approximately 160 feet by 120 feet wide, with the tallest structures at



approximately 65 feet in height. The substation support structure will contain a ACSR 477, 26/7 conductor, one per phase, and an H-Frame Pier Foundation. The footprint will house the transformers and necessary infrastructure to step up the voltage from 34.5 kV to 138 kV. The Facility substation will connect to the AEP switching station via a gen-tie line, anticipated to be less than 100 feet in length. The AEP switching station footprint is approximately 300 feet by 500 feet and is expected to include breakers, switches, station service transformers, dead-end structures for transmission lines, and a control enclosure. The AEP switching station will then connect to the AEP Rio – Lick 138 kV line.

The Facility substation and gen-tie line will be designed according to AEP reliability standards, PJM Interconnection, LLC (PJM) Standards, Reliability First Organization Standards, the National Electrical Code (NEC), and the Rural Utility Service Code. As Facility design is finalized and these standards are subject to change over time, design representations of commitments outlined in this Application will be updated to meet them accordingly. The area within the substation and AEP switching station will be graveled to minimize vegetation growth in the area. The substation and AEP switching station will be enclosed by a 7-foot-tall chain-link fence topped with 1-foot barbed wire strand. The substation and AEP switching station will contain concrete foundations for large equipment, circuit breakers, surge arrestors, insulators, and lighting necessary to meet various electric codes and standards.

(h) *Weather Stations*

The Facility will include up to four weather stations, which will be mounted adjacent to the inverters. These weather stations will be up to 35 feet in height. The weather stations will measure various aspects of the weather such as solar irradiance and wind speed. Manufacturer's specifications for representative weather stations are provided in Exhibit A.

(i) *Transportation Facilities, Access Pathways, and Crane Paths*

The Facility will require the construction of approximately 12.5 miles of access pathway. Access pathways will be all weather access permissible, within a range of 16 feet to 20 feet in width along straight portions of the roads, and wider along curves and at internal road intersections. During construction, access pathway installation and use could result in temporary soil disturbance of

approximately 30 feet in width. During construction, topsoil will be stripped and stockpiled along the access pathway corridors for use in site restoration. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with suitable base fill material at a depth to be determined on a case-by-case basis. Subsoils may be cement stabilized prior to base material installation, or a geotextile fabric or grid will be installed beneath the road surface, if necessary, to provide additional support. Once construction is complete, temporarily disturbed areas will be restored and revegetated. During construction, rock pads will be utilized at construction entrances and exits to reduce the tracking of dirt or sediment onto area roads. The use of small cranes will be required for construction of the POI, transformer and inverter locations, and substation; however, crane paths will not be installed given the size of the cranes used.

(j) *Construction Laydown Areas*

Eleven laydown yards are proposed for the Facility. The preliminary Facility layout includes approximately 16.9 acres of temporary laydown yards scattered throughout the Project Area. These areas will be utilized until construction crews have completed installation of Facility components in the applicable portion of the Facility. The laydown yards will accommodate material and equipment storage, parking for construction workers, and construction management trailers. These locations may be subject to change as the design is finalized but will not extend outside of the boundary of the proposed Project Area.

Erosion and sediment controls will be implemented in accordance with the Project's Storm Water Pollution Prevention Plan (SWPPP). Laydown yards may be developed into the operational parts of the Facility as construction progresses and restored according to the Project's Vegetation Management Plan (Exhibit B).

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

The Project will be surrounded by a 6-foot-tall, chain link fence with 1-foot barbed wire strand. Fence panels will be continuous and made from galvanized steel, supported on galvanized steel posts. The substation will be surrounded by a 7-foot-tall chain link fence with 1-foot barbed wire strand, because the Project Area will retain an existing vegetative buffer, we expect that the chain-

link fence will not be a visible component of the Facility. Lighting will be located at Facility substation, and main entrance of the Project Area.

The onsite O&M facility will consist of one or two permanent storage containers, approximately 40 feet long by 10 feet wide, and up to 10 feet tall, and will likely be located on one of the Project laydown yards. O&M staff will operate remotely.

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 security cameras. Access to the Facility will be through lockable gates.

(l) *Other Pertinent Installations*

There are no additional pertinent installations.

(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 the existing AEP Rio – Lick 138 kV transmission line via a new adjacent POI AEP switching station. Interconnection will involve the installation of new 138 kV circuit breakers, associated protection and control equipment, SCADA, 138 kV revenue metering, and potentially support structures and conductors necessary for interconnection with the adjacent existing transmission line. There are no gas pipelines associated with the Facility.

(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 1:12,000 scale, Figure 03-2 illustrates the following features:

(a) *Aerial Photograph*

Aerial photography is from the Ohio Statewide Imagery Program (2019).

(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 Jackson County GIS Map Office.

(d) *Property Lines*

Property line data was obtained from the Jackson County GIS Map Office in June 2021.

**(C) DETAILED PROJECT SCHEDULE**

*The applicant shall provide a detailed project schedule.*

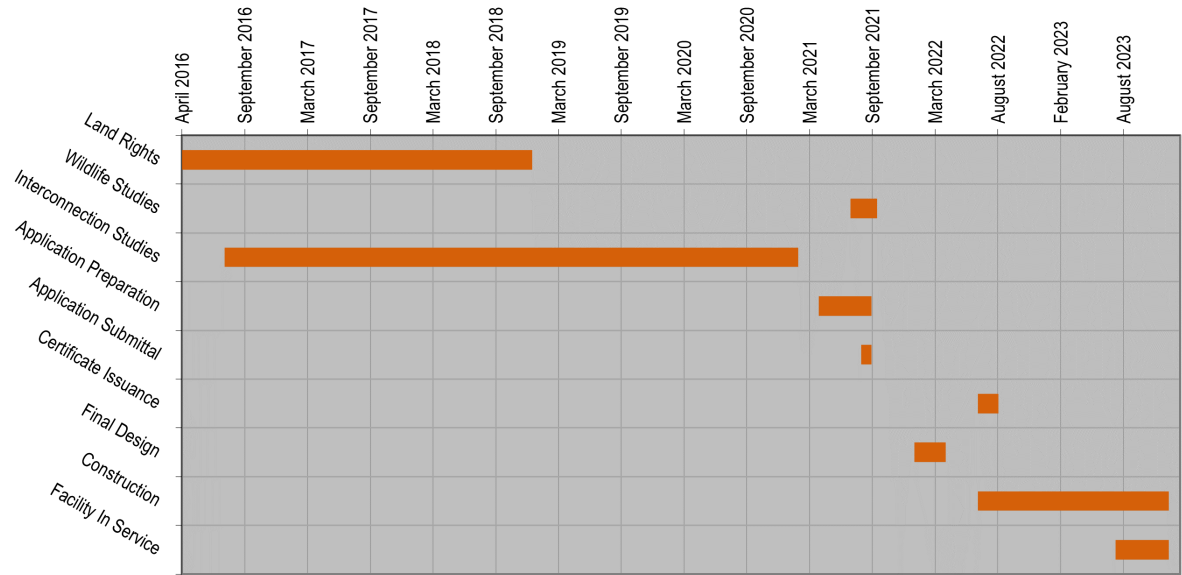
(1) Schedule

*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 03-2 below.

### Inset 03-2. Project Schedule



(a) *Acquisition of Land and Land Rights*

Acquisition of land and land rights began in the second quarter of 2016 and were completed in 2019.

(b) *Wildlife Surveys/Studies*

Ecological surveys/studies were completed in September 2021.

(c) *Receipt of Grid Interconnection Studies*

Grid interconnection studies for the solar Facility were initiated in October 2016 (see section 4906-4-05 of this Application). For queue position AC1-188, the Feasibility Study report was issued in March 2017 and the System Impact Study report was issued in June 2018. For queue position AF2-048, the Feasibility Study report was issued in July 2020 and the System Impact Study report was issued in February 2021. Facilities Study reports are currently underway for both queue positions.

(d) *Preparation of the Certificate Application*

Preparation of the Application occurred in the second and third quarters of 2021 and the public information meeting was held on July 22, 2021.

(e) *Submittal of the Application for Certificate*

This Application was officially submitted in September 2021.

(f) *Issuance of the Certificate*

It is anticipated that the Certificate will be issued in the third quarter of 2022.

(g) *Preparation of the Final Design*

The Applicant expects that final designs and detailed construction drawings will be completed as early as the first or second quarter of 2022.

(h) *Construction of the Facility*

The Applicant expects that construction will begin in the fourth quarter of 2022 and be completed in the fourth quarter of 2023.

(i) *Placement of the Facility in Service*

The Facility will be placed in service upon completion of construction, anticipated for the fourth quarter of 2023.

(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:

- Securing perimeter of the areas in which construction will occur;
- Installation of storm water and erosion control measures;
- Clearing of the Project Area as necessary, particularly at PV arrays, access pathways, laydown yards, and substation and AEP switching station locations;
- Minimal grading for access pathways, PV arrays, laydown yards, substation, and AEP switching station areas;
- Construction of access pathways;
- Installation of piles and racking for support of PV panels;
- Installation of PV modules;
- Installation of the electrical collection system;
- Construction and installation of Facility substation, gen-tie, and POI AEP switching station;
- Installation of inverters;

- Facility commissioning and energization;
- Final grading and drainage; and
- Restoration activities.

Installation of PV module piles and racking, Facility substation, AEP POI switching station, access pathways, and collection lines is described above in section 4906-4-03(B)(2) of this Application. Once construction is complete, temporarily disturbed areas will be restored, including removal of excess road material, decompaction, and rock removal in agricultural areas, and returned to their approximate preconstruction contours. Exposed soils in the Project Area will be stabilized by seeding, mulching, and/or plantings.

(3) Impact of Critical Delays

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

Critical delays may have material, adverse effects on Facility financing, including the Applicant's ability to timely acquire racking, inverters, or transformers. Such delays may push the in-service date back. In addition, considerable costs would be incurred if the delays prevented the Facility from meeting deadlines for federal incentive programs such as the Investment Tax Credit for Solar. Critical delays would also create impacts on the local community by postponing job creation benefits and payment in lieu of taxes (PILOT) payments that would be made as a result of the Applicant's participation in the Qualified Energy Project PILOT program under Ohio Revised Code Section 5727.75, as outlined in the Socioeconomic Report (Exhibit C). Additionally, critical delays could prompt PJM to withdraw the current queue position associated with this project. PJM tariff section 215 requires the Interconnection Customer (Dixon Run Solar) to demonstrate that it has obtained state site permits in order to receive an Interconnection Service Agreement.

## 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 availability and quality of solar resource, proximity to the bulk power transmission system, topography, and identification of willing contiguous participants are the initial site selection criteria utilized for solar power projects. The Applicant's initial evaluation was based on public solar irradiation data, such as the National Renewable Energy Laboratory's (NREL) "National Solar Radiation Database" (Sengupta, et al., 2018; NREL, 2019). The data suggested a suitable solar resource throughout much of Ohio, including Jackson County.

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 located within the vicinity of the Project Area. The transmission system in the area are owned and operated by AEP within the PJM regional transmission organization footprint. To implement an electric generating facility, the transmission system must be able to accommodate a new facility's generating capacity via a POI that 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 140 MW project was viable in the general area of the proposed Facility.

The Applicant identified willing Project landowners adjacent to a suitable POI that met the various other siting criteria listed in this section. Willing participants are essential to the success of any solar project. After a suitable geographic area was established, the Applicant's development team pursued willing landowners in the area. With willing participants and a viable POI, the Project Area for the Facility was developed. The Applicant's development team has established close partnerships with Project participants to evaluate and site the Project within the land under their



ownership. Dixon Run Solar will be the long-term owner and operator and looks forward to strong landowner relationships throughout the life of the Project.

General land use characteristics of the Project Area were also considered. Land use in the area is primarily grazing, reclaimed mine, and agricultural and is generally characterized by open spaces suitable for hosting a utility scale solar power project. Proximity to major transportation routes and supply chains were also reviewed for accessibility. Multiple state routes and county roads surround the Project Area. These roads provide accessibility for 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.*

The Project Area was identified, as outlined above, by reviewing regional solar resources, willing landowners, and access to the transmission system. The buildable area included as the proposed Project was identified in partnership with the participating landowners. A map of the Project Area and a 2-mile radius is included as Figure 03-1.

(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 NREL National Solar Radiation Database indicates that global horizontal irradiance is likely at a level of 4.01 kilowatt-hours (kWh) per square meter per day (NREL, 2019). Solar irradiance at this level is 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 purchase options for contiguous areas of land necessary to support the Facility. See Section 4906-4-06(A) for additional detail on property ownership. The Applicant has also engaged local community and state stakeholders to educate and share information. See Section 4906-4-06(F)(1) for additional details 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 were suitable for the development of a solar facility. An Initial Geotechnical Engineering Investigation report was prepared to analyze the site for suitable geotechnical conditions (Exhibit D). See Section 4906-4-08(A)(5) 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. One public airport, James A. Rhodes Airport, is located 2.2 miles southwest of the Project Area. No other public or private airports, helicopter pads, or landing strips are located within 5 miles of the Project Area.

#### Limited residential development

The Project Area has a low population and residential development density compared to surrounding areas and statewide averages. The nearest area of relatively high population density is Jackson, approximately 3.5 miles northwest of the Project Area. Areas with limited residential development generally have more available space for siting solar panels once site-specific constraints are taken into account. See Section 4906-4-08(C)(4)(e) for additional detail on demographics in the vicinity of the Project Area.

### Compatible land use

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

### Topography

The Project Area has variable terrain with north facing slopes located in the northern section of the Project Area south of Keystone Furnace Rd, in the northeast section of the Project Area north of Luther Jones Rd, and in the eastern portion of the Project Area east of State Route 327. Project Infrastructure is primarily located outside of these areas. The construction of PV Panels at these locations will be avoided, or minimal grading will be implemented to adjust the existing slope.

### Limited ecological resources

The Project Area has adequate open space available to minimize impacts to ecological resources such wetlands, or streams. While a majority of forest will be preserved, portions of forested land will be cleared as necessary to accommodate the generation needs of the Facility. See Section 4906-4-08(B) for more information on ecological resources.

### Cultural resources

A preliminary literature review of cultural resources determined that the Project would likely be able to avoid or mitigate for cultural resources in the area. For additional information on cultural resources, see Section 4906-4-08(D) of this Application.

#### (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).*

Once the Applicant determined that the Project Area was suitable for development of a solar power facility, various siting factors and constraints were evaluated further to refine the Facility components. For additional information, see Section 4906-4-04(B).

#### (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), the Applicant has shown 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 Section 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 Facility components within the Project Area is subject to change depending on final engineering for the Project.

**(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, and utility corridors is included as Figure 04-1. This illustrative graphic cannot appropriately show all of the site-specific constraints and considerations, such as landowner preferences, PV panel engineering factors, and access pathway 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 minimize environmental impacts to the greatest 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 considerations discussed below. Using geographic information system (GIS) tools and consultant assessments, the Applicant identified the preliminary Facility layout as presented and described in this Application.

### Equipment Considerations

As stated in Section 4906-4-03, representative models of Facility panels, racking, and inverters have been included in Exhibit A. 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 the OPSB prior to construction. The equipment selection is subject to internal analysis of costs and availability of equipment during the procurement process. The preliminary Facility layout was designed to meet the engineering requirements of the anticipated Facility equipment under consideration for the Project.

### Noise Considerations

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).

### Agricultural Considerations

Agriculture is the predominant land use designation within the Project Area; however, most of the area is not actively farmed and most of the parcels are also reclaimed mine. The current landowners do not wish to utilize their parcels for agricultural purposes, thereby generating an interest in selling the parcels for the proposed solar Facility. However, the Applicant has designed the Facility footprint to minimize impacts to active agricultural land primarily by co-locating collection lines and access pathways when practicable. The Project Area can be restored to agricultural use upon decommissioning, as discussed in the Applicant's Decommissioning Plan (Exhibit E). For additional information on agricultural land, see Section 4906-4-08(E).

The Facility is located on a reclaimed surface mine and there are no known drain tile issues to address. The Applicant worked with participating landowners to identify any known drain tile locations across the Project Area, and none were identified within the Project Area.

### Cultural Resources Considerations

The Applicant is nearing completion of field surveys across the Project Area for cultural resources, but data analysis and reporting are still underway. A final Phase 1 Archaeology Report and Historic Resource Survey will be provided to the Ohio State Historic Preservation Office (SHPO) during the Certificate Application completeness review period. The preliminary Facility layout has not yet incorporated avoidance of newly identified sites, as they are in the process of being reviewed for potential eligibility to the National Register of Historic Places (NRHP). For additional information regarding cultural resources, see Section 4906-4-08(D). The location and characterization of some of these resources are considered confidential, but the resources will be avoided in the final Facility layout.

### Ecological Considerations

Per consultation with the ODNR and the U.S. Fish and Wildlife Service (USFWS), and through onsite surveys, the Facility has been sited and designed to minimize impacts to ecological resources to the greatest extent practicable. For additional information regarding ecological resources and agency consultations, see Section 4906-4-08(B).

### Geotechnical Considerations

An initial geotechnical engineering investigation was conducted in the Project Area. Geotechnical conditions in the area were found to be generally suitable for solar development in desktop evaluations. The results of the test borings (see Exhibit D) informed engineering and layout. For additional information regarding geotechnical considerations, see Section 4906-4-08(A)(5).

### Glare Considerations

A glare study was also completed for the Project. The analysis evaluated potential glare related to nearby airports (James A. Rhodes Airport) and roadways (US 35, SR 327, CR 9, and CR 41). Potential for glare was detected at seven non-participating residences and three nearby roadways based on the SGHAT model. To limit reflection and maximize efficiency, solar PV panels are constructed of dark materials that maximize absorption of sunlight and minimize glare impacts to the surrounding area. Additionally, solar panels are covered with an anti-reflective technology. In the case of these panels, the desired result is to absorb the sunlight, not reflect it. Solar panels have

been installed at airports next to aircraft runways with no negative effects. For additional information regarding glare and aviation, see Section 4906-4-07(E).

#### Hydrologic Considerations

A hydrology study was completed for the Project. This study analyzed risk of flooding and ponding, and their potential to cause scour, which could hinder the integrity of the solar pilings and racking. There are 100-year floodplain areas mapped along the northeast corner of the Project Area along Keystone Furnace Road. The Applicant will avoid construction in this area entirely, and all remaining area within the Project Area is designated as an area of Minimal Flood Hazard. All hydrologic concerns can be addressed via avoidance or through design measures in the final Facility layout. For additional information regarding hydrological resources, see Section 4906-4-08(A)(4).

#### Landowner Considerations

The Applicant will continue to meet with participating landowners to review and finalize the Facility design on their properties. The Applicant will also continue to solicit and consider feedback from adjacent property owners.

#### Vegetation Considerations

Limited forested areas exist within the Project Area. Dixon Run Solar has identified forested areas within the Project Area for avoidance to the greatest extent practicable and plans to utilize portions of existing forested areas as vegetative buffers. Vegetation removal is discussed further in Section 4906-4-08(B).

#### Setbacks Considerations

The Applicant used setbacks as a design goal for the preliminary Facility layout. Setbacks were established based on the Applicant's industry knowledge. Setbacks for the PV panels are as follows:

- 100 feet from non-participating property lines
- 100 feet from the centerlines of public roads
- 300 feet from non-participating receptors

The receptor setback distance was calculated from the nearest PV panel array to a point placed on the approximate geographic center of the primary structure based on aerial imagery.

#### Wetland and Stream Considerations

A wetland and waterbody delineation was conducted of the Project Area, and Facility components were sited to minimize and avoid potential impacts to these resources to the greatest extent practicable. For additional information on estimated wetland and stream impacts, see Section 4906-4-08(B)(2)(a).

#### (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.*

The public information meeting was held on July 22, 2021. Questions received during the public information meeting were focused on topics such as visual impacts, construction, Project location, air quality, interconnection, jobs, and relationships with local municipalities. No written comments were received at the public information meeting.



## 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, the District of Columbia, and all or parts of 12 other states. The interconnection process includes completion of studies by PJM that determine the transmission upgrades required for a project to interconnect to the PJM grid reliably. These studies are completed in a series. The Feasibility Study, the System Impact Study, and the Facilities Study are designed, respectively, 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 submission of the Feasibility Study and the System Impact Study with the Application.

The Facility will interconnect to the existing AEP Rio – Lick 138 kV section of the Addison – Lick 138 kV circuit, which runs diagonally from northwest to southeast of the Project. To accommodate the interconnection, a new 138 kV gen-tie line and AEP switching station will be constructed. The final design of the POI is dependent on the Facilities Study and interconnection agreement between Dixon Run Solar and AEP. The POI, Feasibility Study and System Impact Study are included in this Application submittal.

### (B) INFORMATION ON INTERCONNECTION OF THE FACILITY TO THE REGIONAL ELECTRIC POWER GRID

*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 two PJM queue position related to the Facility, numbers AC1-188 and AF2-048, named Rio – Lick 138 kV. The queue dates are October 31, 2016 and December 19, 2019, respectively, and are both for 70 MW of energy and 46.6 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.

**Table 05-1. PJM Queue Positions**

<b>Queue Number</b>	<b>Queue Date</b>	<b>Maximum Facility Output (MWac)</b>	<b>Capacity Interconnection Rights (MW)</b>
AC1-188	10/31/2016	70	46.6
AF2-048	12/19/2019	70	46.6

(2) System Studies on Generation Interconnection Request

*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 Feasibility Studies and System Impact Studies are complete for both queue positions, and the Facilities Studies are underway. The completed PJM interconnection studies are included as Exhibit F to this Application. An Interconnection Services Agreement will be executed upon completion of the Facilities Studies which is anticipated in fourth quarter of 2021.

**(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 will be located within public road rights-of-way (ROWS) where the collection line route crosses Luther Jones Road from one participating parcel to another. The purchase option agreements between the Applicant (or its affiliates) 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. Upon issuance of the Certificate, ownership of parcels within the Project Area, including parcel(s) purchased to accommodate the Facility substation, gen-tie line, and POI AEP switching station, will be transferred from the current landowner to the Applicant or its affiliates, as outlined in the purchase option agreement. All components of the Facility will be located entirely on land owned by the Applicant at the time of construction.

**(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 confidential version of the Socioeconomic Report (Exhibit C), filed under seal with this Application. As described in section 4906-4-04 of this Application, 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 (USDOE) 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<sub>AC</sub> (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<sub>AC</sub> (Bolinger, Seel, & Robson, 2019). These costs are lower than the average cost estimated for this Facility, which could be attributed to locational and system size differences. The estimated cost of the Facility is not anticipated to be substantially different from other Facilities completed by 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 confidential version of 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 confidential version of the Socioeconomic Report (Exhibit C), 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.*

The Berkeley Laboratory has compiled O&M cost data for 48 installed utility-scale solar power projects in the United States, totaling 900 MW<sub>AC</sub> of capacity, with commercial operation dates of 2011 through 2018. In general, although there is wide variation in the data, facilities installed more recently have shown lower O&M costs than those installed longer ago. Specifically, capacity-weighted average O&M costs for projects constructed in 2011 were approximately \$32/kW<sub>AC</sub>year. The O&M costs dropped to around \$16/kW<sub>AC</sub>year for projects installed in 2015, and slightly increased to \$19/kW<sub>AC</sub>year for projects installed in the 2018 (Bolinger, Seel, & Robson, 2019).

O&M costs for the Facility are anticipated to be lower than the average costs compiled by the Berkeley Laboratory. The O&M costs for the Facility are not anticipated to be significantly different from other facilities the Applicant operates. More information on the estimated O&M costs for the Facility is included in the confidential version of the Socioeconomic Report (Exhibit C), 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 itemized in the Socioeconomic Report will be subject to real and inflationary increases. Therefore, these costs are expected to increase with inflation after the first two years. Additional details regarding the net present value of O&M costs are included in the confidential version of the Socioeconomic Report (Exhibit C), filed under seal with this Application. As alternative project areas and facilities were not considered in this Application, the O&M cost information in the Socioeconomic Report 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.*

Monthly delay costs are dependent on many factors. If the delay were to occur during the permitting process, 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 days and those associated with idle crews and equipment.

Either scenario could also result in penalties associated with the failure to meet a delivery deadline under a potential Power Purchase Agreement. Significant losses would also be incurred if the delays prevented the Facility from meeting deadlines 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. Estimates of the cost of delays are provided in the confidential version of the Socioeconomic Report (Exhibit C), 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 C). Construction and operation of the proposed Facility are anticipated to provide 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.

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. To quantify the local economic impacts of constructing and operating the Facility, the Photovoltaics Job and Economic Development Impact (JEDI) model (version PV05.20.21) was used, which was created by the NREL, a branch of USDOE. See the Socioeconomic Report (Exhibit C) for a description of inputs, impacts, and indicators used in the JEDI model.

Operation of the Facility will result in increased revenue to local taxing jurisdictions, likely through a PILOT agreement. Construction of the Facility will also result in the direct payment to local landowners in association with the purchase of land to host Facility components. These payments will offer direct benefits to landowners and have a positive impact on the region, to the extent that landowners will spend their revenue locally. PILOT program revenue and landowner payments are further discussed in the Socioeconomic Report (Exhibit C).

(1) Construction and Operation Payroll

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

The results of the socioeconomic analysis are 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**

<b>Construction</b>	<b>Jobs (Full-Time Equivalent)</b>	<b>Earnings (Millions)</b>	<b>Output (Millions)</b>
Project Development and Onsite Labor Total	438.2	\$45.0	\$45.5
<i>Construction Labor</i>	<i>420.7</i>	<i>\$43.9</i>	-
<i>Construction Related Services</i>	<i>17.5</i>	<i>\$1.0</i>	-
Module & Supply Chain Impacts	91.5	\$5.9	\$18.0
Induced Impacts	150.9	\$59.1	\$26.0
<b>Total Construction Impacts</b>	<b>680.6</b>	<b>\$59.1</b>	<b>\$89.5</b>
<b>Annual Operation</b>	<b>Jobs (Full-Time Equivalent)</b>	<b>Earnings (Millions)</b>	<b>Output (Millions)</b>
Onsite Labor Impacts	5.4	\$0.3	\$0.3
Local Revenue & Supply Chain Impacts	1.6	\$0.1	\$0.3
Induced Impacts	4.5	\$0.3	\$0.9
<b>Total Operation Impacts</b>	<b>11.5</b>	<b>\$0.6</b>	<b>\$1.4</b>

Source: NREL JEDI model (version PV05.20.21) Cost values verified by the Applicant in August 2021

Notes: Earnings and Output values are millions of dollars in 2021 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 upon JEDI model calculations, it is anticipated that construction of the Facility could directly generate an estimated 438.2 onsite construction and project development full-time equivalent (FTE) jobs. Module and supply chain industries could in turn generate an additional 91.5 FTE jobs,

and Facility construction could induce demand for 150.9 FTE jobs through the spending of additional household income. The total impact of 680.6 new FTE jobs could result in up to approximately \$59.1 million of earnings, assuming a 2022 construction start. The value of economic output associated with construction of the Facility, including supply chain and induced impacts, is estimated to total \$89.5 million.

It is anticipated that operation of the Facility could generate an estimated 11.5 direct FTE jobs with estimated annual earnings of \$0.3 million. Supply chain and induced impacts are estimated to generate an additional 1.6 and 4.5 jobs respectively, for a total of 6.1 indirect FTE jobs with a total annual economic output of \$0.4 million during operation of the Facility. Further details on construction and operation payroll may be found in the confidential version of the Socioeconomic Report, filed under seal with this Application.

(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 that will be created by the Facility. General skilled labor is expected to be available in Ohio to serve the Facility's basic infrastructure and site development needs. Specialized labor will be required for the installation of some Facility components, and training will be provided as needed to accommodate some of these positions.

(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 tax districts, including local school districts and other taxing districts in the area. For the purpose of calculating the economic impact of the Project, the Applicant assumes that a PILOT agreement will be executed under the Qualified Energy Project program enumerated in Ohio Revised Code (ORC)



5727.25. An average annual payment of \$7,000/MW was assumed for this analysis. Based on the Facility capacity of 140 MW, the PILOT amount would total approximately \$980,000 annually for the lifespan of the Facility. The PILOT revenue would be apportioned by Jackson County. The Facility is expected to achieve commercial operations by the fourth quarter of 2023 and have a lifespan of approximately 40 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. The value of economic output associated with Facility construction is estimated in the Socioeconomic Report. 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 such changes will not alter the Project Area, will not require the purchase of additional properties, and will not impact new property owners or significantly alter potential 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.*

Prior to beginning the formal state permitting process, the Applicant communicated with Project Area neighbors, local government entities, and community organizations to inform and receive feedback about the Project. A listing of local government and community outreach activities is included in the Public Information Program (Exhibit G). Information has also been shared through

direct landowner mailings and a Project website (dixonrunsolar.com), as well as via an in person public information meeting held on July, 22 2021 in Jackson, Ohio. The Applicant will continue to make 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, as required in the OPSB rules.

Dixon Run has established a phone number which is posted to their website dixonrunsolar.com to be used for asking questions or registering complaints about the Project. Dixon Run will register all complaints in a logbook and will respond to all complaints within two business days in order to gain additional information about the concern. Within 30 days of the complaint being received, Dixon Run will initiate reasonable and necessary action to resolve legitimate interference or disturbance that is a direct result of the Facility. If a mutually agreeable remedy cannot be reached, Dixon Run will provide a summary of the complaint and its proposed resolution so the complaining party may bring the complaint to the OPSB. Dixon will provide quarterly reports to the Staff of the OPSB about complaints received (April 15th, July 15th, October 15th, and January 15th). Pre-construction and pre-operation notification letters will be distributed at least seven days prior to the commencement of construction or operation. Further details about the complaint resolution process, as well as drafts of the pre-construction and pre-operation notifications, are included in the Complaint Resolution Plan (Exhibit G).

(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.*

Throughout the construction, operation, and decommissioning of the 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 \$25,000,000 per occurrence and \$25,000,000 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 the Traffic Control Plan, both prepared by Hull & Associates, Inc. (Hull) and attached as Exhibit H. The Route Evaluation Study identifies delivery vehicles and probable delivery routes; evaluates existing conditions of roadways, bridges, and culverts; identifies potential impacts to transportation infrastructure; proposes mitigation measures for potential impacts; and lists transportation permits that could be 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, and because limited oversized vehicles will be required for Facility construction. Traffic will primarily consist of vehicles such as flatbed or tractor-trailer equipment delivery vehicles, multi-axle dump trucks, and conventional pickup trucks or automobiles for workers. Most vehicles will be of standard weight and dimensions. However, some overweight/oversize vehicles may be required for the delivery of the control house and main power transformer for the Facility substation and AEP POI switching station. No delays to local traffic should be experienced except where the delivery vehicles may need to travel on the approximately 2,000-foot-long section of Luther Jones Road that is less than two lanes wide. When delivery vehicles are travelling on this narrow roadway, or when there is an occasional oversized vehicle, traffic control will be utilized to manage local traffic. Deliveries of equipment will generally occur during regular business hours. For additional information regarding equipment and deliveries, refer to sections 2.0 and 4.0 of the Route Evaluation Study and section 8.0 of the Traffic Control Plan in Exhibit H.

#### 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 west by way of US 35 to SR 327, which is adjacent to the western boundary of the Project Area. Once at the Project Area, local roads and new private access

pathways will be used to deliver equipment and materials. For additional information regarding delivery routes, refer to section 2.0 of the Route Evaluation Study in Exhibit H. A map of probable delivery routes is included in Appendix A of Exhibit H.

### Road Conditions

Hull obtained information from the Ohio Department of Transportation (ODOT) and the Jackson County Engineer and conducted a field analysis of the existing conditions of roads, bridges, and culverts along potential transportation routes serving the Project Area. Roadway conditions along potential transportation routes to the Project Area were categorized as good to poor. Two bridges were identified along potential transportation routes to the Project Area. There were no posted load restrictions on the probable routes in the Project Area, and the Jackson County Engineer's office confirmed that there are no bridge or road weight restrictions. A summary of pavement conditions and average daily traffic counts is included in section 2.0 of the Route Evaluation Study. Photographs documenting the current conditions of roadways along likely delivery routes are included in Appendix B of Exhibit H.

No permanent overhead structures that would restrict clearance for oversized vehicles were identified along potential transportation routes to the Project Area. For overhead cables, the national standard for minimum clearance over roads is 15.5 feet, and cables cross over the studied routes in numerous locations. The height of the cables was not measured; however, there were no overhead cables that appeared to be obstructive. In the event an overhead cable presents an obstruction, utility providers can temporarily or permanently raise the cables and/or move the poles. Therefore, overhead cables are not considered a limiting factor for roadway use.

There was one caution sign posted near the Project Area along Dixon Run Road. The sign "Road May Flood" was posted approximately 0.6 mile north of the US 35 intersection. Additional details regarding road conditions are identified in Section 2.0 of the Route Evaluation Study in Exhibit H.

### Impacts and Mitigation

Based on traffic counts and site observations, traffic volume is considered low in the Project Area. Hull identified schools in the area to determine potential impacts to school traffic. Due to the low residential density in the area, impacts to school related traffic are expected to be minimal. Hull

also assessed agricultural operations in the area and determined that heavier use of roadways by local farmers during planting and harvest seasons will occur. Traffic will increase during construction of the Project; however, traffic disruptions will be limited because there are no planned road closings, most deliveries will occur during normal business hours, and equipment delivery will require minimal oversize loads. The Traffic Control Plan included in Exhibit H describes procedures used to manage traffic during construction. Prior to construction, the Traffic Control Plan will be updated with the final delivery routes and more detailed information that describes the procedures that will be used to manage traffic during construction. This plan will be shared with local law enforcement, schools, and nearby landowners.

During operation and maintenance of the Facility, there will be very little increase in traffic, as solar electric generation facilities require minimal staffing to accommodate daily operations and maintenance. There will be occasional maintenance vehicles, but additional traffic will be negligible.

#### Roadway Impacts and Mitigation

Prior to construction, the contractor will obtain all necessary permits from ODOT and the County Engineer. Per the requirements of the Qualified Energy Project PILOT program, the Applicant plans to enter into a Road Use and Maintenance Agreement with the Jackson County Engineer. This agreement will include information such as procedures for road repairs, temporary road or lane closures, road access restrictions, and traffic control. All of the local roads can be used for equipment delivery and construction traffic in their current conditions. However, several roads will likely require repair after construction due to their current poor conditions (see section 2.0 of Exhibit H). The mitigation measures, as outlined in section 3.3 of the Route Evaluation Study (Exhibit H) will be implemented to avoid or minimize transportation-related impacts and to provide long-term improvement to the local road system.

#### (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 the necessary permits from ODOT and the Jackson County Engineer. The majority of vehicles used for the construction and operation of the Facility are expected to meet current standard dimensions and weight (see Table 2 of the Route Evaluation Study, Exhibit H). Therefore, few transportation-related permits are anticipated. Special Hauling Permits may be required for vehicles that will transport the control house and main power transformer for the Facility substation and AEP POI switching station. Each oversized vehicle must receive an individual Special Hauling Permit from the ODOT Central Office for travel on state routes, 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 and township roads, and crossings of roads and county-maintained ditches by overhead collection lines. These permits will be obtained from the Jackson County Engineer or ODOT, as required.

In addition to coordinating with state and local authorities to obtain transportation permits, the Applicant will also coordinate with applicable authorities regarding necessary traffic control during the construction of the Facility, as needed. A Traffic Control Plan is included in Exhibit H. The plan will be finalized upon completion 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 E 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 substation. Some components may remain in place if other agreements necessitate its continued use. Additionally, landowner agreements may specify other components that can remain in place, such as access roads. Equipment that is removed from the site will be salvaged or recycled to the greatest extent practicable. Other waste material 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 as necessary and decompacted 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 12 to 18 months. It is anticipated that most Facility components will be removed within 12 months, but restoration activities may be necessary for a longer period. This is because restoration activities are dependent on weather conditions and site-specific factors. Sometimes these conditions may lead to ongoing re-vegetation and restoration following the removal of the Facility components for a period extending up to approximately 18 months.

Taking into account the salvage value of the panels and other equipment, decommissioning costs are provided in Exhibit E. This estimate will be revised and provided to the OSPB within 60 days prior to the commencement of commercial operations. The Applicant will post a performance bond with the OPSB as the obligee based on the net costs of decommissioning as calculated prior to commercial operation if the net cost of decommissioning is positive taking into account the salvage value of the components. Following commencement of commercial operation, the Applicant will reevaluate decommissioning costs through an Ohio-licensed engineering firm or professional engineer every five years thereafter during the life of the Project. If this evaluation shows that the net decommissioning cost for the Project is positive or has increased, the Applicant will post or increase the amount of the performance bond accordingly.

**(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.*

Best management practices (BMPs) will be utilized to minimize dust generated by construction activities. Exposed/disturbed areas will be minimized at any one time to the extent practicable and restored/stabilized per the requirements of Ohio Environmental Protection Agency (EPA) Permit No. OHC000005. During construction activities, water or a dust suppressant such as calcium carbonate will be applied on as needed basis to suppress dust on Facility access pathways and on unpaved transportation routes. 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.

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.*

Several waterbodies, wetlands, and streams were identified within the Project Area. Generally, the wetlands within the Project Area are lower quality wetlands which may have been previously disturbed by mining and/or agricultural activities that have traditionally occurred in the Project Area. Existing pre-construction conditions of area waterbodies are discussed in greater detail 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 Wetland Delineation and Habitat Assessment (Exhibit I):

- 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);
- 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. The Facility will add only small areas of impervious surface in the form of access pathways, gravel pads to accommodate the AEP switching station and substation, which will be dispersed throughout the Project Area. These will have a negligible effect on surface water runoff and groundwater recharge. Therefore, measurable impacts on the quality of surrounding water resources are not anticipated. Since there are no bodies of water likely to be affected 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, no waterbodies will be significantly affected by the proposed Facility. Therefore, 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 water or waste into streams or 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 water. 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), measurable impacts on the quality of surrounding water resources are not anticipated. Since 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.*

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 so rain can runoff the panel and fall onto the underlying pervious surface. Construction of the proposed Facility will have minimal, localized impacts to groundwater. Soil compaction from the use of construction equipment could limit the efficiency of surface water infiltration to groundwater. When soils are compressed, the pore spaces within the soil are decreased, which reduces water percolation. Seeding all areas aside from access pathways will assist in reducing construction runoff while increasing infiltration and combatting compaction. Construction of access pathways will result in minor increases in storm water runoff that otherwise would have infiltrated into the ground at the road locations.

(c) *Mitigation*

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

As described above, construction of the proposed Facility is not anticipated to have any significant impacts on water quality. However, the following mitigation measures will be taken to ensure that impacts to groundwater, surface waters, and wetlands are avoided or minimized to the maximum extent practicable during Facility construction.

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 use the final Facility layout to develop a 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 the implementation of BMPs that reduce potential pollutants in storm water discharges during construction.

Typical BMPs that will be implemented during Project construction are illustrated in Exhibit J. These controls were designed after evaluating topography and flow direction, and locations of soil disturbing activities. BMPs protect topsoil and adjacent aquatic resources and minimize soil erosion from erosion 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 treatment of stockpiles to control fugitive dust. Other BMPs may be implemented, as necessary, to comply with OHC000005. Project specific BMPs will be developed upon receipt of the final Site Plan.

Facility components were sited to avoid temporary and permanent impacts to aquatic resources to the maximum extent practicable. Permanent impacts to waterbody features from access pathway crossings have been minimized to the extent practicable and will be permitted in accordance with state and federal regulations, as applicable. 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 water bodies. 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. Since 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. Therefore, this section is not applicable.

(c) *NPDES Permit Schedule*

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

As mentioned above, 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

No permanent sewage or solid waste facilities will be installed on site. During construction, temporary portable toilets will be utilized by the construction workers on site and will be removed after construction.

(ii) Blow-down

This section is not applicable, as PV panels do not use 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

The main power transformer includes an oil/water separator. The oil/water separator system is designed to contain the transformer oil in case of equipment failure.

(vii) Run-off from Soil and Other Surfaces

Following completion of construction, temporarily impacted areas will be stabilized and 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.*

Only very limited quantities of water may be used for the occasional cleaning of solar panels. Dixon Run Solar does not expect the cleaning of panels to occur unless there is a severe drought.

Only a tenth of an inch of precipitation is necessary to remove soiling on the panels (such as dust or bird droppings). Therefore, Dixon Run Solar will conserve water by allowing the natural cleaning of panels through rainfall to the greatest extent practicable.

Overall, there are water conservation benefits of solar energy, as compared to conventional coal and nuclear power. 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.*

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

**(b) *Plans for Waste Removal***

*Describe any plans to deal with such wastes.*

Waste will be handled, managed, and disposed of in accordance with federal, state, and local regulations. Materials will be recycled when practicable, and the remainder of the solid waste will be disposed of at a licensed area landfill, or as required by regulation.

**(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.*

Facility construction will generate some solid waste, primarily plastic, wood, cardboard, and metal packing/packaging materials, construction scrap, and general refuse. A rough estimate of the total

amount of solid waste that will be generated during construction is approximately 9,450 cubic yards.

(b) *Methods for Storage and Disposal of Construction Waste*

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

Construction waste will be collected from PV panel installation sites and other Facility work areas and disposed of in dumpsters located at the laydown yards. A private contractor will empty the dumpsters on an as needed basis and dispose of the refuse at a licensed solid waste disposal facility. Waste materials will be recycled when possible. Used oil, used antifreeze, and universal waste, if any, will be handled, managed, and disposed of 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.*

For the most part, Facility operations will not result in the significant generation of debris or solid waste. Waste generated from operation and maintenance activities could include wood, cardboard, metal packing/packaging materials, used oil, general refuse, universal waste, and used antifreeze.

(b) *Methods for Storage and Disposal of Waste*

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

Waste generated from operations and maintenance activities will be discarded using local solid waste disposal and recycling services. Used oil, used antifreeze, 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 the Esri ArcGIS World Topographic Map at a 1:24,000 scale. One public airport, James A. Rhodes Airport, is located 2.2 miles southwest of the Project Area. This airport is open to the public and provides aircraft charters, corporate flights, and flight training (Ohio Department of Transportation, 2021). No other public or private airports, helicopter pads, or landing strips are located within 5 miles of the Project Area.

**(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 alterations must notify the Administrator of the FAA:

- Any construction or alteration exceeding 200 feet above ground level
- Any construction or alteration
  - within 20,000 feet 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 feet.
  - within 10,000 feet 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 feet.

- within 5,000 feet 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

Since the proposed Facility does not meet any of the above criteria, the FAA does not need to be notified.

In addition to obstruction, reflectivity or glare is a potential concern from the FAA regarding solar facilities. Glare from solar panels has the ability 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). Based on the FAA Interim Policy described above, glare studies typically include airports within 2 miles of the Facility; however, no airports were identified within 2 miles of the Facility. In order to evaluate the potential impacts of glare, the Applicant contracted with EDR to conduct a Glare Analysis (Exhibit K). EDR analyzed potential glare at residences and travel routes within 1,500 feet of the Facility.. EDR analyzed potential glare effects using ForgeSolar, a commercial software based on the Solar Glare Hazard Analysis Tool (SGHAT) that was developed by the USDOE’s Sandia National Laboratories. Results of the analysis determined that glare has the potential to be received at seven non-participating residences and portions of three public roadways located adjacent to the Facility Site. The potential glare impacts to these residences are anticipated to be generally minimal and will be limited in duration and intensity. For more discussion on glare impacts associated with the Facility see Exhibit K. No glare is anticipated to be received at any airport or final approach path, meaning that the Facility design

meets FAA standards for aircraft final approach and glare impacts from the Facility are not anticipated.

**(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 prevent unauthorized entrance to the Project Area, safety measures will be employed during construction and operation. Signage will be utilized around the Project Area, warning of the potential dangers within the site and discouraging entrance by the public. Temporary, highly visible mesh fencing will be used around staging and storage areas. Personnel exposed to public vehicular traffic shall be provided with and shall wear warning vests or other suitable reflective or high-visibility garments. During operation, security at the Facility will be maintained by a combination of perimeter security fencing, controlled access gates, electronic security systems, and, potentially, remote monitoring.

Per the Complaint Resolution Plan (Exhibit G), the complaint resolution form 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]), including separation and clearance distances.

(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.*

Exhibit A includes specifications for the representative modules, inverters, and trackers. The safety instruction/installation manual for the selected panel will be provided to OPSB Staff prior to Project construction. All Project equipment is expected to be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings. Additionally, no electrical interference is expected from the existing overhead transmission line to any of the Project equipment. Setbacks are discussed in section 4906-4-08(C)(2) of this Application.

The panel manufacturers being considered by the Applicant are Tier 1 manufacturers with complete Toxicity Characteristic Leaching Procedure (TCLP) testing as part of the product development process and have determined that all existing products pass TCLP testing. In other words, none of the tested products resulted in leachate concentrations above the EPA's regulatory thresholds for any hazardous materials, including arsenic, barium, cadmium, chromium, lead, mercury, selenium, or silver. Since the panels are fully encapsulated, unlikely to shatter, and not expected to leach hazardous materials into the environment, the risk to public health and the environment from the contents of the PV panels will be minimal.

(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, a 6-foot-tall chain-link fence with an additional 1 foot of barbed wire strand will be constructed 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 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. Lighting that may be switch or motion activated will be implemented at main Facility entrance, and substation location for additional safety and security. Security cameras, and potentially remote monitoring, will be implemented for 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 Site Safety Plan (SSP) that identifies procedures to address circumstances such as medical emergencies, fires, or spills is included as Exhibit Q. The Applicant will coordinate with first responders, including the Jackson County Emergency Management Agency, prior to construction to familiarize them with the SSP and the general layout of the Facility.

As noted in the Traffic Control Plan, a map denoting the location of safety muster points, temporary 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 Facility construction and will also be available on site at O&M trailers during Facility 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 communications with emergency responders and the Jackson County Emergency Management Agency regarding the SSP 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 examines current background sound levels, modeled results of sound levels from the Facility on nearby residences, and sound levels from construction activities. The Noise Assessment is included as Exhibit L 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 L) identifies sound levels associated with commonly used construction equipment for solar facilities, assuming no attenuation from trees or terrain. This table conservatively identifies the maximum equipment sound level at 15 meters (50 feet), which can be applied to Facility construction activities near property boundaries, and at 132 meters (435 feet), the approximate closest distance between a non-participating receptor and a solar array where racking and piling will take place, based on the preliminary Facility layout.

The loudest sound level for equipment that would typically be used at 50 feet from property boundaries is approximately 87 A-weighted decibels (dBA). The loudest sound level for typical equipment at 435 feet from non-participating sensitive receptors is approximately 68 dBA. In addition, these nearby activities will be short in duration, and most construction will be set back significantly from property boundaries and sensitive receptors.

(i) Blasting activities

No blasting activities are anticipated for the construction or operation of the Facility.

(ii) Operation of earth moving equipment

Earth moving equipment is not anticipated to exceed 66 dBA at 132 meters (435 feet), the approximate distance from the nearest solar array to the nearest non-participating sensitive receptors. Equipment could occasionally operate nearer to sensitive receptors but should generally be limited to equipment travel between work areas or grading activities for short durations of time. As panel locations are anticipated to be set back at least 300 feet from non-participating sensitive receptors, and earth moving in any one area is completed quickly, noise impacts from earth moving equipment are anticipated to be negligible.

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

Pile driving is not anticipated to exceed 84 dBA at 132 meters (435 feet), the approximate distance from the nearest solar panel to sensitive receptors. As panel locations are set back at least 300 feet from residences, and pile driving activities in any one area are completed quickly, noise impacts from pile driving are anticipated to be negligible.

HDD equipment may be utilized as needed; sound levels emitted by HDD equipment would be 87 dBA at 15 meters (50 feet) and 68 dBA at 132 meters (435 feet). Sound disturbance due to HDD activities during construction is expected to be minimal and will occur between 7:00 a.m. and 7:00 p.m. or dusk, whichever is later.

(iv) Erection of structures

Erection of structures such as PV panels, inverters, and substation will use equipment such as pickup trucks, man lifts, cranes, and flatbed trucks. None of these are anticipated to exceed 66 dBA at 132 meters (435 feet), the approximate distance from the nearest solar panel to the nearest non-participating sensitive receptors. As panels, inverters, and the substation are set back at least 300 feet from non-participating sensitive receptors, and structure assembly and construction activities in any one area are completed in a relatively short duration, noise impacts are anticipated to be negligible.

(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 delivery trucks 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 deliveries are anticipated to be negligible.

(vi) Installation of equipment

As noted above, the equipment utilized for the installation of the Facility primarily will be set back at least 300 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 negligible.

(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. Model inputs used representative inverters and associated transformers. The substation transformer was modeled with cooling fans operating. The modelling conservatively assumed operation of all equipment during both daytime and nighttime, as the substation and inverters could operate at night if the Facility is used to manage reactive power for transmission grid infrastructure.

Sound modeling indicates that the highest sound exposure from the Facility at non-participating residences during the day is 22 dBA. During the day, the substation transformer is modeled at stage two cooling (ONAF), which would involve cooling fans operating. At night, the substation transformer would operate under ONAN cooling, which does not involve cooling fan operation, the projected sound level at non-participating residences is 22 dBA or less at ground level exposures and 24 dBA or less at upper story exposures. The highest church sound exposure is modeled to be 19 dBA during the daytime. Churches are not anticipated to be occupied at night; however, the nighttime exposures are calculated to be 17 dBA or less at ground level and 19 dBA or less at upper stories. The maximum projected sound levels are equal to or less than the daytime and nighttime design thresholds (measured daytime and nighttime ambient sound level plus 5 dB). A map of the projected daytime sound levels throughout the Project Area, including at the Project boundary, is provided in Figure 11, and the projected nighttime sound levels are shown in Figure 12 of Exhibit L.

The highest projected sound level at the Project boundary is 31 dBA for both the daytime and nighttime scenarios. It occurs along the southeastern property line of the northern section of the Project Area.

(ii) Processing equipment

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

(iii) 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 negligible.

(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.*

Noise-sensitive receptors out to the 20 dBA modeled sound level are mapped with modeled daytime and nighttime sound level data on Figures 11 and 12 of the Noise Assessment (Exhibit L). Higher sound levels are localized to areas directly adjacent to Facility equipment and noise from the Facility beyond the area shown in the figure would be well below existing background sound levels. Noise-sensitive receptors within 1 mile of the Facility are included on Figure 08-1 and Appendix C to the Noise Assessment. The highest modelled sound level from noise generating equipment at a non-participating sensitive receptor was determined to be 24 dBA during both daytime and nighttime conditions.

(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 between the hours of 7:00 a.m. and 7:00 p.m. or until dusk when sunset occurs after 7:00 p.m. Impact pile driving may

occur between 7:00 a.m. and 7:00 p.m. if the noise impact at non-participating receptors is not greater than daytime ambient  $L_{eq}$  plus 10 dBA. Extended pile driving hours will increase efficiency and reduce the total number of days necessary for pile driving activities. As most construction occurs during typical working hours, noise impacts are anticipated to be minimal. Facility setbacks assist in the mitigation of noise impacts during construction, as installation will mostly be at least 300 feet from non-participating sensitive receptors. Equipment will be kept in good working conditions to minimize excess noise emissions.

Setbacks will also reduce sound impacts during operation. In addition, representative equipment was modeled and is not anticipated to exceed 5 dBA above the Project Area average daytime and nighttime ambient  $L_{eq}$  sound levels at non-participating sensitive receptors. Routine maintenance of the Facility, such as mowing, generally 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 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 of different soundscapes around the Project Area (Section 4.0 of Exhibit L). Table 1 of the Noise Assessment includes the equivalent continuous average ( $L_{eq}$ ), upper 10<sup>th</sup> percentile ( $L_{10}$ ), median ( $L_{50}$ ), and lower 10<sup>th</sup> percentile ( $L_{90}$ ) background noise levels. The average nighttime  $L_{eq}$  across the Project Area is 42 dBA and the average daytime  $L_{eq}$  across the Project Area is 43 dBA.

(4) Water Impacts

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

This section is based on a desktop review of available geology and hydrogeology information for the proposed Facility, prepared by Hull & Associates, Inc. (Hull) and attached as Exhibit M.

(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.*

No impacts to public or private water supplies are anticipated. The principal groundwater sources for the Project Area are bedrock, consisting of layers of sandstone, shale, fireclay, coal, and limestone, with an average yield for drilled wells of approximately 2 gallons per minute. The Symmes Creek Alluvial Aquifer is located in the southwest corner of the Project Area and the Raccoon Creek Alluvial Aquifer is located in a small portion of the west side of the Project Area.

The presence of Source Water Protection Areas (SWPAs) for public water systems within the Project Area was also evaluated. SWPAs are areas defined and approved by the Ohio EPA for the purpose of protecting drinking water resources. The SWPA map provided by Ohio EPA, Division of Drinking and Ground Waters does not show any SWPAs within or in proximity to the Project Area (see Attachment A in Exhibit M). The closest SWPAs are the Wellston City public water supply, a groundwater SWPA located approximately 5.7 miles north of the Project Area, and the City of Jackson community system, a surface water SWPA located approximately 6.5 miles northwest of the Project Area.

According to the Geology and Hydrogeology Report provided by Hull, there are no water wells recorded by ODNR in the Project Area or within a 500-foot buffer. Hull conducted a well survey of landowners within the Project Area, which confirmed a lack of water wells within 500 feet of the Project Area.

The Project is a solar facility with no wastewater generation. There will be no hazardous substances and/or petroleum underlying or emanating from the Project Area, and no water pollution control equipment or treatment will be required. Additionally, construction storm water impacts will be minimal and short term, and storm water BMPs will be implemented to further reduce impacts. Therefore, construction and operation of the Facility will not impact groundwater or surface waters that serve as the source for drinking water supplies. Due to the lack of existing water wells and SWPAs, and the nature of the Facility, no impacts to public or private water supplies are 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.*

The Facility will not discharge water or waste into streams or waterbodies, and no water pollution control equipment or treatment will be required. 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.*

Figure 4 in Exhibit M includes the unconsolidated aquifers in the Project Area. There are no known water wells or SWPAs within the Project Area or a 500-foot buffer. The Facility is not anticipated to have any effects on aquifers within the Project Area.

(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.*

No SWPAs were identified in the vicinity of the Project Area by the Ohio EPA (see Attachment A in Exhibit M). There are no local plans protecting local water sources for the area near the Facility (Ohio EPA, 2021a; Ohio EPA, 2021b). As a result, this section is not applicable.

(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 Hydrogeology Report, provided by Hull, identified a 100-year floodplain area along in the northeast corner of the Project Area along Keystone Furnace Road (see Figure 3 in Exhibit M). A 100-year floodplain is an area where there is a one percent chance that an extreme hydrologic event could cause a flood in any given year. All areas within the Project Area outside the 100-year floodplain are designated by FEMA as an Area of Minimal Flood Hazard. The Applicant intends to avoid the 100-year flood zone in its final Facility design, so no Facility components will be subject to flooding hazard and the Facility will have minimal impact on surface water drainage during flood events.

(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:*

The following geological features are mapped in the Geology and Hydrogeology Report in Exhibit M: bedrock geology, bedrock topography, and ground surface topographic contours (Figure 1); structural and seismic features (Figure 2); existing oil and gas wells (Figure 4); and underground and surface mines (Figure 6).

Based on injection well data from ODNR, the closest Class II injection well is approximately 16 miles northeast of the Project Area; as a result, none are illustrated in the geological features maps.

(a) *Geologic Suitability*

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

CBC Engineers and Associates, Ltd. (CBC) completed a Geotechnical Engineering Investigation of the Project Area (Exhibit D). The report provided a geotechnical overview and soil test boring results for the Project Area, as well as discussion and recommendations on equipment foundations, site preparation, slope considerations, construction dewatering, soil swell potential, liquefaction, drainage, and buried utilities. A total of 20 borings were made within the Project Area, as shown on Figure 2 in Exhibit D. Geotechnical considerations noted in the report can be addressed via standard engineering techniques and methods. Recommendations of the report will be considered throughout the engineering and procurement process to ensure selection and construction techniques will be implemented to support the viability of the Facility throughout its operational life.

Free groundwater was not encountered during soil test bore drilling or immediately afterwards. However, groundwater levels may vary seasonally, so dewatering may be required during excavations. Because most construction activities will not require significant excavations, dewatering activities are anticipated to be minimal. Any dewatering activities onsite would utilize BMPs such as filter bags or straw bale structures to better diffuse water. Dewatering would be directed to a well vegetated upland area, wherever possible, and will be conducted in accordance with all requirements of Ohio EPA Permit No. OHC000005.

Online karst mapping maintained by ODNR Division of Geological Survey does not indicate any identified or suspected karst features in the Project Area or in Jackson County (ODNR Division of Geological Survey, 2021).

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). Historically, there has only been one earthquake epicenter in Jackson County, a magnitude 2.6 earthquake recorded approximately 15 miles northwest of the Project Area in 2015. Additional low magnitude earthquakes were recorded in adjacent counties: a magnitude 3.3 earthquake from 1975, recorded approximately 4.5 miles northeast of the Project Area in Vinton County, and a magnitude 2.6 earthquake from 2016, recorded approximately 6.3 miles southeast of the Project Area in Gallia County (USGS, 2021).

(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.*

All soils within the Project Area are suitable for grading, compaction, and drainage. According to the on-site soil test borings conducted as part of the Geotechnical Engineering Investigation (Exhibit D), the Project Area is generally overlain by 4-7 inches of topsoil. Subsurface soils encountered in the Project Area consist predominantly of mixed silty clay with varying amounts of sand, gravel, and rock fragments extending to a maximum explored depth of 15 feet, based on the boring log data. Laboratory testing was conducted to determine soil physical characteristics, natural moisture content, soil resistivity, soil pH, sulfate ion content, chloride ion content, and resistivity. Results for these tests can be found as attachments in Exhibit D, Section III.

The site was previously surface mined and reclaimed with mine spoiling. Soil test results showed that the existing mine spoil have the potential to be moderately to extremely corrosive. The foundation designer will consider this corrosion potential when determining the pile compression/uplift capacities and flexural capacities of the embedded portion of any steel piles or other supporting structures. With the observed rock fragments in the mine spoil material, pile refusal on rock could occur. Therefore, it is recommended that each pile be driven without

interruption for its entire depth. Where driving is interrupted before reaching final penetration, it is recommended that the pile penetration not be considered valid until after at least 12 inches of additional penetration has been obtained upon the resumption of driving. Additional information and recommendations related to pile driving are included in section 4.2.2 of the Geotechnical Engineering Investigation in Exhibit D.

Soils within the Project Area may also be susceptible to frost and frost heave. Piles will be installed to depth that counteracts potential freeze heaving forces. Foundations will also be designed to account for the potential of frost heave during winter months. Additional design considerations can be found in Exhibit D.

Prior to post-construction seeding, decompaction will be applied as needed across the site. Special care will be taken to ensure adequate decompaction in hydric areas. The seed mix will be compatible for use within the solar panel arrays and all operational areas of the Facility.

(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.*

As noted above, the geotechnical evaluation included soil test borings conducted across the Project Area, and the Geotechnical Engineering Investigation (Exhibit D) includes the test boring logs in Section III. Boring closure followed standard procedures and methods and the test bores were backfilled following completion. As noted previously, groundwater was not encountered during drilling. Soil characteristics identified from the geotechnical borings are discussed in 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.

Additional borings would only be conducted if needed to inform very specific engineering considerations. If additional borings are determined to be necessary, the onsite contractor will prepare and follow a procedure similar to that described in Exhibit D 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, and any additional geotechnical boring logs or data will be provided to OPSB Staff.

(6) Wind Velocity

*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 design factors in wind speeds; the minimum design wind load is determined by ASCE standard (7-16) based on the geographical location. ASCE 7-16 minimum design wind load for this Facility is 100 miles per hour (mph). This Facility is considered under Risk Category 1 for wind load design, as it is an unoccupied structure. As shown on Exhibit A, the racking system can withstand a 175-mph wind load and the panels have a wind load of 2,400 pascals.

(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 (Guldberg, 2012, p. iv). Accordingly, the Applicant does not anticipate interference with radio or television reception due to weak electric fields 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 up to 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 lightning mast, which is no higher than the AEP transmission line structures that are adjacent to 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.*

In support of this Application, Hull & Associates, LLC completed on-site ecological surveys and prepared a Wetland Delineation and Habitat Assessment, attached hereto as Exhibit I. The Assessment includes a review of applicable literature and desktop information, summarizes consultations with the ODNR, USFWS, and SHPO, provides results of field studies of the 1,474-acre survey boundary (Field Survey Area), and reports anticipated Facility impacts.

**(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 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 03-1. Figure 08-2 includes the 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**

Undeveloped land is shown in Attachment F, Figure 5 and Attachment A of the Wetland Delineation and Habitat Assessment (Exhibit I). Undeveloped land within the Project Area consists

primarily of hay/pasture and deciduous forest, with small areas of herbaceous land, mixed forest, shrub/scrub land, evergreen forest, and barren land. Of the approximately 2,085 acres within the Project Area, approximately 1,465 acres is undeveloped land. Land use data was derived from the USGS National Land Cover Database and confirmed during field surveys for the Wetland Delineation and Habitat Assessment (Exhibit I). The majority of the Project Area was subject to previous surface mining activity; for more detail on the extent of surface mining in the Project Area, see Figures 9 and 10 of the Phase IA Cultural Resources Survey (Exhibit N).

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

Cooper Hollow Wildlife Area is within 1.3 miles of the Project Area. Wildlife areas, nature preserves, and other conservation areas within 10 miles of the Project Area are depicted on Figure 08-2.

(iv) Surface bodies of water

Several surface bodies of water are within 0.5 mile of the Project Area, including Dickason Run, Flint Run, and their tributaries. A total of 33 wetlands, nine streams, and 22 ponds were identified and delineated within the Project Area (Appendix B, Exhibit I).

(v) Highly erodible soils and steep slopes

Highly erodible soils account for 72% of the soils within the Project Area. Three soil types have slopes greater than 12%. Highly erodible soils and soils with slopes of 12% or greater are shown on Figure 15 of the Wetland Delineation and Habitat Assessment (Exhibit I).

(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 were characterized in the Wetland Delineation and Habitat Assessment (Exhibit I). The Field Survey Area contains 43.31% active pasture, 35.91% forest, 18.25% herbaceous or shrub/scrub land, 1.56% baren land, 0.64% developed land, and only 0.33% wetlands and open water, which are generally low quality. Based on data reviewed, agency consultation, and field reconnaissance, no plant communities of concern were identified within the Field Survey Area or

within the surrounding 1-mile radius. A map of vegetative communities is included as Figure 5 of the Ecological Assessment.

#### Wetland and Stream Delineations

A total of 33 wetlands, nine streams, and 22 ponds were identified and delineated within the Project Area. Ten wetlands and eight streams have been preliminarily determined to be jurisdictional, while the remaining are unlikely to be jurisdictional based on current federal guidelines. Determinations, however, are not considered final until verified by the USACE. Delineated wetlands and streams are shown in Figure 10 of the Wetland Delineation and Habitat Assessment (Exhibit I).

Of the 33 wetlands, ten were identified as palustrine emergent (PEM) wetlands, eight were identified as palustrine emergent scrub-shrub (PEM/PSS) wetlands, seven were identified as palustrine forested (PFO) wetlands, three were identified as palustrine emergent forested (PEM/PFO) wetlands, and two were identified as palustrine emergent forested/scrub-shrub (PEM/PSS/PFO) wetlands. Additionally, one wetland was identified as each of the following types: palustrine forested emergent (PFO/PEM), palustrine forested scrub-shrub emergent (PFO, PSS, PEM), and palustrine scrub-shrub forested (PSS/PFO).

Of the nine streams delineated, five were identified as intermittent, three as perennial and one as ephemeral. Additional detail on the individual streams can be found in the Wetland Delineation and Habitat Assessment (Exhibit I).

#### (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 of the plant and animal species that are of commercial or recreational value, or species designated as endangered or threatened, within 0.25 mile of the Project Area is included in the Wetland Delineation and Habitat Assessment (Exhibit I).

### Plants

There are no known plant species of commercial or recreational value within 0.25 mile of the Project Area.

### Animals

White-tailed deer (*Odocoileus virginianus*), eastern chipmunks (*Tamias striatus*), and fox squirrels (*Sciurus niger*) were frequently observed foraging within the Project Area. Other common game species that are typical of central Ohio could occur in the Project Area. These species are mobile and therefore significant injury or mortality to these species are not anticipated.

Common bird species were observed during the field survey, including robins (*Turdus migratorius*), house sparrows (*Passer domesticus*), red-winged blackbirds (*Agelaius phoeniceus*), and great blue heron (*Ardea herodias*). Birds of interest for recreational birding have a low potential for occurrence in the Project Area.

### Federally Listed Species

According to the USFWS, no records of federally listed species occur in the Project Area. The Project, however, is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and federally threatened northern long-eared bat (*Myotis septentrionalis*), as both species occur throughout Ohio. The Applicant will submit tree clearing areas to USFWS for additional review, if suitable habitat is identified, Dixon Run will take the necessary actions to avoid adverse impacts to the Indiana bat or northern long eared bat. Due to the Project type, size, and location, the USFWS does not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. For additional details please see Attachment B in Exhibit I.

### State Listed Species

According to the ODNR, the Natural Heritage Database indicates no records of state listed species in the Project Area or a surrounding 1-mile radius.

The Project is in the range of the running buffalo clover (*Trifolium stoloniferum*), a state endangered plant. This species habitat includes partially shaded woodlots, mowed areas, and

areas along streams and trails. Known locations of this plant occur within 2 miles of the Project Area, for more information on this species and agency recommendations please see Attachment B in the Wetland Delineation and Habitat Assessment (Exhibit I).

No other state listed species has been observed within 2 miles of the project area, for a full list of species whose range overlaps the Project Area, see Attachment B in the Wetland Delineation and Habitat Assessment (Exhibit I).

#### Species of Commercial or Recreational Value

Other than white-tailed deer, there are no known species of commercial or recreational value within the Project Area. In addition, there were no sightings of birds of interest for recreational birding during field surveys.

#### (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.*

The Wetland Delineation and Habitat Assessment (Exhibit I) provides a discussion of species observations during the field reconnaissance. The white-tailed deer was the only species of significant recreational or commercial value observed.

No species-specific field surveys were conducted for the Field Survey Area; however, the Field Survey Area was evaluated for suitable habitat of federally and/or state listed threatened or endangered species. No threatened or endangered species were observed incidentally in the Project Area while conducting surveys, although incidental observations would be unlikely to occur. Habitat potential for listed species within the range of Project is provided in Attachment B in the Wetland Delineation and Habitat Assessment (Exhibit I).

#### (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.*

No additional studies have been made by or for the Applicant to address ecological impact of the proposed Facility.

(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.*

There will be no direct construction related impacts to recreational areas, parks, wildlife areas, nature preserves, or other conservation areas. Impacts to ecological resources may occur during construction or the installation of PV panels, access pathways, and overhead electrical collection lines; development and use of the laydown yards; and the construction of the substation. Based on the data obtained during field studies, and via consultations with agencies, these impacts are anticipated to be minimal. Additional details, including acreage of potential impacts, are included in the Wetland Delineation and Habitat Assessment (Exhibit I).

**Table 08-1 Impacts to Streams**

Stream ID	Temporary Impact (Feet)	Permanent Impact (Feet)	Total Impact (Feet)	Facility Component	Crossing Method
Stream 20	0.00 11.40	77.72 22.81	77.72 34.21	Collection Line/ Access Road	Trench/ Culvert
Stream 26	0.00	53.36	53.36	Collection Line	Trench
Stream 29	0.00	14.10	14.10	Collection Line	Trench
<b>Total Impact</b>	<b>11.40</b>	<b>167.98</b>	<b>179.38</b>		

**Table 08-2 Impacts to Wetlands**

Wetland ID	Temporary Impact (Acres)	Permanent Impact (Acres)	Total Impact (Acres)	Facility Component
Wetland C	0.000	0.292	0.292	Collection Line
Wetland D	0.000	0.069	0.069	Collection Line
Wetland E	0.000 0.008	0.040 0.000	0.040 0.008	Collection Line PV Panel Area
Wetland EE	0.028 1.896	0.043 0.001	0.071 1.897	Access Pathway PV Panel Area
Wetland F	0.000	0.003	0.003	Inverter



Wetland ID	Temporary Impact (Acres)	Permanent Impact (Acres)	Total Impact (Acres)	Facility Component
Wetland FF	0.014	0.058	0.072	Access Pathway
	0.000	0.101	0.101	Collection Line
Wetland GG	0.186	0.001	0.187	PV Panel Area
Wetland HH	0.022	0.042	0.064	Access Pathway
	0.000	0.006	0.006	Collection Line
	0.163	0.001	0.164	PV Panel Area
Wetland II	0.011	0.001	0.011	Access Pathway
Wetland JJ	0.018	0.064	0.083	Access Pathway
	0.002	0.001	0.003	PV Panel Area
Wetland KK	0.037	0.000	0.037	PV Panel Area
Wetland L	0.015	0.005	0.020	Access Pathway
Wetland LL	0.000	0.682	0.682	Collection Line
Wetland MM	0.019	0.000	0.019	PV Panel Area
Wetland N	0.039	0.100	0.138	Access Pathway
	0.003	0.000	0.003	PV Panel Area
Wetland O	0.061	0.158	0.219	Access Pathway
	0.000	0.177	0.177	Collection Line
Wetland OO	0.000	0.172	0.172	Collection Line
Wetland P	0.121	0.001	0.122	PV Panel Area
Wetland Q	0.000	0.012	0.012	Collection Line
Wetland QQ	0.008	0.001	0.010	Access Pathway
	0.000	0.010	0.010	Collection Line
<b>Total Impact</b>	<b>2.651</b>	<b>2.041</b>	<b>4.692</b>	

**Table 08-3 Impacts to Open Water**

Pond ID	Temporary Impact (Acres)	Permanent Impact (Acres)	Total Impact (Acres)	Facility Component
Pond 1	0.327	0.000	0.327	PV Panel Area
Pond 10	0.000	0.024	0.024	Collection Line
	0.460	0.000	0.460	PV Panel Area
Pond 14	0.013	0.000	0.013	PV Panel Area
Pond 15	0.006	0.000	0.006	PV Panel Area
Pond 17	0.000	0.006	0.006	Access Pathway
	0.000	0.111	0.111	Collection Line
Pond 20	0.000	0.131	0.131	Collection Line
Pond 3	0.009	0.020	0.029	Access Pathway
Pond 5	0.000	0.048	0.048	Collection Line
Pond 6	0.000	0.052	0.052	Collection Line
<b>Total Impact</b>	<b>0.815</b>	<b>0.392</b>	<b>1.208</b>	

Through careful design and based on the preliminary Facility layout, impacts to delineated wetlands and streams have been reduced to the maximum extent possible. Detailed tables of anticipated wetland and stream impacts are provided in the Wetland Delineation and Habitat Assessment (Exhibit I). Based on the preliminary Facility layout, three streams will be crossed at four crossing locations, 9 ponds will be crossed at eleven locations, and 20 wetlands will be crossed at 29 crossing locations during Facility construction. Approximately 168 linear feet of streams, 0.39 acres of open water, and 2.04 acres of wetlands will be permanently impacted during construction of permanent access pathways, PV panel arrays, or overhead collection lines. Permanent access pathway crossings will be installed via culverts or low water crossings, as determined in the final engineering design. An additional 11.4 linear feet of streams, 0.81 acres of open water, and 2.65 acre of wetlands will be temporarily impacted during construction of temporary access pathways and workspaces.

Temporary workspaces within streams will be converted to pre-construction contours following construction completion. During the construction of access pathways and collection lines, applicable state and federal permits will be acquired and adhered to. Measures that may be taken to prevent adverse impacts to wetland resources are dependent on on-site conditions, but

generally include BMPs such as silt fence to prevent sedimentation to the surrounding wetland resource, segregation of topsoil and subsoil, and conversion of workspace to pre-construction contours following construction activities.

Vegetation clearing will be necessary for access pathway, overhead collection line, and PV Panel construction. In addition to portions of existing woodlots, scattered individual trees and shrubs may be cleared and grubbed to accommodate Facility operations and to prevent interference with energy production. Approximately 125 acres of tree clearing is anticipated, the exact extent of clearing of these areas is contingent on the final Site Plan, and final areas requiring tree clearing will be noted on the Site Plan. Potential impacts to wildlife and their habitat are anticipated to be minimal, and the Applicant plans to adhere to USFWS and ODNR regulations to avoid/minimize impact to ecological resources. It should be noted that the majority of the deciduous and mixed forest within the ecological Study Area was characterized as second-growth forest because they did not display characteristics indicative of old-growth forests (i.e., an overstory canopy of exceptionally old trees, a mixture of all-aged trees, a multilayered canopy interspersed with gaps, little evidence of human disturbance in the understory, and significant woody debris). These impacts and impact avoidance recommendations are discussed further in the Wetland Delineation and Habitat Assessment (Exhibit I).

(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:

- Disturbed soils over belowground 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

- Laydown yard areas will be de-compacted, topsoil redistributed, and reseeded with a low-growth, native seed mix to stabilize exposed soils and control sedimentation and erosion.

All removed material and demolition 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.

The objective of reclamation and revegetation are to allow for the efficient establishment of vegetation on the site for soil stabilization. Segregation of topsoil and subsoil will occur throughout construction, and treatment of soil may be necessary to preserve approximate pre-construction capability. Any disturbed areas outside the fenceline that will not be used for Facility components will be reclaimed to ensure that the land can be reverted to pre-construction uses.

(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.*

Collection lines that are not installed as overhead collection lines, except where collocated with access pathways, will be installed using HDD methods to minimize potential impacts to jurisdictional waters. An Inadvertent Return Response and Contingency Plan is included as Exhibit O.

(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 surrounded by silt/exclusionary fencing to demarcate 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 onsite will be provided with training to understand the significance of the types of flagging used, and the importance of staying within defined limits of work areas, especially in and adjacent to marked sensitive resource areas such as wetlands.

(iv) Inspection procedures for erosion control measures

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

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.*

Protection of vegetation will be primarily accomplished through careful planning. Most Facility components have been sited on agricultural land, thus limiting impacts to successional grassland, shrubland, forested, and wetland areas. In addition to siting, 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; employing BMPs during construction; and maintaining a clean work area within the designated construction sites. Trees that are to be preserved will be protected by the use of exclusionary fencing to protect the crown and root zone from damage. Following construction activities, temporarily disturbed areas will be re-established with vegetation. Two seed mixes will be used, one within the PV array areas (both underneath and between arrays) and the other for hydric areas.

(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.*

Portions of existing woodlots, as well as scattered trees and shrubs will be cleared and grubbed to accommodate construction and operation of the Facility. 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 and disposal of woody materials 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 of the Project Area, habitat for state and/or federal listed species within the Project Area is minimal. Therefore, no post-construction wildlife monitoring is proposed. Coordination letters are included in the Wetland Delineation and Habitat Assessment (Exhibit I). Per agency guidance, tree clearing will be completed between October 1 and March 31 to avoid potential impacts to bat species.

The Applicant will contact OPSB Staff 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 administrative 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 are 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, the Facility is not anticipated to result in additional ecological impacts. The Applicant has sited the Facility to avoid waters and forested vegetation to the maximum extent

practicable. The impacts proposed for construction are anticipated to be the extent of those needed for the life of the Facility; however, if minor activities are deemed to be required at a later date (e.g., culvert repair), these activities will be performed in accordance with local, state, and federal regulations.

Annual management is required for the life of the Project to control the re-establishment and spread of invasive species, combat the establishment of undesirable and invading trees and shrubs, and reduce biomass/fuel load on site. This management may take the form of mowing or haying, depending on Dixon Run Solar preference and feasibility. Some degree of hand weeding, spot-mowing, and/or spot-herbicide may be warranted thereafter. Perpetual site maintenance is discussed in further detail in the Vegetation Management Plan (Exhibit B).

Direct impacts to wildlife from an operational solar facility are 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 large, rapidly moving parts. Since 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 large 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. Among other information, Figure 08-1 shows the following features:

(i) The proposed Facility

The proposed Facility includes PV panels, collection lines, access pathways, fenceline, Facility substation, AEP POI switching station, laydown yards, weather stations, and inverters.

(ii) Land use

Land use was derived from parcel data provided by the Jackson County Auditor. Most of the land use is agricultural and residential, with scattered industrial, commercial, and exempt parcels, as shown in Figure 08-1.

(iii) Structures

Structures, including residences and other buildings where people congregate for extended periods of time, were digitized via address points provided by Jackson County and aerial imagery, and confirmed through site visits and existing databases such as parcels. Structures within a 1-mile radius of the Project Area primarily include residences, but also include commercial, industrial, and tax-exempt buildings, including a church.

(iv) Incorporated areas and population centers

The nearest population center is the City of Jackson, approximately 3.5 miles northwest of the Project 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 08-4 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 24 structures within 1,500 feet of a PV panel.

**Table 08-4. Structures Within 1,500 Feet of a PV Panel**

Structure Type	Distance to PV Panel (Feet)	Lease Status of Underlying Parcel <sup>1</sup>
Residential	394	Participating
Residential	715	Participating
Residential	1,040	Participating
Industrial	1,176	Participating
Residential	406	Non-Participating
Residential	449	Non-Participating
Residential	558	Non-Participating
Residential	605	Non-Participating
Residential	833	Non-Participating
Residential	966	Non-Participating
Residential	970	Non-Participating
Residential	984	Non-Participating
Residential	995	Non-Participating
Residential	1,044	Non-Participating
Residential	1,143	Non-Participating
Residential	1,206	Non-Participating
Residential	1,235	Non-Participating
Residential	1,239	Non-Participating
Residential	1,261	Non-Participating
Residential	1,283	Non-Participating
Exempt	1,331	Non-Participating
Residential	1,396	Non-Participating
Residential	1,479	Non-Participating
Residential	1,486	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 08-5, which presents the distance to the nearest PV panel and the lease status of the parcel (i.e., participating or non-participating). There are 195 properties within 1,500 feet of a PV panel.

**Table 08-5. Parcels Within 1,500 Feet of a PV Panel**

Parcel ID	Distance to PV Panel (Feet) <sup>1</sup>	Lease Status
N/A	0	Participating
N/A	0	Participating
N/A	0	Participating
A010010009701	0	Participating
A010020014302	0	Participating
A010020014401	0	Participating
A010020014700	0	Participating
A010020016301	0	Participating
A010020016500	0	Participating
A010020016600	0	Participating
A010020016601	0	Participating
A010020016700	0	Participating
A010020016900	0	Participating
A010020017000	0	Participating
A010020017100	0	Participating
A010020017200	0	Participating
A010020017300	0	Participating
A010020017400	0	Participating
A010020017500	0	Participating
A010020017600	0	Participating
A010020017700	0	Participating
A010020017900	0	Participating
A010020018000	0	Participating
A010030008800	0	Participating
A010030013600	0	Participating
A010030017700	0	Participating
A010030017800	0	Participating
A010030019000	0	Participating
A010030019400	0	Participating
A010030023000	0	Participating
A010030023100	0	Participating
A010030023101	0	Participating
A010030023200	0	Participating
A010030023201	0	Participating
A010030023300	0	Participating

Parcel ID	Distance to PV Panel (Feet) <sup>1</sup>	Lease Status
A010030023400	0	Participating
A010030025001	0	Participating
A010030025100	0	Participating
A010030025200	0	Participating
A010030025201	0	Participating
A010030025301	0	Participating
A010030025400	0	Participating
A010030025300	7	Participating
N/A	45	Participating
A010020018300	50	Participating
A010030023500	157	Participating
A010020018202	163	Participating
A010020016301	177	Participating
A010020017800	180	Participating
A010020017100	181	Participating
A010020017202	183	Participating
A010020018411	196	Participating
A010020018410	202	Participating
A010030022800	260	Participating
A010030026300	268	Participating
A010010009000	366	Participating
N/A	403	Participating
A010030013000	413	Participating
A010040016400	421	Participating
A010030019200	447	Participating
A010010009400	452	Participating
A010020018408	462	Participating
A010020018201	487	Participating
A010030008700	499	Participating
A010030014002	532	Participating
A010030014100	681	Participating
A010010010200	702	Participating
A010020018407	773	Participating
A010020018409	811	Participating
A010030008900	839	Participating
A010030014101	1,098	Participating
A010030014101	1,108	Participating
A010030014003	1,151	Participating
A010010009702	98	Non-Participating
A010030018000	112	Non-Participating
A010020018700	136	Non-Participating

Parcel ID	Distance to PV Panel (Feet) <sup>1</sup>	Lease Status
A010010009101	142	Non-Participating
N/A	147	Non-Participating
N/A	150	Non-Participating
A010030019401	163	Non-Participating
A010010011000	174	Non-Participating
A010020016501	178	Non-Participating
A010020017101	180	Non-Participating
A010020017001	194	Non-Participating
A010010011101	194	Non-Participating
A010020017201	198	Non-Participating
A010010009100	207	Non-Participating
A010030019100	214	Non-Participating
A010020018100	243	Non-Participating
A010030015900	263	Non-Participating
A010030024700	295	Non-Participating
N/A	301	Non-Participating
A010030017900	301	Non-Participating
A010030019500	305	Non-Participating
A010030016000	306	Non-Participating
A010010011102	330	Non-Participating
A010010009200	361	Non-Participating
A010030024900	362	Non-Participating
A010020014701	369	Non-Participating
A010030025000	404	Non-Participating
N/A	411	Non-Participating
A010030024800	491	Non-Participating
A010010010900	543	Non-Participating
A010010011100	545	Non-Participating
A010030024200	594	Non-Participating
A010020014301	613	Non-Participating
A010010009500	618	Non-Participating
N/A	692	Non-Participating
N/A	704	Non-Participating
A010040016401	711	Non-Participating
A010030013900	718	Non-Participating
N/A	721	Non-Participating
N/A	729	Non-Participating
A010030024500	764	Non-Participating
A010030018900	771	Non-Participating
N/A	813	Non-Participating
A010030025002	854	Non-Participating

Parcel ID	Distance to PV Panel (Feet) <sup>1</sup>	Lease Status
N/A	858	Non-Participating
A010010010601	873	Non-Participating
A010020018509	885	Non-Participating
A010010011100	896	Non-Participating
A010020014400	918	Non-Participating
A010010010800	931	Non-Participating
A010010009700	939	Non-Participating
A010020018102	946	Non-Participating
A010020018101	953	Non-Participating
A010020014400	968	Non-Participating
A010010009300	971	Non-Participating
N/A	987	Non-Participating
A010030012200	993	Non-Participating
A010030024300	1,002	Non-Participating
A010020014701	1,004	Non-Participating
A010030012202	1,015	Non-Participating
A010030013001	1,035	Non-Participating
A010030012201	1,056	Non-Participating
A010030014800	1,060	Non-Participating
A010010010600	1,061	Non-Participating
A010020019300	1,072	Non-Participating
A010010010700	1,073	Non-Participating
A010020014200	1,100	Non-Participating
A010010011300	1,103	Non-Participating
A010020013600	1,104	Non-Participating
A010020018405	1,110	Non-Participating
A010030015200	1,132	Non-Participating
A010020014300	1,133	Non-Participating
A010030024400	1,151	Non-Participating
A010020018401	1,156	Non-Participating
A010030015300	1,167	Non-Participating
A010030024600	1,187	Non-Participating
A010010004600	1,189	Non-Participating
A010020014800	1,192	Non-Participating
A010020018506	1,203	Non-Participating
A010020018508	1,204	Non-Participating
N/A	1,223	Non-Participating
A010030012703	1,226	Non-Participating
A010030022900	1,236	Non-Participating
A010030011500	1,257	Non-Participating
A010020014301	1,261	Non-Participating

Parcel ID	Distance to PV Panel (Feet) <sup>1</sup>	Lease Status
A010020014000	1,266	Non-Participating
A010010011600	1,272	Non-Participating
N/A	1,283	Non-Participating
A010030017500	1,285	Non-Participating
A010010010701	1,291	Non-Participating
A010010010400	1,311	Non-Participating
N/A	1,311	Non-Participating
N/A	1,316	Non-Participating
A010030011400	1,345	Non-Participating
A010020014900	1,359	Non-Participating
A010020018600	1,363	Non-Participating
N/A	1,370	Non-Participating
A010020016300	1,371	Non-Participating
A010030008901	1,390	Non-Participating
N/A	1,391	Non-Participating
A010040016300	1,395	Non-Participating
A010020018601	1,400	Non-Participating
A010020018510	1,416	Non-Participating
A010030012500	1,431	Non-Participating
A010020015000	1,437	Non-Participating
N/A	1,438	Non-Participating
A010030012300	1,439	Non-Participating
A010030018000	1,444	Non-Participating
A010020018511	1,451	Non-Participating
A010020018402	1,451	Non-Participating
A010030012400	1,459	Non-Participating
A010030022900	1,462	Non-Participating
A010030014801	1,478	Non-Participating
A010010011400	1,478	Non-Participating
A010030012600	1,479	Non-Participating
N/A	1,479	Non-Participating
A010030013002	1,482	Non-Participating
A010030011400	1,483	Non-Participating
A010030012000	1,488	Non-Participating
A010010008800	1,493	Non-Participating
A010020018513	1,493	Non-Participating
A010020018512	1,495	Non-Participating

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

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

There are no existing structures within 250 feet of a Facility component. Distances between the Facility components and property lines within 250 feet are shown in Table 08-6, which presents the distance to the parcel boundary and the lease status of the parcel (i.e., participating or non-participating). There are 60 parcels within 250 feet of a Facility component. This total includes 46 parcels that are within 250 feet of multiple Facility components.

**Table 08-6. Parcels Within 250 Feet of a Facility Component**

Parcel ID	Distance <sup>1</sup>	Associated Facility Component	Lease Status
N/A	0	Access Pathway	Participating
	176	Laydown Yard	
	0	Overhead Collection Line	
N/A	0	Access Pathway	Participating
	0	Overhead Collection Line	
A010020017202	3	Access Pathway	Participating
	39	Overhead Collection Line	
A010020017100	177	Access Pathway	Participating
	155	Overhead Collection Line	
A010020017100	149	Access Pathway	Participating
	0	Overhead Collection Line	
A010020016500	0	Access Pathway	Participating
	0	Inverter	
	0	Overhead Collection Line	
A010020016900	0	Access Pathway	Participating
	0	Inverter	
	137	Laydown Yard	
	0	Overhead Collection Line	
A010020017000	0	Access Pathway	Participating
	0	Inverter	
	0	Overhead Collection Line	
N/A	0	Access Pathway	Participating
	0	Inverter	
	0	Laydown Yard	
	0	Overhead Collection Line	
A010020016700	0	Access Pathway	Participating
	0	Inverter	
	0	Overhead Collection Line	
	0	Weather Station	



Parcel ID	Distance <sup>1</sup>	Associated Facility Component	Lease Status
A010020016601	0 0 0 0 93	Access Pathway Inverter Laydown Yard Overhead Collection Line Weather Station	Participating
A010030025001	0 44	Access Pathway Overhead Collection Line	Participating
A010030023500	0 0 0	Access Pathway Laydown Yard Overhead Collection Line	Participating
A010030023400	0 0 122 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010020017200	3 207 0	Access Pathway Inverter Overhead Collection Line	Participating
A010030023201	0 134 121 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
N/A	0 0 0	Access Pathway Inverter Overhead Collection Line	Participating
A010030025201	0 89 0 70 0 0	Access Pathway Collection Substation Inverter Laydown Yard Overhead Collection Line POI Substation	Participating
A010020014302	0 0	Access Pathway Laydown Yard	Participating
A010020014700	0 0 124 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010020014401	0	Access Pathway	Participating
A010030023300	0 231 104 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating

Parcel ID	Distance <sup>1</sup>	Associated Facility Component	Lease Status
A010030023200	0 0 81 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010030023101	0 0 0 34 87	Access Pathway Inverter Laydown Yard Overhead Collection Line Weather Station	Participating
A010030025100	0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010030025200	0 54 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010030025300	0 196 0	Access Pathway Inverter Overhead Collection Line	Participating
A010030025400	0 0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line Weather Station	Participating
A010030025301	0 0 0	Access Pathway Inverter Overhead Collection Line	Participating
A010030008800	0 0	Access Pathway Overhead Collection Line	Participating
A010030019400	77 247 203	Access Pathway Laydown Yard Overhead Collection Line	Participating
A010030019000	0 0 7	Access Pathway Laydown Yard Overhead Collection Line	Participating
A010030017700	0 0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line Weather Station	Participating

Parcel ID	Distance <sup>1</sup>	Associated Facility Component	Lease Status
A010030017800	0	Access Pathway	Participating
A010030023100	0	Access Pathway	Participating
A010030023000	0 0 0	Access Pathway Inverter Overhead Collection Line	Participating
A010030013600	0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010010009701	0 0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line Weather Station	Participating
A010020016301	0 0 65 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010020016600	0 0	Access Pathway Overhead Collection Line	Participating
A010020017400	0 0 0 0	Access Pathway Collection Substation Overhead Collection Line POI Substation	Participating
A010020018000	0 174 0	Access Pathway Inverter Overhead Collection Line	Participating
A010020017600	0 171 0 0 0	Access Pathway Collection Substation Inverter Laydown Yard Overhead Collection Line	Participating
A010020017500	0 249 248 94 0	Access Pathway Collection Substation Inverter Laydown Yard Overhead Collection Line	Participating
A010020017300	0 80 0	Access Pathway Inverter Overhead Collection Line	Participating

Parcel ID	Distance <sup>1</sup>	Associated Facility Component	Lease Status
A010020017700	0 0 0 0	Access Pathway Inverter Laydown Yard Overhead Collection Line	Participating
A010020018300	186	Access Pathway	Participating
A010020017900	0	Access Pathway	Participating
A010020017900	0	Access Pathway	Participating
A010020017900	0	Inverter	Participating
A010020017900	0	Laydown Yard	Participating
A010020017900	42	Overhead Collection Line	Participating
A010020017001	66	Overhead Collection Line	Non-Participating
A010020017201	66	Overhead Collection Line	Non-Participating
A010020017101	126 67	Access Pathway Overhead Collection Line	Non-Participating
N/A	96 177 0	Access Pathway Inverter Overhead Collection Line	Non-Participating
A010030024700	129 124	Access Pathway Overhead Collection Line	Non-Participating
N/A	86 181 0	Access Pathway Inverter Overhead Collection Line	Non-Participating
A010030018000	0	Access Pathway	Non-Participating
A010030015900	47	Access Pathway	Non-Participating

1. Distances that equal zero represent parcels that contain associated Facility components.

(iii) Status of Each Property

Dixon Run has signed purchase option agreements on all parcels that will host Facility components. The participation status for each structure and property within 1,500 feet of a PV panel and each property within 250 feet of an associated 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.*

As shown on Figure 08-1, agricultural land is the only land use directly impacted by the Facility. Table 08-7 presents the total, temporary, and permanent land use impacts within and outside the fenceline from the construction and operation of the Facility.

**Table 08-7. Total Land Use Impacts**

Facility Component	Temporary Impact (acres) <sup>4</sup>	Permanent Impact (acres)	Total Impact (acres)
<b>Agricultural</b>			
Area Inside Fenceline <sup>1</sup>	0.0	1,094.9	1,094.9
Area Outside Fenceline			
Access Pathway <sup>3</sup>	1.0	2.5	3.4
Overhead Collection Line <sup>2</sup>	0.0	11.5	11.5
Collection Substation	0.0	0.4	0.4
POI Substation	0.0	0.4	0.4
<b>Total Agricultural</b>	1.0	1,109.7	1,110.7
<b>Industrial</b>			
Area Outside Fenceline			
Access Pathway <sup>3</sup>	<0.1	<0.1	<0.1
<b>Total Industrial</b>	<0.1	<0.1	<0.1
<b>Unknown</b>			
Area Inside Fenceline <sup>1</sup>	0.0	105.3	105.3
Area Outside Fenceline			
Access Pathway <sup>3</sup>	0.1	0.1	0.2
Overhead Collection Line <sup>2</sup>	0.0	2.6	2.6
<b>Total Unknown</b>	0.1	108.0	108.1
<b>Total Land Use Impact</b>	<b>1.2</b>	<b>1,217.8</b>	<b>1,219.0</b>

1. As the entire fenced area is anticipated to be unavailable to landowners, permanent land use impacts include the entire area within fenceline.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
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 08-8 presents the total, temporary, and permanent land use impacts on land use by Facility component. Facility related impacts to land use were calculated by overlaying Facility components with parcel data in GIS, 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 of the 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 pathways and

collection lines, the appropriate impact widths, as described in the Table 08-8 notes, 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 08-8 Land Use Impacts by Facility Component**

Facility Components	Temporary Impact <sup>5</sup> (Acres)	Permanent Impact (Acres)	Total Impact (Acres)
<b>Agricultural (100s)</b>			
Access Pathways <sup>3</sup>	12.0	28.5	40.5
Overhead Collection Lines <sup>2</sup>	0.0	55.6	55.6
Collection Substation	0.0	0.4	0.4
Inverters <sup>4</sup>	0.0	1.0	1.0
POI Substation	0.0	0.4	0.4
PV Panels <sup>1</sup>	0.0	438.6	438.6
Laydown Yards	13.5	0.0	13.5
<b>Total Agricultural</b>	<b>25.5</b>	<b>524.6</b>	<b>550.2</b>
<b>Industrial (300s)</b>			
Access Pathways <sup>3</sup>	<0.1	<0.1	<0.1
<b>Total Industrial</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>Unknown</b>			
Access Pathways <sup>3</sup>	0.6	1.5	2.1
Overhead Collection Lines <sup>2</sup>	0.0	5.1	5.1
Inverters <sup>4</sup>	0.0	0.1	0.1
PV Panels <sup>1</sup>	0.0	59.4	59.4
Laydown Yards	3.1	0.0	3.1
<b>Total Unknown</b>	<b>3.8</b>	<b>66.2</b>	<b>69.9</b>
<b>Land Use Total from Components</b>	<b>29.3</b>	<b>590.8</b>	<b>620.1</b>

1. Permanent impacts to solar arrays include the entire area underneath and between the panels, because that area will be taken out of its current use for approximately 40 years.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
4. Includes 39 inverter pads each with an approximate area of 1,200 square feet.
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 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, access

pathways, Facility substation, POI AEP switching station, and other ancillary structures will result in the cumulative conversion of approximately 620.1 acres of land from prior land use, which represents approximately 30% of the Project Area (approximately 2,085 acres).

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.*

No structures will be removed or relocated as part of construction or operation of the Facility.

(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.*

Among the three counties (Jackson, Vinton, and Gallia), nine townships (Bloomfield, Milton, Huntington, Madison, Franklin, Lick, Raccoon, Jefferson, and Coal), and one city (Jackson) within the 5-mile study area, two counties, Vinton County and Gallia County, have adopted comprehensive land use plans. For further discussion of these plans, see the Socioeconomic Report, included as Exhibit C of this Application.

(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.*

No other concurrent or secondary uses are anticipated in the Project Area.

(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 within 5 miles of the Project Area is shaped in large part by the rural economy of the surrounding counties. The regional context of the Facility, including discussion of the significant revenue increases to the local tax base (schools and public services), positive benefits to the regional economy via increased local spending and investment, and minimal adverse impacts to housing demand is discussed in further detail in the Socioeconomic Report, provided as Exhibit C. The need for public services to serve the Facility is minimal, only minor impacts to area roadways are anticipated, and impacts the regional transportation system are negligible (Exhibit C).

(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), only two counties (Vinton and Gallia) within 5 miles of the Project Area have adopted comprehensive land use plans. Although the Facility is not located



in either Gallia or Vinton County, it is compatible with both the 2012 Gallia County Strategic Plan, as it will provide Gallia County with non-traditional job opportunities for its residents, and the Vinton County: Future Focus 2020 Plan, as it may provide additional work opportunities. For further discussion of these plans, see the Socioeconomic Report (Exhibit C). There will be no adverse impacts to regional plans or regional growth as a result of this Facility. As discussed in Section 4906-4-08(C)(4)(a), the Facility is compatible with current regional development 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 08-9 below.

**Table 08-9. Population of Jurisdictions within 5 Miles**

<b>Jurisdiction</b>	<b>2000 Population</b>	<b>2019 Population</b>	<b>Annual Growth Rate (2000-2019)</b>	<b>Projected 2030 Population</b>	<b>Projected Total Growth (2019-2030)</b>	<b>2019 Population Density (people per square mile)</b>
<b>State of Ohio</b>	11,353,140	11,655,397	0.1%	11,836,311	1.6%	282
<b>Gallia County</b>	31,069	30,088	-0.2%	29,543	-1.8%	64
Huntington Township	1,511	1,720	0.7%	1,863	8.3%	46
Raccoon Township	2,302	2,285	0.0%	2,275	-0.4%	61
<b>Jackson County</b>	32,641	32,450	0.0%	32,340	-0.3%	77
Bloomfield Township	896	830	-0.4%	795	-4.2%	21
Franklin Township	1,913	2,346	1.2%	2,672	13.9%	63
Jefferson Township	3,508	3,516	0.0%	3,521	0.1%	95
Lick Township	2,682	2,581	-0.2%	2,525	-2.2%	103
Madison Township	2,171	1,645	-1.3%	1,428	-13.2%	36
Milton Township	1,119	1,035	-0.4%	991	-4.3%	23
City of Jackson	6,184	6,239	0.0%	6,271	0.5%	655
<b>Vinton County</b>	12,806	13,083	0.1%	13,248	1.3%	32
Wilkesville Township	888	612	-1.6%	510	-16.6%	17

Source: U.S. Census Bureau Decennial Census (2000), ACS 5-Year Estimates (2015-2019), population projections based on respective 2000-2019 growth rates. Tables S0101 and P001.

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 population growth within the Study Area. The potential short-term and long-term employment opportunities

associated with construction and operation of the Facility are discussed in Section 4906-4-06 and in the Socioeconomic Report (Exhibit C).

#### **(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES**

*The applicant shall provide information on cultural and archaeological resources.*

On behalf of the Applicant, EDR prepared a Phase IA Cultural Resources Survey of the Project Area and the area within a 2-mile radius of the Project Area, its recommended Cultural Resources Study Area (Exhibit N). The scope of the Phase IA Cultural Resources Survey is broader than, but includes, an evaluation of the impact of the Project on the registered landmarks specified in Section 4906-4-08D(1), i.e., those registered landmarks that either are:

- (1) “of historic, religious, archaeological, scenic, natural, or other cultural significance”; or
- (2) “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.”

Background research conducted as part of the Phase IA Cultural Resources Survey revealed the presence of 14 previously recorded Ohio Archaeological Inventory (OAI) sites mapped within the Project Area, and six Ohio Historic Inventory (OHI) structures, including one resource listed on the NRHP, and 18 Ohio Genealogical Society (OGS) identified cemeteries within the Cultural Resources Study Area. Background research also revealed that the previously recorded OAI sites were identified as part of previous surface coal mining permits, and that the majority of the Project Area was previously subject to surface coal mining operations.

The Phase IA Cultural Resources Survey concluded that the Project has the potential to cause indirect visual impacts to above-ground historic resources within the Cultural Resources Study Area, as well as the potential to impact archaeological sites within portions of the Project Area not previously subjected to surface mining operations. Accordingly, the Phase IA Cultural Resources Survey included a proposed methodology for a reconnaissance survey of historic/architectural resources and a Phase I archaeological survey.

On behalf of the Applicant, EDR submitted the Phase IA Cultural Resources Survey to the Ohio State Historic Preservation Office (SHPO) on July 16, 2021, for its review and comment. SHPO responded with concurrence of the proposed research design and survey methodology in a letter dated August 13, 2021. SHPO's comments ("SHPO Comments on Phase IA Cultural Resources Survey") are included with Exhibit N.

(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 N. No direct impacts are anticipated, as all identified resources can be avoided. Based on the viewshed analysis prepared for this Project as part of the Visual Resource Assessment (Exhibit P), one OHI Structure and 11 OGS Cemeteries will have at least a partial view of the Facility. The Applicant has submitted the cultural resource studies to the SHPO and continues to coordinate with the SHPO on recommended visual screening and mitigation measures. Impacts to recreational and scenic resources are discussed below and in the Visual Resource Assessment and Mitigation Plan (Exhibit P).

(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 10-mile radius of the Project Area are depicted on Figure 08-2. Existing scenic and recreational areas within a 5-mile radius of the Project Area are listed in Table 08-10 below. Recreational areas were identified using the following resources: ODNR, ODOT, Ohio Geographically Referenced Information Program, 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 is included in Exhibit P.

**Table 08-10. Scenic and Recreational Areas within 5 Miles**

<b>Recreational Area</b>	<b>Location</b>	<b>Distance from Project Area (Miles)</b>
Welsh Scenic Byway	Bloomfield, Franklin, Lick, and Madison Townships, Jackson County	0.1
Cooper Hollow Wildlife Area	Bloomfield and Madison Townships, Jackson County	1.3
Keystone Furnace Wetland Preserve	Bloomfield Township, Jackson County	1.5
Broken Aro Wildlife Area	Milton and Bloomfield Townships, Jackson County	1.7
Flint Run Wildlife Area	Milton Township, Jackson County	2.9
Buckeye Furnace	Milton Township, Jackson County	3.5
Lazy Dog Camp Resort	Milton Township, Jackson County	4.7
Battle of Berlin Heights Engagement Site	Lick and Milton Townships, Jackson County	5.0

The Welsh Scenic Byway is a 64-mile byway located south of the Project Area in Gallia and Jackson Counties. At its closest point, it is less than 0.1 mile from the Project Area. The purpose of the byway is to celebrate the Welsh immigrants who came to Ohio in the 19th century, and to connect Welsh communities, churches, farms, and cemeteries (Ohio Department of Transportation, 2021). Corridors of visibility will be possible along the scenic byway, depending on distance to the Project Area. Existing vegetation, woodlots, and residential development will provide partial screening and minimize visual impacts.

Cooper Hollow Wildlife Area is a 5,744-acre state wildlife area located 1.3 miles south of the Project Area in Bloomfield and Madison Townships, Jackson County. The wildlife area is open to the public and offers hiking trails, hunter access, fishing, birding, and a shooting range (Ohio Department of Natural Resources, 2021). Visual impacts on those recreating at the wildlife area

are possible in small corridors of visibility at the site's northern border, based on the viewshed analysis

Keystone Furnace Wetland Preserve is a 700-acre preserve located 1.5 miles east of the Project Area in Bloomfield Township, Jackson County. The preserve is owned and operated by the Ohio Valley Conservation Coalition and is open to the public by request only. The preserve also permits a limited amount of hunting and trapping, approved annually (Ohio Valley Conservation Coalition, 2016). Visual impacts on those recreating at the wetland preserve are not anticipated, based on the viewshed analysis.

Broken Aro Wildlife Area is an approximately 2,900-acre wildlife area located 1.7 miles north of the Project Area in Milton and Bloomfield Townships, Jackson County. Broken Aro wildlife area is directly adjacent to Flint Run Wildlife Area, creating a total of approximately 3,500 acres of uninterrupted, preserved Appalachian forest. Broken Aro is open to the public and offers hunting, fishing, birding, hiking, and other non-motorized recreational activities (Ohio Department of Natural Resources, 2021). Limited pockets of visibility are possible in the southernmost section of the wildlife area, based on the viewshed analysis.

Flint Run Wildlife Area is an approximately 600-acre wildlife area located 2.8 miles north of the Project Area in Milton Township, Jackson County. Flint Run is directly adjacent to another wildlife preserve, Broken Aro. Nearly all of the wildlife area is wooded and is a part of the Appalachian Forest. Flint Run is open to the public and offers hunting, fishing, birding, hiking, and other non-motorized recreational activities (Ohio Department of Natural Resources, 2021). Limited pockets of visibility are possible throughout the wildlife area, based on the viewshed analysis.

Buckeye Furnace is an approximately 270-acre historic site located 3.5 miles northeast of the Project Area in Milton Township, Jackson County. Buckeye Furnace is a reconstructed charcoal-fired blast furnace, built for the purpose of education to the public on iron production in the area and how it shaped the rural landscape in southern Ohio. This site features the charcoal-fired blast furnace, originally built in 1852, as well as a museum and nature trails (Ohio History Connection,

2021). Visual impacts on those visiting the historic site are not anticipated at any point, based on the viewshed analysis.

Lazy Dog Camp Resort is located 4.7 miles north of the Project Area in Milton Township, Jackson County. The campsite offers picnic areas, a supply store, cabins, a playground, volleyball courts, fishing, and a swimming pool, among other recreational opportunities. The campgrounds are frequented by those travelling to the area during deer hunting season (Lazy Dog Camp Resort, 2015). Visual impacts on those recreating at the camp site are not anticipated at any point, based on the viewshed analysis.

The Battle of Berlin Heights Engagement Site is an approximately 53-acre historic site located 5.0 miles northeast of the Project Area in Lick and Milton townships, Jackson County. The engagement site was established in 2015 by the Berlin X-Roads Battlefield Preservation Association to educate the public on the Battle of Berlin Heights, which was fought during the Civil War at this location on July 9, 1863 (Hilton, 2017). Visual impacts on those visiting the engagement site are not anticipated at any point, 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 P). EDR staff who contributed to the report include visual resource assessment experts with experience preparing visual resource assessments, including several for applications to the OPSB. OAC 4906-4-08(D)(4) requires that visual impacts to recreational, scenic, and historic resources be evaluated within a 10-mile radius. However, based on the low profile of the proposed equipment, and the results of the visibility analysis presented herein, it was determined that 10 miles would be an excessive study area for this Facility. To define an appropriately sized visual study area (VSA), a viewshed analysis was conducted to better understand the Facility's area of potential effect. The viewshed analysis indicated that potential Facility visibility largely will be concentrated within 0.5 mile of the proposed Facility components and diminishes rapidly at distances beyond 1.5 miles. Potential visibility extending beyond 4 miles is very limited (see Figure 2.1 of the VRA). As such, a

5-mile radius around the Project Area was used for the VSA. The VSA encompasses approximately 123.8 square miles, primarily falling within eastern Jackson County, but also including a portion of northwestern Gallia County and southern Vinton 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 viewshed analysis conducted for the Facility used lidar data to incorporate screening effects of topography, structures, and vegetation. A digital surface model (DSM) of the VSA was created from the lidar data, which include the elevations of buildings, trees, and other objects large enough to be resolved by lidar technology. The lidar-derived DSM was adjusted by removing overhead electric lines that appear as opaque screening features in the data, and by removing vegetation within the PV panel array fenceline to show bare earth elevation. From the DSM, a viewshed analysis was conducted for the PV panels and above-ground electrical components.

Based on the results of the viewshed analysis, PV panels will be screened from approximately 94.8% of the VSA by intervening topography, vegetation, and structures. Similarly, the Facility above-ground electrical components will be screened from approximately 94.9% of the of the VSA. Visibility of Facility components will be concentrated within the Project Area, and the open fields immediately adjacent. The viewshed analysis also suggests that panel visibility is highest within 0.5 mile of the Project Area, drops substantially between 0.5 and 1.5 miles, and diminishes rapidly beyond 1.5 miles. Potential visibility beyond 4 miles from the Project Area is very limited. Additional information on methods and results of the viewshed analysis is provided in the VRA.

(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 (LTs) within the VSA were categorized based on the similarity of various features, including landform, vegetation, water, and/or land use, in accordance with established visual assessment methodologies. Forest is the dominant LT, comprising 67.9% of the VSA. Views of the

Facility from within the Forest LT will typically be limited by the presence of dense vegetation; however, during leaf-off conditions, narrow or sparsely vegetated woodlots may not provide enough screening to fully obscure views of the Facility. Cropland/Pasture is the second most predominate LT, comprising approximately 21.4% of the VSA. Agricultural land within the VSA typically offers the greatest potential for long-distance views due to the presence of open fields and minimal screening features. As such, the Cropland/Pasture LT is likely to have the greatest opportunities for views of the Project. Developed land comprises approximately 5.2% of the VSA and includes the southeastern edge of Jackson, unincorporated places such as Middleton and Winchester, and all paved roads within the VSA. These areas typically find outward views across landscaped yards, parking lots, recreational fields, and planted vegetation, with views that may be limited due to the presence of closely situated buildings, utility poles, or other constructed features. Other landscape types present within the VSA include Grassland/Shrubland (4.3%), Open Water/Wetland (0.6%), and Barren Land (0.6%). Additional information about LTs is provided in section 1.2.2 of the VRA (Exhibit P).

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 result in alteration of the existing landscape through the introduction of low-profile PV panels. Visibility and visual impact of the Facility will be highly variable, based on landscape setting, the extent of natural screening, the presence of other built features in the view, and distance of the viewer from the Facility. The most notable change includes the blocking of background and middle ground vegetation and structures by PV panels, thereby enclosing views that were once open and visible over longer distances. As distance increases from the PV panels, the panels become more difficult to perceive,



and begin to appear as thin horizontal lines of grayish tan color. For additional details on landscape alterations and impacts, see Exhibit P.

(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 125 visually sensitive resources were identified within the VSA, including 89 properties of historic significance, 23 high-use public areas, 12 public lands and recreational resources, and one designated scenic resource. Figure 1.5 in the VRA (Exhibit P) shows the locations of visually sensitive resources relative to the Project Area. Of the 125 resources identified within the VSA, 25 were found to have the potential for Facility visibility. Additional information on visually sensitive resources is provided as Appendix E in the VRA (Exhibit P), which includes a list of all identified resources, their distance from the Facility, and estimated visibility of the Facility from the identified resource.

(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 from four selected viewpoints. These simulations allow the viewer to better evaluate visibility, appearance, and contrast with the existing landscape. The visual simulations are included in section 2.2 of the VRA (Exhibit P) along with detailed discussions of each simulation. 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 located in a rural, sparsely populated area. To reduce impacts to those living in the area, the Applicant designed the Facility to include setbacks to the PV panels from

non-participating residential structures (300 feet), centerline of public roads (100 feet), and non-participating residential parcel boundaries (100 feet).

#### Lighting

Construction activities generally will be restricted to construction hours (7:00 AM to 7:00 PM, or until dusk when the sun sets after 7:00 PM). Temporary lighting in construction areas will be used as necessary to assure safety of operating equipment and active work sites, for illumination near dawn and dusk, and during any limited but necessary nighttime construction activities. Nighttime lighting will also be necessary in certain areas to assure the security of equipment, trailers, and laydown yards. To the extent practicable, lighting will be oriented toward the interior of the Facility, away from roadways and adjacent residences. During operation, downlit lighting will be used at Facility main entrance and Substation location.

#### Visual Screening

The installation of vegetative screening will lessen the visual impact of the Facility. Vegetation will be used to blend the Facility into the existing landscape, and this selection of material aids in the creation of ecological habitat. Visual screening introduces natural, vertical elements that break up the horizontal lines created by the PV arrays and fenceline. This will help the Facility fall into the background vegetation rather than stand out as a foreground element. For additional information, see the Landscape Mitigation Plan in Exhibit P.

#### Facility Materials and Coloration

PV modules use non-reflective glass and are designed to absorb the light that hits the panels, reducing potential for glare. The fencing for the Facility and substation will be mostly chain link fencing. The racking system for the panels allows panel rows to follow some variation in topography, limiting the landscape alteration needed for installation.

### **(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.

Agricultural districts and crop cover are shown on Figure 08-3. Information on agricultural districts and Current Agricultural Use Value (CAUV) parcels was obtained from the Jackson County Auditor’s offices in June 2021.

(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 08-11 provides the total impacts to agricultural land uses based on the fenced area of the Project, which is anticipated to be unavailable for use by the landowner. Impacts of the small segments of Facility components that are proposed to be located outside of the fenceline were calculated separately and added to the total.

**Table 08-11. Total Agricultural Land Use Impacts**

Facility Component	Temporary Impact (acres) <sup>4</sup>	Permanent Impact (acres)	Total Impact (acres)
<b>Agricultural Vacant (100)</b>			
Area Inside Fenceline <sup>1</sup>	0.0	1,094.9	1,094.9
Area Outside Fenceline			
Access Pathway <sup>3</sup>	1.0	2.5	3.4
Overhead Collection Line <sup>2</sup>	0.0	11.5	11.5
Collection Substation	0.0	0.4	0.4
POI Substation	0.0	0.4	0.4
<b>Total Agricultural Vacant</b>	<b>1.0</b>	<b>1,109.7</b>	<b>1,110.7</b>

1. As the entire fenced area is anticipated to be unavailable to landowners, permanent land use impacts include the entire area within fenceline.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
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 08-12 presents agricultural land use impacts by Facility components. Agricultural land use data was derived from land use codes included in parcel data obtained from Jackson County auditor’s office.

**Table 08-12. Agricultural Land Use Impacts by Facility Component**

Agricultural Land Use	Temporary Disturbance (Acres) <sup>5</sup>	Permanent Loss (Acres)	Total Disturbance (Acres)
<b>Agricultural Vacant (100)</b>			
Access Pathways <sup>3</sup>	12.0	28.5	40.5
Overhead Collection Lines	0.0	55.6	55.6
Collection Substation <sup>2</sup>	0.0	0.4	0.4
Inverters <sup>4</sup>	0.0	1.0	1.0
POI Substation	0.0	0.4	0.4
PV Panels <sup>1</sup>	0.0	438.6	438.6
Laydown Yards	13.5	0.0	13.5
<b>Total Impact</b>	<b>25.5</b>	<b>524.6</b>	<b>550.2</b>

1. Permanent impacts to solar arrays include the entire area underneath and between the panels because that area will be taken out of its current use for approximately 40 years.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
4. Includes 39 inverter pads, each with an approximate footprint of 1,200 square feet.
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.

Table 08-13 provides total impacts to agricultural districts and CAUV parcels based on the fenced area of the Facility, which is anticipated to be taken out of the respective programs due to the commercial nature of the Facility. Impacts of the small segments of Facility components that are proposed to be located outside the fenceline were calculated separately and added to the total.

**Table 08-13. Total Impacts to Agricultural Districts and CAUV Parcels**

Facility Component	Temporary Impact (Acres) <sup>4</sup>	Permanent Impact (Acres)	Total Impact (Acres)
<b>CAUV Land</b>			
Area Inside Fenceline	0.0	1,090.0	1,090.0
Area Outside Fenceline			
Access Pathway	1.0	2.5	3.4
Collection Line	0.0	11.5	11.5
Collection Substation	0.0	0.4	0.4
POI Substation	0.0	0.4	0.4
<b>Total CAUV Land Impact</b>	<b>1.0</b>	<b>1,104.8</b>	<b>1,105.8</b>

1. As the entire fenced area is anticipated to be unavailable to landowners, permanent land use impacts include the entire area within fenceline.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
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 08-14 quantifies impacts to CAUV land by component.

**Table 08-14. CAUV Parcel Impacts by Component**

Facility Components	Temporary Disturbance (Acres) <sup>4</sup>	Permanent Loss (Acres)	Total Disturbance (Acres)
Access Pathways <sup>3</sup>	11.8	28.1	40.0
Overhead Collection Lines <sup>2</sup>	0.0	55.3	55.3
Collection Substation	0.0	0.4	0.4
Inverters	0.0	1.0	1.0
POI Substation	0.0	0.4	0.4
PV Panels <sup>1</sup>	0.0	438.6	438.6
Laydown Yards	13.4	0.0	13.4
<b>Total</b>	<b>25.2</b>	<b>523.9</b>	<b>549.1</b>

1. Permanent impacts to solar arrays includes the entire area underneath and between the panels, because that area will be taken out of its intended current use for approximately 40 years.
2. A permanent, 50-foot-wide area will be required for overhead collection line installation.
3. Access roads will have a temporary width of 30 feet, and a permanent width of 20 feet.
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.

**(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 1,104.8 acres of agricultural land, taking it out of use for approximately 40 years. Agricultural activities such as plowing, planting, cultivating, spraying, aerial applications, and harvesting will be halted on this land for the lifetime of the Facility. Once the Facility has reached the end of its useful life, Facility components may be removed, and the underlying Project Area will be restored for potential agricultural use or the Applicant may wish to continue the use of the Facility by replacing aged components and obtaining any required permits at that time.

(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

There are no known drain tiles within the Project Area. Minimal grading is anticipated, and the Facility will follow existing contours to the extent practicable. Post-construction storm water controls will be implemented, if necessary, per Ohio EPA Permit No. OHC000005, and the Facility will be constructed in accordance with Ohio EPA's guidance on storm water controls. As noted previously, a Geology and Hydrogeology study (Exhibit M) was completed for the Project Area, and no major drainage concerns in the form of flooding, ponding, or scour were noted within the Project Area.

(iv) Structures used for agricultural operations

No agricultural structures will be impacted or removed for Facility construction or operation.

(v) Viability as agricultural district land

There are no agricultural districts within the Project Area, therefore, this section is not applicable.

(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.*

There are no known drain tiles within the Project Area.

(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.*

There are no known drain tiles within the Project Area.

(iii) Topsoil segregation, decompaction, 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 and subsoil are appropriately segregated throughout the site. Topsoil segregation ensures that vegetation can quickly establish following construction, and that agricultural production can commence following Facility decommissioning. Topsoil that is displaced for laydown yards, workspaces, grading, or access pathways will be stockpiled separately so that it can be redistributed prior to final stabilization. Similarly, topsoil and subsoil will be segregated and subsequently backfilled during the installation of belowground 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.

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