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October 10, 2023

Ms. Tanowa M. Troupe, Secretary  
Ohio Power Siting Board  
180 E. Broad Street, 11th Floor  
Columbus, OH 43215

Re: OPSB Case No. 23-796-EL-BGN  
Frasier Solar, LLC

Dear Ms. Troupe:

Accompanying this letter is the application by Frasier Solar, LLC for a Certificate of Environmental Compatibility and Public Need for the Frasier Solar Project, an up to 120 MW solar-powered electric generation facility to be located in Clinton and Miller Townships and the City of Mount Vernon in Knox County, Ohio. The original application was electronically filed. Five hard copies have been provided to the Ohio Power Siting Board, along with ten disc copies.

In accordance with Ohio Adm.Code 4906-2-04, I would like to make the following declarations:

Name of the applicant:

Frasier Solar, LLC  
1105 Navasota St.  
Austin, TX 78702

Name and location of the proposed facility:

Frasier Solar Project  
Clinton and Miller Townships  
City of Mount Vernon  
Knox County, Ohio



Legal Counsel

Ms. Tanowa Troupe, Secretary

October 10, 2023

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Name of the authorized representatives:

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Notarized Statement:

See attached Affidavit of David Savage  
Vice President  
Frasier Solar, LLC

Please note that Frasier Solar, LLC has filed a motion requesting waivers from Ohio Adm. Code 4906-04-05(B)(2), 4906-4-07(C)(1)(b)-(e), 4906-4-07(C)(2)(a)-(e), 4906-4-07(C)(3)(d)(vii), 4906-4-08(A)(1)(c), and limited waivers of 4906-4-08(D)(2)-(4).

Very truly yours,

/s/ Michael J. Settineri

Michael J. Settineri  
Attorney for Frasier Solar, LLC

Enclosure

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of )  
Frasier Solar, LLC for a Certificate of )  
Environmental Compatibility and Public )  
Need )

Case No. 23-796-EL-BLN

OFFICER'S AFFIDAVIT

STATE OF TEXAS )  
COUNTY OF TRAVIS ) SS:

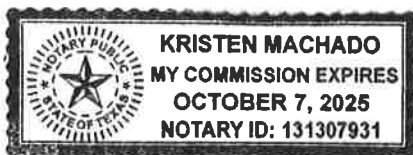
Now comes David Savage, Vice President of Frasier Solar, LLC and an officer of Frasier Solar, LLC, having been first duly sworn, declares and states as follows:

1. I am an executive officer for the Frasier Solar Project to be located in Clinton and Miller Townships and the City of Mount Vernon in Knox County, Ohio.
2. I have reviewed the Application of Frasier Solar, LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generating Facility in Case No. 23-796-EL-BGN.
3. To the best of my knowledge, information, and belief, the information and statements contained in the Application are true and correct.
4. To the best of my knowledge, information, and belief, the Application is complete, subject to any requests for waivers.

Signature: \_\_\_\_\_

David Savage  
Vice President  
Frasier Solar, LLC

Sworn to before me and signed in my presence this 4<sup>th</sup> day of October, 2023



Kristen Machado  
Notary Public  
My Commission Expires 10/07/2025

**APPLICATION**  
**TO THE**  
**OHIO POWER SITING BOARD**  
**FOR A**  
**CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED**  
**FOR THE**  
**FRAISER SOLAR PROJECT**

Clinton Township, Miller Township, and the City of Mount Vernon  
Knox County

**Case No. 23-0796-EL-BGN**

**October 2023**

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## **ACRONYMS and ABBREVIATIONS**

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AC	Alternating Current
Board	Ohio Power Siting Board
dBA	A-weighted decibels
DC	Direct Current
DSM	Digital Surface Model
EMF	Electromagnetic Field
EMS	Emergency Medical Services
FAA	Federal Aviation Administration
HDD	Horizontal Directional Drilling
kV	Kilovolt
kw	Kilowatt
LIDAR	Light Detection and Ranging
MW	Megawatt
MW-ac	Megawatt-alternating current
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge and Elimination System
NREL	National Renewable Energy Laboratory
ODA	Ohio Department of Agriculture
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
O&M	Operation & Maintenance
PILOT	Payment in lieu of taxes
PIM	Public Information Meeting
PV	Photovoltaic
PJM	PJM Interconnection, LLC
QEP	Qualified Energy Project
RUMA	Road Use and Maintenance Agreement
SWPA	Source Water Protection Area
SWP3	Storm-water Pollution Prevention Plan
U.S. EPA	U.S. Environmental Protection Agency

## **I. INTRODUCTION**

This Application for a Certificate of Environmental Compatibility and Public Need (“Application”) is submitted to the Ohio Power Siting Board (“Board”) by Frasier Solar, LLC (“Applicant”) pursuant to Ohio Administrative Code (“O.A.C.”) Chapters 4906-3 and 4906-4. The Application seeks a Certificate of Environmental Compatibility and Public Need (“Certificate”) to construct and operate the Frasier Solar Project, which is a proposed solar-powered electric generation facility of up to 120 megawatts (“MW”) in generating capacity, to be located in Knox County, Ohio (“Project”).

This Application addresses each of the substantive requirements of O.A.C. Chapter 4906-4. For ease of review, the Application quotes in italics each of the regulatory requirements (under the heading “Application Requirement”) for each subject addressed in O.A.C. Chapter 4906-4. The Application then provides (under the heading “Response”) information responsive to that requirement or notes that the requirement does not apply to the Project or that a waiver has been requested.

## II. PROJECT SUMMARY AND APPLICANT INFORMATION

### A. SUMMARY OF PROPOSED PROJECT

#### Application Requirement [4906-4-02(A)]:

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

*(1) A statement explaining the general purpose of the facility.*

*(2) A description of the general location, size, and operating characteristics of the proposed facility.*

*(3) A discussion of the suitability of the site for the proposed facility.*

*(4) An explanation of the project schedule (a Gantt chart is acceptable).”*

#### Response:

##### [4906-4-02(A)(1)]

The general purpose of the Project is to use rows of ground-mounted photovoltaic (“PV”) modules, commonly known as solar panels, to generate clean energy for central Ohio consumers. The Project will provide “on peak” power when demand is high during mid-day and late afternoon. It also will provide employment opportunities throughout the region and State, as well as substantial new revenues to local taxing entities in Knox County.

##### [4906-4-02(A)(2)]

The Project will be located in the southern part of Clinton Township, the northern part of Miller Township, and one parcel in the City of Mount Vernon. It will supply wholesale power to an existing transmission substation owned and operated by AEP Transmission Company, LLC (“AEP”). The power will be delivered to AEP’s existing Sharp Road Substation (“Utility Substation”) located in Clinton Township about one-half mile east of Granville Road.

The total area for which Applicant holds land rights that it plans to use for the Project is 1,395 acres (“Project Area”). Applicant will use much less land than this for the Project, particularly the visible portions of the Project. All of the above-ground components of the Project will be fenced with locked gates. The total of the fenced areas containing these above-ground components will occupy not more than approximately 840 acres of land (“Solar Area”).

The Project will generate electricity using solar panels. Photons in sunlight will strike the semiconducting material in the solar panels, which will excite electrons and generate direct electric current (“DC”). DC will be converted to alternating electric current (“AC”) and the voltage will be increased. The electricity will be gathered through a network

of buried lines to a Project-level substation, where the voltage will be further increased and the power then delivered through a short transmission line to the Utility Substation.

[4906-4-02(A)(3)]

The Project Area is well-suited for the Project because it is close to the Utility Substation, a point on the transmission system at which power can be economically supplied to the system. Solar panels in the Project Area can generate large amounts of power because the Project Area is relatively level, clear of vegetation and dry. Use of the Project Area will minimize impacts to natural resources because virtually all the Project Area is already disturbed annually by farming.

[4906-4-02(A)(4)]

The Project has acquired all the land rights and completed preliminary studies and associated field surveys. Pending receipt of the Certificate and other required authorizations, Applicant plans to begin construction of the Project as early as the third quarter of 2025. Applicant anticipates that the Project will be constructed in two phases: Phase I totaling up to 80 MW and Phase II totaling up to 40 MW. Construction of Phase I is expected to last approximately 12 months. Construction of Phase II is expected to last up to 8 months. The first phase of the Project is expected to start commercial operations during the third quarter of 2026. The second phase is expected to begin commercial operations during the fourth quarter of 2027.

**B. FUTURE PLANS FOR ADDITIONAL GENERATION UNITS IN REGION**

Application Requirement [4906-4-02(B)]:

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

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

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

Response:

[4906-4-02(B)(1)]

Applicant seeks a Certificate to construct and operate the Project at up to 120 Megawatt-alternating current (“MW-ac”) in generating capacity using the Project Area. Applicant has no current plans to add generating units or increase the generation capacity for the Project Area. Any future plans to use land outside the Project Area would be the

subject of a separate application. (However, the Partners, as defined below, are pursuing other solar energy opportunities in the wider region, separate and apart from the Project.)

[4906-4-02(B)(2)]

Applicant is owned by Radiant Planet Renewable Energy, LLC, which in turn is a joint venture partnership between Eolian, L.P. ("Eolian") and Open Road Energy, LLC, an affiliate of Open Road Renewables, LLC (Open Road Energy, LLC and Open Road Renewables, LLC, together, "Open Road") (Eolian and Open Road, together, the "Partners").

Eolian is one of the most experienced private renewable energy investors in the U.S. with successful investments to date in thousands of MW of operating energy projects. Open Road is a focused developer of utility-scale solar projects whose principals successfully originated operating solar projects in Ohio, California, Virginia, Maryland, and Texas. Open Road is developing a number of solar projects throughout the multi-state regional transmission area served by PJM Interconnection, LLC ("PJM"). Eolian's and Open Road's principals have collaborated on many energy projects for more than a decade. Applicant plans to contract with other companies that will construct and operate the Project, but has not yet identified those companies.

### III. DETAILED PROJECT DESCRIPTION AND SCHEDULE

#### A. DESCRIPTION OF PROJECT AREA

Application Requirement [4906-4-03(A)]:

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

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

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

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

Response:

[4906-4-03(A)(1)]

The Project Area is located south to south-west of Mount Vernon in the vicinity of Granville Road (running roughly north to south) and Sycamore Road (running roughly east to west). Almost all of the land in the Project Area has been previously cleared for farming and is relatively level. The predominant industry in the area is farming, with a substantial number of industrial commercial facilities to the north and northeast. The Project Area is mostly rural and is comprised of large-sized farm fields with some pockets of trees and tree lines along creeks and property lines. There are several small clusters of homes close to some of the roads and intersections.

Prominent features in the vicinity of the Project Area include several electric transmission lines, several electric substations (Including the Sharp Road Substation), a decommissioned railroad line, and the southern portion of Mount Vernon. The Project Area itself does not include any population centers, major industries or notable landmarks.

A map depicting the 2-mile area surrounding the Project Area and including each of the features required above is attached as **Figure 1**.

[4906-4-03(A)(2)]

The number of parcels that will be used in whole or in part for construction and operation of the Project is 40. Within those 40 parcels, the total area in which Applicant possesses development rights is approximately 1,395 acres.

## **B. DESCRIPTION OF PROPOSED PROJECT**

### Application Requirement [4906-4-03(B)]:

*“(B) The applicant shall provide a detailed description of the proposed generation facility.”*

### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

## **1. DESCRIPTION OF GENERATION EQUIPMENT**

### Application Requirement [4906-4-03(B)(1)]:

*“(1) The applicant shall submit the following for each generation equipment alternative, where applicable:*

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

### Response:

#### [4906-4-03(B)(1)(a)]

The generation equipment to be used by the Project is solar panels, and no alternatives are being considered. The basic components of the Project will be solar panels mounted on metal racking, inverters to convert DC to AC, including medium-voltage transformers to increase the electric voltage, a network of buried cables to collect the power and provide data, a substation, roads, a data control structure, pyranometers, and fencing. Each of these components is described below.

#### *Solar Panels and Racking*

The Project will generate electricity with conventional solar panels, which will be affixed to metal racking. The racking will be mounted on metal piles driven or rotated into

the ground in long rows. The piles are expected to be driven to a depth of about 10 feet. The rows generally will follow the existing topography of the land in the Solar Area, with some areas made more level with limited grading. The rows will be grouped into large, separately-fenced clusters, often called “solar fields.”

The rows will run in a north-south direction and be equipped with electric motors that very slowly rotate the panels during the day so they face the sun throughout the day. The rows will face east at sunrise, rotate to the west during the day, and then re-set to the east. At the beginning and ending of each day, the low end of the solar panels will be about 2 to 3 feet, and the high end of the solar panels will be about 8 to 12 feet, above the ground. The high end of the solar panels will be no more than 12 feet above the ground at all times during normal operations except when temporarily stowed in a vertical position, for example to perform inspections, maintenance and repair or to manage vegetation below the solar panels.

The solar panel technology for the Project will be one of two basic types: crystalline or thin-film. Crystalline modules are silicon-based. Thin-film modules use one of several alternative semi-conducting compositions (such as cadmium telluride or copper indium gallium selenide).

The Project will use approximately 220,000 to 270,000 solar panels, depending on final engineering and design considerations such as the DC-to-AC ratio and their power output rating. (There is no heat rate associated with solar panels.) The Project will operate 8,760 hours per year, although it will produce no electricity at night (other than possible reactive power support to improve grid performance) and little to none during periods of heavy clouds and significant snowfall. Depending on the choice of models for racking and solar panels, the Project’s annual net capacity factor is expected to be 23% to 25%, which would generate an estimated 225,080 to 250,520 megawatt-hours (“MWh”) of electricity annually, with an expected 0.5% annual decline. This amount of generation is roughly equivalent to the amount of electricity required to power approximately 21,000 typical homes in Ohio.

### *Inverters and Pyranometers*

The Project will include several related groups of electronic components: a DC-to-AC inverter, a step-up transformer that increases the voltage to 34.5 Kilovolts (“kV”), and a cabinet containing power control electronics (“Inverter”). Each Inverter will be mounted on a foundation, such as a metal skid, concrete block, or gravel pad, and will be less than 12 feet high. Each Inverter and related groups of electronic components will be located in an area of up to 280 square feet.

The Project also will include up to 12 stations containing a variety of measuring instruments, including a pyranometer for measuring the solar resource, an anemometer, a wind vane, a barometer, a rain bucket and a temperature probe, as well as associated communications equipment (collectively, “Pyranometer”). Each Pyranometer will be

either mounted on other components or installed on a separate foundation (metal, concrete, or gravel) or directly on the ground. Each Pyranometer will occupy less than 100 square feet and will be a maximum of 12 feet tall.

### *Collection System*

Within each solar field, a network of electric lines and associated data lines commonly called “collection lines” will collect and transmit the power from the solar panels to the Inverters (“DC Collection System”). Separate groups of rows of solar panels will be combined into circuits that are routed, through cable trays mounted on the racking, to combiner boxes. Power from one or more of the combiner boxes then will be transmitted, through buried collection lines, to an Inverter. Most of the underground portions of the DC Collection System are expected to be buried less than 4 feet.

After it converts the power to AC and increases its voltage, each Inverter will deliver the power through a separate network of buried collection lines to the Project-level substation (“AC Collection System”). Each line that is part of the AC Collection System will originate at one of the Inverters and terminate at the Project’s substation (“Substation”). Longer AC collection system circuits might necessitate sectionalizing cabinets. Any portions of the AC Collection System outside of the fences of the solar fields and Substation will be buried at least 3 feet below grade to ensure safety and to avoid interference with farming activities. The final design of the Project may include one or more segments of the AC Collection System mounted on above-ground poles similar to typical power lines.

### *Substation and Gen-tie*

The Substation will be similar in function, size and appearance to other electrical substations that are common in the State. Among the major components of the Substation will be the following:

- (1) collection line feeders and breakers;
- (2) 34.5 kV bus;
- (3) main power transformer (to increase the voltage from 34.5 kV to 69 kV);
- (4) high-voltage breaker;
- (5) metering/relaying transformers;
- (6) disconnect switches;
- (7) equipment enclosure containing power control electronics; and
- (8) lightning masts.

The Substation will be constructed with concrete foundations and aggregate surface cover that is expected to be no more than 90,000 square feet, e.g., 300 feet by 300 feet, in size.

A 69 kV, above-ground transmission line (“Gen-tie”) will connect the Substation to the Sharp Road Substation (“Utility Substation.”) The gen-tie is expected to be about 2,100 feet in length. A self-supporting, steel structure commonly known as a “dead-end structure” will be located at the Utility Substation and connect the Gen-tie to the equipment at the Utility Substation.

### *Roads*

The Project will include a network of access roads and driving aisles connecting public roads to the fence gates and within the fences to access the major electrical equipment. The roads will be either grassy driving aisles or constructed of aggregate material, but will not be paved. They will be used for the operations, maintenance, repair, and replacement of the equipment, as well as to provide emergency response access. Following construction, the roads will be a maximum of 16 feet wide.

### *SCADA*

The Project will include, on the same parcel that hosts the Substation, a single masonry or metal structure containing supervisory control and data acquisition (“SCADA”) equipment. This will include computers, communications equipment, and other devices to assist in the monitoring and operation of the Project. The SCADA structure will have electrical service, but will not include offices, water or sewer service. The structure will be on a poured or pre-fabricated concrete foundation, occupy less than 400 square feet, and be less than 14 feet high.

### *Fencing and Setbacks*

All above-ground components of the Project will be fenced for safety and security. All fenced areas will include entrances with locking gates that, at all times during operations, will remain locked when not in use. Each solar field and the Substation will be separately fenced. Any above-ground component not within a solar field, such as a Pyranometer, will be separately fenced with a locking gate. The fence will be an agricultural-style metal fence about 7 feet high with no barbed wire.

Each solar field and the Substation will incorporate the following minimum setbacks:

(1) 50 to 150 feet from the edge of the pavement of any public road to solar panels. The minimum setback from public roads varies from 50 to 150 feet depending on the number of residences located on the road in the vicinity of the Project. A setback of 50 feet applies to roads with fewer homes (Lafayette, Weaver, Blackjack, and Rangeline), 100 feet to roads with more homes (Kinney, Jennings, Lohr, Watson, and Possum), and 150 feet to roads with the highest number of nearby homes (Granville, Sharp, and Sycamore);

- (2) 50 feet from the property line of any parcel whose owner is not participating in the Project to solar panels;
- (3) 25 feet from the edge of any waterbody or wetland to the nearest structure; and
- (4) 300 feet from any home (existing at the time this Application is submitted) on a parcel whose owner is not participating in the Project to solar panels.

There will also be a minimum setback of 500 feet between any Inverter and any home on a parcel whose owner is not participating in the Project. It is important to note that the above are merely *Project-wide minimum* setbacks: in many cases, especially with regard to the distances between the fences and homes, the actual setback distance will be much greater.

### *Lighting and Signage*

The Project may include permanent lighting at a limited number of locations: entrances, Inverters, the Substation, and the SCADA structure. Any lights will be designed to provide only the amount of light needed for safety and security. All lights will be shielded, and directed either downward or inward. Lights will be designed to be illuminated only when in use.

The Project will include minimal perimeter signage at gates and along the fences. All signs will be only for the purpose of safety, security, or to provide contact information for the Project. There will be no advertising.

### *Preliminary-Maximum Site Plan*

Applicant prepared a preliminary site plan that depicts, within the Project Area, the maximum extent and impact of the above-ground components comprising the Project ("**Preliminary-Maximum Site Plan**"), which is attached as **Exhibit A**. The Preliminary-Maximum Site Plan is based on the preliminary design and engineering currently available for the Project but also conservatively represents the Project's maximum extent relative to the public. It establishes the envelope for the final design and engineering of the Project across all dimensions and depicts all of the major types of above-ground components to be constructed within that envelope. The Preliminary-Maximum Site Plan illustrates preliminary locations of all of the major above-ground components of the Project described above: solar panels, racking, Inverters, the Substation, the SCADA structure, Pyranometers, and fencing, all locations subject to the Project's final engineering design.

Because all the above-ground components of the Project will be fenced, the fence depicted on the Preliminary-Maximum Site Plan represents the maximum boundary of the components with respect to neighboring parcels and public roads. (The total acreage of the areas enclosed by the fences is currently 898, but this figure will be reduced to no more than 840 in the final site plan.) Although the fences, and therefore the components

within them, may be constructed *farther away* from neighbors and roads than the edge of the Solar Area as shown in the Preliminary-Maximum Site Plan, they will not be closer.

Likewise, apart from the Substation and any above-ground collection lines (which are common features on the landscape), no component inside the fence will be higher than 12 feet except possibly pyranometers. Although the height of those components may be *lower* than 12 feet, they will not be higher. As part of the final site plan to be reviewed by the Board's Staff ("Staff") prior to construction start, Applicant will identify the specific models of above-ground equipment to be used, provide the final design and engineering plans, and identify the precise locations and heights of all those components.

Different models of the key components of the Project—solar panels, racking and Inverters—are virtually identical in function and highly similar in appearance. They are largely interchangeable commodities manufactured by scores of companies in highly competitive, global markets. Although subtle technical differences among models will have no effect on the public or the environment, they can significantly affect final design. For example, the electric generating capacity of individual solar panels currently covers a wide range, and so the number of solar panels will be determined by the specific wattages selected. Similarly, the specific model of solar panel chosen will limit the available options for racking and Inverters. To optimize the Project both technologically and economically, multiple combinations of models of solar panels, racking, and Inverters must be evaluated at the time the selections of those components are made.

Because of the necessary length of the certification process and market realities for utility-scale solar facilities, it is not economically feasible for Applicant, at this time, to identify the models of components to be used or provide their precise locations within the Project Area. Rapidly advancing technology (both as to cost and performance) and dynamic markets necessitate that the final model selections occur close to construction start. Indeed, the financing for procurement and construction of the Project will be attracted by, and based on, those selections and the final design and engineering that flow from them. Only after the models have been selected and final design and engineering is completed can the precise locations of the components within the Project Area be identified. Those locations, in turn, will drive the specific locations of the ancillary components, including the piles and collection lines.

The similarity of function and appearance of the key above-ground components means that the maximum extent depicted in the Preliminary-Maximum Site Plan makes it a sound basis for evaluating the Application against the applicable statutory criteria for certification. That is, the Preliminary-Maximum Site Plan presents a conservative and comprehensive scenario for the Board to assess all of the Project's potential impacts on the public per the Board's rules: air and water quality, solid waste generation, aviation, health and safety, ecological resources, land use, cultural and archeological resources, and agricultural districts and agricultural land. The model selections and final engineering and design in the final site plan will merely refine the Preliminary-Maximum Site Plan in ways that do not affect the Board's assessments of those impacts.

Representative models of the three key types of components that have been used in the Preliminary-Maximum Site Plan are as follows:

- (1) Solar Panels – Q.Peak Duo XL-G11.3/BFG manufactured by QCells
- (2) Racking – NX Horizon manufactured by Nextracker
- (3) Inverter – HEM FS4200M manufactured by Power Electronics

Specifications of these **Representative Component Models** are included in **Exhibit B**. Panel specifications included are for the 585-watt version of the 650-watt model which is used in the Preliminary Maximum Site Plan and under development by the manufacturer.

#### *Preliminary Vegetation Management Plan*

Within the fences of the solar fields, most of the land surface will not be occupied by any above-ground components, but will be open ground. The open space is necessary to minimize shading between rows of solar panels and provides room for vehicle and worker access. The open ground surface, as well as the ground surface under the solar panels themselves, will be planted with robust, non-invasive vegetation that will be maintained over the life of the Project.

A key feature of the Project is that the Solar Area not only will produce energy, but serve the dual use of providing pasture for sheep grazing. After an initial transition period of 1 to 3 years, the predominant means of vegetation control will be sheep grazing, supplemented by mechanical cutting, for as long as local sheep grazers are available and interested in providing such services and as long as such services are cost effective. This aspect of vegetation management continues the agricultural use of the land throughout the operating period of the Project.

Within the solar fields, the only areas that will not be vegetated will be the roads with an aggregate surface, the Inverters, the Pyranometers, the fencing and the specific locations where the pilings for the racking are installed. Each piling will occupy less than one square foot of surface. The vegetative cover will have a variety of benefits for the land, including absorbing precipitation and improving water quality. The cover will reduce erosion and run-off and it will be in place even in winter, when the fields hosting the Project normally may otherwise have remained unplanted, and subject to erosion and nutrient loss. All of these positive benefits from vegetative cover will assist participating land owners in resuming crop production (if they so wish) after the Project components are removed.

Because the vast majority of the ground surface within the fences will not be occupied by any above-ground components, vegetation management is an important

facet of the Project. Applicant prepared a **Preliminary Vegetation Management Plan** for the Project, which is attached as **Exhibit C**. The plan reviews the current land use in the area and provides preliminary plans for planting and maintaining the vegetative ground cover for the life of the Project. Prior to the start of construction, the document will be updated and finalized based on final design and engineering.

[4906-4-03(B)(1)(b)-(d)]

The Project will not use wind turbines or fuel and will not emit any stationary source air pollution.

[4906-4-03(B)(1)(e)]

Unlike almost all non-renewable electric generating technologies, the Project will not use any water in the generating process itself, will not generate any process wastewater, and will not discharge any industrial wastewater to any receiving streams.

As explained below, at most, the Project may occasionally use only a relatively very small volume of water, compared to other generating technologies, to clean the solar panels of dust and dirt that may accumulate over time and which are not cleaned by naturally occurring precipitation in the Project Area.

The Applicant believes that 1.3 million gallons (MG) is a reasonable estimate of the maximum amount of water that would be used in the relatively rare instance in which cleaning of the entire Project would be performed. It was calculated based on a literature review indicating a maximum value of 5 gallons/MWh of water used for solar facilities across the U.S. See U.S. Dept. of Energy "Sunshot Vision Study" (2012), p. 166. Based on the highest estimate of the MWh/yr for the Project (250,520), an assumed 5 gallons per MWh results in a total of approximately 1.3 MG. Any such cleaning water would be trucked to the Project or acquired from a nearby source, including possibly from one or more of the land owners participating in the Project. Cleaning may never be needed given the amount of natural precipitation in the area. Any cleaning water used would not need to be treated and would not be discharged to any receiving streams.

## **2. CONSTRUCTION AND RECLAMATION METHODS**

Application Requirement [4906-4-03(B)(2)]:

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

- (a) Electric power generation plant or wind-powered electric generation turbines, including towers and foundations.*
- (b) Fuel, waste, water, and other storage facilities.*
- (c) Fuel, waste, water, and other processing facilities.*
- (d) Water supply, effluent, and sewage lines.*

- (e) Associated electric transmission and distribution lines and gas pipelines.*
- (f) Electric collection lines.*
- (g) Substations, switching substations, and transformers.*
- (h) Temporary and permanent meteorological towers.*
- (i) Transportation facilities, access roads, and crane paths.*
- (j) Construction laydown areas.*
- (k) Security, operations, and maintenance facilities or buildings.*
- (l) Other pertinent installations.”*

Response:

[4906-4-03(B)(2)(a) & (e)-(k)]

The Project will include one or more of the components listed in subsections (a) and (e) through (k) above.

The method that will be used to construct the Project will be similar to that generally used in the U.S. to construct similar utility-scale solar facilities. Other than the Substation, and because the solar panels will be affixed to racking largely using hand tools, the major equipment used to construct the Project will include bulldozers and dump trucks (primarily to build roads), small pile drivers (to install piles), trenchers (to lay the buried portions of the collection lines), and equipment for horizontal directional drilling (“HDD”) (to route certain sections of collection lines under surface features). A more detailed description of the steps comprising construction is provided below in connection with the schedule for the Project.

For several reasons, the land that will host the equipment will require relatively little work to prepare it for construction. First, as discussed in Section B.2 below and in the Ecological Impact Assessment, relatively little land (approximately 10 acres) will need to be cleared of vegetation. Most of the Project Area consists of previously disturbed land that has been actively farmed for years. Also, the design of the solar fields will obviate the need to remove the majority of trees in the Project Area. Finally, relatively limited grading compared to traditional construction will be required because the Project Area already is relatively level and solar panels will largely conform to existing grades. Methods to be used to remove trees and vegetation and perform grading have not been determined but will be standard, accepted methods for the commercial construction industry. As provided in the Preliminary Vegetation Management Plan, the vast majority of the land surface within each solar field, including almost all of the area below the solar panels themselves, will be planted with vegetation.

The construction of the Project is expected to require a number of temporary laydown areas for construction staging, equipment storage, and parking for workers. The laydown areas generally will be located adjacent to public roads, and mostly will be located adjacent to the entrances to the solar fields. All of the laydown yards will be temporary features with gravel surfaces. They will be restored with vegetation after construction to the extent not used to host components of the Project.

The Project will include several narrow corridors of land to host the collection lines outside of fence lines. These collection lines will be buried at least 3 feet deep or installed on typical medium voltage electrical poles. The buried collection lines will be installed via open cut method or HDD, depending on the location. HDD will be used to install collection lines under certain surface features, such as roads.

Several miles of roads internal to the Project will be created for construction, operation, and maintenance of the Project. Roads will be comprised of aggregate material and/or vegetation. Roads will only be as long and as wide as necessary to accommodate construction and operational activities.

The specific materials, and the associated textures and colors, to be used in the components of the Project will be typical of other utility-scale solar facilities in the U.S. Racking will be largely metal, such as aluminum, and will have a smooth texture and be of a grey or silver color. Panels will be comprised of the materials described above, with the exterior layer consisting of a glass cover within a metal frame. The solar panels will have a relatively smooth texture and be black, dark blue, or another dark color. Collection lines will be made of copper or other materials standard in the electric utility industry. The dimensions of the components of the Project have been provided above in connection with the description of generation equipment.

Applicant holds land rights to operate the Project for up to 40 years, and the Project is expected to operate for that period of time. After the useful life of the facility, Applicant will remove the Project and return the land to substantially its original condition so that it can be farmed again. Given the limited use of foundations, the components buried less than 3 feet below grade can be removed and the land restored to substantially its pre-construction condition. The used components and materials will be reused or recycled to the extent practicable, and the remaining materials disposed of in accordance with applicable law.

With respect to subsection (k), the SCADA structure may be considered a non-occupied operations building.

[4906-4-03(B)(2)(b), (c), (d) & (l)]

Subsections (b), (c), and (d) are not applicable to the Project. With respect to subsection (l), there are no significant installations associated with the Project not otherwise addressed above.

### **3. NEED FOR NEW TRANSMISSION**

Application Requirement [4906-4-03(B)(3)]:

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

Response:

The only new transmission line associated with the Project will be the Gen-tie. Applicant is including the Gen-tie as part of this Application, not in a separate Construction Notice. The Gen-tie will transmit the energy from the Substation to the Utility Substation, where it will connect to the existing transmission system. The Project will not use natural gas or include any gas pipelines.

#### **4. PROJECT MAP**

Application Requirement [4906-4-03(B)(4)]:

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

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

Response:

Applicant seeks authorization to construct the Project within the Project Area: the Solar Area plus limited additional acreage outside the fences for roads to gates, portions of the AC Collection System, and perimeter landscaping just outside the fences. The land to be used for the Project is divided into three different use categories. First, the Substation will be located on a specific parcel of land. Second, several narrow strips of land will host only portions of the AC Collection System located outside fence lines. Finally, the Solar Area will be used to host the solar fields themselves, which will include all of the remaining above-ground components of the Project. The required map is attached as **Figure 2**.

Consistent with the Preliminary-Maximum Site Plan, the Solar Area is depicted at its maximum extent, but when constructed, may not extend as far as indicated in one or more areas. Similarly, the depictions of the specific components within each solar field are illustrative only. The final locations will be determined by the final design and engineering for the Project.

#### **C. PROJECT SCHEDULE**

Application Requirement [4906-4-03(C)]:

*“(C) The applicant shall provide a detailed project schedule.*

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

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

*(2) The applicant shall describe the proposed construction sequence.*

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

**Response:**

**[4906-4-03(C)(1)]**

Applicant anticipates that the Project will be constructed in two phases: Phase I totaling up to 80 MW and Phase II totaling up to 40 MW. A detailed schedule for the Project in “Gantt chart” format that includes each of the elements listed above is attached as **Figure 3**.

**[4906-4-03(C)(2)]**

The expected sequence of construction of the Project is as follows:

- (1) survey and mark sensitive areas, perimeters, foundations for roads, and equipment locations;
- (2) clear limited vegetation, limited ground leveling, compaction and grading;
- (3) install drainage and erosion control;
- (4) install perimeter fencing and lighting;
- (5) construct roads;
- (6) install temporary power;
- (7) delineate temporary storage and construction areas;
- (8) install temporary facilities;
- (9) install foundations (for the Substation, SCADA structure, Inverters, and Pyranometers);
- (10) install the Substation and SCADA structure;
- (11) install piles, racking, and solar panels;

- (12) install Inverters;
- (13) install collection lines;
- (14) install Pyranometers;
- (15) install lighting and signage;
- (16) clean-up work areas;
- (17) plant ground vegetation; and
- (18) plant perimeter landscaping.

Many of the above activities may occur concurrently.

[4906-4-03(C)(3)]

Certain critical delays in the development of the Project may have a material, adverse effect on Applicant's efforts to secure equity investment and finance its construction by the planned in-service date. These critical delays could include Applicant's inability to timely acquire solar panels, racking, Inverters, as well as permitting delays and labor shortages. Postponement of the start of construction could affect the Project's eligibility for certain financial incentives, such as the full value of federal tax credits. It also would delay the benefits to the community, including substantial revenues for taxing entities, such as local schools, and income for participating landowners.

#### IV. PROJECT AREA SELECTION AND SITE DESIGN

##### A. SELECTION OF PROJECT AREA

Application Requirement [4906-4-04(A)]:

*“(A) The applicant shall describe the selection of the project area.*

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

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

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

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

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

Response:

[4906-4-04(A)(1) & (2)]

Applicant chose to develop the Project in north central Ohio for several reasons, including an attractive combination of strong electricity demand, a robust transmission system, and a sufficient solar resource. First, the Project is located in a region with several large Ohio cities (Columbus, Toledo, Akron, and Cleveland), which create a strong regional demand for electricity. A map depicting the general location of the Project Area is attached as **Figure 4**. Second, transmission resources in the area have sufficient capacity to accommodate the Project. Third, especially as compared to land farther east, the topography of the area is suitable for solar facilities. Finally, the solar resource in central Ohio is superior to that in the more eastern, and especially more northeastern, parts of the State.

Within this region, the study area was determined largely by the location of the Utility Substation. Economically feasible solar facilities must be located where the power can be economically supplied to the transmission system. Applicant’s preliminary studies indicated that delivering power to the Utility Substation would be cost-effective. As

addressed further below, this has been mostly, and is expected to be fully, confirmed by the formal and independent transmission analysis conducted by PJM.

A map depicting the study area boundary and general sites that were evaluated for the Project is attached as **Figure 5**. The selection of the Utility Substation as the point to supply power and the planned size of the Project necessarily limited the study area to the properties within a radius of approximately 3 to 4 miles of the Utility Substation. Siting the Project in proximity to the Utility Substation avoided the need to construct a lengthy transmission line connecting the solar panels to the transmission system. It also reduced the potential electrical losses of generating the power far from the delivery point. Applicant obtained development rights to properties in the eastern portion of the study area, but opted for development of the proposed Project Area due to its proximity to the Utility Substation as well as relatively lower population density.

[4906-4-04(A)(3), (4) & (5)]

Once the Utility Substation was selected as the point of interconnection, the location of the Project largely was determined by four siting criteria. First, most of the land needed to be relatively level, cleared, and dry. Second, the land needed to be contiguous to or in close proximity to other, similarly suitable parcels. Third, Applicant wanted to minimize any impacts to sensitive features such as streams, wetlands, and potential wildlife habitat. Finally, community acceptance of the Project played a factor, as individual property owners made their own personal decisions on whether to host the Project. Applicant also solicited input from the local community, principally from local residents and local public officials, and incorporated such input into Project siting. These criteria were not assigned particular weights; rather, each played a similar role in determining the location of the Project.

As noted above, the critical factor in determining the study area was the identification of the Utility Substation as a promising point of interconnection serving south central Ohio and the Columbus area. Having made this determination, the siting process was to determine the location of the Project, within the study area, based on the more parcel-specific criteria set forth above. From this two-step process, Applicant decided to pursue development of the Project within the Project Area.

Applicant is not presenting for consideration any alternative locations for the Project, either within the study area or central Ohio generally. Rather, the only proposed location for the Project is as proposed in this Application.

**B. PROCESS OF DESIGNING FACILITY LAYOUT**

Application Requirement [4906-4-04(B)]:

*“(B) The applicant shall describe the process of designing the facility layout.*

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

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

*(3) The applicant shall provide a description of how many and what types of comments were received.”*

Response:

[4906-4-04(B)(1)]

A map showing constraints that influenced the design of the Project, including those listed above, is provided in **Figure 6**.

[4906-4-04(B)(2)]

The Project Area was designed with interested land owners to accommodate solar panels that will produce electricity economically while also accounting for a variety of site-specific constraints. The specific parcels chosen to host the Project reflect the same factors that favored the Project Area within the larger study area:

- (1) relatively level, cleared, and dry;
- (2) close to other parcels; and
- (3) avoidance or minimization of impacts to sensitive features (such as streams, wetlands and larger blocks of potential wildlife habitat).

Also, the layout necessarily was significantly influenced by the decisions of individual property owners whether to participate in the Project. It also was influenced by the decisions of individual land owners whether to make all or a portion of particular parcels available for solar facilities. Some land owners chose to continue farming some portions of certain parcels.

Because ground-mounted solar panels are modular in nature, they are well-suited to accommodate a variety of constraints. It was not necessary, therefore, for Applicant to consider alternative site designs or equipment. Rather, within the larger areas surrounding the Project Area, it was merely necessary for the Project Area to conform to the existing constraints.

[4906-4-04(B)(3)]

As explained further below in connection with the description of public outreach, prior to the Public Information Meeting (“PIM”), Applicant attended numerous regular meetings of the Clinton and Miller Township Trustees starting in June 2022 and reached

out to land owners adjacent to and near the Project Area to brief them on the Project and receive their feedback. This outreach included providing maps that incorporated Applicant's proposed minimum setbacks and perimeter landscaping, as well as the decisions by the participating land owners to keep certain fields in cultivation. In advance of the PIM, Applicant had a number of individual meetings and calls with neighbors to provide more information about the Project and receive feedback about the Project's proposed design.

## **V. ELECTRIC GRID INTERCONNECTION**

### **A. CONNECTION OF PROJECT TO REGIONAL ELECTRIC GRID**

Application Requirement [4906-4-05(A)]:

*“(A) The applicant shall describe how the facility will be connected to the regional electric grid.”*

Response:

The Project will connect to the regional electric grid through the Utility Substation. Through the Utility Substation and its associated transmission and distribution lines, the power will be supplied in part to the “service territory” of AEP, which covers substantial portions of Ohio and is part of the multi-state, regional transmission system managed by PJM.

### **B. INFORMATION ON INTERCONNECTION OF FACILITY**

Application Requirement [4906-4-05(B)]:

*“(B) The applicant shall provide information on interconnection of the facility to the regional electric power grid.*

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

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

Response:

[4906-4-05(B)(1)]

Applicant first applied to PJM in March 2020 to interconnect 80 MW-ac of solar generation to the AEP transmission system. PJM assigned the application Queue No. AF2-149. Applicant later applied to PJM in July 2021 to interconnect an additional 40 MW-ac of solar generation. PJM assigned the application Queue No. AH1-059. Information on these queue positions, which together total 120 MW, is available at:

<https://www.pjm.com/planning/service-requests/services-request-status>

[4906-4-05(B)(2)]

PJM has issued its feasibility study report and system impact report for Queue No. AF2-149 (“**Interconnection Reports**”), copies of which are attached as **Exhibit D**. Applicant submitted a motion for waiver of the rule requiring these reports for Queue No. AH1-059 on August 18, 2023. Based on the reports issued to date and its own transmission analysis, Applicant believes that the Project can be constructed and economically operated at 120 MW-ac.

Applicant signed the services agreement pursuant to which PJM would conduct the Facilities Study for the Project, and paid the required fee, in March 2021. A copy of the receipt for Applicant’s payment of this fee is included with the Interconnection Reports.

## **VI. ECONOMIC IMPACT AND PUBLIC INTERACTION**

### **A. CURRENT AND PROPOSED OWNERSHIP STATUS OF PROJECT**

Application Requirement [4906-4-06(A)]:

*“(A) The applicant shall state the current and proposed ownership status of the proposed facility, including leased and purchased land, rights-of-way, structures, and equipment.”*

Response:

Applicant will own all of the equipment comprising the Project, all of which will be acquired after the issuance of the Certificate but before construction. Applicant holds development rights (leases, options-to-purchase, and easements) for the land that will host Project. Applicant has either the right to buy the land or occupy it for up to 40 years to construct, operate, and decommission the Project.

### **B. CAPITAL AND INTANGIBLE COSTS**

Application Requirement [4906-4-06(B)]:

*“(B) The applicant shall provide information regarding capital and intangible costs.”*

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

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

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

Response:

[4906-4-06(B)(1)]

The Project's total estimated capital and intangible costs is expected to be approximately \$1,025/kilowatt ("kW"), inclusive of intangible costs and dependent on the models of solar panel, racking, and Inverters used. These estimated costs are broken out in the table below, with the assumed costs of the Project within the above range.

Expense Description	Cost (\$/kW)
<u>Tangible Costs</u>	
Modules	\$375
Balance of Plant & Civil	\$545
Substation and Gen-Tie	\$31
Interconnection Upgrades	\$6
<i>Total Tangible Costs</i>	<i>\$957</i>
<u>Intangible Costs</u>	
Legal & Development Costs	\$38
Financing & Transaction Fees	\$15
Other	\$15
<i>Total Intangible Costs</i>	<i>\$68</i>
<i>Total Capital Expenses</i>	<i>\$1,025</i>

Because Applicant is not proposing alternatives to the Project, cost comparisons between alternatives is not included.

[4906-4-06(B)(2)]

Installed project costs compiled by Lazard's Levelized Cost of Energy Analysis – Version 16.0 indicate that the capital costs of the Project are consistent with recent industry trends (Lazard, 2023). Lazard indicates that utility-scale solar PV facilities have a capital cost between \$700 and \$1,400/kW. The National Renewable Energy Laboratory's (NREL) 2022 Annual Technology Baseline (ATB) estimates such capital costs for projects constructed in 2025 to range from \$922 and \$1,157/kW. By way of further comparison, the costs of solar generation projects under development by the Partners in other states in the mid-Atlantic region have similar capital costs averaging \$925/kW. Variances in capital costs across the projects are due to a variety of factors, including solar resource, topography and other site-specific characteristics, project scale, and proximity to equipment suppliers.

[4906-4-06(B)(3)]

Capital costs for the Project will include development costs, construction design and planning, equipment costs, and construction related costs. The costs will be incurred within 2 years following the start of construction. Therefore, a present worth analysis is essentially the same as the costs presented above. Because alternatives to the Project are not under consideration, the capital cost information presented is limited to the Project.

**C. OPERATION AND MAINTENANCE EXPENSES**

Application Requirement [4906-4-06(C)]:

*“(C) The applicant shall provide information regarding operation and maintenance expenses.*

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

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

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

Response:

[4906-4-06(C)(1)]

For the first 2 years of commercial operation, the annual operations and maintenance (“O&M”) cost of the Project at 120 MW-ac nameplate capacity are expected to be approximately \$1.21 million, or \$10/kW. These costs can be categorized as solar plant O&M, balance of plant O&M, site maintenance, and unplanned maintenance reserves. Solar plant O&M is expected to cost \$485,000 – \$545,000/year, balance of plant is expected to cost \$45,000 – \$72,000/year, site maintenance is expected to cost \$450,000 – \$510,000/year, and unplanned maintenance reserves are expected to cost \$67,000 – \$83,000/year.

[4906-4-06(C)(2)]

O&M expenses are significant components of the overall cost of solar projects and can vary widely among facilities. As with capital costs, annual O&M expenses vary across geographies and by project scale. Key activities include monitoring and supervision, grid regulation, corrective maintenance, preventative maintenance, and site maintenance.

The annual O&M costs for the Project are estimated to be approximately \$10/kW in the first year of operations and increase at a rate of approximately 2% per annum through the life of the Project. These estimated costs exclude property taxes, land rent payments, and other ongoing expenses not directly related to the operation of the Project. The 2022 NREL ATB referenced above estimates annual O&M costs for utility-scale solar PV projects constructed in 2025 to range from \$17 to \$20/kW-year (NREL 2022). Because the NREL figures are inclusive of land rent payments and property taxes, they are generally consistent with estimated O&M expenses for the Project. The Project’s estimated O&M costs are similar to costs expected at other facilities under development by the Partners in other states in the mid-Atlantic region of \$10-13/kW.

[4906-4-06(C)(3)]

The annual O&M costs itemized above will be subject to real and inflationary increases. Therefore, these costs are expected to increase with inflation throughout the life of the Project. The net present value of the total estimated O&M costs per kW over 40 years, using an inflation rate of 2% and assuming a 7% discount rate, is \$171/kW. Because alternatives to the Project are not under consideration, the above O&M cost information is limited to the Project.

**D. COST FOR A DELAY**

Application Requirement [4906-4-06(D)]:

*“(D) The applicant shall submit an estimate of the cost for a delay prorated to a monthly basis beyond the projected in-service date.”*

Response:

The cost of month-to-month delays beyond the expected in-service date would depend on a number of factors. If the delay were to occur during development of the Project (including the process for obtaining the Certificate), the losses would primarily be those attributable to the time value of money from the delayed earning of power sale revenue. Such a loss is estimated to be approximately \$1.03 million/month. Delays beyond the planned in-service date also could incur costs pursuant to one or more power purchase agreements under which the Project is expected to deliver power by a date certain. Finally, delays that extended the in-service date could jeopardize the Project’s expected eligibility for the applicable value of federal investment tax credits.

**E. ECONOMIC IMPACT OF PROJECT**

Application Requirement [4906-4-06(E)]:

*“(E) The applicant shall provide information regarding the economic impact of the project.*

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

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

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

*(4) The applicant shall provide an estimate of the economic impact of the proposed facility on local commercial and industrial activities.”*

Response:

Applicant analyzed the economic and fiscal impacts of the construction and operation of the Project in its **Socioeconomic Report** attached as **Exhibit E**.

[4906-4-06(E)(1) & (2)]

The Socioeconomic Report forecasts jobs that the Project would create, including both direct and indirect employment. It estimates that the Project will create 232 direct jobs as well as 124 indirect and induced jobs for a total of approximately 356 jobs during construction, with a corresponding, estimated total construction payroll of \$25.1 million.

For the operation phase of the Project, the Socioeconomic Report estimates that the Project will create 5 direct jobs and 6 indirect and induced jobs for a total of 11 jobs, with corresponding annual payroll of \$700,000. The present value of annual operations and maintenance earnings over the 40 year lifespan of the Project is approximately \$4.9 million, assuming a 7% discount rate and a 3% annual salary increases.

The Knox County Commissioners voted unanimously to pass a resolution in favor of Applicant's application to be a "qualified energy project" ("QEP") and approve a "Payment in Lieu of Taxes" ("PILOT") Agreement for the Project pursuant to Ohio Revised Code ("R.C.") Section 5727.75 and procedures developed by the Ohio Department of Development ("DOD"). The DOD has since certified the Project as a QEP. As such, it is required that at least 70% to 80% of the full-time equivalent employees who are employed for the construction or installation of the Project be domiciled in Ohio. Additional information is provided in Section 5.0 of the Socioeconomic Report.

[4906-4-06(E)(3)]

The Project will generate approximately \$1,080,000 in annual revenue from the PILOT, which assumes an annual \$9,000/MW payment for 120 MW-ac for up to 40 years. The table below provides a breakdown of the anticipated annual and total PILOT revenue that each taxing jurisdiction will receive over the life of the Project.

Frasier Solar – Summary of PILOT Payments

<b>Taxing Jurisdiction</b>	<b>Annual</b>	<b>40-Year Total</b>
Knox County		
General Fund	\$286,167	\$11,351,243
Developmental Disabilities	\$72,646	\$2,881,515
Mental Health	\$13,579	\$538,601
Senior Citizens	\$10,727	\$425,495
Community Health Center	\$10,863	\$430,881
Children's Services	\$17,652	\$700,181
Parks District	\$4,753	\$188,510
Mount Vernon City School District	\$488,289	\$19,368,090
Knox County Career Center	\$86,904	\$3,447,046
Clinton Township	\$19,438	\$774,426
Miller Township	\$48,454	\$1,919,236
Mt. Vernon City	\$2,876	\$114,594
Knox County Library	\$17,652	\$700,181
<b>Total</b>	<b>\$1,080,000</b>	<b>\$42,840,000</b>

[4906-4-06(E)(4)]

The Project is expected to have a number of positive economic impacts on commercial activities in the local area. The Socioeconomic Report estimates that, during

the construction phase, the Project will generate tens of millions of dollars of new economic output during construction and several million annually from operation. A substantial portion of this total is expected to represent induced impacts, which in part reflect spending at local commercial establishments of substantial construction-related wages. In addition, additional local employment during the construction period is expected in supporting commercial sectors, such as restaurants and hotels. Similar induced impacts benefiting local commerce are expected to occur from operation-related employment spending, albeit to a much smaller degree than during construction. Finally, land lease payments to land owners participating in the Project are expected to augment local income, which will result in increased demand for local commercial services.

The Socioeconomic Report also specifically examines the economic impact of the current row crop operations and compares that to the impacts expected from the Project's use of sheep grazing for vegetation management. This analysis is set forth in Section 4.4 of the Socioeconomic Report.

## **F. PUBLIC RESPONSIBILITY**

### **1. PUBLIC INTERACTION**

#### *Application Requirement [4906-4-06(F)]:*

*“(F) The applicant shall provide information regarding public responsibility.”*

#### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

#### *Application Requirement [4906-4-06(F)(1)]:*

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

#### Response:

With respect to the siting of the Project, as part of determining the best location for the Project, between January 2020 and March 2023 Applicant mailed letters to and called many property owners in an area of several miles surrounding the Utility Substation. After a demonstration of sufficient interest from area land owners and confirmation that the Project could economically supply power to the electric grid, Applicant briefed local

officials. Applicant then initiated a public outreach effort to inform and educate potential neighbors of the Project and receive their input. Applicant's interaction with the community about the Project and its pre-application public information program, including its PIM, is provided in the document entitled **Summary of Public Outreach** attached as **Exhibit F**.

To better facilitate Applicant's efforts to address local questions and concerns, it opened a local office in downtown Mount Vernon in April 2023. Applicant's outreach efforts also included an invitation for certain neighbors to participate in a "good neighbor agreement" program under which neighbors will receive funds to install their own residential solar systems or to offset their electric bills if the Project comes to fruition. A number of neighbors have chosen to participate in the program.

Prior to construction, Applicant will identify a company contact person to address any complaints, concerns or comments from the public. Applicant will provide the public with contact information to submit complaints, concerns or comments regarding construction and ensure that prompt responses be made to any such complaints, concerns or comments (for which a response either is requested or clearly implied). Applicant will also make commercially reasonable efforts to expeditiously resolve any complaints or concerns. These and other measures for public interaction during construction are captured in a **Complaint Resolution Program** for the Project, which is attached as **Exhibit G**.

No later than seven (7) days prior to the start of construction, Applicant will mail a notice of start of construction to the following persons:

- (1) affected property owners and tenants who were provided notice of the PIM;
- (2) attendees of the PIM who requested updates regarding the Project and provided a mailing address for that purpose;
- (3) residences located within 1/4 mile of the perimeter of the Project; and
- (4) any other person who requests updates regarding the Project and provides a mailing address for that purpose.

The notice of construction will summarize upcoming construction activities, describe where construction will occur, including the main routes of equipment delivery, and provide the name and contact information of a Project representative to whom any complaints, concerns or comments may be addressed.

During operations, Applicant will post its contact information at or near the entrance of each solar field and the Substation. Applicant also will post information to provide the public with contact information to submit complaints, concerns or comments regarding operation. A prompt response will be made to any submittals (for which a response either is requested or clearly implied.)

## 2. INSURANCE

Application Requirement [4906-4-06(F)(2)]:

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

Response:

Applicant will maintain a comprehensive package of liability insurance to protect the public in connection with the Project. Throughout the construction, operation, and decommissioning of the Project, Applicant will maintain insurance against claims and liability for personal injury, death and property damage arising from the construction, operation, or decommissioning of the Project. At a minimum, the coverage limits of such insurance will be \$1 million per occurrence and \$2 million in the aggregate. Applicant also will maintain umbrella insurance coverage against claims and liability in the amounts of \$10 million per occurrence and \$10 million in the aggregate.

## 3. TRANSPORTATION IMPACTS

Application Requirement [4906-4-06(F)(3)]:

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

Response:

Applicant evaluated the expected impact of the construction of the Project on roads and bridges, any needed improvements prior to construction or likely repairs needed following construction, and any required transportation-related permits and local traffic coordination. A copy of the resulting **Transportation Assessment** for the Project is attached as **Exhibit H**. The Transportation Assessment includes the results of an on-site study of the transportation routes to the Project Area and the conditions of the local roads adjacent to and near the Project Area. The assessment determined that most of the construction and delivery vehicles will be of legal weight and dimension (except for larger equipment such as substation transformers), and that the majority of the roads likely to be used for construction were suitable for equipment delivery and construction traffic in their condition as of May 2023.

Section 3.1 of the Transportation Assessment evaluates the anticipated impacts to roads from construction of the Project. The report estimates construction of the Project will require between 2,040 and 2,520 vehicle delivery trips, with a more precise estimate to be provided in the Final Transportation Assessment (to be completed prior to construction). The routes used for delivery of construction equipment and materials will experience increased truck traffic, and construction traffic may cause accelerated surface deterioration or stress on drainage structures that necessitate repairs during or after construction. The measures to be used to address inadequate roads and repair them to at least pre-construction conditions are set forth in Section 3.3 of the Transportation Assessment.

Pursuant to the Project's status as a QEP, Applicant also plans to post a road bond or similar surety to ensure the repair of any roads damaged by construction of the Project. Applicant is working with the local authorities to develop a common understanding for the use and protection of area roads. This is expected to include a road use maintenance agreement or a similar arrangement ("RUMA") providing that any construction-related damages to roads be expeditiously repaired. As part of a RUMA, Applicant expects to establish appropriate surety to guarantee funds to fulfill its road-related obligations.

Each of the subjects addressed by the Transportation Assessment can readily be addressed with local authorities so that the post-construction condition of the local roads is as good as or better than their current condition. Applicant plans to work closely with township and county officials, particularly the Township Trustees and the County Engineer, to review the Transportation Assessment, further assess the state of the roads as construction approaches, and agree on a plan to repair any damage to roads needed to start or resulting from construction of the Project. Applicant expects this collaboration to culminate in the execution of a RUMA for the Project.

#### **4. TRANSPORTATION PERMITS**

Application Requirement [4906-4-06(F)(4)]:

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

Response:

Section 3.2 of the Transportation Assessment examines whether the construction or operation of the Project will necessitate any transportation-related permits. It concludes that few special hauling permits are likely to be needed because almost all of the vehicles needed for construction are expected to be within legal heights, weights and widths for the applicable roads and bridges. The Transportation Assessment notes that driveway

permits will be required for the road entrances, and utility permits will also be required for any crossings of roads with buried electrical lines. As with road and culvert repairs and traffic coordination, these routine permits can be secured through consultation with the appropriate State and local officials.

The Transportation Assessment also describes current traffic conditions in and near the Project Area and addresses the effect of the likely volume of construction-related traffic. It concludes that the travelling public is likely to experience, at most, minor delays and inconveniences during the construction of the Project. Applicant believes that these matters can readily be addressed by Applicant in cooperation with local authorities, and plans to coordinate construction traffic with the Township Trustees, County Engineer and school representatives.

## **5. DECOMMISSIONING**

Application Requirement [4906-4-06(F)(5)]:

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

Response:

The Project will have only modest impacts to the land and can be readily decommissioned and removed at the end of its useful life. The solar panels and racking will be installed on simple piles driven or rotated into the ground, likely to a depth of about 10 feet. Inverters and Pyranometers will be installed on modest-sized foundations, which can be lifted out of place or broken up and removed. The Substation components will be installed on concrete footers but will not cover a large area. Roads will be constructed of aggregate material or covered in grass, not paved, and participating land owners may choose to retain roads for their own use following decommissioning. Buried portions of collection lines outside of the fence will be at least 3 feet below grade and, therefore, need not be removed to return fields to farming.

Operation of the Project will not create any hazardous waste or wastewater. The only materials that may remain are roads desired to be retained by land owners, collection lines buried greater than 3 feet, and possibly occasional piles that, during removal, break off more than 3 feet below grade. The solar panels themselves typically contain only exceedingly small amounts of potentially hazardous materials, all of which are safely encased in polymer and tempered glass within an aluminum frame. Even if damaged, solar panels will not release any material necessitating soil or water remediation.

The decommissioning effort will prioritize reuse and recycling over land disposal as waste. Most of the materials used in state-of-the-art solar generating facilities are reusable or recyclable. Given recent and expected trends, it is likely that the percentage

of reusable/recyclable components will only increase over time. Solar panels are comprised mostly (almost 80%) of commonly recycled materials: glass, aluminum and copper. Although little recycling has occurred to date due to the relative youth of the solar industry, a national recycling program was launched in 2016 with the goal of making the solar industry in the U.S. landfill-free. (SEIA, 2016). One of the top U.S.-based solar panel manufacturers, which is based in Ohio, is a leader in this area (First Solar, 2013).

Even if the Project's solar panels are not fully recyclable in 40 years, they will not constitute "hazardous" or dangerous waste at disposal. Most solar panel suppliers have demonstrated that their products pass U.S. Environmental Protection Agency's ("U.S. EPA's) "Toxic Characteristic Leaching Procedure," which qualifies them to be disposed of as routine waste such as household garbage. This includes the Ohio-made solar panels based on cadmium telluride chemistry (Lagunas, January 2017). As a result, solar panels generally may be disposed of in standard landfills. Applicant will work closely with manufacturers, local subcontractors, and waste management firms to segregate—based on the prevailing standards and practices at the time—materials that can be reused and recycled from those that must be land-disposed as waste.

The ultimate goal for decommissioning is that the land used for the Project be restored to use for cultivation, unless circumstances prevailing shortly in advance of the start of decommissioning indicate that another use is more appropriate or explicitly desired by the land owner. Restoration will include a return to the same or functionally similar pre-construction drainage patterns, including farm drainage tiles, decompaction of soil, and seeding with an appropriate, low-growing vegetative cover, such as clover, to stabilize soil, enhance soil structure, and increase soil fertility.

Applicant will provide for financial security to ensure that funds are available for decommissioning. Prior to construction, Applicant will perform an engineering estimate of the total cost of fully decommissioning the Project without taking into account salvage value ("Decommissioning Cost"). A professional engineer will re-calculate the Decommissioning Cost every 5 years over the life of the Project. Applicant will post and maintain a performance bond in the amount of the Decommissioning Cost prior to construction. If and when a subsequent engineering estimate of the Decommissioning Cost shows an increase, the performance bond will be increased to that amount.

To start planning now for decommissioning, Applicant prepared a **Preliminary Decommissioning Plan** for the Project, which is included as **Exhibit I**. Following the selection of equipment models and the completion of final design and engineering, Applicant will review and revise the Preliminary Decommissioning Plan to account for the final design and then-current market conditions. In advance of the start of construction, Applicant will submit a final Decommissioning Plan for the Project to Staff for review.

## **VII. COMPLIANCE WITH AIR, WATER, SOLID WASTE, AND AVIATION REGULATIONS**

### **A. PURPOSES OF RULE**

#### Application Requirement [4906-4-07(A)]:

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

#### Response:

Because of the nature of utility-scale solar facilities, several of the requirements on these subjects, especially with regard to air quality regulations, do not apply to the Project. The specific instances in which a particular requirement does not apply are identified below. In addition, as noted below, the Applicant has requested a waiver of certain rules.

### **B. AIR QUALITY**

#### Application Requirement [4906-4-07(B)]:

*“(B) The applicant shall provide information on compliance with air quality regulations.”*

#### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

### **1. PRECONSTRUCTION AIR QUALITY AND PERMITS**

#### Application Requirement [4906-4-07(B)(1)]:

*“(1) The applicant shall submit information regarding preconstruction air quality and permits.*

*(a) Provide available information concerning the ambient air quality of the proposed project area and any proposed alternative project area(s).*

*(b) Describe the air pollution control equipment for the proposed facility.*

*Stack gas parameters including temperature and all air pollutants regulated by the federal or state environmental protection agency shall be described for each proposed fuel. These parameters shall be included for each electric power generation unit proposed for the facility. Include tabulations of expected efficiency, power consumption, and operating costs for supplies and maintenance. Describe the reliability of the equipment and the reduction in efficiency for partial failure.*

*(c) Describe applicable federal and/or Ohio new source performance standards (NSPS), applicable air quality limitations, applicable national ambient air quality standards (NAAQS), and applicable prevention of significant deterioration (PSD) increments.*

*(d) Provide a list of all required permits to install and operate air pollution sources. If any such permit(s) have been issued more than thirty days prior to the submittal of the certificate application, the applicant shall provide a list of all special conditions or concerns attached to the permit(s).*

*(e) Except for wind farms, provide a map of at least 1:100,000 scale containing:*

*(i) The location and elevation (ground and sea level) of Ohio environmental protection agency primary and secondary air monitoring stations or mobile vans which supplied data used by the applicant in assessing air pollution potential.*

*(ii) The location of major present and anticipated air pollution point sources.*

*(f) Describe how the proposed facility will achieve compliance with the requirements identified in paragraphs (B)(1)(c) and (B)(1)(d) of this rule."*

Response:

[4906-4-07(B)(1)(a)-(f)]

Subsections (a) through (f) do not apply to the Project because the Project will not include any air pollution point sources or produce any air emissions from stationary or point sources of air pollution.

## **2. AIR EMISSIONS AND DUST DURING CONSTRUCTION**

Application Requirement [4906-4-07(B)(2)]:

*"(2) The applicant shall describe plans to control emissions and fugitive dust during the site clearing and construction phase."*

Response:

Due to the nature of construction, some emissions of fugitive dust necessarily will be generated by the construction of the Project, particularly roads. The amount of dust generated, however, will be relatively low for the Project's acreage because there will be only limited grading and other earth-moving activities and excavation compared to traditional construction practices associated with buildings. Best management practices in the construction industry will be used to minimize the amount of dust created by construction. These will include the following:

- (1) retention of construction firms that are knowledgeable about the importance of minimizing dust creation during construction activities;
- (2) maintenance of construction vehicles in proper working condition; and
- (3) use of water and/or dust suppressant on unpaved roads as needed to reduce dust creation.

As with other construction activities, dust emissions will be localized to the area of activity and temporary. Applicant plans to implement dust control measures as needed to minimize dust emissions during construction.

### **3. AIR QUALITY FOR OPERATION**

#### Application Requirement [4906-4-07(B)(3)]:

*“(3) Except for wind farms, the applicant shall provide information regarding air quality for the operation of the proposed facility.*

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

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

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

#### Response:

This requirement does not apply to the Project because it will not include any air pollution point sources or produce any air emissions from stationary or point sources of air pollution.

## **C. WATER QUALITY**

### Application Requirement [4906-4-07(C)]:

*“(C) The applicant shall provide information on compliance with water quality regulations.”*

### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

## **1. PRECONSTRUCTION WATER QUALITY AND PERMITS**

### Application Requirement [4906-4-07(C)(1)]:

*“(1) The applicant shall provide information regarding preconstruction water quality and permits.*

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

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

*(c) Describe the ownership, equipment, capability, and sampling and reporting procedures of each station.*

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

*(e) Provide available data necessary for completion of any application required for a water discharge permit from any state or federal agency for*

*this project. Comparable information shall be provided for the proposed site and any proposed alternative site(s)."*

Response:

[4906-4-07(C)(1)(a)]

The Project will not create any wastewater discharges of the kind typically associated with conventional electric generation plants and industrial facilities. Accordingly, it will include no water pollution control equipment or wastewater treatment processes. The Project does not require an "individual" National Pollution Discharge Elimination System ("NPDES") permit of the kind issued by the U.S. EPA or the Ohio Environmental Protection Agency ("Ohio EPA") for significant discharges of pollutants to water bodies.

Rather, Applicant will address water quality primarily by seeking coverage for the Project under Ohio EPA Permit No. OHC000006, General Permit Authorization for Stormwater Discharges Associated with Construction Activity Under the National Pollutant Discharge Elimination System (April 23, 2023-April 22, 2028)("General Construction Permit"). Based on final engineering and design, if necessary, Applicant also may also seek authorization for minor impacts to jurisdictional surface waters (wetlands and streams) under one or more "nationwide" permits issued by the U.S. Army Corps of Engineers, a water quality certification from the Ohio EPA, and Ohio Isolated Wetland Permits from the Ohio EPA.

[4906-4-07(C)(1)(b)]

Applicant has not used water monitoring and gauging stations to collect preconstruction survey data for the Project because the General Construction Permit does not require collection of these data. The General Construction Permit does not protect water bodies through numerical pollutant limitations based on the water quality of receiving streams, but by imposing "non-numeric effluent limitations" implemented in part by a site-specific Stormwater Pollution Prevention Plan ("SWP3") requiring the implementation of a variety of best management practices ("BMPs") to minimize discharges of sediment and other pollutants into water bodies. See Parts II and III of the General Construction Permit. Ohio EPA issued the General Construction Permit to regulate such discharges from construction activities only by determining, in accordance with its own regulations governing general permits, that "the discharges authorized by [the General Construction Permit] will have only minimal adverse effects on the environment." O.A.C. 3745-38-02(G)(1)(a). As a result, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(1)(c)]

As noted above, water monitoring and gauging stations are not necessary for this Project. As a result, the Applicant has requested a waiver of this requirement.

[4906-4-07(C)(1)(d)]

As explained above, the existing water quality of receiving streams is not relevant to the regulatory scheme imposed by the General Construction Permit for the protection of water bodies in Ohio from construction stormwater discharges. For this reason, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(1)(e)]

A Notice of Intent ("NOI"), which serves as the application under the General Construction Permit, and SWP3 for the Project required by the General Construction Permit cannot be prepared until after equipment selections have been made and final engineering and design is completed. As a result, Applicant has requested a waiver of this requirement.

## **2. WATER QUALITY DURING CONSTRUCTION**

Application Requirement [4906-4-07(C)(2)]:

*"(2) The applicant shall provide information regarding water quality during construction.*

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

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

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

*(d) Describe any changes in flow patterns and erosion due to site clearing and grading operations.*

*(e) Describe the equipment proposed for control of effluents discharged into bodies of water and receiving streams."*

Response:

[4906-4-07(C)(2)(a)]

For the reasons provided in above in response to Section 4906-4-07(C)(1)(b), Applicant does not plan to use water monitoring and gauging stations during construction of the Project. Applicant has requested a waiver of this requirement.

[4906-4-07(C)(2)(b)]

Applicant expects that only aquatic discharges that are authorized by Applicant's adherence to the General Construction Permit will occur during construction of the Project. (In addition, the construction of the Project will not include dredging, filling or construction of any shoreline facilities.) The quality and quantity of any aquatic discharges from construction of the Project is not required by, or relevant to the applicability of, the General Construction Permit to the Project. Applicant notes that Ohio EPA's regulations governing general permits provide that an NOI must include "[w]hen required by a general permit, quantitative data describing the concentration of pollutants in the discharge and the volume to be discharged." O.A.C. 3745-38-02(E)(3)(g) (emphasis added). Ohio EPA did not include such a requirement, however, in the General Construction Permit. For these reasons, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(2)(c)]

As noted above, Applicant expects that only aquatic discharges that are authorized by Applicant's adherence to the General Construction Permit will occur during construction of the Project. Any discharges that occur will be minimized by adherence to the General Construction Permit. This will include complying with that permit's non-numeric effluent limitations (Part II) and adhering to a robust and site-specific SWP3 that meets all of the detailed requirements of the permit (Part III). Although Applicant does not expect that the construction of the Project will adversely affect water quality, it notes that, as to Ohio generally, Ohio EPA has "determined that a lowering of water quality of various waters of the state associated with granting coverage under [the General Construction Permit] is necessary to accommodate important social and economic development in the state of Ohio." General Construction Permit, p. 1.

As required by the General Construction Permit, Applicant will implement BMPs to minimize erosion and control sediment in the areas of construction. As required, Applicant will employ a qualified engineer that will utilize the final design of the Project to develop a SWP3 prior to construction. The SWP3 will identify the construction activities for the Project that may affect storm water discharges and it will identify the BMPs that will be implemented to avoid or mitigate those impacts. Because these mitigation measures will be described in the SWP3, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(2)(d)]

Applicant does not expect that there will be any significant changes to flow patterns or erosion as a result of construction of the Project because the amount of significant grading activities will be limited (in addition, the majority of the Project Area is already disturbed due to agricultural activities). Any such changes that are anticipated based on final design, however, will be detailed in the SWP3 for the Project prepared prior to construction. For instance, the General Construction Permit requires that the SWP3 include the following: "Existing and proposed contours. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed in acres . . . ." General Construction Permit, Part III, Section

G.1.n.iii. Because any changes to flow patterns or erosion resulting from construction will be detailed in the SWP3, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(2)(e)]

The equipment and BMPs employed to control the stormwater discharges are set forth in the General Construction Permit and will be further detailed with respect to the Project itself in its SWP3. For this reason, Applicant has requested a waiver of this requirement.

### **3. WATER QUALITY DURING OPERATION**

Application Requirement [4906-4-07(C)(3)]:

*“(3) The applicant shall provide information on water quality during operation of the facility.*

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

*(b) Describe the water pollution control equipment and treatment processes planned for the proposed facility.*

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

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

*(i) Sewage.*

*(ii) Blow-down.*

*(iii) Chemical and additive processing.*

*(iv) Waste water processing.*

*(v) Run-off and leachates from fuels and solid wastes.*

*(vi) Oil/water separators.*

*(vii) Run-off from soil and other surfaces.*

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

Response:

[4906-4-07(C)(3)(a)]

Applicant does not plan to install any water quality monitoring or gauging stations during operation of the Project because it does not expect that the operation of the Project will result in any discharges for which monitoring is required or would be useful. Rather, Applicant expects that, when applied to the Project, the General Construction Permit will not require any “structural” post-construction practices to capture and treat stormwater prior to discharge. Applicant expects that the “Post-Construction Stormwater Management Requirements” under the “Controls” component of the SWP3 for the Project (see Part III, Section G.2.e., found on p. 19-27, of the General Construction Permit) will consist of “Runoff Reduction Practices” such as “impervious surface disconnection” pursuant to solar-specific guidance issued by the Ohio EPA as an effective approach to manage the water quality volume required in the General Construction Permit ”

[4906-4-07(C)(3)(b)]

For the reasons given in response to Section 4906-04(C)(3)(a), Applicant does not plan to use any water pollution control equipment or treatment processes for the operation of the Project.

[4906-4-07(C)(3)(c)]

Applicant plans to submit its NOI for coverage under the General Construction Permit within the 90 days prior to the start of construction

[4906-4-07(C)(3)(d)]

The operation of the Project will not generate any water-borne wastes including any of the following: (i) sewage; (ii) blow-down; (iii) chemical and additive processing; (iv) waste water processing; (v) run-off and leachates from fuels and solid wastes; or (vi) oil/water separators.

With regard to stormwater only-related discharges, Applicant notes that it expects that the amount of stormwater leaving the Project Area will be less than the amount leaving the current row crop operations. To assess the stormwater-related impacts of the Project during operations, Applicant conducted a preliminary storm water analysis for the Project based on the Preliminary Maximum Site Plan. A copy of this **Storm Water Assessment** is attached as **Exhibit J**. The Storm Water Assessment demonstrates that the Project will be able to satisfy the post-construction control requirements of the General Construction Permit through design features that include the spacing of solar panel rows, decompaction of soils if necessary, and vegetative ground cover. The Storm Water Assessment also predicts that, largely because of its year-round vegetation, that the Project will reduce the rate of stormwater runoff and improve water quality compared to the current farming use. While Applicant has provided a stormwater assessment and a description of run-off from soil and other surfaces, structural stormwater controls required during operation of the Project (if any) will not be determined until final design is complete. For this reason, Applicant has requested a waiver of this requirement.

[4906-4-07(C)(3)(e)]

The Project incorporates maximum feasible water conservation practices considering available technology because the selected generation technology itself, when compared to most forms of conventional electric power generation, inherently consumes very little water. PV panels do not use any process water (such as water to create steam to drive electric generating turbines) or any cooling water (such as water to cool processing equipment). Because water conservation is inherent in the technology itself, opportunities to employ water conservation practices at the Project are extremely limited.

## **D. SOLID WASTE**

### Application Requirement [4906-4-07(D)]:

*“(D) The applicant shall provide information on compliance with solid waste regulations.”*

### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

## **1. SOLID WASTE IN PROJECT AREA**

### Application Requirement [4906-4-07(D)(1)]:

*“(1) The applicant shall provide information regarding preconstruction solid waste.*

*(a) Describe the nature and amount of debris and solid waste in the project area.*

*(b) Describe any plans to deal with such wastes.”*

### Response:

The area that will host the Project is rural in character and comprised mostly of farm fields with a relatively low population density, except for a few isolated and small clusters of homes near certain roads and intersections. As a result, the general area is relatively free of debris and other solid waste. Applicant therefore does not have a specific plan to address existing debris and solid waste in the area.

## **2. CONSTRUCTION**

### Application Requirement [4906-4-07(D)(2)]:

*“(2) The applicant shall provide information regarding solid waste during construction.*

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

*(b) Describe the proposed method of storage and disposal of these wastes.”*

**Response:**

The solid waste generated during construction is expected to consist largely of cardboard, wood, pallets, foam packaging, spools, paper, and plastics (shrink wrap and banding) from the packaging and shipping of the solar panels, racking and Inverters, collection lines and other equipment. General refuse also will be generated. Some additional solid waste may be generated if damaged equipment and materials are received, or damage occurs during construction. Other refuse may include used or unused construction materials such as excess concrete, extra bolts and wiring. Applicant estimates that construction will generate in the range of 15,000 to 20,000 cubic yards of solid waste during construction.

With regard to storage and disposal of solid waste, efforts will be made to find sustainable solutions (i.e., reuse and recycling), which means that different types of materials may be segregated and stockpiled or stored in dumpsters located in the temporary construction laydown areas. Best management practices will be implemented to minimize contact with stormwater or minimize stormwater runoff in the storage areas (if needed based on the material). For waste that is not reused or recycled, which likely will comprise the majority of the waste, the material will be delivered to solid waste management facility in accordance with applicable law.

### **3. OPERATION**

**Application Requirement [4906-4-07(D)(3)]:**

*“(3) The applicant shall provide information regarding solid waste during operation of the facility.*

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

*(b) Describe proposed methods for storage, treatment, transport, and disposal of these wastes.”*

**Response:**

Very small amounts of solid waste are expected to be generated from operation of the Project. These materials will largely consist of cardboard, wood, pallets, foam packaging, paper, and plastics (shrink wrap and banding) that are associated with the packaging and shipping of replacement solar panels, electrical equipment, and metals. General refuse also will be generated. Applicant estimates that these activities will generate about 20 to 25 cubic yards of solid waste annually.

Solid waste generated during operations will be handled in the same way as during construction, except Applicant expects to place more emphasis on reuse and recycling over disposal.

#### **4. PERMITS**

Application Requirement [4906-4-07(D)(4)]:

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

Response:

The Project does not expect to generate any waste for which such a permit is required.

#### **E. AVIATION**

Application Requirement [4906-4-07(E)]:

*“(E) The applicant shall provide information on compliance with aviation regulations.*

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

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

Response:

[4906-4-07(E)(1)]

Of the types of aviation-related facilities described in the rule, Applicant is aware of three within a five-mile radius of the Project Area, two public and one private. The public facilities are the Knox County Regional Airport and the Knox Community Hospital helicopter pad. The private facility is a local landing strip known as the Wynkoop Airport. The three facilities are shown on the map attached as **Figure 7**. (Within Figure 7, see the overview page and pages 8, 9, and 13.) Applicant has sent written notice to each facility in which Applicant advises that it does not expect the Project to have any impacts on their operations.

[4906-4-07(E)(2)]

The FAA Identifier of the Knox County Regional Airport is 4I3; the Wynkoop Airport is 6G4; and the Knox Community Hospital helipad is OH04. The Project will not include any tall structures other than lightning masts at a new electric substation and none of the facilities uses an air traffic control tower. Applicant does not expect that the Project will cause any potential conflicts with air navigation or air traffic communications at these facilities.

## **VIII. HEALTH AND SAFETY, LAND USE AND ECOLOGICAL INFORMATION**

### **A. HEALTH AND SAFETY**

Application Requirement [4906-4-08(A)]:

*“(A) The applicant shall provide information on health and safety.”*

Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

#### **1. SAFETY AND RELIABILITY OF EQUIPMENT**

Application Requirement [4906-4-08(A)(1)]:

*“(1) Equipment safety. The applicant shall provide information on the safety and reliability of all equipment.*

*(a) Describe all proposed major public safety equipment.*

*(b) Describe the reliability of the equipment.*

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

*(d) Describe the measures that will be taken to restrict public access to the facility.*

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

Response:

[4906-4-08(A)(1)(a)]

The proposed major safety equipment for the Project is perimeter agricultural fencing with locked gates, which will surround all above-ground features of the Project. Appropriate warning signs will be posted on the fence. The general public will be prohibited from entering the gates to the Project. The public will be protected because it will be warned about electrical hazards and have no access to the equipment.

[4906-4-08(A)(1)(b)]

The Project's operating components will be highly reliable because Applicant will select only leading suppliers and the components will have relatively few moving parts. All of the primary types of components will be accompanied by standard industry warranties.

[4906-4-08(A)(1)(c)]

After the selection of the model and vendor of solar panels, Applicant will submit to Staff the solar panel manufacturers' safety standards, including safety manuals or similar documents. All Project equipment is expected to be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings. Although Applicant does not expect any will exist, Applicant also will identify at that time any setbacks recommended by the manufacturer. Although Applicant will incorporate any such setbacks into its final site plan, it is highly confident that the proposed setbacks for the Project will exceed any manufacturer-recommended setback.

Applicant has requested a waiver of this requirement so that the responsive information may be provided based on final design and prior to the start of construction.

[4906-4-08(A)(1)(d)]

Except for guided tours that may be given to specific categories of visitors, such as school groups, the public will have no access to the fenced portion of the Project. The public will not come into contact with any of the components because the components will be fenced with locked gates or buried.

[4906-4-08(A)(1)(e)]

Prior to construction, Applicant will develop an emergency response plan for fire, ambulance and law enforcement with affected local officials and emergency response personnel. The emergency response plan will include information on the type and location of equipment, potential hazards (including potential hazards to emergency responders), locations of access gates, and emergency contact information. Consistent with the Project's status as a QEP, Applicant also will offer initial and refresher training to local responders regarding solar energy and its associated electrical systems, as well as provide any equipment that local responders may lack to safely address any situation at the Project.

## **2. FAILURE OF AIR POLLUTION CONTROL EQUIPMENT**

Application Requirement [4906-4-08(A)(2)]:

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

Response:

Due to the nature of the technology, the operation of the Project will not include any air pollution control equipment.

## **3. SOUND FROM CONSTRUCTION AND OPERATION**

Application Requirement [4906-4-08(A)(3)]:

*"(3) Noise. The applicant shall provide information on noise from the construction and operation of the facility."*

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

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

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

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

*(ii) Processing equipment.*

*(iii) Associated road traffic*

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

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

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

**Response:**

Applicant measured the pre-construction sound in the Project Area, described the expected construction sound, modeled the Project's anticipated operational sound against a generally-accepted benchmark for solar facilities in Ohio, and addressed any needed mitigation. A copy of its **Noise Impact Assessment** for the Project is attached as **Exhibit K**.

**[4906-4-08(A)(3)(a)]**

Although construction will intermittently generate the types and levels of sound common at large construction sites, it will not feature many of the most significant sound-generating activities common during construction of other facilities.

The Project will not involve extensive excavation or, with the exception of the Substation, construction of large foundations. Although many piles will be driven, they likely will be to a depth of only about 10 feet and the activity will be relatively brief at any particular location. HDD is expected to be used for the Project, but only in a limited number of locations.

Blasting is not expected based on geotechnical investigations showing bedrock well below any construction activity. Any rock-breaking activities using conventional

construction equipment are expected to be limited. In any event, such activities would be very limited in any particular location and of limited duration.

Pile-driving will be avoided during early and late hours and will only occur between the hours of 9:00 a.m. to 6:00 p.m., and will involve smaller machines that repeatedly “tap” galvanized steel I-beams through soil to a shallow depth. These are not the large pile drivers associated with major construction projects such as bridges and high-rise buildings that “drive” or “pound” large pilings, typically made of iron, deeply through earth and rock. The erection of structures and components will require almost exclusively standard construction vehicles and hand tools.

The Noise Impact Assessment includes a table (Table 5.0.1; p. 25) with representative sound levels from construction equipment at 50 feet, which may be conservatively interpreted as the site property boundary, and 300 feet, which generally represents the distance to the nearest neighboring homes. According to this data, sound levels in the range of 80 to 85 A-weighted decibels (“dBA”) could be temporarily produced during construction at the edge of the Solar Area. In general, however, the Noise Impact Assessment notes that construction-related sound will be modest and intermittent, and will result in only minimal, unavoidable impacts.

[4906-4-08(A)(3)(b)]

The Project’s generation equipment will operate with virtually no off-site sound. Operation will generate only very small amounts of sound because it entails no fuel movement, no combustion, no waste movement, and few kinds of moving parts. The only components that are likely to cause any discernable sound off-site are the transformer at the Substation and the Inverters. The sound generated by these sources will rapidly dissipate to background levels of sound over short distances.

The Project will not include any “processing equipment” that produces sound apart from the operating equipment referenced above. Both of the sound-producing sources with any potential for off-site impacts—Inverters and the Substation transformer—were included in the Noise Impact Assessment’s modeling for “generation equipment.” The Inverter used for the modeling is the representative Inverter used in the Preliminary-Maximum Site Plan, and each Inverter depicted on the Preliminary Maximum Site Plan is at least 500 feet from any off-site home or other sensitive receptor. Operation of the Project also will not include any measurable or meaningful sound off-site from associated road traffic; only a few workers will routinely access the Project in passenger vehicles.

The Noise Impact Assessment depicts against a map of the Project Area the expected maximum operational sound levels from the Project derived from the modeling. The edge of the Solar Area serves as a conservative proxy for the nearest property boundary (in many cases the property boundary is hundreds of feet farther away from the operating components than the edge of the Solar Area). Because sound from the Project will only further dissipate the farther from the components it travels, the maximum operational sound levels at the property boundaries can only be equal to or less than

those depicted for the edge of the Solar Area. As explained below, the maximum operational sound predicted at the outside of a non-participating residence is 40 dBA. The maximum operational sound predicted at the nearest non-participating property boundary is 51 dBA; however, there are no sensitive receptors near this location.

[4906-4-08(A)(3)(c)]

The map in the Noise Impact Assessment that depicts the results of the modeling includes a symbol for each habitable building within 1 mile of the edge of the Project Area. A separate table in the Noise Impact Assessment lists the maximum operational sound levels from the Project for each building.

Although not a requirement, the Noise Impact Assessment compared the Project's sound contribution at these habitable buildings to a benchmark equal to the observed average daytime sound level in the Project Area plus five (5) dBA or 40 dBA if the background is less than 35 dBA. Because the design targets derived from the L50 and L90 statisticals essentially collapse to a single design goal of 40 dBA, a design goal of 40 dBA was assumed for all areas. The modeling predicts that the maximum operational sound level at a non-participating neighboring home due to the Project will be 40 dBA with others in the mid-30 dBA or less. The predicted sound levels are generally comparable to the existing daytime ambient sound level suggesting that any sound emissions from the Project inverters will likely be inaudible.

As part of its final engineering and design for the Project, Applicant will confirm that no changes to the Preliminary Maximum Site Plan will result in any additional sound levels at property lines or habitable buildings. Specifically, Applicant will re-run its modeling if it:

- (1) Uses an Inverter model with sound power levels higher than that used in the modeling;
- (2) Constructs an Inverter closer to any property line than depicted in the Preliminary-Maximum Site Plan; or
- (3) Selects a transformer with sound power levels higher than those used in the modeling.

A sound report from any such re-running of the model will be provided to Staff prior to the start of construction.

[4906-4-08(A)(3)(d)]

To mitigate sound during construction as much as practicable, Applicant will employ best management practices for the construction industry. These measures will include the following:

- (1) Limiting construction activities to 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m., and limiting pile driving to 9:00 a.m. to 6:00 p.m.;
- (2) Maintaining construction-related vehicles in proper working condition; and
- (3) Working with the local community to advise residents of those periods when sustained construction activity is expected to take place in relatively close proximity to their homes.

Applicant also will work to advise neighbors when construction activities that will produce sound will be undertaken near their homes. Over the vast majority of the area, for the vast majority of the time, construction sound sources will be hundreds of feet away from any home.

Applicant does not expect to need to mitigate sound during operations given that the maximum sound pressure that the nearest non-participating resident may experience during the Project's operations will be less than 40 dBa. The Complaint Resolution Program, however, will be available if any neighbors have concerns. For instance, certain retrofits or sound-dampening measures can be employed following installation if an Inverter is producing unexpected sound.

[4906-4-08(A)(3)(e)]

The Noise Impact Assessment includes the results of a preconstruction background sound study on both daytime and nighttime conditions. Continuous ambient measurements were collected at four representative locations during daytime and nighttime periods over a seven-day span from November 10-17, 2022.

#### **4. WATER IMPACTS**

Application Requirement [4906-4-08(A)(4)]:

*“(4) Water impacts. The applicant shall provide information regarding water impacts*

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

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

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

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

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

Response:

[4906-4-08(A)(4)(a)]

Applicant reviewed the available geologic, hydrogeologic, and geotechnical data for the Project Area. A copy of its **Geology, Hydrogeology and Preliminary Geotechnical Report** for the Project is attached as **Exhibit L**.

Neither the construction nor operation of the Project is expected to have any impact on public or private water supplies.

The potable water supply for all homes in the vicinity of the Project Area is by private well or public service. Many of these wells have been identified in the Geology, Hydrogeology and Preliminary Geotechnical Report based on public data and a survey of land owners participating in the Project. There are very few wells in the Solar Area, where the majority of construction activities will occur; and construction of the Project will avoid all wells with a minimum setback of 50 feet to the nearest solar panel. Accordingly, the Project will not have any direct, physical impacts on any well.

The construction of the Project also will have no impact on the groundwater resources that the wells access. Virtually all subsurface work will be relatively near-surface and not in the region of groundwater resources. Wells in the area draw from aquifers at greater depths. Based on the depth of the wells and a thick layer of impermeable clay above the water-bearing zones, the construction and operation of the Project will not impact any of the wells.

[4906-4-08(A)(4)(b)]

Due to the nature of the technology, the operation of the Project will not include any pollution control equipment. Therefore this rule is not applicable.

[4906-4-08(A)(4)(c)]

**Figure 8** depicts aquifers, water wells, and Storm Water Protection Areas (“SWPAs”) near the Project Area. As discussed above, solar panels will not be installed within 50 feet of an existing water well. Therefore, none of these resources will be directly or adversely affected by the Project.

[4906-4-08(A)(4)(d)]

The Geology, Hydrogeology and Preliminary Geotechnical Report explains that certain activities that may pose a risk to SWPAs are regulated in these areas. These

activities include concentrated animal feeding operations, wastewater treatment and lands application, landfills, and certain underground storage tanks. The Project is not among the types of activities regulated with respect to SWPAs.

[4906-4-08(A)(4)(e)]

The prospects for floods are relatively low in the Project Area, but formal FEMA mapping of 100-year floodplains does not cover the Project Area. The Geology, Hydrogeology and Preliminary Geotechnical Report includes an analysis that estimates the portions of the Project Area that may be within the 100-year floodplain. The analysis estimates that about 38 acres of the maximum 840-acre Solar Area (4%) may be within the 100-year floodplain, but flooding would be limited to the support piles and cabling enclosed in waterproof conduit. The Project is not expected to adversely impact management of the floodplain. For additional information please see Sec. 4.4 of the Geology, Hydrogeology, and Preliminary Geotechnical Report.

## **5. GEOLOGICAL FEATURES, TOPOGRAPHY AND WELLS**

Application Requirement [4906-4-08(A)(5)]:

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

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

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

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

*(i) Subsurface soil properties.*

*(ii) Static water level.*

*(iii) Rock quality description.*

*(iv) Percent recovery.*

*(v) Depth and description of bedrock contact.”*

Response:

**Figure 9** depicts the location of the proposed Project, geological features of the proposed Project Area, topographic contours, and any oil and gas or injection wells.

[4906-4-08(A)(5)(a)]

The site geology is well-suited for the Project because its subsurface impact will be shallow and bedrock is not expected to be encountered. The Geology, Hydrogeology and Preliminary Geotechnical Report estimates that depth to bedrock in the Project Area is well below the construction area. Additionally, the nearest mapped karst features are located approximately 15 miles southwest of the Project Area in Franklin County. As described in the Preliminary Maximum Site Plan, the Project will avoid all plugged, abandoned, and active oil and gas wells within the Project Area, with minimum setbacks of 50 feet between active wells and solar panels and 25 feet between plugged or abandoned wells and solar panels. Accordingly, there are no geology-related inadequacies to remedy in connection with the Project.

[4906-4-08(A)(5)(b)]

The Geology, Hydrogeology and Preliminary Geotechnical Report found that the soils in the Project Area are generally suitable for grading, compaction and drainage for the Project. Accordingly, there are no soil-related inadequacies to remedy in connection with the Project.

The Project will necessitate only limited grading and compaction, primarily in connection with the construction of the Substation, Inverters and access roads. The Project Area is fairly level, obviating the need for substantial grading. The racking and panels will be installed without moving significant quantities of top soil, and the rows of solar panels generally will follow the gentle contours of the existing surface. The limited amounts of topsoil disturbed for construction will be used for establishing ground cover. For additional information regarding grading and topsoil management, please see the **Preliminary Agricultural Soils Management Plan**, attached as **Exhibit M**.

[4906-4-08(A)(5)(c)]

To inform its Preliminary Maximum Site Plan and confirm the general suitability of the Project Area to host the various components, Applicant conducted 17 test borings representative of subsurface conditions in the Project Area. The results of the tests are provided in the Geology, Hydrogeology and Preliminary Geotechnical Report.

Based on the Geology, Hydrogeology and Preliminary Geotechnical Report, Applicant believes that the geotechnical and soil conditions in the Project Area will accommodate the Project and, in particular, steel piles to support the solar panels. Borings were advanced to points well below the ground surface, and no bedrock was encountered, and so there are no rock quality descriptions to provide. The required technical information is found in the Geology, Hydrogeology and Preliminary Geotechnical Report and, in particular, the boring logs (Table 1, Exhibit L). As part of, and to assist with, its final engineering and design of the Project, Applicant plans to conduct additional geotechnical work in the Project Area.

## **6. HIGH WINDS**

Application Requirement [4906-4-08(A)(6)]:

*“(6) Wind velocity. The applicant shall provide an analysis of the prospects of high winds for the area, including the probability of occurrences and likely consequences of various wind velocities, and describe plans to mitigate any likely adverse consequences.”*

Response:

The Project will withstand typical high wind occurrences for the area, as defined by the local wind speed requirements in the structural design codes at the time of final design. Potentially applicable codes include the International Building Codes, International Code Council, Ohio Building Code, ASCE-7 – Minimum Design Loads for Buildings and Other Structures. These design codes include safety factors and will cover all components of the Project, including solar panels, racking, and piles. The pile design will include resistance to wind uplift, downward loading, and lateral loading. The racking system also will include a wind stow mode in which the panels can be moved to a position that minimizes the load on the structure during high winds.

Average hourly wind speeds for the area are provided in the table below, which is drawn from data collected from the nearest location (Wooster) of the weather system operated by Ohio State University College of Food, Agriculture, and Environmental Sciences. This data is from the three-year period January 2020 to December 2022.

<b>Average Daily Wind Speed (mph)</b>	<b>National Weather Service Threat Description</b>	<b>Percent of Time</b>
Calms	Non-Threatening	0.8%
1 to 1.9	Non-Threatening	12.0%
2 to 2.4	Non-Threatening	8.9%
2.5 to 4	Non-Threatening	44.7%
5 to 9	Non-Threatening	29.9%
10 to 14	Non-Threatening	3.6%
15 to 21	Very Low	0.1%
22 to 25	Low	0.0%
>26	Moderate	0.0%

In addition, the Project's components generally are not susceptible to damage from high winds. The piles for the racking will be made of galvanized steel and will be installed, based on the site-specific soil conditions, at sufficient depths to prevent the movement of the associated equipment from wind. The racking and solar panels selected during final engineering and design of the Project will be accompanied by wind ratings from the manufacturers. Most racking systems are designed to withstand hurricane force winds and will include wind sensors that will send a signal in the case of a high wind (e.g., 40 mph or higher) event to the Project operator to send the trackers into a wind stow defense position to prevent any damage to the tracker system and solar panels.

For these reasons, no adverse consequences to the Project from high winds are expected, but the Project will carry liability insurance coverage typical of such facilities that is expected to include coverage for damage from high winds, should it occur. As a result, Applicant does not have specific plans to mitigate any wind-related adverse consequences.

## **7. BLADE SHEAR**

Application Requirement [4906-4-08(A)(7)]:

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

Response:

This requirement does not apply to the Project, as the Project is not a wind farm.

## **8. ICE THROW**

Application Requirement [4906-4-08(A)(8)]:

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

Response:

This requirement does not apply to the Project, as the Project is not a wind farm.

## **9. SHADOW FLICKER**

Application Requirement [4906-4-08(A)(9)]:

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

Response:

This requirement does not apply to the Project, as the Project is not a wind farm.

## **10. TV AND RADIO RECEPTION**

Application Requirement [4906-4-08(A)(10)]:

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

Response:

The Project is not expected to have any material impact on radio or television reception because it lacks tall structures typical of conventional electric generating facilities, such as tall air emission stacks at coal plants and towers at wind energy facilities. The Project’s SCADA equipment is a commonly-used technology. Applicant is aware of no research that indicates that utility-scale solar facilities have the potential to interfere with radio or television reception. As a result, Applicant does not plan any measures to minimize interference of those communications.

## **11. RADAR SYSTEMS**

Application Requirement [4906-4-08(A)(11)]:

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

Response:

The Project is not expected to have any material impact on military or civilian radar systems because it lacks tall structures that could potentially block radar signals. It also lacks exposed moving parts and it will generate only very weak EMFs that will dissipate rapidly within short distances. The Federal Aviation Administration (“FAA”) has concluded that “[d]ue to their low profiles, solar PV systems typically represent little risk of interfering with radar transmissions.” In addition, solar panels do not emit electromagnetic waves over distances that would interfere with radar signal transmissions, and any electrical

facilities that do carry concentrated current are buried (FAA Guidance, 2018). Applicant is aware of no research that indicates that the Project has the potential to interfere with radar systems. As a result, Applicant does not plan any measures to minimize interference of those signals.

## **12. NAVIGABLE AIRSPACE INTERFERENCE**

### Application Requirement [4906-4-08(A)(12)]:

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

Response:

Given its very low vertical profile, the Project should not interfere with navigable airspace. As a result, Applicant does not plan to coordinate with any state or federal agencies on that subject.

## **13. MICROWAVES**

### Application Requirement [4906-4-08(A)(13)]:

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

Response:

The Project is not expected to have any adverse impact on microwave communication paths because it lacks tall structures that could block such communications. Microwaves travel in narrow beams confined to a line-of-sight path from one antenna to another, and so typically are installed in elevated locations to avoid interference. The only structure at the Project at an appreciable height will be lightning masts at the Substation. The lightning masts will not interfere with any microwave transmissions because they will be too narrow and, in any event, will be located very close to and similar in height to large transmission lines and an existing substation. As a result, Applicant does not plan to take any measures to minimize interference with microwaves.

## **B. ECOLOGICAL RESOURCES**

Application Requirement [4906-4-08(B)]:

*“(B) The applicant shall provide information on ecological resources.”*

Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

**1. ECOLOGICAL RESOURCES IN PROJECT AREA**

Application Requirement [4906-4-08(B)(1)]:

*“(1) Ecological information. The applicant shall provide information regarding ecological resources in the project area.*

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

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

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

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

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

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

Response:

In response to O.A.C. Section 4906-4-08(B)(1), Applicant prepared an **Ecological Impact Assessment**, which is attached as **Exhibit N**.

[4906-4-08(B)(1)(a)]

A map depicting the required features and ecological resources is attached as **Figure 10**.

[4906-4-08(B)(1)(b)]

Applicant identified all surface waters and wetlands, as well as their associated vegetative communities, in the area for which there may be construction plus the required buffer. Its **Surface Water Delineation Report** is attached as **Exhibit O**. A map depicting the delineated water resources is attached as **Figure 11**. A total of 21 wetlands, totaling less than 20 acres, were delineated within the Survey Area. None of these wetlands were determined to be higher-quality "Category 3" wetlands. 25 streams were delineated, comprising 23,307 linear feet within the Project Area. 16 streams were determined to be relatively permanent and are likely jurisdictional under current federal guidelines (33 CFR Part 328) and nine streams are non-relatively permanent waters with ephemeral flow regime and likely fall under the jurisdiction of the state of Ohio (O.A.C. 3745-1-02).

[4906-4-08(B)(1)(c)]

Applicant conducted a literature review of plant and animal life located within one-fourth mile of the Project Area boundary ("**Wildlife and Habitat Assessment Report**"), which is attached as **Exhibit P**. The Wildlife and Habitat Assessment Report notes that the species present in the Project Area are those primarily associated with farm fields, isolated wood lots, and streams. It notes that a majority of the federal- or Ohio-listed species potentially present in the area would be expected to inhabit the wetlands and associated streams. The Wildlife Report concludes, however, that it is unlikely that these habitats are well-developed due to constant disturbance from cultivation and habitat fragmentation. It determined that, except for a very small amount of potential habitat for the Northern Harrier, the area to be used for construction and a one-quarter mile buffer are not known to provide significant habitat for sensitive bird species, and that there are no records of bald eagle nests or known bat hibernacula in the area. The Wildlife and Habitat Assessment Report also advises that no commercially valuable species were expected to be present in the Project Area.

[4906-4-08(B)(1)(d)]

The Wildlife and Habitat Assessment Report also provides the results of field surveys of the Project Area and one-quarter mile buffer. It confirms the conclusions from the literature survey. Specifically, the surveys revealed no evidence of any of the following:

- (1) bald eagle nest, although one bald eagle in flight was sighted;

- (2) nests of listed or sensitive raptor species;
- (3) bat activity (noting that most bat activity would be nocturnal); or
- (4) any special status species, except a northern harrier was sighted.

The surveys confirm that the area plus the one-quarter mile buffer constitute generally poor wildlife habitat owing to the historically high degree of fragmentation and the constant disturbance of the vast majority of the land by farming and related land-intensive operations.

[4906-4-08(B)(1)(e)]

Due to the generally poor wildlife habitat of the Project Area, Applicant did not undertake other studies addressing the ecological impact of the Project.

## **2. POTENTIAL IMPACT DURING CONSTRUCTION**

Application Requirement [4906-4-08(B)(2)]:

*“(2) Ecological impacts. The applicant shall provide information regarding potential impacts to ecological resources during construction.*

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

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

- (i) Plans for post-construction site restoration and stabilization of disturbed soils, especially in riparian areas and near wetlands. Restoration plans should include details on the removal and disposal of materials used for temporary access roads and construction staging areas, including gravel.*
- (ii) A detailed frac out contingency plan for stream and wetland crossings that are expected to be completed via horizontal directional drilling.*
- (iii) Methods to demarcate surface waters and wetlands and to protect them from entry of construction equipment and material storage or disposal.*
- (iv) Procedures for inspection and repair of erosion control measures, especially after rainfall events.*

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

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

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

Response:

[4906-4-08(B)(2)(a)]

The Ecological Impact Assessment details the Project’s estimated impacts to the resources identified in response to O.A.C. Section 4906-4-08(B)(1) based on the Preliminary Maximum Site Plan.

Exhibit N explains that only 0.75 acres of wetlands and 0.27 acres of streams will be temporarily disturbed as a result Project construction. With respect to measures to protect streams and wetlands, prior to construction Applicant will demarcate such resources with flagging or signage. To provide a buffer between construction and such resources, the fence line will be at least 25 feet from their edge. The site orientation provided to construction personnel will include information about these resources, their importance to the area ecology, and steps to minimize impacts. Measures will be taken to protect vegetation, particularly mature trees, wetland vegetation, and woody vegetation in riparian areas, from construction activities. Most importantly, very little vegetation, and particularly mature trees, in the Project Area will be removed. Construction will generally avoid areas within 25 feet of the streams and wetlands in the Project Area.

Regarding vegetation clearing, approximately 10 acres of forested uplands are located within the Project Area with potential for removal. These forested areas can be divided into two categories:

(1) narrow, linear strips of trees (referred to as “windrows”) running between cultivated areas that likely served historically as property boundaries, as well as other relatively small clusters of trees; and

(2) larger, more substantial blocks of trees and associated habitat (referred to as “woodlots”), with the largest of these likely used for hunting.

The vast majority of the trees, especially the woodlots, in the Project Area will not be disturbed by the Project. The Project will be constructed almost entirely on farm fields,

which provide minimal habitat for plant and animal life. The relatively small areas of trees to be removed do not provide significant habitat for wildlife.

[4906-4-08(B)(2)(b)]

The Ecology Impact Assessment describes the mitigation measures that Applicant will employ to mitigate impacts to ecological resources from construction.

The areas in which construction takes place will be stabilized and re-seeded, as construction proceeds across the site, in accordance with the SWP3 developed pursuant to the General Construction Permit. These erosion and control measures and surface restoration efforts will be synchronized with the implementation of the Vegetation Management Plan for the establishment and growth of a robust ground cover across the Project. Aggregate and related materials used to build temporary roads and laydown yards will be removed and either re-purposed or disposed of in accordance with applicable law.

HDD may be used to cross one or more streams in the area or other non-jurisdictional water features or other features without disturbing the surface. Applicant prepared a plan that sets forth procedures to avoid, minimize, and remediate potential environmental impacts resulting from an inadvertent return of drilling fluids during HDD operations ("**Preliminary HDD Inadvertent Return Response and Contingency Plan**"). This plan is found in **Exhibit Q**.

With respect to measures to protect streams and wetlands, prior to construction Applicant will demarcate such resources with flagging or signage. To provide a buffer between construction and such resources, the fence line will be at least 25 feet from their edge. The site orientation provided to construction personnel will include information about these resources, their importance to the area ecology, and steps to minimize impacts. The site-specific SWP3 that Applicant will develop prior to construction pursuant to the Construction General Permit will include procedures for inspection and maintenance of erosion and sediment control measures following significant rainfall events.

Measures will be taken to protect vegetation, particularly mature trees, wetland vegetation, and woody vegetation in riparian areas, from construction activities. Most importantly, very little vegetation, and particularly mature trees, in the Project Area will be removed. In addition, construction will generally avoid areas within 25 feet of the streams and wetlands in the Project Area.

The off-site disposal of removed vegetation, and the use of heavy equipment for such removal, will be minimal. There will be relatively little vegetation removed because woodlots and riparian areas along streams will be avoided. The limited number of trees and other vegetation to be removed may be chipped for on-site use as erosion control mulch, rather than sent for off-site disposal.

A final site plan incorporating final design and engineering and construction plans will be submitted to Staff for review prior to construction. It will include detailed procedures for each of the elements listed above, and will address:

- (1) soil management;
- (2) surface water and wetland demarcation;
- (3) SWP3 inspection procedures;
- (4) vegetation protection; and
- (5) vegetation disposal.

As noted above, impacts resulting from the Project are concentrated in previously disturbed farm fields which provide minimal habitat for plants and wildlife. As described in Exhibit P, regarding the potential Northern Harrier habitat within the Project Area, construction activities either will be avoided in this area during the species' nesting period of April 15 to July 31, or the area will be mowed prior to the beginning of the nesting period to avoid establishment of nests. Applicant will follow all site-specific USFWS and ODNR recommendations that have been provided for the Project to minimize any potential impacts to listed species during construction. As a result, the Project is not expected to have any significant adverse impacts on wildlife or their habitat.

### **3. POTENTIAL IMPACT DURING OPERATION**

#### Application Requirement [4906-4-08(B)(3)]:

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

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

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

*(c) Describe any plans for post-construction monitoring of wildlife impacts.”*

#### Response:

[4906-4-08(B)(3)(a)]

The Project's operation will not have any significant adverse impacts on ecological resources, including on the undeveloped areas referenced in O.A.C. Section 4906-4-08(B)(1). Virtually all of the Project Area currently is being farmed. The Project Area will be used for clean energy production for up to 40 years, and then can be returned to farming. The Project will produce no air pollution or wastewater discharges, and will not generate any significant amount of waste.

4906-4-08(B)(3)(b)]

By its very nature, the Project's operation will be highly protective of ecological resources. Operations will have essentially no impact on streams, wetlands, or vegetation, including mature trees, wetland vegetation, and woody vegetation in riparian areas. Vegetation within the fence will be managed in accordance with the Preliminary Vegetation Management Plan, as finalized prior to the start of construction.

Regarding herbicides, as noted in the Preliminary Vegetation Management Plan, operating personnel may use limited amounts of commercially-available herbicides for the control of noxious weeds and as needed for the proper maintenance of the vegetative cover. Over the life of the Project, however, this is expected to be far less than the amounts typically applied to row crops such as corn and soybeans. Because the solar panels will be constructed only in upland areas that are almost entirely already dry and cleared of vegetation, the occasional use of herbicides will not adversely affect mature trees, streams, wetland vegetation, and riparian areas.

The final design of the Project will include pollinator-friendly, native plantings in selected locations along the outside of the fenced perimeter of the Solar Area. These features not only will enhance the Project's visual appeal but will enrich local wildlife habitat and benefit local farming. Native flowering plants can provide a much-needed food source for wildlife, native butterflies, bees, and insects that pollinate flowering forbs and some commercial crops. This subject is discussed more below in connection with landscaping and also is addressed in the Preliminary Vegetation Management Plan.

[4906-4-08(B)(3)(c)]

Applicant has no plans for the post-construction monitoring of impacts to wildlife because no adverse impacts are expected. The Project will have no rapidly moving parts that are not fully enclosed (and these will be limited to the Substation, the Inverters, and small electric motors for tracking). It will cause no environmental discharges potentially affecting wildlife. Operational vehicle use will not appreciably increase the amount of traffic in the general vicinity of the Project Area.

## **C. LAND USE AND COMMUNITY DEVELOPMENT**

Application Requirement [4906-4-08(C)]:

*“(C) The applicant shall provide information on land use and community development.”*

**Response:**

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

**1. LAND USE IN PROJECT AREA AND POTENTIAL IMPACTS**

**Application Requirement [4906-4-08(C)(1)]:**

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

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

*(i) The proposed facility.*

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

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

*(iv) Incorporated areas and population centers.*

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

*(i) For all structures and property lines within one thousand five hundred feet of the generation equipment or wind turbine, the distance between both the structure or property line and the equipment or nearest wind turbine.*

*(ii) For all structures and property lines within two hundred fifty feet of a collection line, access road, or other associated facility, the distance between both the structure or property line and the associated facility.*

*(iii) For each structure and property in the table, whether the property is being leased by the applicant for the proposed facility.*

*(c) Provide an evaluation of the impact of the proposed facility on the above land uses identified on the map in paragraph (C)(1)(a) of this rule. Include, for each land use type, the construction impact area and the permanent impact area in acres, in total and for each project component (e.g., turbines,*

collection lines, access roads), and the explanation of how such estimate was calculated.

(d) Identify structures that will be removed or relocated.”

Response:

[4906-4-08(C)(1)(a) & (b)]

The required map is included as **Figure 12** and the required tables are included as **Figures 13 through 16**, respectively.

[4906-4-08(C)(1)(c)]

A table setting forth the specified land use impacts is included as **Figure 17**. Note that only approximately one-third of the land within the Solar Area actually will be occupied by any components of the Project. That figure conservatively treats all the land below the solar panels, when they are parallel to the ground surface, as “occupied” by the solar panels. In reality, only the narrow pilings supporting the racking and solar panels will impact or occupy the ground surface.

[4906-4-08(C)(1)(d)]

Applicant plans to remove a dilapidated storage barn so that the participating land owner may use the underlying land for solar.

## **2. MAP REQUIRED FOR WIND FARMS**

Application Requirement [4906-4-08(C)(2)]:

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

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

*(b) The wind turbine shall be at least one thousand, one hundred, twenty-five feet in horizontal distance from the tip of the turbine's nearest blade at*

*ninety degrees to the property line of the nearest adjacent property at the time of the certification application.*

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

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

Response:

This requirement does not apply to the Project, as the Project is not a wind farm.

### **3. SETBACK WAIVERS**

Application Requirement [4906-4-08(C)(3)]:

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

*(a) Content of Waiver. The waiver shall:*

*(i) Be in writing;*

*(ii) Provide a brief description of the facility;*

*(iii) Notify the applicable property owner(s) of the statutory minimum setback requirements*

*(iv) Describe the adjacent property subject to the waiver through a legal description;*

*(v) Describe how the adjacent property is subject to the statutory minimum setback requirements; and*

*(vi) Advise all subsequent purchasers of the adjacent property subject to the waiver that the waiver of the minimum setback shall run with the land.*

*(b) Required Signature. The waiver shall be signed by the applicant and the applicable property owner(s), indicating consent to construction activities without compliance with the minimum setback requirements.*

*(c) Recordation of Waiver. The waiver shall be recorded in the county recorder's office where the property that is subject of the waiver is located.*

Response:

This requirement does not apply to the Project, as the Project is not a wind farm.

#### **4. LAND USE PLANS**

Application Requirement [4906-4-08(C)(4)]:

*“(4) Land use plans. The applicant shall provide information regarding land use plans.*

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

*(b) Describe the applicant's plans for concurrent or secondary uses of the site.*

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

*(d) Assess the compatibility of the proposed facility and the anticipated resultant regional development with current regional plans.*

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

Response:

[4906-4-08(C)(4)(a)]

Applicant examined the Knox County Comprehensive Plan – 2018 Update (“Comprehensive Plan”), which can be found on the website of the County’s Regional Planning Commission at <https://www.knoxregionalplanning.com>. The Comprehensive Plan was adopted by the Board of Commissioners in August 2018 and sets forth a “blueprint for a realistic vision for Knox County’s future development, health and environment during the next five to ten years.” Comprehensive Plan, p.1. Thus, the Comprehensive Plan is relevant for the time period under which the Project is under consideration.

The Project will have a modest, if not beneficial, impact on the land and a limited useful life. Because the Project will be removed at the end of that life, the Solar Area, which is currently use for agricultural purposes, will be protected from permanent loss due to real estate development during that time. For this reason, the Project actually will serve to help the County preserve farmland for future cultivation. A study by North Carolina (“N.C.”) State University concluded that, unlike more common developments such as residential subdivisions, “[m]odern solar facilities may be considered a temporary,

albeit long-term, use of the land in the sense that the systems can be readily removed from the site at the end of their productive life.” (N.C. State 2019). In addition, the study found that “solar development with proper planning and implementation, results in a small but manageable impact on the future agricultural productivity of the land on which it is sited.” (N.C. State 2019).

Chapter 6 of the Comprehensive Plan lays out various goals and strategies to facilitate achievement of a key objective for the community, which is to preserve its environmental character. Section 6.3.1 addresses the goal of understanding the fiscal impacts of land uses, noting the importance of encouraging development with positive fiscal impacts for the county.

*“residential land uses generally do not pay for themselves, but commercial, industrial and agricultural development does. New residential developments cost local governments more – in road maintenances expenses, and fire and EMS runs, among others – than the offsetting revenues received from residential development in the form of taxes. But commercial, industrial and agricultural development tends to bring in more tax revenue than they cost to provide services.”* (Knox County 2018)

As discussed above, the Project will generate substantial economic and fiscal benefits for the County. By preventing residential development within the Solar Area during the Project’s life, the Project furthers the goal of the Comprehensive Plan of encouraging fiscally responsible development.

Strategy 6.3.3F discusses one recommended strategy for achieving the goal of preserving the County’s environmental character, which is to develop a farmland preservation plan. The Comprehensive Plan notes that purchasing development rights is an “effective but expensive tool” to preserve farmland. As discussed above, during its 40 year life, the Project results in an outcome similar to that of a farmland conservation easement in that it ensures dual solar-agricultural land use and, consequently, prevents permanent conversion of the Solar Area to real estate. Furthermore, it does so at no cost to taxpayers.

Section 6.2 of the Comprehensive Plan asserts that mitigating the impacts of inevitable development in Knox County is a “balancing act between the rights of private property owners to market and develop their land as they so choose...and preserving the local environmental character.” In this sense, the Project is not only consistent with objectives set forth in the Comprehensive Plan, but represents a rare “win-win” by respecting participating landowners’ private property rights while simultaneously facilitating environmentally and economically responsible development that preserves the area’s rural character.

[4906-4-08(C)(4)(b)]

As discussed in detail in the Preliminary Vegetation Management Plan, Applicant plans to use the Solar Area for sheep pasture for as long as it remains practical and viable.

[4906-4-08(C)(4)(c) & (d)]

The Project is not expected to have any significant adverse effect on regional development, including housing, commercial and industrial development, schools, transportation system development, or other public services and facilities. The Project will, however, positively contribute to employment, as well as provide the secondary and induced effects of increased wages. Similarly, the Project will contribute significant new sums annually to the revenue base for Clinton Township, Miller Township, local schools, other local taxing entities and the County. The Project is consistent with the current regional plans for the preservation of farmland while concentrating commercial and residential growth near populated areas.

[4906-4-08(C)(4)(e)]

The Project is somewhat centrally located with Knox County, and so no other county is within 5 miles of the Project Area. Additionally, Mount Vernon is the nearest town with a population over 10,000 people, the center of which is located about 2.5 miles from the northern end of the Project. As noted above, one of the parcels that will host the Project is located within the city. The population-related data for Knox County and Mount Vernon are provided in Table 1 of the Socioeconomic Report.

## **D. CULTURAL AND ARCHAEOLOGICAL RESOURCES**

Application Requirement [4906-4-08(D)]:

*“(D) The applicant shall provide information on cultural and archeological resources.”*

Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

### **1. RECREATION AREAS AND LANDMARKS IN PROJECT AREA**

Application Requirement [4906-4-08(D)(1)]:

*“(1) Landmark mapping. The applicant shall indicate, on a map of at least 1:24,000 scale, any formally adopted land and water recreation areas, recreational trails, scenic rivers, scenic routes or byways, and registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance within ten miles of the project area. Landmarks to be considered for purposes of paragraph (D) of this rule are those districts,*

*sites, buildings, structures, and objects that are recognized by, registered with, or identified as eligible for registration by the national registry of natural landmarks, the state historic preservation office, or the Ohio department of natural resources.”*

Response:

The required map is provided in **Figure 18**. Note that Applicant has submitted a waiver request to reduce, other than for mapping requirements, the distance requirement for cultural resources from 10 to 2 miles, and for visual resources from 10 to 5 miles, from the Project Area. The Project will have a very low visual profile with the highest points within the solar fields of only 12 feet above ground level. The Project generally will not be meaningfully visible at locations more than 2 miles away from the Project Area, nor from most areas within 2 miles of the Project Area. In anticipation of favorable action on the waiver, Applicant has provided maps of these resources out to 2 or 5 miles, as applicable, from the Project Area.

## **2. IMPACTS ON REGISTERED LANDMARKS**

Application Requirement [4906-4-08(D)(2)]:

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

Response:

Applicant prepared a **Cultural Resources Survey Methodology** for an area larger than the Project Area and the area within a 2-mile radius around that area, which is attached as **Exhibit R**. The scope of the Cultural Resources Survey Methodology is broader than, but includes an evaluation of, the impact of the Project on the registered landmarks specified in O.A.C. Section 4906-4-08(D)(1), i.e., those registered landmarks that either are:

- (1) “of historic, religious, archaeological, scenic, natural, or other cultural significance”; or
- (2) “districts, sites, buildings, structures, and objects that are recognized by, registered with, or identified as eligible for registration by the national registry of

natural landmarks, the state historic preservation office, or the Ohio department of natural resources.”

The Cultural Resources Survey Methodology included a proposed methodology for a reconnaissance survey of archeological and historic/architectural resources.

Applicant submitted the Cultural Resources Survey Methodology to the State Historic Preservation Office (“SHPO”) for its review and comment. SHPO provided comments, which included its acceptance of the proposed methodology for the surveys. SHPO’s comments (**“SHPO Concurrence with Cultural Resources Survey Methodology”**) are included as **Exhibit S**.

Pursuant to the SHPO-accepted methodology, Applicant conducted a **Historic Resources Survey** for the Project, which is attached as **Exhibit T**. The Historic Resource Survey concluded that no resource eligible for listing on the National Register of Historic Places (“NRHP”) would experience adverse effects from the Project. The Historic Resource Survey was provided to SHPO, which agreed with its conclusions. See **SHPO Concurrence with Historic Resources Survey**, which is attached as **Exhibit U**.

Although they do not constitute registered landmarks, Applicant also investigated the potential subsurface archeological resources within the Project Area itself. The Cultural Resources Survey Methodology provided background research on the potential for the presence of subsurface archeological resources within the “Area for Direct Effects” for the Project, i.e., the buildable area in which there may be ground disturbance. It also proposed a field survey methodology to investigate the presence of those potential resources. In the SHPO Concurrence with Cultural Resources Survey Methodology, SHPO also accepted this methodology.

Pursuant to the SHPO-accepted methodology, Applicant conducted a **Phase I Archeological Survey** for the Project, which is attached as **Exhibit V**. The Phase I Archeological Survey concluded that 4 resources in the Project Area may be eligible for listing on the NRHP (but were not fully evaluated) and a determination was made that the Project would avoid these resources. The Phase I Archeological Survey was provided to SHPO, which agreed with its conclusions. See **SHPO Concurrence with Phase I Archeological Survey**, which is attached as **Exhibit W**.

### **3. IMPACTS ON FORMALLY-ADOPTED RECREATION AREAS**

Application Requirement [4906-4-08(D)(3)]:

*“(3) Recreation and scenic areas. The applicant shall describe the identified recreation areas within ten miles of the project area in terms of their proximity to population centers, uniqueness, topography, vegetation, hydrology, and wildlife. Provide an evaluation of the impact of the proposed*

*facility on identified recreational and scenic areas within ten miles of the project area and describe plans to mitigate any adverse impact.”*

Response:

Applicant prepared a **Visual Resources Assessment** of the Project, which is attached as **Exhibit X**. The scope of the Visual Resources Assessment is broader than, but includes, an evaluation of the impact that the Project would have on the formally-adopted recreation areas specified in O.A.C. Section 4906-4-08(D)(1), i.e., “land and water recreation areas, recreational trails, scenic rivers, scenic routes or byways” within 5 miles of the Project Area. (Note: the 5-mile scope is the subject of Applicant’s motion for waiver.)

The Visual Resources Assessment concludes that, within 5 miles of the Project Area, there are no National River Inventory-designated rivers, National Scenic Trails, National Wildlife Refuges, or State Wildlife Management Areas. Some lakes and streams informally used for recreation are located within the 5-mile area, but the Project will not impact these resources. The low profile of the Project’s infrastructure, maintaining the vast majority of existing woodlots, and the topography of the region means that practical visibility within the Project’s viewshed area is limited to 2 miles. Thus, the Project will not adversely impact any formally-adopted water recreation areas, recreational trails, scenic rivers, scenic routes or byways within 5 miles of the Project Area.

#### **4. VISUAL IMPACTS**

Application Requirement [4906-4-08(D)(4)]:

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

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

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

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

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

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

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

Response:

[4906-4-08(D)(4)(a)]

In general, the visibility of the Project will be limited to places relatively close to the Solar Area without intervening obstacles such as vegetation or buildings. This is due to the relatively level land in the area, the low profile of the solar panels, and the substantial amount of intervening vegetation. The addition of planted vegetation along the perimeter that is part of Project itself will further reduce the visibility of the Project.

The Visual Resources Assessment, which was performed by a team of professionals with experience in developing visual impact assessments, includes a computer analysis based on a bare earth digital surface model ("DSM"). The DSM conservatively assumes a viewer height of 6 feet and a maximum height for the Project of 12 feet throughout the Project Area. It incorporates both topographical data for the area as well as buildings and vegetation derived from "light detection and ranging" (also known as "LIDAR") data for the multi-county region that includes the Project Area.

The results of the DSM analysis conservatively demonstrates that the Project generally will not be visible in any meaningful way at locations that are more than 3 miles from the Project Area. It also illustrates why the Project will largely not be visible from the vast majority of areas within 0.5 and 3 miles of the Project Area. Rather, due to the low profile of the solar panels, the significant amount of vegetation, topography, and structures in the area, the number of locations from which the solar components may be

visible is relatively few. The vast majority of the locations with visibility of the Project are very close to the components (within 0.5 miles of the Project Area).

Open views toward the Project are largely restricted to areas adjacent to the Project Area where public roads are bordered by open agricultural fields. Views of the Project from beyond 0.5 mile will largely be screened by the lines of mature vegetation associated with water bodies, roads, and the built environment. The combination of relatively low panel height, along with existing streamside vegetation, hedgerows, and the atmospheric effects of distance, will limit visibility of the Project from the majority of the viewshed.

[4906-4-08(D)(4)(b)]

The land use within the 5-mile area surrounding the perimeter of the Project Area is characterized by a mix of open agricultural fields, a few clusters of residential properties, forested windrows and woodlots, large transmission lines, an electric substation, and the nearby communities of Mount Vernon and Brandon. The Project Area itself is primarily located on private farm land. Most of these farms are in active use. In general, the existing landscape in and immediately around the Project Area is typical of rural Ohio, in which there is ample vegetation, the predominant land use is farming, and the population density is low.

[4906-4-08(D)(4)(c)]

The Project will only moderately alter this landscape and will not materially affect its scenic quality. The Project will have a very low profile and present a consistent visual image throughout the Project Area. Except for the Substation, which will have very limited visibility and likely be viewed in the context of the existing transmission lines and Utility Substation, virtually all the Project's equipment will be either buried or less than 12 feet in height. Each of the solar fields will contain essentially the same components, which will consistently follow most of the existing level of the various farm fields. With no discernable movement of the equipment, the solar panels will passively "harvest" energy from the sun. For additional information regarding the Project's alterations to the landscape and the impact of those alterations to the scenic quality of the landscape, please see Section 3 of the Visual Resources Assessment.

[4906-4-08(D)(4)(d)]

The Visual Resources Assessment provides a full evaluation of the visual impacts to the identified resources within 5 miles of the Project Area that are valued specifically for their scenic quality.

[4906-4-08(D)(4)(e)]

The Visual Resources Assessment includes visual simulations of representative views of the Project from various foreground and near mid-ground distances, as well as different viewer circumstances. The criteria by which viewpoints for visual simulations were selected include:

- Distance from the Project (foreground views versus middle or background),
- Degree of view obstruction (unobstructed versus obstructed),
- Types of viewers (more viewer types versus fewer viewer types), and
- Number of arrays, viewpoint direction, and range of panel positions.

For additional information regarding viewpoint selection and the visual simulations, please see Section 3.4.1 of the Visual Resources Assessment.

[4906-4-08(D)(4)(f)]

Although the low profile of the Project means that its visibility will diminish rapidly with distance, it will have a visual impact on some adjacent and nearby neighbors and travelers. What particular viewers see will depend largely on their distance to the nearest fence, topography, and whether there are any intervening objects, such as vegetation or buildings (farm building, storage shed, garage, etc.). In this regard, two key features of the landscape near the Project Area and the Project itself serve to substantially mitigate visual impacts.

First, there are a number of woodlots and windrows around the perimeter of the Project Area that will screen or break up views of the components from many locations. Some of this vegetation exists immediately outside the Project Area. Applicant hopes to work with neighbors to preserve it. Much of the screening vegetation, however, sits on land owned by the Project participants, and the footprint of the components was purposefully shaped to avoid these features in part to preserve their aesthetic benefits.

Second, for areas between neighboring homes and the Project not obscured by vegetation, the fence of the Project has been designed a considerable distance away to create a substantial buffer. Despite the Project-wide *minimum* setback of 300 feet between the solar panels and homes (the length of a football field), in the vast majority of cases the distance is much more than this amount, and in many cases it is over 1,000 feet. Applicant expects that these farm buffer areas will continue to be farmed throughout the life of the Project, with corn fields, in particular, having a substantial screening effect in summer and fall.

In addition to the above, the Project will feature a landscape plan for the perimeter of the Project to further enhance its appearance and harmonize it with the surrounding landscape. Applicant has developed a **Preliminary Landscape Plan**, for the Project, which is included as **Exhibit Y**. The Preliminary Landscape Plan features a tiered set of landscape treatments just outside the fence that are tailored to specific locations and viewers. The locations and composition of the specific treatments are preliminary, flexible, and subject to on-going discussions with a number of neighbors. Following these discussions and prior to the start of construction, Applicant will submit a final landscape plan to Staff. In no event, however, will the final Landscape Plan be less rigorous than the Preliminary Landscape Plan. .

The Project will have only minimal lighting as it will not operate at night and has no personnel stationed on site. At most, lights will be located at entrances, Inverters and the Substation and all will be designed to reduce any off-site impacts. Among the features that may be incorporated into the design are that lights be down-ward facing and either equipped with side shields or motion-activated.

## **E. AGRICULTURAL DISTRICTS AND AGRICULTURAL LAND**

### Application Requirement [4906-4-08(E)]:

*“(E) The applicant shall provide information regarding agricultural districts and potential impacts to agricultural land.”*

### Response:

Information responsive to this overall requirement is provided in responses to the detailed requirements listed below.

## **1. AGRICULTURAL RESOURCES IN PROJECT AREA**

### Application Requirement [4906-4-08(E)(1)]:

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

### Response:

The required map is attached as **Figure 19**.

## **2. IMPACTS TO AGRICULTURAL RESOURCES**

### Application Requirement [4906-4-08(E)(2)]:

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

*(a) A quantification of the acreage impacted.*

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

*(i) Field operations such as plowing, planting, cultivating, spraying, harvesting.*

*(ii) Irrigation.*

*(iii) Field drainage systems.*

*(iv) Structures used for agricultural operations.*

*(v) The viability as agricultural district land of any land so identified.*

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

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

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

*(iii) Segregation of excavated topsoil, and decompaction and restoration of all topsoil to original conditions unless otherwise agreed to by the landowner."*

Response:

[4906-4-08(E)(2)(a)]

A table containing the impacts to agricultural land and agricultural uses is found in **Figure 20**.

[4906-4-08(E)(2)(b)(i)]

For any of the farm land within the fence that is used for operation of the Project, the current row crop use will be supplanted by the Project for approximately 40 years. In these areas, all field operations, such as plowing, planting, cultivating, spraying, and harvesting, as well as any irrigation, will be precluded during that time. These activities and uses may be continued after that period of time, however, following decommissioning of the Project and restoration of the area for return to solely agricultural use should the landowner so desire. Construction of the Project is not expected to result in the removal of or damage to any structures, other than the removal of a dilapidated barn, currently used for farm operations.

[4906-4-08(E)(2)(b)(ii)]

Applicant is not aware of any irrigation systems within the Project Area that could be impacted by construction, operation, or maintenance of the Project.

[4906-4-08(E)(2)(b)(iii)]

The farm land within the Project Area includes a number of field drainage systems. Applicant's final design and engineering will seek to avoid interference with these systems. In doing so, Applicant will be particularly attentive to "main" tile systems typically comprised of larger pipes that cross property boundaries between different land owners. Some "pattern" or "lateral" tile systems that do not affect neighboring landowners may need to be rerouted to accommodate construction or disconnected during the life of the Project, but would be restored for future row crop farming during decommissioning of the Project.

An initial effort to identify drain tile in and adjacent to the Project Area and a plan for locating any remaining drain tile has already been undertaken. Specifically, Applicant prepared a **Preliminary Drain Tile Assessment** for the Project. It is attached as **Exhibit Z**.

[4906-4-08(E)(2)(b)(iv)]

Applicant does not anticipate that the Project will impact any structures currently used for agricultural operations. The dilapidated storage barn Applicant plans to remove is not currently used for agricultural operations.

[4906-4-08(E)(2)(b)(v)]

There are approximately 297 acres of Project land located in an agricultural district. The portion of property within the Project located in this district is shown in Figure 19. As noted above, the Solar Area will serve not only to produce energy but also will provide pasture for sheep grazing. After an initial transition period of 1 to 3 years, the predominant means of vegetation control will be sheep grazing, supplemented by mechanical cutting. This aspect of vegetation management means that the Solar Area will remain in agricultural use throughout the operating period of the Project.

[4906-4-08(E)(2)(c)(i) and (ii)]

Prior to construction, Applicant will finalize its assessment of drain tile, which will include consulting with the owners of the land adjacent to the Project Area and other readily available public resources to ascertain, to the extent practicable, the type, size and location of all functioning drain tile where construction is planned. Applicant will use this information to update and finalize its mapping of the expected locations of drain tile and physically mark the surface accordingly.

Applicant will avoid, where possible, or minimize to the extent practicable, any damage to existing drain tile during construction. Applicant will use commercially reasonable efforts to promptly repair, at Applicant's expense, any such drain tile. Also, if Applicant becomes aware during operations of circumstances indicating that the Project has damaged functioning drain tile, then Applicant will promptly investigate the matter and use commercially reasonable efforts to promptly repair any such damage. However, no repairs shall be necessary to any non-functional lateral tile, or lateral tile which has no

impact on neighboring properties, which are damaged during construction or operations by Applicant.

[4906-4-08(E)(2)(c)(iii)]

Relatively little topsoil will be disturbed or significantly compacted during construction of the Project. Among the primary activities that will necessitate some topsoil movement or compaction are building roads, trenching collection lines, and installing foundations for Inverters and the Substation. Topsoil disturbed during construction will be used to help establish the vegetative ground cover for the Project and, in some cases, placed in long-term stockpiles for potential use at decommissioning. The Preliminary Agricultural Soils Management Plan for the Project provides extensive measures that the Project will follow to avoid, minimize, and mitigate impacts to agricultural soils during construction, operation and decommissioning.

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