

APPLICATION TO THE OHIO POWER SITING BOARD

FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE

WILD GRAINS SOLAR PROJECT

Hoaglin Township, Van Wert County, Ohio

Case No. 21-0823-EL-BGN

Prepared for:



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NOVEMBER 2021



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November 16, 2021

Via Electronic Filing

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

**Re: Wild Grains Solar, LLC,
OPSB Case No. 21-823-EL-BGN**

Dear Ms. Troupe:

Enclosed for filing in the above-referenced case is a copy of the Application of Wild Grains Solar, LLC ("Wild Grains") for a Certificate of Environmental Compatibility and Public Need in proposing to develop, construct, and operate a 150 megawatt solar-powered electric facility in Hoaglin Township, Van Wert County, Ohio.

Name of Applicant: Wild Grains Solar, LLC
whose authorized representative is:
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**Name/Location of
Proposed Facility:** Wild Grains Solar, LLC
150 MW Solar-Powered Electric Facility
Hoaglin Township, Van Wert County, Ohio

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

Notarized Statement: See Attached Affidavit of Jeffrey J. Reinkemeyer,
on behalf of Wild Grains Solar, LLC

Sincerely on behalf of
WILD GRAINS SOLAR, LLC



Dylan F. Borchers
Kara H. Herrnstein

Enclosure

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **Wild Grains Solar, LLC** for a Certificate of Environmental Compatibility and Public Need for a Solar Facility Located in Van Wert County, Ohio.)
Case No. 21-823-EL-BGN)

JEFFREY J. REINKEMEYER OF AVANGRID RENEWABLES

STATE OF INDIANA :
COUNTY OF LAKE : ss.
:

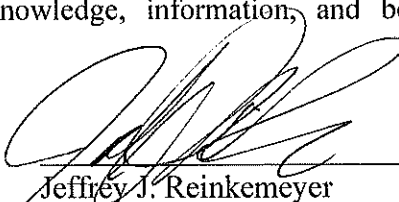
I, Jeffrey J. Reinkemeyer, being duly sworn and cautioned, state that I am over 18 years of age and competent to testify to the matters stated in this affidavit and further state the following based upon my personal knowledge:

1. I am the Director, Eastern Renewables Development of Avangrid Renewables, LLC a subsidiary of Avangrid, Inc. and part of IBERDROLA Group ("Avangrid") is the sole owner of Wild Grains Solar, LLC ("Wild Grains").

2. Wild Grains' Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need to develop, construct, and operate a 150 megawatt ("MW") solar-powered electric facility in Hoaglin Township, Van Wert County, Ohio was prepared and reviewed by Avangrid employees that are the primary individuals in charge of the development of Wild Grains on whom I reasonably rely as Avangrid subject matter experts.

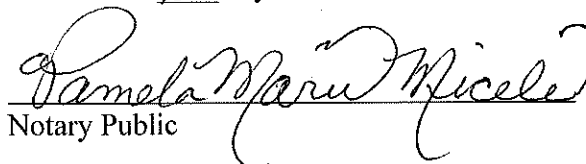
3. To the best of my knowledge, information, and belief, the information and materials contained in the above-referenced Application are true and accurate.

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



Jeffrey J. Reinkemeyer
Director, Eastern Renewables Development
Avangrid Renewables

Sworn to before and signed in my presence this 15th day of November 2021.



Notary Public

[SEAL]



Pamela Marie Miceli
Notary Public - State of Indiana
County of Residence: Marion
Commission Number: 683899
My Commission Expires: 04-19-2024

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ACRONYMS AND ABBREVIATIONS

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

4906-4-01 PURPOSE AND SCOPE

(A) REQUIREMENTS FOR FILING OF CERTIFICATE APPLICATIONS

Wild Grains Solar, LLC (Applicant or Wild Grains), a wholly owned subsidiary of Avangrid Renewables, LLC, is proposing to construct the Wild Grains Solar Facility (Project), a solar-powered electric generation facility (Facility) in Hoaglin Township, Van Wert County, Ohio. The materials contained herein and attached hereto constitute the Applicant's submittal (Application) for a Certificate of Environmental Compatibility and Public Need (Certificate), prepared in accordance with the requirements for the filing of standard certificate applications for electric generation facilities, as prescribed in Chapter 4906-4 of the Ohio Administrative Code (OAC).

This Application has been prepared by the Applicant, with support from EDR. EDR has over 20 years of experience with siting and permitting renewable energy facilities, including more than 10 years of experience with renewable energy facilities in Ohio.

(B) WAIVERS

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 being filed separate from this Application, the Applicant is requesting 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.

(A) PROJECT SUMMARY

The Applicant proposes the construction of an up to 150 megawatt (MW) alternating current (AC) solar photovoltaic (PV) generation facility in a rural portion of Van Wert County. The Facility will consist of PV modules, steel racking and support structures, single-axis solar tracking system, inverters with medium voltage transformers, an underground medium voltage electrical collection line system, access roads, perimeter fencing, a high voltage electrical collection substation, meteorological data collection system, supervisory control and data acquisition (SCADA) system, and potentially an equipment storage facility. The point of interconnection (POI) for the Facility will be American Electric Power's existing 345 kilovolt (kV) Maddox Creek substation, which is located adjacent to the western section of the proposed Facility. Interconnection will be accomplished with a short 345 kV interconnection (gen-tie) conductor from the collection substation to the adjacent POI substation, as shown on Figure 03-2 and described in detail in Section 4906-6-05 of this Application.

(1) General Purpose of the Facility

The general purpose of the Facility is to maximize energy production from available solar resources in order to deliver clean renewable electricity to the Ohio bulk 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) Description of the Facility

The Facility will be located on approximately 2,312 acres of private land in Hoaglin Township (Project Area). The footprint of Facility components will be approximately 763.9 acres. The total AC generating capacity of the Facility will not exceed 150 MW. The Facility is expected to operate with an annual capacity factor of approximately 26.2% in its first year, generating a total of approximately 340,000 megawatt hours (MWh) in its first year of operation, 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

The Project Area meets all factors necessary to support a viable solar energy facility. The proposed site possesses a competitive solar resource, good access and close proximity to the bulk power transmission system, interested landowners, sufficiently low population density, positive feedback from landowners and local officials, highly compatible land-use characteristics, 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 2019 and was completed prior to submittal of this Application. During this time, meetings were held with local stakeholders, and outreach was conducted with landowners near the Project Area. Due to the ongoing COVID pandemic, some meetings were held virtually. An in-person community open house was held on Wednesday, June 30, 2021, to inform the public about the proposed Facility. An in-person public information meeting was held, pursuant to OPSB rules, on August 18, 2021, to provide information to the public about the Applicant, the Facility, and solar technology, and to provide opportunities for the public to ask questions about the Project.

Final design of the Facility will be completed prior to the commencement of construction, as early as the third quarter of 2022. Construction is anticipated to begin shortly thereafter and be completed as early as 2023 or in 2024, at which time 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) APPLICANT INFORMATION

(1) Plans for Future Generation Capacity at the Site

The Applicant currently has no plans for future additional generation capacity at this site.

(2) Description of Applicant and Operator

Wild Grains Solar, LLC is a wholly owned subsidiary of Avangrid Renewables, LLC, which is a subsidiary of Avangrid and part of the Iberdrola S.A. Group. Iberdrola S.A. has been a company for over a century and currently employs more than 28,000 people in nearly 40 countries. In the United States, Avangrid Renewables is responsible for approximately 60 renewable energy projects providing power for its utility-scale customers. Avangrid Renewables is one of the leading providers of clean, renewable power in the U.S. with more than 6,000 MW of owned and controlled wind and solar power facilities, demonstrating their financial stability and development success.

4906-4-03 PROJECT DESCRIPTION AND SCHEDULE

(A) PROJECT AREA DESCRIPTION

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

(1) Geography and Topography Map

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

(a) *The Proposed Facility*

Figure 03-1 illustrates the primary components of the Facility, including the fenceline, PV panel areas, electrical collection system, inverters, access roads, collection substation, gen-tie conductor, O&M building, and laydown yards contained within the Project Area. While the Applicant expects that the final layout will remain substantially similar to the preliminary Facility layout, due to ongoing technological innovations in the solar industry, continued engineering and survey work, public feedback, and communications during the OPSB certification process, the precise location of these features within the Project Area is subject to change. While the layout is subject to change, all Facility components will be located within the Project Area, which has been studied for environmental, cultural, engineering, and visual impacts, and will be subject to the various conditions and constraints laid out in this Application, and stipulations and conditions identified upon Certificate issuance.

(b) *Population Centers and Administrative Boundaries*

The Facility is in Hoaglin Township, in northeastern Van Wert County, Ohio. The nearest population centers are the Village of Scott, approximately 2.1 miles north of the Project Area boundary, and the City of Van Wert, approximately 1.7 miles south of the Project Area boundary. The Toledo and Columbus metropolitan areas are approximately 60 miles to the northeast and 90 miles to the southeast, respectively.

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

The Project Area is bounded by Mohr Road to the north, Slane Road to the east, Church Road to the south, and U.S. Route (US) 127 to the west. US 224 runs north-south from Van Wert, gradually turning east-west as it passes through the Project Area. Other nearby major routes include State Route (SR) 637 to the east and US 30 to the south. Van Wert County Airport is located approximately 4 miles to the southwest. There are no other commercial airports nearby.

The Chicago, Fort Wayne & Eastern railway line runs east-west through Van Wert, with a short active spur running north and terminating approximately 1.8 miles south the Project Area. In addition, an abandoned rail line continues north from the Chicago, Fort Wayne & Eastern spur, approximately 0.5 mile west of the Project Area. There are no other active or abandoned rail lines within 2 miles of the Project Area (Ohio Rail Development Commission, 2021).

An active natural gas transmission line runs northwest-southeast approximately 2.6 miles northeast of the Project Area. The pipeline is operated by Panhandle Eastern Pipeline Company. There are no natural gas or hazardous liquid pipelines within 2 miles of the Project Area (USDOT, 2021).

The existing Maddox Creek substation is located in the west-central portion of the Project Area, along Fife Road. Several existing transmission lines connect through this substation, including East Lima – Maddox Creek, a 345 kV transmission line that runs east-west through the central portion of Project Area; Maddox Creek – RP Mone, a 345 kV transmission line that runs east-west through the central portion of Project Area; and Blue Creek – Maddox Creek, a 345 kV transmission line that runs north-south through the northwestern portion of Project Area.

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

There are five named streams located within 2 miles of the Project Area. Maddox Creek and Town Creek traverse the central portion of the Project Area, while Hoaglin Creek flows through the very northwestern corner of the Project Area. Pottawatomie Creek drains into Hoaglin Creek approximately 0.2 mile west of the Project Area boundary. The closest section of North Creek lies

approximately 1.2 miles northwest of the Project Area. There are no named lakes or reservoirs within 2 miles of the Project Area.

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

Bike Route 44 runs east-west across northern Ohio, passing south of the Facility within approximately 1.6 miles of the Project Area boundary. The Lincoln Highway Historic Byway, which was developed as the first roadway system in support of the automobile, also runs east-west approximately 1.6 miles south of the Project Area.

(2) Area of All Owned and Leased Properties

A total of approximately 2,312 acres of private property are owned and/or under lease agreement by the Applicant for construction and operation of the proposed facility. This includes easement agreements that have been established on approximately 9 acres of land. The approximately 2,312-acre Project Area is comprised of 76 parcels. Of the approximately 2,312 acres, the Applicant intends to use only approximately 763.9 acres for operation of the Facility.

(B) DETAILED DESCRIPTION OF PROPOSED FACILITY

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

(1) Description Details for the Project

(a) *Type and Characteristics of Generation Equipment*

Generation equipment for the Facility includes PV modules, a racking system, and inverters to convert from electrical output from direct current (DC) to AC. The PV panels proposed for this Facility will be dual glass, mounted on single axis trackers and installed in linear arrays. Representative solar panels and trackers under consideration are provided in Exhibit B. The panels will rotate along one axis of movement along the linear array. Based on the total generating

capacity of 150 MW, the Applicant anticipates using approximately 477,400 solar panels. The panels will operate continuously but will not produce electricity over night or during periods with overcast skies. The anticipated annual net capacity factor for the Facility is anticipated to be 26.2% in Year 1. Based on a total generating capacity of 150 MW and an annual capacity factor of 26.2%, the Facility will generate approximately 340,000 MWh of electricity in Year 1. Because no fuel will be burned by the generating equipment, heat rate is not applicable to solar energy facilities.

(b) *Turbine Dimensions*

This section is not applicable to the Facility.

(c) *Fuel Quantity and Quality*

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

(d) *List of Pollutants Emissions and Quantities*

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

(2) Description of Major Equipment

This section describes, based on information 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 Facility components. The primary steps for Facility construction include the following: (1) securing the perimeter of the construction areas; (2) installation of stormwater and erosion control measures; (3) clearing vegetation where necessary; (4) minor earthwork or grading where necessary; (5) construction of access roads; and (6) installation of equipment, such as pilings, racking, panels, inverters, pyranometers, the substation, and fencing to secure the site.

(a) *Electric Power Generation Equipment*

Once access roads are complete for the Project Area, construction of the trackers and mounting of the PV modules will commence. Because the majority of the site is relatively flat, minimal grading is anticipated in the PV array area. The PV modules will be secured on a single-axis tracker racking system supported on metal piles that will be driven into the ground to an approximate depth of 7 to 10 feet. Pile driving negates the need for excavation for PV module installation.

Single-axis tracker designs vary by manufacturer, but generally consist of a series of mechanically linked horizontal steel support beams known as torque tubes, with a drive train system usually located in the center of the rows, dividing the array into two sides. The number of rows within a tracker block is typically limited by the drive system's ability to move multiple torque tube assemblies. This row design is also determined by the amount of the desired solar output to the inverters. Rows would be aligned north to south, and the PV panels would pivot, tracking the sun's motion from east to west throughout the day. PV panels will be a maximum of 12 feet in height and will be surrounded by a 6 to 7-foot tall chain link fence plus a 1-foot tall barbed wire strand. PV panels used in the Facility are anticipated to consist of tempered coated dual glass and are anticipated to be approximately 7.4 feet (length) by 3.7 feet (width) by 1.4 inches (thickness). However, final panel selection may result in different dimensions and materials. Additional information regarding dimensions and materials for the solar panel model under consideration is provided in Exhibit B.

The Applicant will utilize the Ohio Environmental Protection Agency (Ohio EPA) *Guidance on Post Construction Storm Water Controls for Solar Panel Arrays* (Ohio EPA, 2019). This guidance will be considered in the final Facility layout.

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

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

Fuel tanks for construction equipment will be stored in laydown yards during Facility construction. In addition, there will be a back-up propane generator in the collection substation with a 1,000-gallon propane tank. PV panels generate electricity without the use of fuel or water, and without generating waste. Therefore, the proposed Facility does not include any significant facilities for fuel, waste, water, or other similar storage facilities.

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

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

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

No Facility components will use significant quantities of water or discharge significant quantities of wastewater. Due to the Project's proximity to the Blue Creek Wind project, the O&M building for Blue Creek will be used to host the Wild Grains Facility. Thus, no additional water or sewer infrastructure will be needed for the Project.

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

The Facility will include the installation of a 115-kV gen-tie conductor which will be less than 100 feet in length. This gen-tie conductor will run overhead from the collection substation to the adjacent POI, American Electric Power's existing 345 kV Maddox Creek substation, where the voltage will be increased to 345 kV through an existing transformer. The Facility will connect to the Maddox Creek substation through the installation of a new 345 kV circuit breaker. Because of the short distance between the collection substation and the POI substation, which will both be located within a common fenceline, it is not anticipated that there will be any support structures outside of the substation fenceline. Preliminary details of the Facility interconnection are included in Exhibit A.

There are no gas pipelines associated with the Facility.

(f) *Electric Collection Lines*

Each solar array will have a network of electric cable and associated communication lines that collect the electric power from the solar modules and transmit it to a centralized location through a DC combiner harness. Power from the DC collector will be transmitted through a series of related electrical components including a DC-to-AC inverter, a medium-voltage transformer that will increase the voltage up to the 34.5 kV, and a cabinet of power control electronics, all housed inside the power conversion station which will be mounted on a steel skid and set on a steel pile or concrete pad foundation.

The medium-voltage transformer on each power conversion station will increase the voltage to 34.5 kV. Several power conversion stations will be connected in series to form a medium-voltage circuit. These circuits are commonly referred to as the medium-voltage collection system. Medium-voltage cables for each circuit will be buried underground. Approximately 22.4 miles of buried collection cable will be used in the Facility. Underground collection lines will be installed using the direct burial method. Direct burial methods may include the use of a trencher. The trencher uses a large blade to excavate an open trench, generally 24 to 36 inches wide, with an adjacent sidecast area. Alternatively, a backhoe or excavator may be used to excavate the trench. Using the direct burial method, cable will be installed to a minimum depth of 36 inches and requires up to a 20-foot width of clearing and surface disturbance for installation machinery and access. Once cable is placed in the trench, suitable native soil will be placed around the cable and compacted.

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

Each solar field will have a network of electric lines and associated communication lines that collect the electric power from the various arrays and transmit it to a centralized location at combiner harnesses. Power from the combiner harnesses will be transmitted through a series of related electrical components including a DC-to-AC inverter, a medium-voltage transformer that will increase the voltage to 34.5 kV, and a cabinet of power control electronics, housed inside the power control station. The preliminary Facility layout includes 43 inverter stations. The inverter, medium-voltage transformer, and power control electronics, that form a power conversion

station, will be mounted on a skid or concrete pad. Manufacturer's specifications for representative inverters under consideration are provided in Exhibit B.

The medium-voltage transformer on each of the approximately 43 power conversion stations will increase the voltage to 34.5 kV. Several power conversion stations will be connected to form a medium-voltage circuit. Collection lines will deliver power to the collection substation, where an additional voltage step up from 34.5 kV to 115 kV will occur. The collection substation will be located in the west-central portion of the Project Area, along the south side of Fife Road, within the existing Blue Creek substation area and next to the existing Maddox Creek substation. The area within the substation has previously been graveled. The collection substation will be enclosed by an approximately 7-foot tall chain-link fence plus an additional 1-foot barbed wire strand. Preliminary design drawings of the collection substation are included in Exhibit A.

Prior to construction of the collection substation, erosion and sediment control features (e.g. silt fencing) will be installed as needed. Given the fact that the site was previously graded and graveled, no grading is anticipated. After site construction, permanent erosion and sediment control features will be installed, as needed. The collection substation will cover an area of approximately 567 feet by 165 feet. Major equipment within the collection substation will be positioned on concrete foundations, and the entire substation will be enclosed by the existing chain link fence around the Blue Creek substation. Additional features of the collection substation include dead-end support structures for collection lines, circuit breakers, surge arrestors, insulators, and a lightning mast. The tallest structure within the substation will be the lightning mast, which will be approximately 65 feet tall.

A new transformer in the collection substation will step the voltage up to 115 kV, and then an existing transformer in the Blue Creek substation will be used to step the voltage up to 345 kV. Electricity will be delivered, through an overhead conductor to the POI substation. The existing POI substation is located along the south side of Fife Road, immediately south of the collection substation location.

(h) *Weather Stations*

The Facility will include approximately 15 weather stations, which will be mounted to the PV racking system. Each weather station will include a pyranometer, which will be approximately 6 inches in diameter and approximately 6 feet tall.

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

The Facility will require the construction of approximately 8.7 miles of new access roads within the Project Area. The roads typically will include a 14-foot-wide gravel surfaced area. New gravel-surfaced access roads will be constructed in locations selected to minimize potential impacts. Large cranes will not be utilized in the construction of the Project; therefore, there are no designated crane paths for the Facility.

Access road construction will involve topsoil stripping and grubbing of stumps, as necessary. Stripped topsoil will be stockpiled along the road corridor for use in site restoration. Any grubbed stumps will be removed, chipped, or buried. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with gravel or crushed stone, with the depth to be determined on a case-by-case basis. To the extent practicable, local sources will be used to obtain gravel and other construction materials that may be needed (e.g., sand) in support of Facility construction.

During construction, access road installation and use could result in temporary soil disturbance of a maximum width of 30 feet. Once construction is complete, temporarily disturbed areas will be restored, including removal of excess road material and rocks greater than 12 inches, and returned to their approximate pre-construction contours as necessary.

(j) *Construction Laydown Areas*

As shown in Figure 03-2, 10 laydown yards are proposed for the Facility. The laydown yards will occupy approximately 10.1 acres. The laydown yards will accommodate material and equipment storage during construction, parking for construction workers, and construction management trailers. The laydown yards will be temporary structures, which may be equipped with temporary lighting, fencing, and erosion and sediment control methods, if needed, all of which will be removed upon completion of Facility construction. Construction and reclamation of the laydown

yards will be similar to that for access roads. Following construction, laydown yards will be decompacted, the topsoil will be redistributed, and the area will be reseeded per the specifications of the Vegetation Management Plan.

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

The Facility will be surrounded by a 6-foot or 7-foot security fence with potentially an additional 1-foot of barbed wire on top. The fence will be made from galvanized steel, supported on steel posts. Downward facing lighting will be located at Facility substation.

As stated previously, the Blue Creek O&M facility on Fife Road will be used to host O&M facility functions for the Wild Grains Facility. Thus, there will be no need to establish a new O&M building for the Project. However, the Project may include a new equipment storage facility, which would be placed within the fenceline of the existing Blue Creek O&M facility.

(l) *Other Pertinent Installations*

Permanent stormwater treatment infrastructure will be installed for the Facility to meet all requirements of the Ohio EPA Permit No. OHC000005 (Ohio EPA, 2018). Permanent stormwater treatment infrastructure is anticipated to be minimal and primarily will consist of infiltration swales and ditches adjacent to access roads.

(3) Need for New Transmission Lines

The Facility will require the use of an overhead gen-tie conductor, which will be less than 100 feet in length. The gen-tie conductor will transmit the energy generated by the Facility from the collection substation to the POI substation, which is interconnected with the electric transmission grid. Interconnection to the POI substation will require the installation of a new 345 kV circuit breaker at the POI substation. The gen-tie conductor is further discussed in Section 4906-4-03(B)(2)(e) and is provided in the preliminary Facility substation drawings, included in Exhibit A.

(4) Project Area Map

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 6-inch orthoimagery map service.

(b) *The Proposed Facility*

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

(c) *Road Names*

Road name data was verified with the Van Wert County Engineer's Office website.

(d) *Property Lines*

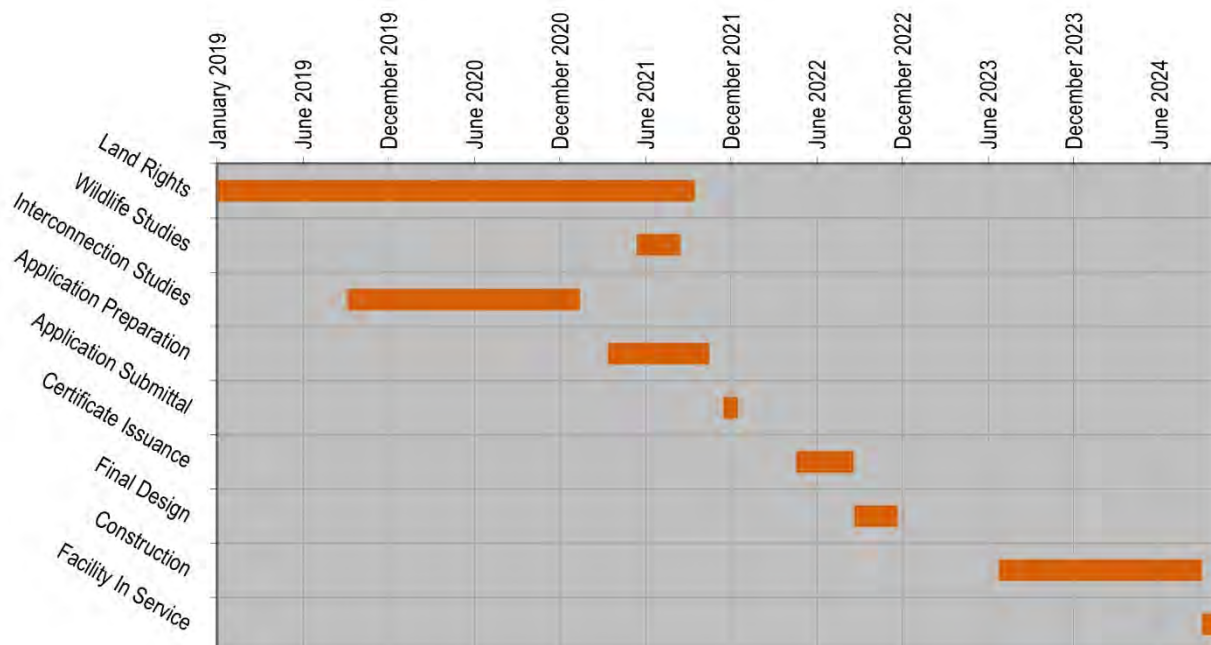
Property line data was obtained from the Van Wert County Auditor's Office website and a previously conducted survey associated with the Blue Creek Wind project.

(C) DETAILED PROJECT SCHEDULE

(1) Schedule

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

Inset 03-1. Project Schedule



(a) *Acquisition of Land and Land Rights*

Acquisition of land and land rights began in 2019 and continued through 2021.

(b) *Wildlife Surveys/Studies*

Ecological surveys/studies were completed in 2021.

(c) *Receipt of Grid Interconnection Studies*

Grid interconnection studies were initiated in October 2019. The Feasibility Study report was issued in July 2020. The System Impact Study report was issued in February 2021. Both reports are included in Exhibit G of this Application.

(d) *Preparation of the Certificate Application*

Preparation of the Application began in the second quarter of 2021.

(e) *Submittal of the Application for Certificate*

This Application was submitted in November 2021.

(f) *Issuance of the Certificate*

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

(g) *Preparation of the Final Design*

It is expected that final designs and detailed construction drawings will be completed as early as the third quarter of 2022.

(h) *Construction of the Facility*

Construction is anticipated to begin as early as 2023 or in 2024 and completed in approximately one year.

(i) *Placement of the Facility in Service*

The Facility will be placed in service upon completion of construction.

(2) Construction Sequence

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

- Installation of storm water and erosion control measures;
- General clearing of the Project Area, particularly where PV arrays, access roads, laydown yards, and substation;
- Grading for laydown yards and substation areas;
- Minimal grading for access roads and PV arrays;
- Construction of access roads;
- Installation of piles for support of PV modules;
- Installation of single-axis tracker system;
- Installation of PV modules;
- Installation of the electrical collection system;
- Construction and installation of substations;
- Installation of inverters;
- Facility commissioning and energization;
- Final grading and drainage; and
- Restoration activities.

Graded areas will be freed from irregular surface changes and sloped to drain. Final earth grade adjacent to equipment will be sloped away from the structure to maintain proper drainage. Slopes of embankments shall be protected against rutting and scouring during construction in a manner similar to that required for excavation slopes. Site grading will be compatible with the general topography and use of adjacent properties, right-of-way, setbacks, and easements.

Construction of PV module foundations, assembly, access road construction, and installation of collection lines are described above in Section 4906-4-03(B)(2).

Once construction is complete, temporarily disturbed areas will be restored (including removal of excess road material, de-compaction, and rock removal in agricultural areas) and returned to their approximate pre-construction contours. Exposed soils in the Project Area will be stabilized by seeding, mulching, and/or plantings.

(3) Impact of Critical Delays

Critical delays may have material, adverse effects on Facility financing, including the Applicant's ability to procure PV panels and other Facility components. 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 tax credits. 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 (ORC) Section 5727.75, or the Ohio Air Quality Development Authority's (OAQDA) Clean Air Improvement Program under ORC Sections 3706.01 and 3706.25, which are outlined in the Socioeconomic Report (Exhibit H).

4906-4-04 PROJECT AREA SELECTION AND SITE DESIGN

(A) PROJECT AREA SELECTION

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

(1) Description and Rationale for Selecting Project Area

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

As depicted in Figure 03-1, an existing bulk transmission line and transmission substation are located within the vicinity of the Project Area. The transmission system in the area is owned and maintained by AEP Ohio Transmission Company, Inc. (AEP), within the PJM regional transmission organization footprint. To establish a generation facility, the electrical grid must be able to accommodate a new facility's generating capacity at a selected POI. The POI is the location on the specified transmission line or infrastructure where the Facility will transmit power to the greater electric grid. The capacity of the nearby transmission line and anticipated costs of upgrades to accommodate a new interconnection at the POI were evaluated and it was determined that a 150 MW project was viable in the general area of the proposed Facility.

General topography and land use characteristics in the vicinity of the Project Area were also considered. The land in the immediate area is characterized with open spaces and is primarily used for agriculture, which is suitable for hosting a utility-scale power project. Ideal solar development areas are relatively flat with limited variations in topography. Initial site visits provided visual verification that the predominant land use and relatively flat terrain, making this project location compatible with solar project development. The Project Area is crossed by US 224 and bordered along the western side by US 127. US 30 passes east-west approximately 2 miles south of the Project Area. Additional county and township roads traverse and surround the Project Area. These roads provide accessibility to the Project Area for transportation of Facility components, construction equipment, workers, and emergency service providers.

(2) Map of Study Area

Willing participants are essential to the success of any solar project. After a suitable geographic area was established, the Applicant identified a group of willing Project landowners adjacent to a suitable POI that met the various other siting criteria listed in this section. With a group of willing participants, and a viable POI, the study area for the Facility was developed. As such, there were no additional sites considered for the Project. A map of the Project Area and 2-mile radius is included as Figure 03-1 and is representative of the area considered.

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

Adequate solar resource

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

Adequate access to the bulk power transmission system

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

Willing land lease participants and host communities

Solar generation facilities can be sited only on property where the landowner has agreed to allow such construction. The Applicant obtained private lease and easement agreements for contiguous areas of land necessary to support the Facility. See Section 4906-4-03(A)(2) of this Application for additional detail on property ownership and lease status. The Applicant has also engaged local community and state stakeholders to educate and share information. See Section 4906-4-06(F)(1) of this Application for additional detail on public interaction.

Site accessibility

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

Appropriate geotechnical conditions

The Applicant, based on a preliminary geotechnical analysis, determined that geotechnical conditions at the site are suitable for the development of a solar facility. See Section 4906-4-08(A)(5) of this application for additional details regarding geotechnical conditions.

Limited residential development

Hoaglin Township, which includes the Project Area, has a low population and residential development density compared to neighboring communities and statewide averages. Areas with limited residential development generally have more available space for siting solar panels once site-specific constraints are considered. See Section 4906-4-08(C)(3)(e) of this Application for additional detail on demographics in the vicinity of the Project Area.

Distance from airports

Solar panels are typically compatible with airports, as many airports have successfully implemented solar panels within airport boundaries. Nonetheless, airports were considered during the siting process. The proposed Facility is sited approximately 4.2 miles northeast from the nearest public-use airport (Van Wert County Airport). The next closest public-use airport is located 27 miles east of the Facility. See Section 4906-4-07(E) of this Application for additional details on aviation facilities.

Compatible land use

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

Topography

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

Limited sensitive ecological resources

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

Cultural resources

The Project Area was shown to have minimal known cultural resources during initial siting efforts. Sufficient land area exists within the Project Area to allow for the avoidance of identified cultural resources without affecting the viability of the Project. For additional information on cultural resources, see Section 4906-4-08(D) of this Application.

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

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

As noted above, the selection of possible sites for development of solar power facilities is constrained. The Applicant completed evaluations of the above siting criteria to identify and evaluate the suitability of the Project Area. As noted in 4906-4-04(A)(2), no other sites were considered for the Project.

(5) Description of Project Area Selected for Evaluation

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

(B) FACILITY LAYOUT DESIGN PROCESS

The Applicant considered the siting criteria identified in 4906-4-04(A) when developing the preliminary Facility layout. The Facility layout presented in this Application is considered preliminary. 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 locations of these features within the Project Area are subject to change.

Representative models of arrays, electrical collection system, inverters, access roads, substation, and laydown yards are subject to change within the Project Area but will still meet the various constraints identified below. As noted previously, the O&M building will be the existing Blue Creek O&M facility. The final Facility layout will be provided to the OPSB prior to the commencement of construction of the Facility.

(1) Constraint Map

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

In addition to investigating the layout within the constraints discussed above, numerous expert analyses and field studies have been conducted to ensure that the PV panel arrays are sited so as to minimize environmental impacts to the maximum extent practicable, while still allowing for a successful project. 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 worked with various consultants to conduct detailed assessments that identified and defined the siting factors and constraints discussed below. Using geographic information system (GIS) tools and consultant assessments, the Applicant performed numerous layout design iterations to develop the proposed Facility layout as presented and described in this Application. The criteria used in designing the Facility layout are discussed in additional detail below.

Equipment

As stated in Section 4906-4-03, representative models of Facility panels, racking, and inverters are provided in Exhibit B. Improving technologies could dictate the use of an alternative equipment model as identified during the final procurement process. All models selected will be analyzed for suitability of the various siting criteria and constraints listed herein and submitted to OPSB Staff

prior to construction. The equipment selection is subject to internal analysis of costs and availability of equipment during the procurement process.

Noise Constraints

Although there are no applicable standards for noise levels produced by solar energy facilities, the preliminary Facility layout is designed to minimize noise impacts to non-participating sensitive receptors in accordance with the noise analysis requirements stated in OAC Chapter 4906-4-08(A)(3) for electric generation facilities. For additional information on noise, see Section 4906-4-08(A)(3) of this Application.

Agricultural Constraints

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

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

Cultural Resources Constraints

The Applicant has completed field surveys across the Project Area for cultural resources. Twenty archaeological sites were identified within the Project Area that are potentially eligible for National Register of Historic Places (NRHP) listing, and they have been avoided in Facility design. A total of six historic resources were identified as potentially eligible for NRHP listing during the Historic Resources Survey. Visual effects resulting from Facility construction and operation are anticipated to be minimal and not have adverse effects on these resources. For additional information regarding cultural resources, see Section 4906-4-08(D).

Ecological Constraints

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

In order to avoid and minimize impacts to streams and wetlands, on-site investigations were conducted to establish the locations of streams and wetlands, and Facility components were sited in an effort to avoid impacts to these resources to the maximum extent practicable. For all identified stream and wetland crossing points, appropriate construction techniques will be used to avoid or minimize impacts. Any stream or wetland impacts will be temporary in nature. For additional information on estimated wetland and stream impacts, see Section 4906-4-08(B)(2)(a) of this Application.

Geotechnical Considerations

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

Glare Considerations

A glare study was also completed for the Project. The results of this study showed that no glare related impacts to flight paths or nearby airports are anticipated. Additionally, four primary thoroughfares near the Project, and the 40 nearest residences to the Project, were analyzed for potential glare impacts. No issues associated with glare were found. To limit reflection and maximize efficiency, solar PV panels are constructed of dark, anti-reflective, light-absorbing glass

that minimize glare impacts to the surrounding area. For additional information regarding glare and aviation, see Section 4906-4-07(E).

Hydrologic Constraints

A preliminary Groundwater, Hydrogeological, and Geotechnical Desktop Review was completed for the Project (Exhibit P). A Federal Emergency Management Agency (FEMA) floodplain is mapped along Maddox Creek, in the western section of the Project Area. An additional floodplain area touches the Project Area boundary in the extreme northwest section of the Project Area, associated with Hoaglin Creek. Other floodplain areas, associated with Town Creek, touch the central portion of the Project Area and a collection line easement. No above-ground facility structures will be placed within the FEMA floodplain areas; therefore, no impacts to floodplains are anticipated.

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

Landowner Considerations

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

Trees, Shrubs, and Vegetation

Vegetation clearing for the Project will primarily consist of agricultural crop cover, hedge rows, and volunteer vegetation in agricultural fields. Less than 2 acres of tree clearing is anticipated for the Project. No clearing will take place within existing woodlots, but some tree and shrub clearing is anticipated along hedge rows. Any clearing of trees greater than 3 inches in diameter that may be necessary will be completed from October 1 through March 31 to avoid potential impacts to bat species.

Setbacks

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

- 100 feet from non-participating sensitive receptors (residence, church, school)
- 25 feet from non-participating property boundaries
- 130 feet from the centerlines of public roads
- 1.3 times the maximum tip height from wind turbines

Wetland and Stream Constraints

Three wetlands, nine streams, and four ponds were identified and delineated in the Project Area during field surveys. These resources have been avoided to the maximum extent possible during Project design. No above-ground facility components will be placed in or over any of these features. The Project will require six stream crossings by collection lines, all of which will be completed by horizontal directional drilling. As a result, this Project will have no impacts on the streams, wetlands or ponds in the Project Area. For additional information on estimated wetland and stream impacts, see Section 4906-4-08(B)(2)(a) of this Application.

(3) Description of Number and Type of Comments Received

The public was able to provide comments to the Applicant through the Applicant's website (<https://www.wildgrainssolar.com>), by mail, and at the public information meeting which was held on August 18, 2021. A written comment in favor of the proposed Facility was received at the public information meeting. As of the date of filing the application, no other comments have been received by the Applicant. The Applicant is continuing to accept comments through the Project's website and through the Project email address (info@wildgrainssolar.com).

4906-4-05 ELECTRIC GRID INTERCONNECTION

(A) CONNECTION TO THE REGIONAL ELECTRIC GRID

In order to interconnect new generation to the electric transmission grid, the Facility owner must obtain approval from PJM. PJM is a regional transmission organization that coordinates the movement of wholesale electricity in all of Ohio and all or parts of surrounding states. The interconnection process includes completion of 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. The Facilities Study is not required for all projects (PJM, n.d.). The OPSB requires the Feasibility Study and the System Impact Study (both included in Exhibit G) to be submitted with the Application.

The proposed Facility will connect to the AEP transmission system through a short gen-tie conductor to AEP's Maddox Creek 345 kV substation (the POI). Interconnection with the AEP substation will require the installation of a new 345 kV circuit breaker, 345 kV risers, SCADA, jumpers, switches, 345 kV revenue metering, and associated protection and control equipment. The Applicant will be responsible for construction costs. As discussed in 4906-4-05(B)(2), the Applicant anticipates executing an interconnection agreement in the fourth quarter of 2022.

(B) INTERCONNECTION INFORMATION

(1) Generation Interconnection Request Information

The name of the interconnection queue position for the Facility is Maddox Creek 345 kV. The queue number is AF2-014, and the queue date is October 18, 2019. The proposed in-service date used by PJM for the interconnection studies is December 31, 2023. The website for the queue is <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx>. Find this project by entering the queue number AF2-014 into the "Queue/OASIS ID" search field.

(2) System Studies

The Maddox Creek 345 kV Feasibility Study and System Impact Study are complete. Although the Facilities Study is in progress, this step in the PJM review process can take considerable time. Information provided on the PJM website shows that the Facilities Study is currently taking approximately two years to complete (PJM, 2021). Because of this timing, the Applicant anticipates that it may be necessary to execute an Interim Interconnection Service Agreement, rather than an Interconnection Service Agreement, prior to the commencement of construction of the Facility. Because the Board's rule in OAC 4906-3-14(D) requires that a signed Interconnection Service Agreement be in place prior to commencement of construction, the Applicant has requested a waiver of this rule to allow for the use of an Interim Interconnection Service Agreement.

The completed PJM interconnection studies are included as Exhibit G to this Application.

(A) OWNERSHIP

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 where the collection line routes cross Wetzel Road, Fife Road, Hattery Road, John Yoh Road, Smith Kitzenbarger Road, Hoaglin Center Road, Convoy Road, Galvin Road, Rumble Road, and US 224, between participating parcels. The proposed Facility will not change the ownership status of such rights-of-way. The Applicant continues to communicate with property owners and is completing the process of obtaining the necessary leases, easements, and other agreements supportive to constructing the Project. For the purposes of this Application, participating parcels include any parcels anticipated to be under a lease or easement agreement at the time of Facility construction, or parcels owned by the signatory of a Good Neighbor Agreement. The land that hosts the collection substation will be purchased by the Applicant. The existing POI substation is owned by AEP. All other components of the Facility will be located entirely on privately-owned land, and voluntary lease agreements between the Applicant and private landowners will accommodate the Facility. The proposed Facility and associated lease agreements are not expected to change the ownership status of private lands within the Project Area.

The Applicant is a wholly-owned subsidiary of Avangrid Renewables, LLC (Avangrid) which is a subsidiary of Avangrid, Inc. (NYSE: AGR) and part of Iberdrola S.A. Avangrid currently owns and operates wind and solar facilities with over 6,000 MW of capacity in over 20 states. In total, Avangrid generates power from approximately 60 renewable energy projects in the United States and has a diversified energy portfolio, including wind, thermal, solar, and biomass generation.

(B) CAPITAL AND INTANGIBLE COSTS

(1) Estimated Capital and Intangible Costs by Alternative

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 H), filed under seal with this Application.

As described in Section 4906-4-04, the Applicant has not proposed alternative project areas. Therefore, no cost comparison between alternatives is available.

(2) Cost Comparison with Similar Facilities

Installed project costs compiled by the U.S. Department of Energy's (USDOE) Lawrence Berkeley National Laboratory (Berkeley Laboratory) in October 2021 indicate that the capital costs of the Facility are lower than recent industry trends. The Berkeley Laboratory compilation shows that capacity weighted average installed costs in 2021 averaged roughly \$1,420/kW_{AC} (Bolinger, Seel, Warner, & Roberston, 2021).

By way of further comparison, a sample size of 12 solar facilities installed in 2020 with capacities from 100 to 500 MW had a median cost of around \$1,290/kW_{AC} (Bolinger, Seel, Warner, & Roberston, 2021). These costs are consistent with the average cost estimated for this Facility. 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

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

(C) OPERATION AND MAINTENANCE EXPENSES

(1) Estimated Annual Operation and Maintenance Expenses

Estimated annual operation and maintenance expenses are included in Part III, Section 2 of the confidential version of the Socioeconomic Report (Exhibit H), filed under seal with this Application.

(2) Operation and Maintenance Cost Comparisons

Operations and maintenance (O&M) costs are anticipated to be slightly higher than the average costs compiled by the Berkeley Laboratory, and not significantly different from O&M costs at other solar energy facilities developed by the Applicant (Bolinger, Seel, Warner, & Roberston,

2021). A more detailed O&M cost comparison is included in Part III, Section 2 of the confidential version of the Socioeconomic Report (Exhibit H), filed under seal with this Application.

(3) Present Worth and Annualized Operation and Maintenance

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 are included in Part III, Section 2 of the confidential version of the Socioeconomic Report (Exhibit H). As alternative project areas and facilities were not considered in this Application, the O&M cost information in this section is limited to the Facility.

(D) COST OF DELAYS

Monthly delay costs would depend on various factors. If the delay were to occur in the permitting stage, the losses would be associated with the time value of money resulting from a delay in the timing of revenue payments. If the delay were to occur during construction, costs would include lost construction days and those associated with idle crews and equipment. There could also be penalties associated with failing to meet a delivery deadline under a potential Power Purchase Agreement. In addition, significant losses would be incurred if the delays prevented the Facility from meeting deadlines to qualify for the existing federal Investment Tax Credit. Prorating these one-time delay costs monthly would not be meaningful, as the lost opportunity is triggered at a single deadline and does not accrue over time. For estimates of the cost of delays, see Part III, Section 2 of the unredacted version of the Socioeconomic Report (Exhibit H).

(E) ECONOMIC IMPACT OF THE PROJECT

Information provided in this section was obtained from the Socioeconomic Report prepared by EDR (Exhibit H). The proposed Facility is anticipated to have local and statewide economic benefits. Solar power development, like other commercial development projects, can expand the local, regional, and statewide economies through both direct and indirect means. Income generated from direct employment during the construction and operation phases of the Project 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, EDR used the Photovoltaics Job and Economic Development Impact (JEDI) model (version PV12.23.16), which

was created by the NREL, a branch of the USDOE. The JEDI model requires project-specific data input such as year of construction, size of project, module, and location, and calculates the impacts described above using state-specific multipliers. These multipliers account for the change in jobs, earnings, and output likely to occur throughout the local, regional, and statewide economy as a result of project-related expenditures. The most currently available IMPLAN multipliers (2019) for the state of Ohio were used during the time of analysis (June 2021). The multipliers are paired with industry standard values such as wage rates and data reflecting local personal spending patterns to calculate on-site, supply chain, and induced impacts (NREL, 2021). This model allows impacts to be estimated for both the construction and operation phases of the proposed development.

Applying input assumptions of varying levels of confidence, the JEDI model allows users to estimate the jobs, earnings, and economic development impacts from solar power generation projects for both the construction and operation phases (NREL, 2021). These economic development impacts include earnings and related economic outputs from onsite jobs, local revenue and supply chain jobs, and induced jobs (see Part IV of Exhibit H for a description of impacts and indicators).

(1) Construction and Operation Payroll

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

Table 06-1. Estimated Statewide Job and Economic Impacts

	Jobs (FTE)	Earnings (Millions)	Output (Millions)
Construction			
Project Development and Onsite Labor Total	390.0	\$32.9	\$35.1
<i>Construction Labor</i>	309.5	\$28.1	-
<i>Construction Related Services</i>	80.5	\$4.7	-
Module & Supply Chain Impacts	138.2	\$8.9	\$23.8
Induced Impacts	147.1	\$8.1	\$25.6
Total Construction Impacts	675.3	\$49.9	\$84.6
Annual Operation			
Onsite Labor Impacts	1.0	\$0.1	\$0.1
Revenue & Supply Chain Impacts	1.0	\$0.1	\$0.2
Induced Impacts	4.1	\$0.3	\$0.8
Total Annual Operation Impacts	6.1	\$0.4	\$1.0

Source: NREL JEDI model (version PV12.23.16) (NREL, 2016). Cost values verified by the Applicant in June, 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). "During operating years" represent impacts that occur from system/ plant operations/ expenditures. 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 computations, it is anticipated that construction of the proposed Facility will directly generate employment of an estimated 390 full-time equivalent (FTE) on-site construction and project development positions. The JEDI model estimated a total of \$32.9 million in earnings for these 390 positions.

Module trade and supply chain industries could in turn generate an additional 138.2 jobs over the course of Facility construction. In addition, Facility construction could induce demand for 147.1 jobs through the spending of additional household income. The total impact of 675.3 new jobs could result in approximately \$49.9 million of earnings, assuming a 2022 construction start and wage rates consistent with statewide and nationwide averages.

Local employment will primarily benefit those in the construction trades, including laborers and electricians. Facility construction will also require workers with specialized skills, such as panel assemblers, specialized excavators, and high-voltage electrical workers. It is anticipated that many of the highly specialized workers will come from outside the area and will remain only for the duration of construction.

Based upon JEDI model computations, the operation and maintenance of the proposed Facility is estimated to generate one direct FTE job with estimated annual earnings of approximately \$0.1 million. Wage rates for direct operational employees are projected to be \$21.39 per hour with 45.6% employer payroll overhead, consistent with Ohio state averages, which are estimated to be approximately \$22 per hour for installation, maintenance, and repair occupations (U.S. Department of Labor, 2018). An estimate of the net present value of O&M earnings can be found in Part IV, Section 3 of the confidential version of Exhibit H, filed under seal with this application.

(2) Construction and Operation Employment

Demand for new jobs associated with the Facility will be created during both the initial construction period and the years following construction, 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 as it ripples through the economy. The results shown in Exhibit H and discussed above describe the potential impact of the Facility on industries throughout the state, including the direct labor impacts that occur specifically within the local economy.

The Applicant anticipates that approximately 50% of the construction workforce will be filled by workers domiciled in Ohio. In addition, other jobs will be created that play a supportive role. The increased economic activity from jobs and spending will have a ripple effect in the local economy, thereby creating the need for additional jobs in the area as the wages of local workers go towards supporting households and local businesses.

(3) Local Tax Revenues

The proposed Facility will have a significant positive impact on the local tax base, including local school districts and other taxing districts that service in the area where the proposed Facility is to be located. Taxing districts within the Project Area include Van Wert County, Hoaglin Township, and the Lincolnview Local School District.

Solar energy projects in Ohio can be exempt from state and local tax payments through two potential abatement programs: 1) the Qualified Energy Project (QEP) program under Ohio Revised

Code (ORC) 5727.75, and 2) the Ohio Air Quality Development Authority's (OAQDA) Clean Air Improvement Program under ORC Sections 3706.01 and 3706.25.

The QEP program exempts projects from tangible personal property and real property tax payments if they meet certain conditions. If an applicant is granted exemption from taxation for any of the tax years 2011 through 2025, the Qualified Energy Project will be exempt from taxation for tax year 2026 and all ensuing years, as long as the property was placed into service before January 1, 2026. The OAQDA Clean Air Improvement Program is an abatement program for projects that contribute to better air quality, such as solar projects. A project financed through OAQDA bonds receives a 100% exemption on real property, tangible personal property, and sales and use tax for qualified project costs, and interest on the bonds may be exempt from certain Ohio taxes. As part of this program, the project must enter into a Payment in Lieu of Taxes (PILOT) agreement with the local county, township, and school district.

The amount of PILOT to be paid annually to the county treasurer is assessed per MW of nameplate capacity, with the rate of at least \$7,000/MW. Assuming an aggregate nameplate capacity of 150 MW and an estimated PILOT payment of \$9,000/MW, the increase in local tax revenues will be at least \$1.35 million annually from the Facility, under either abatement program.

(4) Economic Impacts on Local Commercial and Industrial Activities

The proposed Facility will have a beneficial impact on the local economy. In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on economic output, a measurement of the value of goods and services produced and sold by backward-linked industries. Economic output provides a general measurement of the amount of profit earned by manufacturers, retailers, and service providers connected to a given project. The value of economic output associated with Facility construction is estimated in the Socioeconomic Report to be \$84.6 million. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors of the statewide economy.

(F) PUBLIC RESPONSIBILITY

In presenting the Facility to the public, the Applicant has presented the maximum extent of the Facility. As described above, changes to the current Facility layout may occur as Facility design progresses but any such changes will not alter the maximum extent of the Facility, will not require the leasing of additional properties, and would not impact new property owners or create additional impacts for existing adjacent property owners.

(1) Public Interaction

The Applicant has and will continue to make general information about solar power and specific information about the proposed Facility available to community members, elected officials, the media, and local civic organizations. Information has been shared through the Project website and a public information meeting held on August 18, 2021. The Public Interaction Plan (Exhibit I) includes additional details on meetings with the local officials, landowners, and benefits to the surrounding communities.

Complaint resolution procedures will be implemented to ensure that any complaints regarding the Facility construction or operation are adequately investigated and resolved. Once construction begins, a construction manager phone number for registering complaints will be provided to township trustees and posted on signage at the Facility entrance. Additionally, complaints can be registered in-person at the temporary construction office or by a written letter to the Applicant. Any such complaints will be fully investigated by onsite staff, pursuant to the Complaint Resolution Plan (Exhibit J). At least seven days prior to the start of construction, the Applicant will notify affected property owners and tenants of the approved Complaint Resolution Plan and other sources of information about the Facility. Any updates to the Complaint Resolution Plan will be provided to OPSB Staff prior to the commencement of construction.

(2) Liability Insurance

The Applicant will acquire and maintain throughout the term of the Facility, at its sole cost, insurance against claims and liability for personal injury, death, and property damage arising from construction, operation, and decommissioning of the Facility. The insurance policy or policies will insure the Applicant to the extent of their interests and extent of their liability. 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 construction, operation, and decommissioning of the Facility. The limits of the excess liability insurance will, at a minimum, insure against claims of \$10,000,000 per occurrence and \$10,000,000 in the aggregate.

(3) Roads and Bridges

Information provided in this section was obtained from the Traffic Study prepared by Westwood attached hereto as Exhibit K. The study identifies traffic levels during construction and operation, probable transportation routes, types of vehicles and construction equipment used during construction and operational phases, and required transportation permits.

Construction/Delivery Vehicles

Traffic associated with material deliveries for the Facility will likely consist of flatbed trucks, semi-trailer dump trucks, concrete trucks, semi-trailers, 40-foot container trucks, cable trailers, water trucks, and multi-axle trucks. Anticipated vehicles for the delivery of construction equipment include lowboy semi-trailers, single unit flatbed truck, and small flatbed trailers. Most of the vehicles will be of legal weight and dimensions; however, some overweight/oversize (OW/OS) vehicles may be required for the delivery of the switchgear or transformer for the collection substation. In addition to these vehicles, typical automobiles and pick-up trucks will be used to transport staff and other incidentals. O&M traffic will consist of a few passenger vehicles per day and occasional equipment delivery vehicles.

Delivery Route

Roadways within and near the Project Area were categorized by the Ohio Department of Transportation (ODOT) functional classifications and include one principal arterial (US 30), two minor arterials (US 127 and US 224), one major collector (County Road 418), one minor collector (County Road 192), and local roads (all other roads in the Project Area). These classifications are based on physical characteristics such as lane width, shoulder width, average annual daily traffic,

divided/undivided status, and access control (see Appendix A of Exhibit K). The principal arterial, minor arterials and major collector roadways all have 12-foot lanes and 2-foot shoulders. The minor collector roadway has no lane delineations and is 22 feet wide with a 1-foot gravel shoulder. Local roads in the Project Area are paved and have no lane delineations. Most local roads are 18 feet wide, except for Hoaglin Road and Hattery Road, which are 14 to 16 feet wide. It is assumed that most vehicular traffic will originate from an interstate or four-lane highway, before approaching the identified routes.

Road Conditions

All roads in the Project Area are paved. Desktop analysis showed that the township roads generally appear to be chip seal surfaces, the county roads appear to be a mix of bituminous and chip seal surfaces, and the State Roads (US 127 and US 224) appear to be bituminous pavements.

Impacts and Mitigation

The Traffic Study determined that very little impact to roads associated with construction vehicles and material delivery is anticipated during Project construction and operation. Final civil engineering design will be necessary prior to construction to ensure all transportation related activities are accounted for and approved by the County Engineer.

Temporary impacts to traffic will be addressed in a Road Use and Maintenance Agreement (RUMA) between the Applicant and the Van Wert County Engineer. This plan will address procedures for temporary road closures, lane closures, road access restrictions, and traffic control. The RUMA will also include measures that will be taken to repair any roads or bridges to their pre-construction condition.

(4) Transportation Permits

Prior to construction, the transportation contractor will obtain all necessary permits from ODOT and the Van Wert County Engineer. The vast majority of vehicles used for the construction and operation of the Facility will meet current maximum dimensions and weight; therefore, very few transportation-related permits are anticipated. Special Hauling Permits may be required for a few

vehicles that will transport the switchgears and transformers for the collection substation. Two additional permits that will be required include a permit with Van Wert County for driveway access on County and Township Roads, and a road crossing permit from ODOT or the Van Wert County Engineer for collection lines.

(5) Decommissioning

Utility-scale solar facilities typically have a life expectancy of 30 to 40 years. If panels or ancillary equipment were to fail before the useful lifetime of the Facility, they will be replaced with operational components. However, if not upgraded, or if large solar arrays are non-operational for an extended period of time, such that there is no expectation of their returning to operation, they will be decommissioned. The Applicant's plan for decommissioning is comprised of two primary components: removal of Facility components/improvements and financial assurance. Each of these is described in additional detail below:

Removal of Facility Improvements

At the termination of the lease, the Applicant will dismantle and remove Facility components and above-ground property owned or installed by the Applicant. At the time of decommissioning, panels may be reused, recycled, or disposed of in accordance with the current regulations at the time of decommissioning. Below-ground structures, such as buried interconnect lines, will be removed to a depth of at least 36 inches. Any underground infrastructure installed to a greater depth may remain in place. Upon request of the landowner, the Applicant may consider allowing roads, foundations, buildings, structures, or other improvements to remain in place. However, the Applicant will not be obligated to leave any components or improvements and will only consider such action so long as it does not violate any permits or legal requirements. Any sites that have been excavated and backfilled will be graded to their preconstruction condition as dictated by landowner lease agreements. Topsoil will be placed on disturbed areas and seeded with appropriate vegetation or in coordination with landowners within agricultural land.

Financial Assurance

The Applicant, through this application, is committing to provide financial assurances for Facility decommissioning and reclamation. A draft decommissioning plan is provided as Exhibit L. An

updated decommissioning plan will be provided to OPSB Staff prior to commencement of construction, which will be based on final equipment selection and design layout for the Facility. The Applicant will post a decommissioning performance bond for the total cost to decommission the Facility, as provided in the updated decommissioning plan, with an additional 10% added as a contingency, prior to the commencement of construction. The Applicant will have the decommissioning costs re-evaluated by an Ohio licensed engineering firm or professional engineer every 5 years throughout the life of the Facility. If the re-evaluation shows that the decommissioning cost for the Facility has increased, the Applicant will increase the amount of the performance bond accordingly.

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

(A) PURPOSE

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

(1) Pre-construction

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

Best management practices (BMPs) will be utilized to minimize the amount of dust generated by construction activities. The extent of exposed or disturbed areas will be minimized at any one time to the extent practicable and restored or stabilized per the requirements of Ohio 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 roads 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

As per OAC 4906-4-07(B)(3), this requirement does not apply to wind farms. Likewise, the proposed Facility is a renewable energy project that will not produce any air pollution. In fact, the Facility may lead to improvements in air quality by reducing the need for traditional energy systems that negatively contribute to air pollution. Therefore, this requirement does not apply to the proposed Facility.

(C) WATER

(1) Pre-construction

Pre-construction conditions of area waterbodies are discussed in Section 4906-4-08(A)(4).

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

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

- 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*

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 processing activities. The Facility will add only small areas of impervious surface in the form of access roads, gravel pads to accommodate inverters and the substation, which will be dispersed throughout the Project Area. These will have a negligible effect on surface water runoff and groundwater recharge. Therefore, 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*

As described above, no water or waste discharges to waterbodies are proposed; therefore, this section is not applicable.

(d) *Existing Water Quality of Receiving Stream*

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*

The Facility will not discharge any water. Therefore, this section is not applicable.

(2) Construction

(a) *Water Quality Map*

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

(b) *Quantity/Quality of Construction Runoff*

Construction of the proposed Facility will have only minimal localized impacts to surface water runoff. Soil compaction from the use of construction equipment could limit the efficiency of surface water infiltration to groundwater. Construction of access roads and the collection substation will result in minor increases in storm water runoff that otherwise would infiltrate into the ground at those locations.

(c) *Mitigation*

As described above, construction of the proposed Facility is not anticipated to have any significant impacts to 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.

As mentioned in Section 4906-4-07(C)(1)(a), the Facility will require a NPDES Construction Storm Water General Permit (OHC000005) from the Ohio EPA. This permit is required for all construction sites disturbing 1.0 or more acres of ground. To obtain this permit, the Applicant will develop a Storm Water Pollution Prevention Plan (SWPPP) and file a Notice of Intent (NOI) letter with the Ohio EPA at least 21 days prior to the commencement of construction activities.

The SWPPP will address all minimum components of the NPDES permits and conform to the specifications of the Rainwater and Land Development manual, which describes Ohio's standards for storm water management, land development, and urban stream protection (Ohio Department of Natural Resources, 2006). 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. The SWPPP will also describe and ensure the implementation of BMPs that reduce pollutants in storm water discharges during construction. Exhibit R provides typical BMPs that may be used during construction of the Facility. Final site-specific BMPs will be included in the SWPPP.

As described below in Section 4906-4-08(E)(2)(c), topsoil will be removed and segregated in areas that require significant earth disturbance, such as for grading, access road construction, collection line trenching, and foundation installations. Upon completion of such activities, topsoil will be replaced, and de-compacted as needed. These practices, and those described in the Ohio EPA document *Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays* will also mitigate any potential impacts that soil compaction could have on infiltration of rain and snowmelt, thereby further reducing any potential impact to groundwater recharge (Ohio EPA, 2019). The construction footprint will be minimized by defining/delineating the work area in the field prior to construction and adhering to work area limits during construction. These measures will limit potential impacts of soil compression on normal infiltration rates.

On-site investigations were conducted to establish the locations of streams and wetlands, and Facility components were sited to avoid impacts to these resources to the maximum extent practicable. Impacts to surface waters have been minimized through feature avoidance, horizontal directional drilling (HDD) of underground collection lines, and BMPs. Equipment restrictions, herbicide use restrictions, and erosion and sediment control measures will also be utilized to reduce adverse impacts to water quality, surface water hydrology, and aquatic organisms. In addition, vegetation clearing along stream banks and in wetland areas will be kept to a minimum. For more information on mitigation measures to protect wetlands and surface water, see Section 4906-4-08(B)(2)(b).

(d) *Changes in Flow Patterns and Erosion*

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*

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

(3) Operation

(a) *Water Quality Map*

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

(b) *Water Pollution Control Equipment and Treatment Processes*

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

The proposed Facility will not result in wide-scale conversion of land to impervious surfaces. While PV panels themselves are impervious, they are disconnected from the ground surface and allow rainwater to fall from the panel and permeate into the underlying surface. Impervious surfaces found at the site will include the substation, inverter pads, and access roads. Per the preliminary Facility layout, post-construction BMPs for the impervious surface across the site are anticipated to include ditches and swales adjacent to Facility access roads. Planned storm water BMPs will be re-evaluated prior to submission of the final Facility layout to ensure compliance with Ohio storm water requirements.

(c) *NPDES Permit Schedule*

Facility construction will require an Ohio NPDES construction storm water general permit, Ohio EPA Permit No. OHC000005. The 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*

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

(i) Sewage

The Project will make use of the existing Blue Creek O&M building. There will be no direct discharge of sewage into surface waters resulting from this Project.

(ii) Blow-down

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

(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 will not use fuels or generate solid wastes which could result in run-off or leachates. Therefore, this section is not applicable.

(vi) Oil/water Separators

This section is not applicable because the Facility will not require the use of oil/water separators.

(vii) Run-off from Soil and Other Surfaces

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

(e) *Water Conservation Practices*

Aside from very limited quantities of water that may be used for the occasional cleaning of solar panels, the only Facility component requiring water sources will be the O&M building. Staff operating out of the O&M building will use water at a rate comparable to a typical small business or office. The Facility will incorporate water conservation practices by including installation of

modern, efficient water fixtures for all water usage, and by regular maintenance to keep water fixtures in proper working order.

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

(D) SOLID WASTE

(1) Pre-construction

(a) *Nature and Amount of Solid Waste*

The Applicant is not aware of any debris or solid waste within the Project Area that would require removal for Facility development.

(b) *Plans for Waste Removal*

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

(2) Construction

(a) *Nature and Amounts of Construction Waste*

Facility construction is expected to generate approximately 9,200 cubic yards of construction waste, primarily consisting of wood pallets, cardboard, miscellaneous other packing materials, construction scrap, and general refuse.

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

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 as needed and dispose of the refuse at a licensed solid waste disposal facility. Waste materials will be recycled when possible. Universal waste, if any, will be handled, managed, and disposed of in accordance with federal, state, and local regulations.

(3) Operation

(a) *Nature and Amounts of Waste*

For the most part, Facility operation will not result in generation of significant amounts of solid waste. Waste generated from O&M activities could include wood, cardboard, metal packing/packaging materials, used facility components, and general refuse. The O&M activities will generate solid wastes comparable to a typical small business.

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

The O&M building will utilize local solid waste disposal and recycling services. Universal waste, if any, will be handled, managed, and disposed of in accordance with federal, state, and local regulations.

(4) Licenses and Permits

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

(E) COMPLIANCE WITH AVIATION REGULATIONS

(1) Aviation Facilities List and Map

The closest known airport for public use is the Van Wert County Airport (Federal Aviation Administration [FAA] Identifier: VNW), located on the opposite side of Van Wert, approximately 4 miles southwest of the Project Area. The Van Wert County Airport is shown on Figure 08-3.

(2) FAA Filing Status and Potential Conflicts

The 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 ft of a public use heliport which exceeds a 25:1 surface
- Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards;
- When requested by the FAA; or
- Any construction or alteration located on a public use airport or heliport regardless of height or location.

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

Reflectivity or glare is a potential concern from the FAA regarding solar facilities. Glare from solar panels may have the potential to cause brief loss of vision for pilots during their final approach to a runway or to air traffic controllers (Rogers, et al., 2015). In 2013, the FAA established an Interim Policy that reviewed the impacts of solar energy system projects 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).

To assure that the potential for glare from the proposed Facility was thoroughly evaluated, the Applicant engaged EDR to conduct a Solar Glare Analysis for the Facility (Exhibit N). The analysis indicated that there is no predicted glare to approaches of runways for nearby airports. Similarly, the analysis indicated that there is no predicted glare to residences or roadways as a result of construction and operation of the Facility.

(A) HEALTH AND SAFETY

The Applicant has used conservative potential impact assumptions for project components discussed below; therefore, as detailed project design decisions are finalized, the potential impacts associated with construction and operation of the proposed Facility are anticipated to remain the same or decrease.

(1) Equipment Safety and Reliability

(a) *Major Public Safety Equipment*

To prevent unauthorized entrance to the Project Area, safety measures will be employed during the construction and operation phases. During Facility construction, temporary, chain-link fencing may be used around Facility components and staging and storage areas. The Applicant will coordinate with local emergency responders during construction activities. Signage will be utilized around the Project Area during construction, warning of the potential dangers within the site and discouraging entrance by the public. Personnel exposed to public vehicular traffic will be required to 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, signs warning of potential dangers within the site, electronic security systems, and potentially remote monitoring. Though the public will not have open access to the Facility, once construction is complete, the Facility may be available for guided tours at specific times.

(b) *Equipment Reliability*

Equipment reliability is an important criterion when selecting solar equipment. The Applicant will only select reliable 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], National Electric Code [NEC], National Electrical Safety Code [NESC], American National Standards Institutes [ANSI]).

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

Generation equipment manufacturer's safety standards will be provided after PV solar module technology has been selected for the Project. All Project equipment is expected to be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings.

(d) *Measures to Restrict Public Access*

The public will not have access to the private land on which the Facility is located; hence, the public would only encounter the proposed Facility by trespassing. However, to further restrict public access, a 6-foot or 7-foot security fence with potentially an additional 1-foot of barbed wire 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, and electronic security systems. Additionally, "No Trespassing" and "High Voltage Equipment" signs will be placed around the perimeter of the fencing, warning the public of the hazards within the fenced Facility Site.

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

The Applicant plans to coordinate with Van Wert County emergency responders, including local fire and medical officials, to discuss safety plans and training protocol prior to construction. The Preliminary Emergency Action Plan (EAP) (Exhibit M) will be finalized based on coordination with Van Wert County emergency services and will be submitted to OPSB staff prior to Facility construction.

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

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

(3) Noise

Jacobs was retained by the Applicant to evaluate potential noise levels from the proposed Facility in accordance with the requirements of OAC 4906-4-08(A)(3). The analysis was overseen by an acoustical engineer (Acoustical P.E.) who is also Board Certified by the Institute of Noise Control Engineering. This study, hereafter referred to as the Sound Assessment, consists of 3 phases: (1)

evaluation of potential sound levels during construction, (2) a background sound level survey, and (3) modeling of future sound levels for the substation transformer and inverters. The Sound Assessment is included as Exhibit O and summarized below.

(a) *Construction Noise Levels at the Nearest Property Boundary*

Table 2-1 of the Sound Assessment (Exhibit O) identifies commonly used construction equipment for solar facilities, assuming no attenuation from trees or terrain. The table conservatively identifies the sound level at 15 meters (50 feet) for equipment, which can be applied to Facility construction nearby to property boundaries. The table identifies that the loudest emissions at this distance for any type of equipment used on site is anticipated to be 88 decibels (dBA). Table 2-2 of the Sound Assessment presents the expected average construction equipment noise levels at various distances. The closest non-participating residence to the solar array is approximately 200 feet away. While construction is occurring at this distance, the sound level is expected to be approximately 78 dBA. However, increased sound levels due to construction of the Facility will be temporary and limited to daytime hours.

(i) *Blasting activities*

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

(ii) *Operation of earth moving equipment*

Noise emission levels associated with earth moving equipment, including backhoes, dozers, graders, and loaders are included in Table 2-1 of the Sound Assessment.

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

Small hydraulic drivers will be used to install the metal posts that hold the racking system for the PV panels. The sound level of these drivers is expected to be similar to other general construction equipment with a nominal sound level of approximately 85 dBA at 50 feet. Equipment used for earth moving and HDD is anticipated to be consistent with general construction equipment used on a variety of infrastructure projects. See Table 2-1 of Exhibit O for sound levels associated with this equipment.

(iv) Erection of structures

The equipment used to erect structures is anticipated to be consistent with general construction equipment used on a variety of infrastructure projects. See Table 2-1 of Exhibit O for sound levels associated with this equipment.

(v) Truck traffic

The sound level from truck traffic is expected to be 84 dBA at 50 feet during construction.

(vi) Installation of equipment

Table 2-1 of the Sound Assessment presents the maximum sound pressure levels for various pieces of equipment at 15 meters (50 feet) away and Table 2-2 presents sound levels as a function of distance Exhibit O. Sound levels for equipment 15 meters (50 feet) from a non-participating residence ranges from 76 dBA to 88 dBA. General construction sound levels are estimated to be 78 dBA when equipment is working in close proximity to the nearest non-participating residence.

(b) *Operational Noise Levels at the Nearest Property Boundary*

(i) Operational noise from generation equipment

A detailed operational noise model was developed based on the Facility layout. Sound sources in the model include inverters and transformers, the sound levels of which were developed from measurements of similar equipment or vendor specifications. The representative inverter and transformer sound levels were used to develop a three-dimensional sound model based on the ISO 9613-2 standard for propagation of sound outdoors. Results from sound modeling showed that all non-participating residences are anticipated to receive sound levels of 43 dBA or less. Figure 3-1 of the Sound Assessment (Exhibit O) illustrates surrounding residences and anticipated sound levels to be produced by the Facility.

Based on the sound model, the highest sound level anticipated at a non-participating property boundary associated with a residence from noise emitting equipment during operation of the Facility is 44 dBA. The highest sound level at a non-participating property boundary without an associated residence is 47 dBA. This sound level is located in the northeastern portion of the

Project Area. See Figure 3-1 of the Sound Assessment for a depiction of predicted sound levels at residences and properties in the vicinity of the Project Area.

Overall, the equipment sound levels associated with transformers are low and unlike other power facilities, one would not require hearing protection when standing near the solar equipment. When the Facility is not operating at full load, the sound level would be less than the values provided above and in the Sound Assessment. During the nighttime hours, the inverters are not at full capacity and emit substantially less noise. Additionally, the cooling requirements for the transformers are expected to be diminished as the transformer is not loaded during the nighttime hours, allowing the fans to operate at a lower speed or not at all resulting in lower sound levels.

(ii) Processing equipment

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

(iii) Associated road traffic

Once operational, the proposed Facility will not significantly contribute to traffic on local roads. Operational traffic is anticipated to be minimal, primarily pickup trucks used by a small operation and maintenance staff for periodic maintenance and will not be a significant source of noise.

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

Noise sensitive areas within the immediate vicinity of the Facility are mapped with sound level data in Figure 3-1 of the Sound Assessment. Noise sensitive areas within 1 mile are included in Figure 3-2 of the Sound Assessment. As noted above, the highest modeled sound level from noise generating equipment at a non-participating sensitive receptor was determined to be 43 dBA.

(d) *Mitigation of Noise Emissions during Construction and Operation*

Although noise emissions during construction and operation of the Facility are anticipated to be minor, mitigation measures will include the following:

- Implementing BMPs for sound abatement during construction, including use of appropriate mufflers, proper vehicle maintenance, and limiting hours of construction to daylight hours, unless there is a compelling reason to work beyond those hours.
- Notifying adjacent landowners of construction commencement.

The Applicant anticipates complying with conditions similar to the following:

General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving, hoe ram, and blasting operations, if required, shall be limited to the hours of 9:00 a.m. to 7:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at nonparticipating sensitive receptors are permitted outside of these specified hours and days. The Applicant shall notify property owners or affected tenants within the meaning of Ohio Adm. Code 4906-3-03(B)(2) of upcoming construction activities including potential for nighttime construction activities.

In addition, a complaint resolution plan will be used to ensure that any complaints are adequately investigated and resolved. The Complaint Resolution Plan is attached hereto as Exhibit J.

(e) *Pre-construction Background Noise Study*

A sound level monitoring effort was conducted between March 18 and March 29, 2010, at three locations within the Project Area. Data logging Larson Davis 831, ANSI S1.4 Type 1 precision sound level meters were used for this survey. Data were collected in 10-minute increments over the survey period. The monitoring locations are depicted on Figure 5-1 of the Sound Assessment.

Appendix D of the Sound Assessment provides the average sound level for each monitoring location for daytime hours. Given the solar nature of the Facility, the emphasis was placed on the daylight results. The overall site-wide average was 47 dBA for daytime hours. The modeled sound level of 43 dBA at the nearest non-participating residence is less than the average ambient sound level of 47 dBA.

(4) Water Impacts

Westwood Professional Services (Westwood) conducted a desktop review of available hydrogeology and geotechnical information for the proposed Facility, which is attached as Exhibit P.

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

Wells in the vicinity of the Facility are displayed in Exhibits 4 and 5 of the Groundwater, Hydrogeological, and Geotechnical Desktop Review (Exhibit P). Wells were identified using public well records obtained from the ODNR Division of Water Resources, which indicate that 10 wells are located within the Project Area. The wells range in depth from 25 feet to 122 feet below ground surface, all within a limestone aquifer. For the wells with known testing yields, yields were between 12 to 30 gallons per minute (gpm).

The Applicant will coordinate with landowners to identify specific well locations, avoidance and mitigation measures, or capping. Construction and operational activities are not anticipated to have significant negative impact to the irrigation and drinking wells located on private properties.

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

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

(c) *Water Resources Map*

Figure 08-1 depicts aquifers and existing water wells in the vicinity of the Project Area. There are two Ohio EPA Source Water Protection Areas (SWPAs) within 1 mile of the Project Area. Neither SWPA is within the boundary of the Project Area. The North Union United Methodist Church SWPA was delineated in December of 2005 and is approximately 0.35 mile west of the Project Area. The Cooper Farms Cooked Meats SWPA was delineated in May of 2008 and is approximately 0.5 mile south of the Project Area.

(d) *Compliance with Local Water Source Protection Plans*

There are two Ohio EPA SWPAs within 1 mile of the Project area. Both SWPAs are located outside of the Project Area, and as such construction and operation of the Facility is not anticipated to have any impacts on local SWPAs.

(e) *Prospects of Floods in the Area*

A Groundwater, Hydrogeological, and Geotechnical Desktop Review was completed by Westwood for the Project Area (Exhibit P). 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. The Project Area contains a portion of mapped FEMA Zone A 100-year floodplain. 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. However, no Facility components are sited within that floodplain. The study further indicated that low to moderate depths and low velocities were found across the majority of the Project Area, with minimal concern for scour. All hydrologic concerns will be addressed via avoidance or through design measures in the final Facility layout.

(5) Geological Features

Geological features of the proposed Project Area, including existing oil and gas wells, are depicted in Exhibit P. Topographic contours are included in the Site Location and Exploration Plans, an attachment to Exhibit C.

(a) *Geologic Suitability*

A geotechnical evaluation of the Project Area was completed by Terracon Consultants, Inc. (Exhibit C). The report provided an overview of the local geology along with information and geotechnical engineering recommendations regarding soil and rock conditions, groundwater conditions, site preparation, excavation considerations, foundation design, and pile embedment. Services and explorations performed include: test pit investigations, soil boring explorations, pile load testing, field electrical resistivity testing, laboratory thermal resistivity testing, laboratory soil material testing, and limited chemical testing. 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.

The Facility is not anticipated to require extensive grading, given the flat to gently sloped topographic relief of the Project Area. Dolomite and shale bedrock were encountered in test borings at depths ranging from 7 to 19.5 feet below ground surface.

Groundwater was encountered in less than half of the boreholes, at depths ranging from about 6 to 18.5 feet below the ground surface. Groundwater levels during construction, and at other times in the life of the construction, may vary due to seasonal variations, amount of rainfall and runoff, and other factors not evident during test borings. Excavations, such as trenches for electrical cable and conduit, will likely encounter groundwater and require dewatering. Any dewatering activities will be conducted in accordance with all requirements of Ohio EPA Permit No. OHC000005.

Based on ODNR karst mapping, the Project Area is located in a region in which the calcareous bedrock can be susceptible to karst features. However, the nearest historic karst activity was observed to be approximately 50 miles to the southeast. Test borings conducted in the Project Area do not suggest any obvious signs of karst-related anomalies.

The Facility will be designed to meet seismic requirements. The seismic design requirements, or Seismic Design Category, for the Facility is determined by the Seismic Site Classification in accordance with the International Building Code (IBC). Based on the soil properties encountered at the site and as described on the exploration logs and laboratory results, the site would be classified as a Seismic Site Class C.

(b) *Soil Suitability*

Soil borings in the Project Area encountered topsoil at the surface extending to a depth range of about 4 to 6 inches below ground surface. The surficial topsoil layer was underlain by native cohesive soils which were in-turn underlain by dolomite bedrock in many of the borings. The native cohesive soils included lean clay, silty clay, and fat clay with varying proportions of sand and gravel sized constituents, and sandy lean clay, sandy silty clay, and sandy fat clay with varying proportions of gravel sized constituents. These cohesive soils exhibited consistencies ranging from medium stiff to hard. Testing was conducted to determine the corrosivity, thermal resistivity, and electrical resistivity of the soils. The results of those tests can be found in Exhibit C.

The site can be classified as having moderate to high corrosive potential to buried metal. The Applicant will evaluate specific materials, as recommended in Exhibit C, for additional protection against corrosion.

The soils throughout the Project Area are frost susceptible, and the typical frost depth for foundation design considerations is 3 feet. The Applicant will consider the design recommendations related to adfreeze stress during foundation sizing and design. The Geotechnical Report includes foundation design and construction recommendations based on the properties of the soils in the Project Area.

(c) *Plans for Test Borings*

The geotechnical evaluation included 44 soil test borings conducted across the Project Area. The test boring logs are included in the Exploration Results attachment in Exhibit C. Boring closure followed standard procedures and methods and the test bores were backfilled following completion. As noted previously in 4906-4-08(A)(5)(a), both groundwater and bedrock were encountered during some of the test borings. Groundwater was encountered at depths ranging from 6 to 18.5 feet, and dolomite and shale bedrock was encountered at depths ranging from 7 to 19.5 feet. Soil characteristics identified from the borings and pits are discussed in 4906-4-08(A)(5)(b).

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 C 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

The Facility will be engineered and installed to withstand typical high-wind occurrences. The Applicant has completed pile load tests and pile embedment analyses (Exhibit C) to determine overall suitability and recommended range in pile depths for the Project. The Facility design factors in wind speeds, which are based on building code wind speed maps. The Facility is designed using Risk Category I factors from the building code and based on a 3-second wind gust of 100 miles per hour.

(7) Blade Shear

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

(8) Ice Throw

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

(9) Shadow Flicker

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

(10) Radio and Television Reception

The Applicant is not aware of any research conducted to date that indicates utility-scale solar generation facilities interfere with communication systems. The central inverters in 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 many household appliances (Massachusetts Department of Energy Resources, 2015). The central inverters in the PV arrays will be located such that any EMFs will not be detectable at the project boundary. In a study of three solar projects in Massachusetts, electric field levels measured along the boundary of each project did not exceed background levels (Guldborg, 2012). 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

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

Due to the low profile of the Facility, where the tallest structure will be the overhead transmission line support structures, with a maximum height of approximately 95 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

Interference in microwave communication signals occurs when the line-of-sight between two microwave transmitters is blocked (Polisky, 2005). However, components of this Facility are low in profile with the tallest structures being the overhead transmission line poles. 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

(1) Ecological Resources in the Project Area

In support of this Application, Environmental Solutions & Innovations, Inc. (ESI) completed on-site ecological surveys and prepared an Ecological Survey Report, attached hereto as Exhibit Q. The assessment includes a review of applicable literature and desktop information, summarizes consultations with the ODNR and the USFWS, provides results of field studies in the Project Area, and reports anticipated Facility impacts.

(a) *Open Spaces and Facility Map*

Figure 03-1 shows the proposed Facility and ecological features within 0.5 mile of the Project Area. This map was developed using Esri ArcGIS Online "World Topographic Map" map service.

(i) The proposed Facility and Project Area boundary

The preliminary Facility layout and Project Area boundary are both depicted on Figure 03-1. The proposed Facility layout includes PV panels, collection lines, access roads, inverters, laydown yards, fenceline, and the collection substation.

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

Undeveloped land is mapped in Figure 3 of Exhibit Q and includes woodlots, grassland, shrub/scrub, and barren land. Of the approximately 6,963 acres that make up the 0.5-mile radius around the Project Area, approximately 224 acres are undeveloped. Undeveloped land data was derived from the USGS National Land Cover Database (NLCD).

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

No wildlife areas, nature preserves, or other conservation areas are located within 0.5-mile of the Project Area. Wildlife areas, nature preserves, and other conservation areas within 10 miles of the Project Area are illustrated in Figure 08-3.

(iv) Surface bodies of water

Surface waterbodies within the 0.5-mile study area are illustrated on Figure 03-1.

(v) Highly erodible soils and steep slopes

Highly erodible and potentially-highly erodible soils, as well as steep slopes, are illustrated on Appendix C of Exhibit P, the Groundwater, Hydrogeological, and Geotechnical Desktop Review.

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

Vegetative Communities

Vegetative communities are characterized in Section 5 of the Ecological Survey (Exhibit Q). Vegetative communities were identified via a desktop analysis of aerial photography, and then later verified during field surveys. The primary communities identified include agricultural fields, small forested woodlots, and maintained residential yards. Agricultural land, consisting primarily of corn and soybeans, is the predominant land cover in the Project Area. Developed land is present in low densities and consists of residences with lawns or landscaped areas, driveways, and unpaved roads. Limited forestland is present as isolated woodlots. A map of the land cover is included as Figure 3 in Appendix A of the Ecological Survey Report.

Wetland and Stream Delineations

Surface water delineations were completed within the Project Area. A Wetland and Stream Delineation Report is provided as Attachment 1 to the Ecological Survey Report. A map of delineated wetlands and streams is included as Figure 2 in the Ecological Survey Report.

A total of three palustrine forested (PFO) wetlands were identified and delineated within the Project Area. All wetlands could potentially be jurisdictional, based on potential hydrologic connectivity to a potential Waters of the U.S. (WOTUS). Additionally, a total of nine stream segments, nine ditches, and four ponds were identified and delineated within the Project Area.

Based on the preliminary Facility layout, no wetlands or streams will be impacted during construction of the Facility. Additional detail on the individual wetlands and waterbodies can be found in the Ecological Survey Report.

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

A literature review of plant and animal life within 0.25 mile of the Project Area is included in the Ecological Survey Report (Exhibit Q). This information is summarized below.

Plants

Aside from crops, there are no known plant species of commercial or recreational value within 0.25 mile of the Project Area. The Applicant consulted with the ODNR regarding state and federally listed plant species that may occur in the vicinity of the Project Area. The ODNR indicated that there were no records of state endangered or threatened plants within the Project Area.

Animals

Section 4.4.2 of the Ecological Survey Report (Exhibit Q) includes a discussion on wildlife species potentially existing in the Project Area. Appendix G of the Ecological Survey Report provides a comprehensive table of all state and federal listed species that were identified by the ODNR or USFWS as potentially occurring in the Project Area, and if they were observed during field surveys. For additional information on these species and agency consultation, see the Ecological Survey Report.

Federally Listed Species

The Project Area is not known to provide significant habitat for sensitive bird species. No federally listed bird species were identified during field survey efforts. According to publicly available sources and records, no known bald eagle or sensitive raptor nests are within the Project Area.

The Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) were both identified by the ODNR and USFWS as potentially occurring in the Project Area, siting a distribution range for both species that spans the entirety of Ohio. There is potential for both species to occur in the Project Area as there were potential roost trees identified in woodlot areas during the field survey. To avoid direct impacts to these species, the preliminary Facility layout

avoids the woodlot areas, and any necessary tree clearing (hedgerows and scattered trees) will adhere to the recommended dates of October 1 through March 31. Impacts to these species during operation of the Facility are not expected.

State Listed Species

The Project is within the range of one fish species and two bird species identified by the ODNR as threatened or endangered. Critical habitat areas exist within the Project Area only for the listed fish species, the pugnose minnow (*Opsopoeodus emiliae*). As recommended by ODNR, no in-water work in perennial streams will be conducted from March 15 through June 30 to reduce the potential for impacts to the pugnose minnow.

Game Species

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

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

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

(e) *Summary of Additional Ecological Impact Studies*

All ecological impact studies are discussed above in Section 4906-4-08(B)(1)(b) and (d).

(2) Construction Impacts

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

Because the Facility is located entirely on leased private land, there will be no construction-related impacts to recreational areas, parks, wildlife areas, nature preserves, or other conservation areas. Potential impacts to undeveloped areas, plants, and animals may occur during construction as a result of the installation of PV panels, access roads, and electrical interconnects; development and use of the laydown yards; and the construction of the collection substation. Additional details, including acreage of potential impacts, are included in the Ecological Survey Report (Exhibit Q).

Impacts to Plants

Construction activities that may result in impacts to vegetation include site preparation, earth-moving, excavation, and backfilling activities associated with construction of the laydown yards, access roads, substation, and buried electrical interconnection cables. As described in the Ecological Survey Report, the majority of the plant communities that will be impacted will be agricultural crops (corn and soybeans). It is not anticipated that any plant species occurring in the Project Area will be significantly reduced in abundance as a result of construction activities.

Impacts to Wildlife Species

Construction-related impacts to wildlife are anticipated to be very limited. Based on the studies conducted to date, none of the construction-related impacts will be significant enough to affect local populations of any resident or migratory wildlife species. Potential impacts from construction are described below.

Incidental Injury and Mortality: Because most Facility components are sited in active agricultural land that provides limited wildlife habitat, and which currently and historically experiences frequent agricultural-related disturbances, such impacts are anticipated to be very minor.

Siltation and Sedimentation: To prevent adverse effects to water quality and aquatic habitat during construction, runoff will be managed under a NPDES construction storm water permit and the associated SWPPP. An erosion and sediment control plan will be developed prior to construction that will use appropriate runoff diversion and collection devices. Also, because the majority of Facility components are being sited in active agricultural land, soil disturbance or exposure due to Facility construction will generally occur in areas already subject to regular plowing, tilling, and harvesting activities. Therefore, impacts are anticipated to be very minor.

Habitat Loss: The Facility will be built on or adjacent to agricultural land, which generally provides habitat for only a small number of wildlife species. In addition, most of these areas are already subject to periodic disturbance in the form of mowing, plowing, and harvesting. Forested communities have been avoided and will experience limited construction-related disturbance.

Forest Fragmentation: As stated above, impacts to forest habitat will be avoided.

Disturbance/Displacement: Some wildlife displacement may also occur due to increased noise and human activity as a result of Facility construction. The significance of this impact will vary by species and the seasonal timing of construction activities. Because most of the Facility components will be placed on agricultural land, species utilizing those habitats are most likely to be temporarily disturbed or displaced by Facility construction. As species utilizing this land experience disturbance from agricultural activities, impacts from the construction of the Facility are anticipated to be negligible.

Impacts to Upland Habitat

Tree clearing is discussed in the Ecological Survey Report (Exhibit Q). The Project will have limited environmental impacts, in part due to the minimization of potential impacts to habitats that may support significant wildlife by avoiding all woodlots. The vast majority of upland impacts will be to agricultural areas, which provide little habitat for floral and faunal communities. The Vegetation Management Plan, included as Exhibit D to this Application, discusses measures to minimize clearing of woody vegetation.

Impacts to Wetland and Surface Water Habitats

Through careful design and avoidance measure, the Applicant anticipates minimal impact to delineated waterbodies within the Project Area. Detailed tables of anticipated wetland and waterbody impacts are provided in Section 7.2 of the Ecological Assessment. No wetland disturbance from the construction of this Project is anticipated. No permanent impacts to streams are proposed for this Project.

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

(i) Site restoration and stabilization of disturbed soils

Restoration activities are anticipated to include the following:

- Underground electrical interconnect routes will be restored to pre-construction contours as necessary and allowed to regenerate naturally.
- Disturbed soils within the Facility's fence line will be re-seeded with a low-growth, native seed mix to stabilize exposed soils and control sedimentation and erosion.
- The laydown yards will be removed post-construction, followed by gravel removal and soil decompaction.

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

The objectives of reclamation and revegetation are to return the disturbed areas to approximately pre-construction condition. This involves the treatment of soil as necessary to preserve approximate pre-construction capability and the stabilization of the work surface in a manner consistent with the initial land use.

(ii) Frac out contingency plan

Facility construction will include the use of trenchless excavation methods known as HDD. This widely used technique accomplishes the installation of buried utilities with minimal impact, by routing the utility under a sensitive feature such as a stream, river, or wetland. HDD operations have the potential to inadvertently release drilling fluids into the surface environment. This inadvertent release is referred to as a “frac out” and occurs due to pressurization of the drill hole beyond the containment capability of the overburden soil material, or through fractured bedrock into the surrounding rock. The HDD procedure uses a bentonite slurry, a fine clay material, as a drilling lubricant. Although bentonite is non-toxic and non-hazardous, it has the potential to adversely impact aquatic species if released into waterbodies. Seepage of drilling fluid is most likely to occur near the bore entry and exit points where the drill head is shallow. Frac outs can occur, however, in any location along a directional bore.

A Horizontal Directional Drilling Inadvertent Return and Contingency Plan is included as Attachment 2 of the Ecological Survey Report (Exhibit Q). This Plan sets forth response measures for inadvertent returns and containment methods for various locations (e.g., inland, wetlands, or streams), notification procedures, and clean-up activities.

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

The boundaries of jurisdictional streams and wetlands within and immediately adjacent to the construction limits of disturbance will be demarcated with highly visible flagging, staking, or

fencing prior to construction. These sensitive areas will also be marked on final construction documents. All contractors and subcontractors working on-site 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

As noted previously, the Applicant will seek coverage for the Facility under the Ohio EPA Permit No. OCH000005. The permit requires development of a SWPPP for erosion control and stormwater management. This permit 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. 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 name(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 SWPPP.

(v) Measures to protect vegetation

Protection of vegetation will be primarily accomplished through careful site planning. A majority of Facility components have been sited on agricultural land, thus avoiding significant impacts to successional grasslands, 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. Following construction activities, temporarily disturbed areas will be re-established with vegetation. In addition to re-seeding temporarily disturbed areas, the Applicant will preserve mature trees within the Project Area to the maximum extent practicable.

(vi) Options for clearing methods and disposing of brush

Scattered trees and shrubs, as well as windrows, will be cleared and grubbed to accommodate construction and operation of the Facility. Trees cleared from the work area will be cut into logs and removed or left for the landowner, if requested. 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.

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

Based on consultations with the ODNR and USFWS and onsite field surveys, habitat for state or federal listed species within the Project Area is minimal. Neither the ODNR nor the USFWS recommended post-construction monitoring for the Project; therefore, no post-construction wildlife monitoring is necessary. Coordination letters are included in the Ecological Survey Report (Exhibit Q). Per agency guidance, tree clearing will be completed from October 1 through March 31.

(3) Operational Impacts

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

Aside from minor disturbance associated with routine maintenance and occasional repair activities, no other disturbance to plants, vegetative communities, wetlands, or surface waters are anticipated as a result of 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*

Once operational, the Facility is not anticipated to result in additional ecological impacts. The Applicant has sited the Facility to avoid wetlands and streams to the maximum extent practicable, and no additional impacts to these resources are anticipated during Facility operation.

Herbicide may be used, as necessary, around fence lines; however, applications will be made by a licensed professional and will be applied in accordance with manufacturer instructions.

Direct impacts to wildlife from an operational solar facility in Ohio are low. Because no significant operational impacts to these resources are anticipated, and because ODNR and USFWS did not indicate the need for mitigation, no mitigation measures are proposed.

(c) *Post-Construction Monitoring Plans*

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**

(1) Land Use

(a) *Land Use Map*

Figure 08-2 shows the Facility layout as well as parcel-based land use and structures within a 1-mile study area.

(i) The proposed Facility

The proposed Facility layout includes collection lines, access roads, inverters, laydown yards, collection substation, transmission line, and fenceline. PV panels are not shown on Figure 08-2 to improve map legibility, and the fenceline shown is the approximate boundary of the PV panels.

(ii) Land use

Land use was derived from the land use category assigned to each parcel in the data retrieved from the Van Wert County Auditor's website. A majority of land use is agricultural, with some residential and vacant land dispersed throughout the study area.

(iii) Structures

Structures within 1 mile of the Project Area primarily include residences. Structures were digitized based on aerial imagery, and confirmed through existing databases and site visits, and include residences, commercial centers or buildings, industrial buildings, schools, hospitals, churches, civic buildings, and other buildings where people may congregate for extended periods of time.

(iv) Incorporated areas and population centers

The nearest population centers are the Village of Scott, approximately 2.1 miles north of the Project Area boundary, and the City of Van Wert, approximately 1.7 miles south of the Project Area boundary.

(b) *Structures Table*

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

There are 65 structures and 238 parcels within 1,500 feet of a PV panel. Table 08-1 and Table 08-2 below present the distance from structures and property lines to the nearest PV panel and the participation status of the property (i.e., participating or non-participating).

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

Structure Type	Distance to PV Panel (Feet)	Participation Status of Underlying Parcel ¹
Residential	236	Participating
Residential	245	Participating
Residential	259	Participating
Residential	267	Participating

Structure Type	Distance to PV Panel (Feet)	Participation Status of Underlying Parcel ¹
Residential	270	Participating
Residential	287	Participating
Residential	306	Participating
Residential	353	Participating
Residential	369	Participating
Residential	371	Participating
Residential	384	Participating
Commercial	384	Participating
Residential	407	Participating
Residential	410	Participating
Residential	412	Participating
Residential	413	Participating
Commercial	413	Participating
Residential	430	Participating
Commercial	482	Participating
Residential	546	Participating
Residential	554	Participating
Residential	604	Participating
Residential	647	Participating
Residential	670	Participating
Residential	798	Participating
Residential	1,045	Participating
Residential	222	Non-Participating
Residential	251	Non-Participating
Residential	344	Non-Participating
Residential	416	Non-Participating
Residential	536	Non-Participating
Residential	603	Non-Participating
Residential	609	Non-Participating
Residential	669	Non-Participating
Residential	681	Non-Participating
Residential	690	Non-Participating
Residential	715	Non-Participating
Residential	716	Non-Participating
Residential	741	Non-Participating
Residential	803	Non-Participating
Residential	823	Non-Participating
Residential	856	Non-Participating
Residential	886	Non-Participating
Residential	940	Non-Participating
Residential	965	Non-Participating
Residential	1,015	Non-Participating
Residential	1,044	Non-Participating
Residential	1,061	Non-Participating

Structure Type	Distance to PV Panel (Feet)	Participation Status of Underlying Parcel ¹
Residential	1,066	Non-Participating
Residential	1,086	Non-Participating
Residential	1,100	Non-Participating
Residential	1,213	Non-Participating
Residential	1,277	Non-Participating
Residential	1,330	Non-Participating
Residential	1,352	Non-Participating
Residential	1,356	Non-Participating
Residential	1,384	Non-Participating
Residential	1,394	Non-Participating
Residential	1,402	Non-Participating
Residential	1,406	Non-Participating
Residential	1,416	Non-Participating
Residential	1,457	Non-Participating
Residential	1,468	Non-Participating
Residential	1,476	Non-Participating
Residential	1,489	Non-Participating

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

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

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150391540000	0	Participating
150391580000	0	Participating
150391580100	0	Participating
150392100000	0	Participating
150392100100	0	Participating
150392180000	0	Participating
150392180100	0	Participating
150392260000	0	Participating
150392300000	0	Participating
150392660000	0	Participating
150396220000	0	Participating
150396260400	0	Participating
150396260500	0	Participating
150396340000	0	Participating
150396380000	0	Participating
150396420000	0	Participating
150396420100	0	Participating
150396500000	0	Participating
150396500700	0	Participating
150396500800	0	Participating
150396500900	0	Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150396501000	0	Participating
150396540000	0	Participating
150396540300	0	Participating
150396580200	0	Participating
150396580300	0	Participating
150396660000	0	Participating
150397100100	0	Participating
150397300000	0	Participating
150397340000	0	Participating
150397380000	0	Participating
150397460000	0	Participating
150397460100	0	Participating
150397460200	0	Participating
150397460300	0	Participating
150397460400	0	Participating
150397460500	0	Participating
150397540000	0	Participating
150397540100	0	Participating
150397540101	0	Participating
150397540102	0	Participating
150397540300	0	Participating
150397820000	0	Participating
150399460000	0	Participating
150400260000	0	Participating
150400300000	0	Participating
150392220000	40	Participating
150396580000	53	Participating
150397380400	56	Participating
150397420100	75	Participating
150397380300	84	Participating
150397100000	97	Participating
150400220700	99	Participating
150400220600	103	Participating
150400220500	111	Participating
150397860000	113	Participating
150400220400	118	Participating
150397380402	121	Participating
150396300000	124	Participating
150400220300	126	Participating
150400260200	131	Participating
150400220200	133	Participating
150400220100	141	Participating
150397380100	148	Participating
150400220000	149	Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150392620700	152	Participating
150397880100	154	Participating
150392620600	155	Participating
150396220100	155	Participating
150392620500	160	Participating
150392620400	166	Participating
150392620300	171	Participating
150392620200	177	Participating
150396580100	191	Participating
150400180000	197	Participating
150396900400	200	Participating
150397380401	201	Participating
150400260100	207	Participating
150391980000	208	Participating
150396380100	224	Participating
150391620206	251	Participating
150391620203	256	Participating
150392740000	263	Participating
150391620205	266	Participating
150391620204	271	Participating
150400180100	271	Participating
150391620202	275	Participating
150396260100	282	Participating
150396260200	285	Participating
150396780000	285	Participating
150397540200	306	Participating
150396460000	306	Participating
150392620100	308	Participating
150396380200	367	Participating
150396660100	502	Participating
150392620000	606	Participating
150397180000	653	Participating
150396780100	656	Participating
150396900300	705	Participating
150397060000	732	Participating
150397300200	798	Participating
150396860000	814	Participating
150396820000	830	Participating
150397140000	1,228	Participating
150396820400	1,272	Participating
150396500300	48	Non-Participating
150396260000	50	Non-Participating
150400300100	50	Non-Participating
150399980000	53	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150397620000	64	Non-Participating
150397740000	65	Non-Participating
150396180000	79	Non-Participating
150396100000	86	Non-Participating
150392660100	126	Non-Participating
150392380000	128	Non-Participating
150396140000	134	Non-Participating
150392700100	149	Non-Participating
150392700000	149	Non-Participating
180403520000	154	Non-Participating
150397780100	154	Non-Participating
150391180000	155	Non-Participating
150396700000	164	Non-Participating
150396620000	170	Non-Participating
180403240000	172	Non-Participating
150398020000	176	Non-Participating
150397340100	179	Non-Participating
150397980000	183	Non-Participating
150392060000	201	Non-Participating
150391980100	207	Non-Participating
150398780000	207	Non-Participating
150392020000	215	Non-Participating
150392460000	224	Non-Participating
150391780600	240	Non-Participating
150392140000	248	Non-Participating
150400300200	259	Non-Participating
150391620201	261	Non-Participating
150397580000	275	Non-Participating
150400140000	279	Non-Participating
150394020000	280	Non-Participating
150397900100	281	Non-Participating
150400100000	295	Non-Participating
150391940000	299	Non-Participating
150394060100	303	Non-Participating
150393940200	315	Non-Participating
150399420000	365	Non-Participating
150392340000	373	Non-Participating
150399500000	392	Non-Participating
150397420000	404	Non-Participating
150399580000	409	Non-Participating
150396500501	434	Non-Participating
150396700400	436	Non-Participating
150391620200	450	Non-Participating
150396500200	454	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150396500400	485	Non-Participating
150396500500	505	Non-Participating
150393940300	525	Non-Participating
150396100200	555	Non-Participating
150393940400	559	Non-Participating
150393180000	570	Non-Participating
150396100400	606	Non-Participating
150391420000	629	Non-Participating
150391460000	633	Non-Participating
150391500000	635	Non-Participating
190411520000	653	Non-Participating
150399540000	680	Non-Participating
150399700000	684	Non-Participating
150391500100	696	Non-Participating
150397780000	703	Non-Participating
150393940501	713	Non-Participating
150397900000	724	Non-Participating
150393140000	724	Non-Participating
150391220400	737	Non-Participating
150397300100	744	Non-Participating
150396060000	744	Non-Participating
150396540100	747	Non-Participating
150399860000	748	Non-Participating
150393940500	757	Non-Participating
150398860000	776	Non-Participating
190411480100	777	Non-Participating
150391780400	782	Non-Participating
150396100300	786	Non-Participating
150396780200	786	Non-Participating
150393940000	787	Non-Participating
150396500601	792	Non-Participating
150396060100	827	Non-Participating
150392780000	840	Non-Participating
150399220300	842	Non-Participating
150396500100	879	Non-Participating
150400060000	887	Non-Participating
150391820100	896	Non-Participating
150396500600	898	Non-Participating
150392500000	908	Non-Participating
150396700100	944	Non-Participating
150393980000	956	Non-Participating
150396700200	964	Non-Participating
150396100100	967	Non-Participating
150394060101	979	Non-Participating

Parcel ID	Distance to PV Panel (Feet) ¹	Participation Status
150399700100	1,003	Non-Participating
150391220000	1,003	Non-Participating
150396540200	1,043	Non-Participating
150397620100	1,051	Non-Participating
150396900200	1,079	Non-Participating
150396700300	1,103	Non-Participating
150397940000	1,109	Non-Participating
150398820000	1,137	Non-Participating
N/A	1,184	Non-Participating
150397220000	1,192	Non-Participating
150393940100	1,196	Non-Participating
150397780200	1,214	Non-Participating
150392340100	1,214	Non-Participating
150398780100	1,222	Non-Participating
150399220100	1,253	Non-Participating
180403520100	1,261	Non-Participating
150391620000	1,263	Non-Participating
150391780000	1,276	Non-Participating
150391780200	1,299	Non-Participating
150397700000	1,299	Non-Participating
150397660000	1,318	Non-Participating
180403200000	1,345	Non-Participating
150392460100	1,352	Non-Participating
080119080000	1,388	Non-Participating
150391780300	1,388	Non-Participating
150399940000	1,391	Non-Participating
080119120000	1,398	Non-Participating
150396020000	1,402	Non-Participating
080119000200	1,410	Non-Participating
080119000000	1,412	Non-Participating
080119000100	1,420	Non-Participating
190411400000	1,446	Non-Participating
150396020100	1,448	Non-Participating
080119040000	1,453	Non-Participating
150396900000	1,455	Non-Participating
150396900100	1,472	Non-Participating
150391140000	1,472	Non-Participating
150392860200	1,474	Non-Participating
150393900000	1,485	Non-Participating
150392820000	1,487	Non-Participating
150396860100	1,489	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 16 structures and 110 parcels within 250 feet of an associated Facility component, including collection lines, inverters, access roads, laydown yards, and the collection substation. Table 08-3 and Table 08-4 below present the distance from the structures and property lines to the associated Facility components.

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

Structure Type	Distance to Facility Component (Feet)	Facility Component	Participation Status of Underlying Parcel
Residential	181	Collection Line	Participating
Residential	180	Collection Line	Participating
Residential	99 115	Access Road Collection Line	Participating
Residential	204	Access Road	Participating
Residential	123	Access Road	Participating
Residential	136	Collection Line	Participating
Residential	221	Collection Line	Participating
Commercial	177 214	Collection Line Collection Substation	Participating
Commercial	114 186	Collection Substation Collection Line	Participating
Commercial	144	Collection Substation	Participating
Residential	104	Collection Line	Non-Participating
Residential	174	Collection Line	Non-Participating
Residential	137	Collection Line	Non-Participating
Residential	234	Collection Line	Non-Participating
Residential	214	Laydown Yard	Non-Participating
Residential	245	Collection Line	Non-Participating

Table 08-4. Parcels Within 250 Feet of a Facility Component

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150391540000	0 0 0	Collection Line Inverter Access Road	Participating
150391580000	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150391580100	0 0 0	Collection Line Inverter Access Road	Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150391620202	0 174	Access Road Laydown Yard	Participating
150391620204	0 170	Access Road Laydown Yard	Participating
150391620205	165 213	Laydown Yard Access Road	Participating
150391980000	0 177	Collection Line Access Road	Participating
150392100000	0 0	Collection Line Access Road	Participating
150392100100	0 0 10	Collection Line Access Road Inverter	Participating
150392180000	0 0 0	Collection Line Inverter Access Road	Participating
150392180100	0 0 0	Collection Line Inverter Access Road	Participating
150392220000	0 6	Collection Line Access Road	Participating
150392260000	0 0 0	Collection Line Inverter Access Road	Participating
150392300000	0 0 0	Collection Line Inverter Access Road	Participating
150392620700	66	Collection Line	Participating
150392660000	0 0 0	Collection Line Inverter Access Road	Participating
150392740000	0	Collection Line	Participating
150396220000	94 96 97 154	Inverter Access Road Collection Line Laydown Yard	Participating
150396260200	212	Collection Line	Participating
150396260400	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150396260500	0 85 98	Collection Line Inverter Access Road	Participating
150396300000	85	Collection Line	Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150396340000	0 0 0	Collection Line Inverter Access Road	Participating
150396380000	21	Collection Line	Participating
150396420000	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150396420100	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150396460000	244	Access Road	Participating
150396500700	12 170	Access Road Laydown Yard	Participating
150396500800	0 0	Collection Line Inverter	Participating
150396500900	0 0 0	Collection Line Inverter Access Road	Participating
150396501000	0 0 0 197	Collection Line Access Road Laydown Yard Inverter	Participating
150396540000	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150396540300	0 40 91 118	Laydown Yard Collection Line Inverter Access Road	Participating
150396580000	0 0 0	Collection Line Access Road Laydown Yard	Participating
150396580100	0 0 114	Collection Line Access Road Laydown Yard	Participating
150396580200	0 0 0 22	Collection Line Access Road Laydown Yard Inverter	Participating
150396580300	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150396660000	0 0 0	Collection Line Inverter Access Road	Participating
150396660100	24	Collection Line	Participating
150396780000	0	Collection Line	Participating
150396780100	33	Collection Line	Participating
150396820000	0	Collection Line	Participating
150396820301	0	Collection Line	Participating
150396820400	0	Collection Line	Participating
150396820500	0	Collection Line	Participating
150396860000	0	Collection Line	Participating
150396900300	27	Collection Line	Participating
150396900400	0 10	Collection Line Access Road	Participating
150397100100	0 0 0	Collection Line Inverter Access Road	Participating
150397300000	0 8	Collection Line Access Road	Participating
150397340000	0 0 0	Collection Line Inverter Access Road	Participating
150397380000	0 57 61 101	Collection Line Collection Substation Access Road Inverter	Participating
150397380100	13 26	Access Road Collection Line	Participating
150397380300	46 108	Collection Line Access Road	Participating
150397380400	0 0 42	Collection Line Collection Substation Access Road	Participating
150397380401	0 25	Collection Substation Collection Line	Participating
150397380402	0 0	Collection Line Collection Substation	Participating
150397460000	0 63 66	Access Road Inverter Collection Line	Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150397460100	0 0 0	Collection Line Inverter Access Road	Participating
150397460200	0 217	Collection Line Access Road	Participating
150397460300	0 0 0	Collection Line Inverter Access Road	Participating
150397460400	0 0 63	Collection Line Access Road Inverter	Participating
150397460500	0 61 80	Collection Line Access Road Inverter	Participating
150397540000	0 0 0 120	Collection Line Inverter Access Road Laydown Yard	Participating
150397540100	0 0 0 163	Collection Line Access Road Laydown Yard Inverter	Participating
150397540101	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150397540102	0 0 0	Collection Line Access Road Laydown Yard	Participating
150397540300	0 0 0	Collection Line Inverter Access Road	Participating
150397820000	0 0 0	Collection Line Inverter Access Road	Participating
150397860000	33 101	Access Road Collection Line	Participating
150397880100	9 25 156	Access Road Collection Line Collection Substation	Participating
150399460000	0 0 0	Collection Line Inverter Access Road	Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150400260000	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
150400300000	0 0 0 0	Collection Line Inverter Access Road Laydown Yard	Participating
080119080000	13	Access Road	Non-Participating
150391620200	194	Access Road	Non-Participating
150391620201	166	Laydown Yard	Non-Participating
150391180000	209	Collection Line	Non-Participating
150391980100	176	Access Road	Non-Participating
150392020000	16	Collection Line	Non-Participating
150392060000	129 186	Access Road Laydown Yard	Non-Participating
150392140000	29 216	Collection Line Access Road	Non-Participating
150392380000	102	Fenceline	Non-Participating
150392460000	129	Access Road	Non-Participating
150392660100	64	Collection Line	Non-Participating
150392700000	27 67	Access Road Collection Line	Non-Participating
150392700100	69	Collection Line	Non-Participating
150393940200	233	Laydown Yard	Non-Participating
150394020000	11 196	Access Road Laydown Yard	Non-Participating
150396100000	192	Laydown Yard	Non-Participating
150396140000	124	Laydown Yard	Non-Participating
150396260000	99 222	Collection Line Laydown Yard	Non-Participating
150396620000	11 164	Access Road Laydown Yard	Non-Participating
150396700000	11 164	Access Road Laydown Yard	Non-Participating
150396780200	81	Collection Line	Non-Participating
150396820200	27	Collection Line	Non-Participating
150396860100	27	Collection Line	Non-Participating
150396900100	45	Collection Line	Non-Participating
150396900200	68	Collection Line	Non-Participating
150397220000	24	Collection Line	Non-Participating
150397620000	118	Laydown Yard	Non-Participating
150397740000	32 37 60	Collection Line Access Road Laydown Yard	Non-Participating

Parcel ID	Distance to Facility Component (Feet) ¹	Associated Facility Component	Lease Status
150397980000	10	Access Road	Non-Participating
150398020000	8	Access Road	Non-Participating
150399420000	33 49	Access Road Collection Line	Non-Participating
150399860000	43	Collection Line	Non-Participating
150399980000	39	Collection Line	Non-Participating
150400300100	48 234 224	Laydown Yard Collection Line Access Road	Non-Participating
150400300200	242 232	Collection Line Access Road	Non-Participating
180403520000	134	Access Road	Non-Participating

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

(iii) Lease Status of Each Structure

The participation status for each structure and property is included in the tables above.

(c) *Land Use Impacts*

Table 08-5 below presents the total, temporary, and permanent land use impacts within and outside the fenceline from the construction and operation of the Facility. Agricultural land is the only land use directly impacted by the Facility. The collection substation will be located on commercial land; however, given that the collection substation will be placed within the existing fenceline of the Blue Creek substation area, no additional impacts to land use from the collection substation are reported.

Table 08-5. Total Land Use Impacts

Facility Component	Temporary Impact (acres) ⁴	Permanent Impact (acres)	Total Impact (acres)
Agricultural			
Area Inside Fenceline ¹	0.0	816.2	816.2
Area Outside Fenceline			
Access Road ²	2.4	2.0	4.4
Collection Line ³	19.5	0.0	19.5
Total Agricultural	21.9	818.2	840.1
Residential			
Area Outside Fenceline			
Access Road	<0.1	0.0	<0.1
Total Residential	<0.1	0.0	<0.1
Exempt			
Area Outside Fenceline			
Access Road	<0.1	<0.1	<0.1
Collection Line	0.7	0.0	0.7
Total Exempt	0.7	<0.1	0.7
Total Land Use Impact	22.6	818.2	840.8

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

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

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

Table 08-6 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 08-5 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 08-6. Land Use Impacts by Facility Component

Facility Component	Temporary Impact (acres) ⁵	Permanent Impact (acres)	Total Impact (acres)
Agricultural (100s)			
Collection Line ¹	26.3	0.0	26.3
Access Road ²	17.1	14.8	31.9
Laydown Yard	9.7	0.0	9.7
PV Panel ³	0.0	695.3	695.3
Inverter ⁴	0.0	0.1	0.1
Total Agricultural	53.1	710.2	763.2
Residential (500s)			
Access Road	<0.1	<0.1	<0.1
Total Residential	<0.1	<0.1	<0.1
Exempt (600s)			
Access Road	<0.1	<0.1	<0.1
Collection Line	0.7	0.0	0.7
Total Exempt	0.7	0.0	0.7
Total Land Use from Components	53.8	710.2	763.9

¹ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Permanent impacts from solar arrays include the entire area between and underneath the panels, because that area will be taken out of its current use for the lifespan of the Facility.

⁴ Includes 43 inverter pads each with an approximate area of 82.5 feet.

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

Although changes in land use are anticipated within the Project Area as a result of Facility operation, no changes are predicted outside the Project Area. The presence of the PV panels, the collection substation, and other ancillary structures will result in the cumulative conversion of 818.2 acres of land from its current use to holding Facility components, which represents approximately 35% of the Project Area (approximately 2,312 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*

No structures will need to be removed for construction of the Facility.

(2) Parcel Status Map

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

(3) Setback Waiver

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

(4) Land Use Plans

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

Of the two counties, nine townships, three villages, and one city within 5 miles of the Project Area, only Paulding County has an existing land use plan. The objectives in Paulding County's *Ohio Community Development Plan 2018* include increasing the number of employment options and reducing poverty in the county. The Project's temporary construction jobs and longer term operational related employment opportunities will assist the county in achieving these objectives. Paulding County also recognizes agriculture as one of its leading industries. Because the Facility will not be located in Paulding County, none of the agricultural land in Paulding County will be impacted by the Facility.

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

The Applicant has no plans for concurrent or secondary uses of the site.

(c) *Impact on Regional Development*

Housing

The Facility is not anticipated to adversely impact local housing. The Facility is not expected to result in a significant increase in demand for rental properties, and given the availability of vacant housing, the Facility is not anticipated to have a destabilizing effect on current rental properties. For additional information on housing within the 5-mile study area, see Exhibit H.

Commercial and Industrial Development

The impact of the proposed Facility on local commercial and industrial development is discussed in Section 4906-4-06(E) of this Application. The Project will generate employment opportunities

during construction and operation. Employee earnings, spending on accommodations, food, and activities during construction, and direct payments to landowners participating in the Project are expected to increase spending in the local economy. This spending would support commercial development in the region.

Schools

The Facility location is within the Lincolnview Local School District. Development of the Facility will result in substantial positive economic benefits to the school district in the form of PILOT payments, discussed in detail in Section 4906-4-06(E)(3). The Project will bring jobs to the region, primarily during construction. It is expected that most of these workers that come from outside the area will travel to the area rather than relocating permanently; therefore, the Project is not expected to increase the need for services from the school district.

Transportation System Development

Transportation routes within the 5-mile study area include numerous state, county, and local roads, one US route, a rail line, and one airport. The Project is not anticipated to impact roadway traffic, given the existing roadway capacities. Construction vehicles and material deliveries are anticipated to have very little impact to local roads. For more information on roadway impacts, see Exhibit K and Section 4906-4-06(F)(4). Impacts to the freight lines in the area are not anticipated because the transportation of Facility components will not utilize the rail system. Adverse impacts to air navigation are also not anticipated from Facility construction due to the large distance between the Facility and the nearest airports. Additional discussion on impacts to air navigation is provided in Section 4906-4-07(D).

Other Public Services and Facilities

The Facility is not expected to have significant growth-inducing effects on the surrounding locales. Therefore, no significant impact on local public services and facilities is expected. Workers will commute to the work site daily. Local employees will be hired to the extent possible. Hiring of non-resident workers would occur only when local residents with the required skills were not available or competitive. It is expected that non-resident workers would commute or stay in regional transient housing or motels, and not require new housing. It is also assumed that non-

resident workers would not bring families that might require family healthcare or additional school facilities. The principal impact on public services in the site locale would be a temporary increase in traffic on roads leading to the Project Area, due to deliveries of equipment and materials during construction.

(d) *Regional Plan Compatibility*

There would be no impacts to regional plans or regional growth as a result of this Facility. As discussed in Section 4906-4-08(C)(3)(a), one entity within 5 miles of the Project Area has adopted comprehensive land use plans, strategic downtown plans, and/or economic development plans. The compatibility of the Facility with that plan is discussed above in Section 4906-4-08(C)(3)(a).

(e) *Current and Projected Population Data*

Table 08-7 presents the population trends for the Ohio counties, townships, cities, and villages located within 5 miles of the Project Area, including annual percent change in population from 2000 to 2019. The population of both counties has decreased since 2000. At a more local level, most nearby communities have shown declining population trends. However, several communities, such as Blue Creek Township and the Village of Haviland, in Paulding County, and Hoaglin Township and the City of Van Wert in Van Wert County, have increased in population. The population trends experienced by each community from 2000 to 2019 are generally projected to continue through 2030.

Table 08-7. Population of Jurisdictions within 5 Miles

Jurisdiction	2000 Population	2019 Population	Annual Growth Rate (2000-2019)	Projected 2030 Population	Projected Total Growth (2019-2030)	2019 Population Density (people per square mile)
Paulding County	20,293	18,809	-0.4%	18,028	-4.2%	45
Blue Creek Township	804	962	1.0%	1,077	12.0%	27
Latty Township	1,026	856	-0.9%	777	-9.2%	23
Washington Township	789	636	-1.0%	568	-10.7%	18
Village of Haviland	180	263	2.4%	342	30.2%	674
Van Wert County	29,659	28,261	-0.2%	27,499	-2.7%	69
Hoaglin Township	605	694	0.8%	755	8.9%	22
Jackson Township	481	433	-0.5%	409	-5.6%	19
Pleasant Township	11,120	10,559	-0.3%	10,255	-2.9%	286
Ridge Township	3,114	3,174	0.1%	3,210	1.1%	87
Union Township	1,009	866	-0.7%	798	-7.9%	24
Washington Township	5,228	5,012	-0.2%	4,893	-2.4%	137
Village of Middle Point	593	514	-0.7%	476	-7.4%	935
Village of Scott	322	298	-0.4%	285	-4.2%	373
City of Van Wert	10,690	11,045	0.2%	11,259	1.9%	1,463

Source: Decennial Census (U.S. Census Bureau, 2000), ACS 5-Year Estimates (U.S. Census Bureau, 2015-2019), population projections based on respective 2000-2018 growth rates. Tables S0101 and P001.

Although construction employment for the Facility will be substantial, this employment is relatively short term and is not expected to result in the permanent relocation of construction workers to the area; therefore, the Facility is not anticipated to generate significant population growth within the 5-mile study area.

(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES

(1) Landmarks of Cultural Significance Map

Figure 08-3 depicts formally adopted land and water recreation areas, recreational trails, scenic byways, and registered landmarks of historic, religious, scenic, natural, or other cultural significance in Ohio within 10 miles of the Project Area.

EDR conducted a Phase IA Cultural Resources Survey (Phase IA Survey), which includes a literature review for archaeological and historic resources within 2 miles of the Project Area (Cultural Resources Study Area). Results of the review are provided in the Phase IA Survey (Exhibit S). The Phase IA Survey documents previously identified cultural resources located within the Cultural Resources Study Area that could potentially be affected by the construction and operation of the

Facility. The Phase IA Survey also includes proposed research designs for subsequent archaeological and historical resources field surveys that the Applicant anticipates will be necessary for the Facility.

EDR reviewed numerous sources of information relating to archaeological and historic resources located within the Cultural Resources Study Area, including the David Rumsey map collection (David Rumsey Map Center, 2021), and USGS topoView (USGS, 2021), EDR's in-house collection of historic and archaeological reference materials, and the Ohio State Historic Preservation Office (SHPO) online GIS mapping system (Ohio History Connection, 2021). Previously recorded resources identified on the SHPO GIS mapping system included:

- National Register of Historic Places (NRHP)
- NRHP Determination of Eligibility (DOE)
- Ohio Historic Inventory (OHI)
- Ohio Department of Transportation (ODOT) Historic Bridge Inventory
- Ohio Archaeological Inventory (OAI)
- Ohio Genealogical Society (OGS) cemetery files
- Previous cultural resources surveys
- 1914 Mills *Archaeological Atlas of Ohio*
- National Historic Landmarks (NHL)

EDR's review of these information resources found the following: no previously identified NRHP-listed resources; one resource previously determined eligible for listing on the NRHP; 14 OHI-designated properties within the Cultural Resources Study Area, none of which were in the Project Area; no historic bridge inventory listings; 94 previously recorded archaeological sites within the Cultural Resources Study Area, 12 of which were located within the Project Area; four OGS cemeteries; three previous cultural resources surveys; one site recorded in Mill's *Archaeological Atlas of Ohio*; and, no designated national historic landmarks. Additional information regarding these sites is presented in the Phase IA Cultural Resources Survey Report (Exhibit S).

(2) Impact to Landmarks and Mitigation Plans

Following the Phase 1A Survey, EDR conducted a Reconnaissance-Level Historic Resources Survey (Historic Resources Survey), which identified and evaluated historic landmarks located within the

2-mile Cultural Resources Study Area. More specifically, the Historic Resources Survey (Exhibit T) identified resources in the Area of Potential Effect (APE) for Indirect Effects, determined by a viewshed analysis, within the 2-mile Cultural Resources Study Area. The purpose of this survey was to identify historic buildings that appear to satisfy National Register Criteria for Evaluation within areas where the Facility may result in indirect impacts on historic resources, such as visual effects.

The Historic Resources Survey included a site visit, conducted on June 15 and 16, 2021, to identify and photograph both previously identified and new historic resources, with the goal of identifying and documenting those buildings, sites, structures, objects, and/or districts within the APE that appear to satisfy NRHP eligibility criteria.

A total of 21 resources were evaluated as part of the Historic Resources Survey, including three new resources. The 18 resources previously identified in the Phase 1A survey, which included 14 OHI properties and four OGS cemeteries, were evaluated as part of the Historic Resources Survey. Three OHI properties were recommended as eligible and six properties were recommended as noneligible for NRHP listing due to lack of National Register Criterion, while the remaining five properties were deemed no longer existent. The four OGS cemeteries were recommended by EDR as noneligible for NRHP listing due to lack of National Register Criterion. Three newly identified historic resources were observed in the APE for Indirect Effects and recommended for NRHP eligibility. These structures include the Hoaglin Township District No. 6 School, the Hoaglin-Jackson Township School, and a one-room schoolhouse on Gilliland Road.

It was determined through observations during the field survey that five of the six resources recommended eligible for listing in the NRHP may have potential views of the Project. However, these views will be largely obscured, if not completely screened, by distance and/or existing vegetation and development existing between the resources and the proposed Project. In addition, visual distractions from an existing wind farm are already present in the viewshed of the resources. EDR recommends that these obscured views of the proposed Project will result in No Adverse Effects to these historic properties. One remaining resource, the Hoaglin Township District No. 6 School at 4016 Rumble Road in Hoaglin Township, is located approximately 0.03

mile away from the Project and will have views of the proposed Project across open agricultural fields. However, this resource is located within an existing large wind farm consisting of numerous wind turbines, with some in close proximity to the resource. This development has already altered the historic setting of the resource, and the construction of the Project will not result in the resource's ability to convey its significance. Therefore, EDR recommends that the proposed Project, as currently designed, will result in No Adverse Effect to the identified historic properties.

Additionally, a Phase 1B archaeological survey was completed in accordance with the Phase 1A Survey Report. The results of the Phase 1B archaeological survey are provided in the Phase 1 Archaeological Survey Report (Exhibit U), which has been submitted under seal. The Phase 1B archaeological survey was conducted in June through September 2021 and included a 100% (1,452 acres) survey of the APE for Direct Effects and 94.5% (2,185 acres) of the Project Area. The parts of the Project Area that were not surveyed are comprised of heavily wooded areas and areas directly adjacent to existing turbines that were avoided in all Facility design. In total, 52 archaeological sites and 46 isolated finds were identified during the Phase 1B survey. These sites consisted of 17 historic sites, one historic isolated find, one multicomponent site, 34 Native American sites, and 45 Native American isolated finds. Cultural material from four previously identified sites (33-VW-071, 33-VW-074, 33-VW-290, and 33-VW-295) was also identified and collected in the field. In total, 214 Native American period artifacts and 2,473 historic-period artifacts were collected during the survey. The Phase 1B archaeological survey identified 20 potentially eligible sites within the Project Area. The preliminary Facility layout presented in this application avoids these sites.

The Applicant has provided the full results of the Phase 1B archaeological survey and Historic Resources Survey to SHPO for concurrence.

(3) Impact to Recreational Areas and Mitigation Plans

Existing scenic and recreation areas within a 10-mile radius of the proposed Facility are depicted on Figure 08-3. Scenic and recreation areas within a 5-mile radius are listed in Table 08-8, below. Recreational areas were identified using a variety of data sources including digital geospatial data obtained primarily through the Ohio Geographically Referenced Information Program (OGRIP) or

Esri; numerous national, state, county, and local agency/program websites as well as websites specific to identified resources; and web mapping services such as Google Maps.

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

Recreational Area	Location	Distance from Project Area (Miles)
Lincoln Highway Scenic Byway	Paulding County and Van Wert County	1.6
Bike Route 44	Paulding County and Van Wert County	1.6
Jubilee Park	City of Van Wert	2.7
Bresler Park	Blue Creek Township	3.0
Memorial Park	City of Van Wert	3.4
Fountain Park	City of Van Wert	3.5
Franklin Park	City of Van Wert	3.6
Smiley Park	City of Van Wert	3.7
Middle Point Ball Park	Washington Township	3.9
Van Wert County fairgrounds	City of Van Wert	4.3
Willow Bend Country Club	City of Van Wert	4.3
Hiestand park	City of Van Wert	4.6
Haviland Park	Blue Creek Township	4.7
Rotary Park	City of Van Wert	4.7
Mumma Park	Blue Creek Township	4.9

As listed in Table 08-8 above, 15 scenic and recreational areas occur within 5 miles of the proposed Facility. These sites are described below, along with an assessment of potential impacts from the Facility. Additional information regarding the results of the viewshed analysis is provided in Section 4906-4-08(D)(4).

The Lincoln Highway Scenic Byway, the nearest portions of which fall approximately 1.6 miles south from the nearest PV panel array, could have potential visibility of the PV panels and the proposed above-ground electrical components. Potential Project visibility along the scenic byway will vary based on proximity to the Project, elevation, and roadway orientation. Potential views of the Project will be available along the scenic byway to the southwest of the Project with views across open agricultural fields. While portions of the Project may be visible, these views will be softened by the effects distance and existing vegetation screening.

Bike Route 44 follows the Lincoln Highway Scenic Byway in the vicinity of the Project. Potential views of the Project are the same as for the Lincoln Highway Scenic Byway.

Of the 13 parks and recreation areas occurring within the visual study area (VSA) only four are indicated as having potential views of the PV panels and/or above-ground electrical components. Jubilee Park, which is indicated as having limited views of both PV panels and the above-ground electrical components, is located within the middle ground distance zone approximately 2.7 miles northeast of the nearest PV panel array. Jubilee Park is located within the northeast portion of the City of Van Wert and while the viewshed indicates that there may be views of the Project from the northeast portion of the park, intervening development, including a substation, US Highway 30, and residential and commercial buildings will likely obscure views of the Project from within the park.

Bresler Park, also located within the middle ground zone, is located approximately 3.0 miles northwest of the nearest PV panels. The park is situated in the northwest portion in the Village of Scott, and is indicated as having limited views of the PV panels. However, substantial residential development within the Village of Scott will largely obscure views of the Project from the park.

The remaining two parks, Haviland Park and Mumma Park, located within the background distance zone (approximately 4.7 and 4.9 miles from the nearest PV panels, respectively), are indicated as having limited views of only the PV panels. Both parks are in the Village of Haviland, with Haviland Park located in the southern portion and Mumma Park located in the northern portion of the village. In addition to intervening residential development and visual distractions presented by existing utilities, the distance from the parks to the Project will make discerning the PV panels difficult.

(4) Visual Impact

EDR prepared a Visual Resource Assessment (VRA) for the proposed Facility (Exhibit V). EDR staff who contributed to the report include licensed landscape architects, GIS professionals, and environmental specialists 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 VSA, a viewshed analysis was conducted to better understand the Facility's area of potential effect. This viewshed analysis indicates that the number of PV Panels that are potentially visible diminishes rapidly at distance beyond 1.5 miles. Though widely-spaced areas of potential visibility extend out to 5 miles, less than 10% of PV Panels will be visible from a vast majority of the VSA outside of the foreground distance zone (i.e., beyond 1.5 miles from the site). Based on the results of the viewshed analysis, and the relatively flat terrain surrounding the Project, it was determined that a 5-mile radius from the Project would be a sufficient VSA for the purposes of this study. Beyond the distance of 5 miles, the PV panels will generally be either fully screened by existing vegetation and topography, or indistinguishable due to the limits of human visual acuity.¹ The area covered in the VSA encompasses a total of approximately 147.3 square miles.

(a) *Project Visibility and Viewshed Analysis*

The viewshed analysis conducted for the Facility incorporated screening effects of topography, structures, and vegetation. A digital surface model (DSM) of the VSA was created from lidar data, which include the elevations of buildings, trees, and other objects large enough to be resolved by lidar technology. Areas within the panel array fenceline were cleared of any vegetation in the model, as were small stands of tree and hedgerows that will be cleared during construction of the Facility, in order to reflect the bare-earth elevation in these locations. From the DSM, a viewshed analysis was conducted for the PV panels, transmission line, collection substation, and POI substation.

Based on the results of the viewshed analysis, the Facility will be screened from approximately 46.5% of the VSA. Above ground electrical components (collection substation and transmission line) will be screened from approximately 75.5% of the VSA. Screening of these components is attributed to intervening landforms, vegetation, and structures. The viewshed analysis also suggests that panel visibility is concentrated in the area out to 0.5 mile of the Project Area, while views from 0.5 mile to 1.5 miles are more well screened, and visibility is further reduced at

¹ This methodology is consistent with other solar projects submitted to the OPSB (Case Nos. 19-1823-EL-BGN, 18-1024-EL-BGN, 18-1024-EL-BGN).

distances beyond 1.5 miles. Visibility of the above ground electrical components is anticipated to be largely concentrated within 1.5 miles of the Project Area. Based on the viewshed analysis, some areas past 1.5 miles could experience views due to the height of Facility components. However, it is important to keep in mind that the substation viewshed analysis presents theoretical visibility. It ignores the narrow profile and neutral color of the lightning masts, is based on a lightning mast height that is significantly taller than most of the internal substation structures, and does not consider the existing visibility of the neighboring switching station. Additional information on methods and results of the viewshed analysis is provided in the VRA.

(b) *Description of Scenic Quality of Existing Landscape*

Landscape types within the VSA were categorized based on the similarity of the various features, including landform, vegetation, water, and/or land use patterns, in accordance with established visual assessment methodologies. Pasture/cropland is the dominant landscape within the VSA (87.9%) and comprises most of the area that will host Facility components. This landscape type is likely to provide the greatest opportunities for views of the Facility.

Developed landscape is the second most predominant landscape, comprising approximately 9.8% of the VSA and includes the City of Van Wert, and the Villages of Middle Point, Scott, and Haviland. These areas typically find outward views across landscaped yards and planted vegetation but may be limited due to the presence of closely situated buildings, utility poles, or other visual clutter.

Forest land comprises 1.6% of the VSA and occurs in small distinct locations throughout the VSA, including discrete locations within the Project Area. Views of the Project from this landscape type are typically limited by the presence of dense vegetation. The remaining portions of landscape types in the VSA are comprised of Open Water at 0.3%, Grassland/Herbaceous Wetland at 0.3%, and Barren Land at 0.1%.

In addition to these landscape types, the VRA included a review of 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*

The Project will result in varying levels of visual alteration when viewed from adjoined roads and residences. The impact may be somewhat mitigated by the presence of seasonal crops in actively farmed fields, but during the rest of the year the Project will introduce structures that will alter the scenic quality and/or existing agricultural character of the landscape. However, this visibility and potential visual impact diminishes rapidly as the Project is viewed from greater distances. Therefore, it is anticipated that changes in the landscape will largely be limited to areas directly adjacent to the Project.

Visual screening may be implemented in the form of direct payment or reimbursement to affected residences so that they can install their preferred vegetation or other screening, at their choosing. As an alternative, the use of mitigation plantings at select locations along the perimeter of the PV arrays may be used to lessen the visual impact of the Project when viewed from non-participating residences with a direct line of sight of the Facility from near-foreground distances.

(d) *Visual Impacts to Landmarks of Cultural Significance*

In total, 237 visually sensitive resources were identified within the VSA, including 196 properties of historic significance, 21 public lands and recreational resources, 19 high-use public areas, and one designated scenic resource. Figure 1.5 in the VRA shows the location of visually sensitive resources relative to the Project Area. Of the 237 resources identified within the VSA, 38 have the potential for PV array visibility. Additional information on visually sensitive resources is provided as Appendix E in the VRA (Exhibit V), 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*

To illustrate anticipated visual changes associated with the proposed Facility, photographic simulations of the Facility were developed from five selected viewpoints. These simulations allow the viewer to better evaluate visibility, appearance, and contrast with the existing landscape. The simulations show panels mounted on a tracking system that would result in a maximum panel height of 12 feet in a fully-tilted position. The visual simulations are included as Appendix D to the VRA (Exhibit V) 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*

Project Area Location and Facility Layout

The proposed Facility is located in a rural, sparsely populated area. To further reduce impacts to those living in the area, the Applicant designed the Facility to account for setbacks to the fenceline from nonparticipating sensitive receptors (100 feet) and the centerline of public roads (130 feet).

Lighting

Lighting during construction is anticipated to be minimal and will be restricted to construction hours (7:00 AM to 7:00 PM, or until dusk when the sun sets after 7:00 PM). To the extent practicable, lighting will be oriented toward the interior of the Facility, away from roadways and adjacent residences. Lighting during Facility operation will be downlit, in accordance with the Lighting Strategy (Exhibit F).

Visual Screening

Visual screening may be implemented in the form of direct payment or reimbursement to affected residences so that they can install their preferred vegetation or other screening, at their choosing. As an alternative, the installation of native vegetative mitigation at select locations may be used to help screen portions of the Facility to lessen potential visual impact, as applicable. Visual screening introduces natural, vertical elements that break up the horizontal lines created by the PV arrays and fenceline. This helps the Facility fall into the background vegetation rather than stand out as a foreground element. Representation of potential vegetative mitigation is included in the Landscape Mitigation Plan (Appendix C to the VRA). Details regarding vegetative mitigation are included in the Landscape Mitigation Plan provided as Appendix C to Exhibit V.

Facility Materials and Coloration

PV modules will use anti-reflective glass coating and are designed to absorb the light that hits the panels, reducing potential for glare. As described in 4906-4-07(C), the Project is not anticipated to result in glare for approaches to airport runways, residences or roadways. Additionally, 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

(1) Agricultural Land and Agricultural District Land Map

Agricultural districts and crop cover are depicted in Figure 08-4. Information on agricultural districts and Current Agricultural Use Value (CAUV) parcels was obtained from the Van Wert County Auditor's Office in August 2021.

(2) Potential Impacts and Proposed Mitigation

(a) *Acreage Impacted*

Table 08-9 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 08-9. Total Agricultural Land Use Impacts

Facility Component	Temporary Impact (acres) ⁴	Permanent Impact (acres)	Total Impact (acres)
Agricultural Vacant (110)			
Area Inside Fenceline ¹	0.0	639.9	639.9
Area Outside Fenceline			
Access Road ²	2.1	1.8	3.9
Collection Line ³	18.7	0.0	18.7
Total Agricultural Vacant	20.8	641.7	662.5
Cash – Grain or General Farm (111)			
Area Inside Fenceline	0.0	154.6	154.6
Area Outside Fenceline			
Access Road	0.1	<0.1	0.1
Total Cash – Grain or General Farm	0.1	154.6	154.7
Other Agricultural Use (199)			
Area Inside Fenceline	0.0	21.7	21.7
Area Outside Fenceline			
Access Road	0.2	0.2	0.4
Collection Line	0.8	0.0	0.8
Total Agricultural Use	1.0	21.9	22.9
Total Agricultural Land Use Impact	21.9	818.2	840.1

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

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

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

Table 08-10 presents agricultural land use impacts by Facility components. Agricultural land use data was derived from land use codes included in parcel data obtained from the Van Wert County Auditor's website.

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

Facility Component	Temporary Impact (acres) ⁵	Permanent Impact (acres)	Total Impact (acres)
Agricultural Vacant Land (110)			
Collection Line ¹	24.1	0.0	24.1
Access Road ²	13.1	11.3	24.4
Laydown Yard	7.7	0.0	7.7
PV Panel ³	0.0	544.5	544.5
Inverter ⁴	0.0	<0.1	<0.1
Total Agricultural Vacant Land	44.9	555.8	600.7
Cash – Grain or General Farm (111)			
Collection Line	1.1	0.0	1.1
Access Road	3.4	3.0	6.4
Laydown Yard	2.0	0.0	2.0
PV Panel	0.0	131.9	11.9
Inverter	0.0	<0.1	<0.1
Total Cash – Grain or General Farm	6.5	134.9	141.4
Other Agricultural Use (199)			
Collection Line	1.1	0.0	1.1
Access Road	0.5	0.5	1.0
PV Panel	0.0	18.9	18.9
Inverter	0.0	<0.1	<0.1
Total Other Agricultural Use	1.6	19.4	21.0
Total Agricultural Land Use from Components	53.0	710.1	763.1

¹ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Permanent impacts from solar arrays include the entire area between and underneath the panels, because that area will be taken out of its current use for the lifespan of the Facility.

⁴ Includes 43 inverter pads each with an approximate area of 82.5 feet.

⁵ Temporary impact area represent only the additional impact are 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 08-11 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 08-11. Total Impacts to Agricultural Districts and CAUV Parcels

Facility Component	Temporary Impact (acres) ⁴	Permanent Impact (acres)	Total Impact (acres)
Agricultural Districts			
Area Inside Fenceline ¹	0.0	36.9	36.9
Area Outside Fenceline			
Access Road ²	<0.1	<0.1	<0.1
Collection Line ³	<0.1	0.0	<0.1
Total Agricultural Districts Impact	<0.1	36.9	36.9
CAUV Parcels			
Area Inside Fenceline	0.0	816.2	816.2
Area Outside Fenceline			
Access Road	2.4	2.0	4.4
Collection Line	19.5	0.0	19.5
Total CAUV Parcels Impact	21.9	818.2	840.1

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

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

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

Table 08-12 quantifies impacts to Agricultural Districts and CAUV parcels by component.

Table 08-12. Agricultural Districts and CAUV Parcels Impacts by Component

Facility Component	Temporary Impact (acres) ⁵	Permanent Impact (acres)	Total Impact (acres)
Agricultural Districts			
Collection Line ¹	0.4	0.0	0.4
Access Road ²	0.6	0.5	1.1
PV Panel ³	0.0	23.3	23.3
Inverter ⁴	0.0	<0.1	<0.1
Total Agricultural Districts Impact from Components	1.0	23.8	24.8
CAUV Parcels			
Collection Line	26.3	0.0	26.3
Access Road	17.1	14.8	31.9
Laydown Yard	9.7	0.0	9.7
PV Panel	0.0	695.3	695.3
Inverter	0.0	<0.1	<0.1
Total CAUV Parcels Impact from Components	53.1	710.1	763.2

¹ Underground collection lines will have a temporary disturbance corridor of 20 feet, and no permanent impact.

² Access roads will have a temporary width of 30 feet, and a permanent width of 14 feet.

³ Permanent impacts from solar arrays include the entire area between and underneath the panels, because that area will be taken out of its current use for the lifespan of the Facility.

⁴ Includes 43 inverter pads each with an approximate area of 82.5 feet.

⁵ Temporary impact area represent only the additional impact are 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*

(i) Field operations

The Facility will occupy 818.2 acres of agricultural land, taking it out of use for approximately 40 years. Therefore, plowing, planting, cultivating, spraying, aerial applications, and harvesting will be halted on land occupied by the Facility during the lifetime of the Facility. Once the Facility has reached the end of its useful life, aboveground Facility components will be removed, and the underlying Project Area will be restored for potential agricultural use.

(ii) Irrigation

Irrigation systems are not in use in the Project Area. Potential interference to irrigation operations is very limited and coordination with affected landowners will alleviate potential for significant long-term disruption.

(iii) Field drainage systems

While operation and maintenance of the Facility should not impact field drainage systems within the Project Area, construction of the Facility could result in impacts to drainage systems. The Applicant has coordinated with Van Wert County, a private contractor, and local landowners to identify and assess drain tiles within the Project Area. The Facility has been designed to avoid known drainage mains to the extent practicable. Additional mitigation measures to minimize impacts to drain tiles are included in the Tile Maintenance Plan (Exhibit E).

(iv) Structures used for agricultural operations

No impacts to agricultural structures are anticipated.

(v) Viability as agricultural district land

Figure 08-4 depicts parcels enrolled in the agricultural district program. Once the Facility is constructed and operating on these parcels, the parcels enrolled as agricultural district land will no longer be eligible for inclusion in that program. Once the Facility is decommissioned, the parcels could be re-enrolled in the program.

(c) *Proposed Mitigation Procedures*

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

Per the Tile Maintenance Plan (Exhibit E), drain tiles will be avoided to the maximum extent practicable. Any known tiles will be illustrated on final construction drawings. Unavoidable damage to drain tile may occur during construction of the Facility. Details regarding assessment and repair of damaged tile are identified below.

(ii) Timely repair of damaged field tile systems

The Tile Maintenance Plan identifies the procedures for assessing damaged drain tile for repair. The plan ensures that adverse impacts to drain tile systems will not extend outside of the Project Area. If it is determined that a drain tile main was impacted, repairs will be implemented to ensure the integrity of the greater drainage system. Commercially reasonable and practical efforts will be expended to repair tile main drains, completed by a qualified contractor, within two weeks of the discovery of the damage (weather and soil conditions permitting). Lateral drain tile lines that are

damaged, and contained within the Project Area, may not be repaired, as they are subject to individual landowner agreements previously negotiated during the leasing process. Additional information regarding repairs and repair specifications to tile drains is provided in the Tile Maintenance Plan (Exhibit E).

(iii) Topsoil segregation, decompaction, and restoration

The Applicant will take care to ensure that excavated topsoil and subsoil are appropriately segregated throughout the site. Topsoil segregation ensures that vegetation can quickly establish following construction, and so that agricultural production can commence following Facility decommissioning. Topsoil that is displaced for laydown yards, workspaces, grading, or access roads will be stockpiled separately so that it can be redistributed prior to final stabilization. Similarly, topsoil and subsoil will be segregated and subsequently backfilled during the installation of underground collection lines. Excess materials, such as rock utilized for entrance pads, will be removed following construction. Upon removal, soil will be decompacted, regraded as necessary, and stabilized with a low-growth seed mix.

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Teresa Orahood on behalf of Herrnstein, Kara