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VIA HAND DELIVERY

October 9, 2018

Ms. Barcy F. McNeal, Secretary
Ohio Power Siting Board
180 E. Broad Street, 11th Floor
Columbus, Ohio 43215

**Re: In the Matter of the Application of Hecate Energy Highland LLC for a
Certificate of Environmental Compatibility and Public Need Case No.
18-1334-EL-BGN (Before the Ohio Power Siting Board)**

Dear Ms. McNeal:

Accompanying this letter are hard copies of an application by Hecate Energy Highland LLC for a Certificate of Environmental Compatibility and Public Need for a solar powered electric generation facility to be located in Highland County, Ohio. In accordance with Ohio Admin. Code 4906-2-04, I make the following declarations:

Name of the Applicant:

Hecate Energy Highland LLC
621 W Randolph Street
Chicago, Illinois USA 60661

Name of the Proposed Facility and Location:

Hecate Energy Highland Solar Farm
Clay and Whiteoak Townships
Highland County, Ohio

47 Offices in 20 Countries

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010-8681-2149/1/AMERICAS

Name of the Authorized Representative:

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Notarized Statement:

See enclosed Affidavit of Chris Bullinger
Sole Member of Hecate Energy Highland LLC

Please note that Hecate Energy Highland LLC has previously filed a Motion for Waiver requesting a waiver from Ohio Admin. Code 4906-4-08(A)(1)(c) (manufacturers' safety manuals or setbacks).

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Karen A. Winters", is written over a light blue rectangular background.

Karen A. Winters
Squire Patton Boggs (US) LLP

Enclosures

cc: Patti Shorr
Danelle M. Gagliardi

**BEFORE
THE OHIO POWER SITING BOARD**

| | | |
|--|-----------------------|-------------------------|
| In the Matter of the Application of Hecate Energy Highland LLC for a Certificate of Environmental Compatibility and Public Need |))))) | Case No. 18-1334-EL-BGN |
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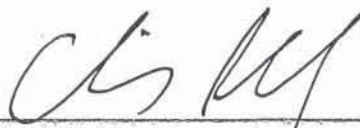
OFFICER'S AFFIDAVIT

STATE OF TENNESSEE)
COUNTY OF DAVIDSON) SS:

Now comes CHRIS BULLINGER, President & CEO of Hecate Energy LLC, being the sole member of Hecate Energy Highland LLC, having been first duly sworn, declares and states as follows:

1. I am the highest ranking executive officer in charge of the Hecate Energy Highland LLC solar project to be located in Highland County, Ohio.
2. I have reviewed the Application of Hecate Energy Highland LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generating Facility in Case No. 18-1334-EL-BGN.
3. To the best of my knowledge, the information and statements contained in the Application are true and correct.
4. To the best of my knowledge, the Application is complete, with the exception of information pursuant to Ohio Administrative Rule 4906-4-08(A)(1)(c) (manufacturers' safety manuals or setbacks) for which an application for a waiver under Ohio Administrative Code Rule 4906-3-01(B) has been made.

FURTHER AFFIANT SAYETH NAUGHT.



Chris Bullinger
Sole Member of Hecate Energy Highland LLC

SWORN TO AND SUBSCRIBED before me on the 8 day of October, 2018.

Kevin D. Sykes Tennessee
Notary Public, State of

My Commission Expires Sept 7, 2021



HECATE ENERGY HIGHLAND LLC
APPLICATION
TO THE
OHIO POWER SITING BOARD
FOR
A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC
NEED
FOR THE
HIGHLAND SOLAR FARM

Clay and Whiteoak Townships

Highland County, Ohio

Case No. 18-1334-EL-BGN
October 2018

Prepared by: Hecate Energy Highland LLC
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TABLE OF CONTENTS

| | | |
|------|--|----|
| I. | INTRODUCTION..... | 1 |
| II. | PROJECT SUMMARY AND APPLICANT INFORMATION..... | 2 |
| A. | SUMMARY OF PROPOSED PROJECT | 2 |
| B. | SUMMARY OF PROPOSED PROJECT | 4 |
| III. | DETAILED PROJECT DESCRIPTION AND SCHEDULE..... | 5 |
| A. | DESCRIPTION OF PROJECT AREA..... | 5 |
| B. | DETAILED PROJECT DESCRIPTION AND SCHEDULE | 7 |
| 1. | DESCRIPTION OF PROJECT AREA..... | 7 |
| 2. | CONSTRUCTION AND RECLAMATION METHODS | 9 |
| 3. | NEED FOR NEW TRANSMISSION | 14 |
| 4. | PROJECT MAP..... | 14 |
| C. | PROJECT SCHEDULE | 16 |
| IV. | PROJECT AREA SELECTION AND SITE DESIGN | 17 |
| A. | SELECTION OF PROJECT AREA..... | 17 |
| B. | PROCESS OF DESIGNING PROJECT LAYOUT | 19 |
| V. | ELECTRIC GRID INTERCONNECTION..... | 21 |
| A. | CONNECTION OF PROJECT TO REGIONAL ELECTRIC GRID | 21 |
| B. | INFORMATION ON INTERCONNECTION OF PROJECT | 21 |
| VI. | ECONOMIC IMPACT AND PUBLIC INTERACTION | 22 |
| A. | CURRENT AND PROPOSED OWNERSHIP STATUS OF PROJECT | 22 |
| B. | CAPITAL AND INTANGIBLE COSTS | 23 |
| C. | OPERATION AND MAINTENANCE EXPENSES..... | 24 |
| D. | COST FOR A DELAY | 25 |
| E. | ECONOMIC IMPACT OF PROJECT | 26 |
| F. | PUBLIC RESPONSIBILITY | 27 |
| 1. | PUBLIC INTERACTION..... | 27 |
| 2. | INSURANCE | 28 |
| 3. | TRANSPORTATION..... | 29 |
| 4. | DECOMMISSIONING..... | 30 |
| VII. | COMPLIANCE WITH AIR, WATER, SOLID WASTE, AVIATION REGULATIONS..... | 32 |
| A. | PURPOSES OF RULE | 32 |

| | | |
|-------|--|----|
| B. | AIR QUALITY | 32 |
| 1. | PRECONSTRUCTION AIR QUALITY AND PERMITS | 32 |
| 2. | AIR EMISSIONS AND DUST DURING CONSTRUCTION | 34 |
| 3. | AIR QUALITY FOR OPERATION..... | 34 |
| C. | WATER QUALITY | 35 |
| 1. | PRECONSTRUCTION WATER QUALITY AND PERMITS | 35 |
| 2. | WATER QUALITY DURING CONSTRUCTION..... | 36 |
| 3. | WATER QUALITY DURING OPERATION..... | 37 |
| D. | SOLID WASTE | 38 |
| 1. | SOLID WASTE IN PROJECT AREA | 38 |
| 2. | CONSTRUCTION | 39 |
| 3. | OPERATION | 39 |
| 4. | PERMITS..... | 40 |
| E. | AVIATION..... | 40 |
| VIII. | HEALTH AND SAFETY, LAND USE AND ECOLOGICAL INFORMATION | 42 |
| A. | HEALTH AND SAFETY..... | 42 |
| 1. | SAFETY AND RELIABILITY OF EQUIPMENT | 42 |
| 2. | FAILURE OF AIR POLLUTION CONTROL EQUIPMENT | 44 |
| 3. | NOISE FROM CONSTRUCTION AND OPERATION | 45 |
| 4. | WATER IMPACTS | 46 |
| 5. | GEOLOGIC FEATURES, TOPOGRAPHY AND WELLS | 47 |
| 6. | HIGH WINDS | 49 |
| 7. | BLADE SHEAR..... | 49 |
| 8. | ICE THROW..... | 49 |
| 9. | SHADOW FLICKER..... | 50 |
| 10. | TV AND RADIO RECEPTION..... | 50 |
| 11. | RADAR SYSTEMS | 51 |
| 12. | MICROWAVES | 51 |
| B. | ECOLOGICAL RESOURCES | 52 |
| 1. | ECOLOGICAL RESOURCES IN PROJECT AREA | 52 |
| 2. | POTENTIAL IMPACT DURING CONSTRUCTION | 54 |
| 3. | POTENTIAL IMPACT DURING OPERATION..... | 57 |
| C. | LAND USE AND COMMUNITY DEVELOPMENT | 58 |
| 1. | LAND USE IN PROJECT AREA AND POTENTIAL IMPACTS | 58 |

| | | |
|----|---|----|
| 2. | MAP REQUIRED FOR WIND FARMS | 60 |
| 3. | LAND USE PLANS | 60 |
| D. | CULTURAL AND ARCHAEOLOGICAL RESOURCES | 62 |
| 1. | RECREATION AREAS AND LANDMARKS IN PROJECT AREA..... | 63 |
| 2. | IMPACTS ON REGISTERED LANDMARKS..... | 63 |
| 3. | IMPACTS ON FORMALLY-ADOPTED RECREATION AREAS..... | 64 |
| 4. | VISUAL IMPACTS | 64 |
| E. | AGRICULTURAL DISTRICTS AND AGRICULTURAL LAND | 66 |
| 1. | AGRICULTURAL RESOURCES IN PROJECT AREA..... | 66 |
| 2. | IMPACTS TO AGRICULTURAL RESOURCES..... | 67 |
| | WORKS CITED | 69 |

FIGURES and EXHIBITS

Figures

| | |
|-----------|--|
| Figure 1 | Map of Project Area Geography and Topography |
| Figure 2 | Map of Aerial View of Project Area |
| Figure 3 | Project Schedule |
| Figure 4 | Map of Study Area |
| Figure 5 | Map of Constraints |
| Figure 6 | Aviation Map |
| Figure 7 | FAA Notice Criteria Tool Results |
| Figure 8 | FEMA Map |
| Figure 9 | Map of Existing Geological Features |
| Figure 10 | Map of Ecological Resources |
| Figure 11 | Map of Delineated Resources |
| Figure 12 | Map of Land Uses |
| Figure 13 | Table of Land Uses |
| Figure 14 | Table of Structures |
| Figure 15 | Map of 5-Mile Resources |
| Figure 16 | 5-Mile LiDAR Visibility Map |
| Figure 17 | Map of Agricultural Resources |

Exhibits

| | |
|-----------|---------------------------------|
| Exhibit A | Feasibility Study Report |
| Exhibit B | System Impact Study Report |
| Exhibit C | Economic Report |
| Exhibit D | Transportation Report |
| Exhibit E | Noise Report |
| Exhibit F | Desktop Geotechnical Evaluation |
| Exhibit G | Ecological Reports |

| | |
|-----------|---------------------------|
| Exhibit H | Land Use Report |
| Exhibit I | Cultural Resources Report |
| Exhibit J | Viewshed Analysis Report |

COMMONLY USED ACRONYMS and ABBREVIATIONS

| | |
|----------|---|
| AC | Alternating Current |
| Board | Ohio Power Siting Board |
| DC | Direct Current |
| DSM | Digital Surface Model |
| EMF | Electromagnetic Field |
| ERA | Environmental Resource Analysis |
| ESA | Environmental Site Assessment |
| FAA | Federal Aviation Administration |
| I-IDD | Horizontal Directional Drilling |
| ISA | Interconnection Service Agreement |
| kV | Kilovolt |
| kw | Kilowatt |
| LIDAR | Light Detection and Ranging |
| MW | Megawatt |
| MW-ac | Megawatt-alternating current |
| NPDES | National Pollutant Discharge and Elimination System |
| ODNR | Ohio Department of Natural Resources |
| Ohio EPA | Ohio Environmental Protection Agency |
| PILOT | Payment in lieu of taxes |
| PJD | Preliminary Jurisdictional Determination |
| PJM | PJM Interconnection, LLC |
| POI | Point of Interconnection |
| QEP | Qualified Energy Project |
| SWPA | Source Water Protection Area |
| SWPPP | Storm Water Pollution Prevention Plan |
| USACE | US Army Corps of Engineers |

I. INTRODUCTION

This Application for a Certificate of Environmental Compatibility and Public Need ("Application") is submitted to the Ohio Power Siting Board ("Board") by Hecate Energy Highland LLC ("Applicant") pursuant to Chapters 4906-3 and 4906-4 of the Ohio Administrative Code. The Application seeks a Certificate of Environmental Compatibility and Public Need ("Certificate") to construct and operate the Highland Solar Farm, which is a proposed solar-powered electric generation facility of up to 300 MWac" to be located in Highland County, Ohio ("Project"). Applicant seeks to construct and operate the Project within an approximately 3,300-acre area ("Project Area").

At a capacity of 300 MW, the Project will generate more power than the amount used by 49,200 average Ohio homes (based on the national average of 164 homes/MW, used by the Solar Energy Industries Association). It will do so without the need for any pipelines or using any fuel. The Project will not use any appreciable amount of water, and it will not generate any air pollution, water pollution, or hazardous waste. The equipment comprising the Project will have very few moving parts and will make almost no sound. With only minimal disturbance of topsoil and few underground foundations, the Project will require very few changes to the land surface, and will productively utilize existing, open agricultural fields to diversify the income sources of area families.

This Application addresses each of the substantive requirements of R.C. Chapter 4906 and Ohio Admin. Code Chapters 4906-3 4906-4. The Application also demonstrates that the Project meets the criteria outlined in R.C. 4906.10 for certificate issuance, insofar as it represents the minimum adverse environmental impact, will comply with all applicable laws and regulations and will serve the public interest, convenience and necessity. A cursory summary of key environmental project information is provided below. Based on the analyses performed as part of this Application, the Project:

- Is situated in a rural agricultural area characterized primarily by row crop cultivation;
- Will not require material structure demolition or removal and only minimal tree clearing;
- Will require minimal grading due to relatively flat topography;
- Will utilize storm water pollution control measures during construction to ensure minimal impact on surface waters and sensitive resources;
- Is anticipated to have a beneficial economic impact on the surrounding community;
- Is expected to have minimal impact on the agricultural use of the land should eventual decommissioning occur;
- Has involved landowner, neighbor, and public consultation to ensure compatibility with the local community;
- Is expected to result in minimal water consumption and generate low quantities of soil waste, primarily during construction;
- Is anticipated to be compatible with existing roads, traffic, and transportation routes;
- Will be situated atop subsurface conditions that appear geotechnically suitable for project development;
- Is not located within the 100-year or 500-year floodplains or land that is prone to flooding;

- Is not anticipated to adversely impact air quality and may improve air quality to nearby nonattainment counties for 8-hour ozone;
- Is not anticipated to result in a significant increase in noise levels beyond those expected from current agricultural row crop activities;
- Will not result in any hazards to air navigation;
- Will require tree clearing to be performed outside of bat roosting season, and as such, will not result in adverse impacts to state or federal threatened or endangered species;
- Has been designed to avoid impacts to wetlands and jurisdictional waters;
- Has been designed to avoid impact any documented cultural resources;
- Is currently undergoing coordination with the State Historic Preservation Office to provide a Phase I Archeological Survey prior to project development;
- Is expected to be compatible with existing land use;
- Will not visually impact any scenic resources in the viewshed;
- Will be reasonably coordinated with adjacent property owners in the viewshed to ensure minimal impact to surrounding properties;
- Is anticipated to have a minimal impact on agricultural resources due to on-going landowner coordination to avoid and mitigate impacts to existing drainage tiles and irrigation lines.

For ease of review, the Application quotes each of the relevant specific regulatory requirements (under the heading "OPSB Application Requirement" and in italics) for each subject addressed in Ohio Admin. Code Chapter 4906-4. The Application then provides, under the heading "Response," information responsive to that specific requirement, if applicable. In some instances, the Application provides an explanation of why the Applicant believes that a particular requirement does not apply to the Project.

II. PROJECT SUMMARY AND APPLICANT INFORMATION

A. SUMMARY OF PROPOSED PROJECT

OPSB 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 install arrays of ground-mounted photovoltaic ("PV") modules, commonly known as solar panels, to generate affordable, clean and quiet renewable electricity for consumers in southwestern Ohio. The Project will provide "on peak" power during the high demand period of mid-day and late afternoon, which is when Ohio consumers need it the most. It also will provide employment opportunities throughout the region and State, as well as generate additional annual tax revenues to the residents of Highland County.

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

The Project will be located in Highland County, Ohio, approximately 25 miles east of Cincinnati. It will supply wholesale power to the Stuart-Clinton 345 ("kV") transmission line via a new 345 kV three breaker ring bus substation that will tap the Stuart-Clinton 345 kV line owned by Dayton Power & Light. The Point of Interconnection ("POI") will be the first dead-end structure on the Project's 345 kV generator lead line outside the new three breaker ring bus switchyard fence located on the Highland property. The Project will occupy up to 3,300 acres of private land. It will have the capacity to generate up to 300 MW-alternating current ("MWac") of electricity.

The Project will generate electricity using PV 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 cables at a Project substation. The substation then will increase the voltage again and deliver the power to the 345 kV Stuart-Clinton transmission system.

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

The Project Area is ideal for a utility-scale solar farm because it is adjacent to a point in the regional transmission system at which power can be supplied without the need for substantial and costly upgrades to that system. Interconnecting directly to the high-voltage 345kV line will minimize electrical loss across the transmission system to load centers where power is consumed. Use of the Project Area will enable the generation of large amounts of solar power because it is generally level, open and dry. The Project also will minimize impacts to natural resources because most of the Project Area is disturbed in the normal course of active cultivation.

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

The schedule for development of the Project, which commenced in 2016, continues as shown on the Project schedule noted on **Figure 3**. Acquisition of the necessary land rights is complete, and survey and title work is well underway. Natural resources studies and associated field surveys are, for the most part, complete. It is expected that the Facility Study will be issued by PJM simultaneously with the Interconnection Services Agreement in mid-October 2018. The Project anticipates executing the

Interconnection Services Agreement and Interconnection Construction Services Agreement in November 2018. Applicant plans to begin construction of the Project in the first quarter of 2020, and construction would proceed throughout 2020. The Project is expected to start commercial operations in mid-2021.

B. SUMMARY OF PROPOSED PROJECT

OPSB 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 300 MWac within the Project Area. Following issuance of the Certificate, Applicant may propose to construct and operate an additional 100 MWac of solar PV generation within the Project Area, which also would deliver power to the Stuart-Clinton 345 transmission system. (This additional 100 MWac is contemplated in Applicant's current interconnection queue position that is separate from the Project described herein). Applicant's plans with regard to this additional 100 MWac are dependent on a variety of factors, including the securing of energy offtake. It is possible, pending authorization from the Board and other authorities, that the additional 100 MWac could be constructed concurrently with, or relatively soon thereafter following the current construction contemplated under this application. Any further expansion of the Project, would, be subject to the Ohio Power Siting Board process as prescribed, securing additional land, securing viable interconnection positions and going through the natural resource study processes that are required, normal and customary for solar projects in the state and in Highland County.

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

Applicant will construct, own and operate the Project. Hecate Energy LLC ("Hecate Energy") is the sole member of the Applicant. Founded six years ago, Hecate Energy has developed or built 332 MW of operating solar projects totaling \$569 million in asset value, 58 MWh of battery storage, and 45 MW of wind. Hecate Energy has contracts to build an additional 552 MW of solar and 60 MWh of battery storage projects in the next three years. The Company is in negotiations on over 1,000 MW of new solar, with a large pipeline of solar, battery storage, and natural gas projects under long term development.

Hecate Energy is headquartered in Chicago, Illinois and has additional offices in Los Angeles, California and Columbus, Ohio. Hecate Energy has 21 full-time employees and several full-time contractors. Hecate Energy has developed operating power projects in California, Florida, Texas, Rhode Island, Maryland, Massachusetts, Virginia, and Georgia, with energy storage projects in Ontario, Canada. Hecate's current pipeline is located in Washington; Louisiana; Alabama; Rhode Island; South Carolina; New York; Ohio; Texas; Georgia; Tennessee; Ontario, Canada, the Kingdom of Jordan; and California.

In the past four years, Hecate Energy has been awarded solar PPAs by several investor-owned and municipal utilities, including: National Grid, Duke Energy Carolinas, Georgia Power, JEA (formerly Jacksonville Electric Authority), and the Los Angeles Department of Water & Power. Cities including Palo Alto and Houston have also selected Hecate Energy to be their solar provider. In addition, organizations such as Johns Hopkins University, the United States Postal Service, and the Port of Los Angeles have selected Hecate Energy to provide their solar power solutions.

Hecate Energy's executives previously were founders of OCI Solar Power, where they held positions of President, COO, Senior Vice President of Engineering, Procurement, & Construction (EPC) & Operations, and Board Members. While at OCI Solar Power, this executive team formulated the strategy and led the negotiations to enter into a 400 MW solar PPA with CPS Energy of San Antonio, Texas. The solar project in San Antonio is currently the largest municipal solar plant development in the United States, and is the largest initiative of its kind in the world that combines economic development with clean energy development.

Hecate Energy's team is composed of industry veterans who have developed and financed billions of dollars of power plant development and acquisition. Successful projects have ranged from single MW solar utility projects to thousand MWs natural gas plants. Hecate Energy's team has led the acquisition of power plant portfolios that include coal, oil, gas, and hydro power. The total amount of financing for these portfolios has been in the billions of dollars, and has included debt and equity investments from a wide range of energy investment funds, insurance companies, utilities, and commercial banks

III. DETAILED PROJECT DESCRIPTION AND SCHEDULE

A. DESCRIPTION OF PROJECT AREA

OPSB 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 in Clay and Whiteoak Townships in Highland County, Ohio. The approximately 3,300-acre tract is located approximately two miles east of Buford and 3.2 miles northwest of Mowrystown. The Project Area is irregularly shaped and generally located to the northeast of Highway 321, west of Fender Road, southeast of Highway 138 (with the exceptions of the far northwest parcels, which are located on both sides of Highway 138). The land within the Project Area has been mostly cleared for agriculture and is extremely level. The predominant industry is agriculture.

The Project Area is rural, and is largely characterized by medium- to large-sized farms with interspersed pockets of trees. Undeveloped land includes actively cultivated fields, small blocks and rows of trees and other vegetation, and old fields. Existing features in the Project Area include one electric transmission line (345 kV), existing roads, single family homes, and farm buildings. The Project Area itself does not include any population centers, major industries, or notable landmarks. A map depicting the two-mile area surrounding the Project Area and including each of the features required above is attached as **Figure 1**. The map, which shows an area that is two (2) miles in radius around the Project Area, includes the following: (1) the proposed facility; (2) population centers; (3) administrative boundaries; (4) transportation routes; (5) electric transmission corridors; (6) named rivers, streams, lakes and reservoirs; and (7) major institutions, parks, and recreation areas. No gas transmission lines occur within a 2-mile radius of the Project Area.

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

The total area of all properties that are leased (or will be purchased pursuant to options) and that is available for use for construction and/or operation of the Project is approximately 3,300 acres. It should be noted that while initial documentation and letters for the project may have indicated different acreages, the 3,300 acres in this application represents the most current land acquired for the Project Site. All owners and adjacent owners of the complete project site have been notified in accordance with the public notification process, and the correct project site boundaries were provided at the Public Information Meeting. This total is comprised of over six landowner families separate properties.

Applicant expects to use up to the entire acreage of this site for construction and operation of the Project.

B. DETAILED PROJECT DESCRIPTION AND SCHEDULE

1. DESCRIPTION OF PROJECT AREA

OPSB 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 are solar panels, and no alternatives are being considered. The basic components of the Project will be solar panels mounted on metal racking that track the sun, inverters that convert DC electricity to AC electricity, transformers to increase electric voltage to conform to the electric grid at the point of the project's interconnection, a network of cables to collect the energy produced by the solar panels, a Project-level substation, gravel access roads and pyranometers that record the weather conditions. 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 trackers that move in the direction of the sun. The trackers will include steel piles that will be driven into the ground, or screws that will be rotated into the ground in long rows. The layout generally will follow the existing topography of the land in the Project Area, although some rough grading may occur to accommodate drainage and other needs. The Project Area will be fenced, with locked gates, for equipment security and public safety.

Each of the Project's arrays will use single-axis tracking technology. Tracking arrays will run in a north-south direction and be equipped with electric motors that will slowly rotate the panels throughout the day to keep them perpendicular to the direction of sunlight. Tracking arrays will face east at sunrise, rotate to the west during the day, face west at sunset, and then re-set to the east.

The solar panel technology for the Project will be silicon-based crystalline modules. Although the specific module vendor has not been selected, highest quality "Tier 1" modules will be used for the Project. At a capacity of 300 MWac, the Project will use approximately 1,100,000 modules. There is no heat rate associated with solar panels. The modules will operate 8,760 hours per year, although they will produce no electricity during the night. The modules also will produce little to no electricity during periods of heavy clouds and during and briefly following significant snowfall. The anticipated annual net capacity factor for the Project is anticipated to be between 22% to 25%.

DC Collector System, Inverters and AC Collector System

Within the Project Area, a network of electric lines and associated communication lines will collect the electric power from different groups of arrays ("DC Collector System") and transmit the power to a central location. Solar panels will be grouped into series of circuits that are routed either directly to the inverters or, through cable trays on the racking, to combiner boxes. Power from one or more of the combiner boxes then will be transmitted to a group of related components: a DC-to-AC inverter, a step-up transformer that increases the voltage to 34.5 kV, and a cabinet containing power control electronics. The equipment will be mounted on a pre-fabricated foundation such as a metal skid or a concrete block.

Each Inverter will deliver AC power to a single, fenced, Project-level substation ("Project Substation"). The Inverters will be connected to the Project Substation through a system of electric lines and associated communication lines ("AC Collector System"). The AC Collector System will originate at the inverter and terminate at the Project Substation.

Project Substation and Gen-tie

The Project Substation will be located on a small parcel of land immediately adjacent to the 345 kV 3-breaker ring bus Utility Substation that Dayton Power and Light will build. Among the major components of the Project 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 345 kV); (4) high-voltage breaker; (5) metering/relaying transformers; (6) disconnect switches; (7) equipment enclosure containing power control electronics; and (8) a lightning mast.

The Project Substation will be located on a fenced and graded gravel pad to drain water away from the electrical equipment and to provide a stable working surface. The equipment and structures will each have its own concrete foundation. For equipment security and public safety, a fence with a locked access gate will be installed around the perimeter. Approximately 30 feet of substation busbar will connect the Project Substation to the Utility Substation. The Utility Substation will be similar in configuration to the Project.

Roads

The Project will include a number of unpaved roads ("Access Roads") comprised of aggregate material and/or grass used to access different parts of the solar project. Short driveways will connect the Access Roads to public roads at one or more points. Access Roads are used for the operations, maintenance, repair, and replacement of equipment in addition to providing sufficient access for emergency response. Access Roads will only be as long and as wide as necessary to accommodate construction and operational activities, all of which is subject to final engineering plans and requirements.

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

Subsections (b) through (e) are not applicable to the Project. Subsections (b), (c) and (d) do not apply because the Project will not include wind turbines, use any fuel, or emit any stationary source air emissions. Regarding Subsection (e), the Project will use only an extremely small volume of water for occasional cleaning of the solar panels, which will be trucked to the Project or acquired from existing sources within the Project Area. The Project will not produce any wastewater that is treated and discharged either directly or indirectly to a receiving stream.

2. CONSTRUCTION AND RECLAMATION METHODS

.OPSB 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)]:

The Project will be constructed using methods customarily used for utility-scale solar facility construction in the United States. Preconstruction steps include (but not limited to) permitting, interconnection studies, EPC selection and contract award, equipment selection, detailed surveying, and final design. Construction will begin with site mobilization, followed by equipment delivery, equipment installation, electrical installation, and finally commissioning and testing.

The Project will establish, coordinate, and monitor project design, construction and installation activities including:

- Project design criteria

- Engineering, procurement and construction scope and agreement
- Scope of work
- Construction budget/staffing plans
- Construction schedule
- Construction QA/QC procedures as part of the EPC agreement
- Environmental compliance
- Construction permitting
- Construction
- Mechanical completion
- Commissioning and systems acceptance testing

Prior to site mobilization, a traffic management and control plan will be in place. The traffic control plan will be based on input provided by all stakeholders and will be agreed upon with local city/county, and/or state jurisdictional authorities. The project permitting specialist and the project manager will obtain the approved permits to support the scope of work that the contractor will be performing on the site. Installation of the perimeter gravel access roads, along with a Storm Water Pollution Prevention Plan (“SWPPP”) are critical to the successful construction at the site and will be among the first items that the contractor will install. The staging areas for equipment and material, general location for the field work trailers, and the perimeter fencing for security/site control will follow.

Site Mobilization

During site mobilization, construction trailers equipped with temporary power and communications will be brought on site. One or more parking areas will be identified, and laydown areas for equipment delivery and storage will be designated. Construction equipment such as bulldozers, pile drivers, backhoes, front-end loaders, graders, and others will be delivered to the site and prepared for construction activities. A SWPPP shall be completed concurrently with site mobilization.

Following site mobilization, access roads, fencing, and drainage systems (if and as needed) will be installed. Grading and site prep will start after the site entrances are complete and the survey of site grades is completed. Currently, no import or export of any fill material is expected at the site.

The next items in the Project’s implementation will be a final survey that will include identifying exact locations for post installation, identifying locations of DC and AC conduits and cables installation, and the location of the inverter/transformer pads:

- Complete final survey and identify tracker post locations and elevations
- Identify locations of combiner boxes
- Identify exact locations of inverter skids
- Identify meteorological station locations
- Identify AC / DC trenching, interior roads locations

The Project will maintain fixed locations for survey control points throughout the project and permanent survey monuments will be placed at conspicuous locations on the site.

Equipment Delivery

Solar panels, inverters, cabling, and other associated components will be delivered to the site via truck and staged at the laydown areas identified during site mobilization. As installation of components begins, activities will move in parallel to efficiently utilize the total construction time.

Equipment Installation

Tracker post installation shall follow the surveying of the points for the mechanical/structural construction of the plant. Logistical control of receiving the posts will utilize just in time delivery / scheduling and posts will be expected to be installed immediately after receipt to maintain production /schedule. Lasers and string lines (as needed) will be utilized to ensure accurate location for post driving and to ensure and maintain the strict quality control required for installation.

Tracker structural components' installation will occur after the posts are installed, and strict QA/QC will ensure the system is installed accurately.

Tracking structures having been assembled, the solar panels will be installed and prepared for electrical connection.

Electrical (DC side)

The plant's DC-side installation/connectivity will primarily include photovoltaic modules, DC cables/harnesses, DC jumpers, DC whips, DC combiner boxes and /or recombining boxes, DC feeders, and inverters.

- Photovoltaic modules will be mounted onto the torque tube and structural components of the trackers.
- DC wire harnesses will be installed next
- Either via trenching or cable tray installation, the strings of modules will then be connected to DC combiner boxes.
- The DC combiner boxes will then be connected via DC feeders to their respective inverters that will convert DC power into AC power.

Inverters, transformers, and switchgears will be located on concrete inverter pads or prefabricated metal skids that will integrate all low- to medium-voltage switchgear, protection equipment, inverters and AC transformers and switchgear.

Electrical (AC side)

AC cable placement will encompass four main components: (1) AC Feeder Installation; (2) SCADA and other control/communication systems; (3) Step up Transformers; and (4) Medium Voltage Collection Switchgear.

- AC feeders will be installed to provide connectivity from one inverter skid output to another inverter skid, or to a medium voltage AC collection system (MVCS)

- AC power needs for SCADA control collection housing, MET Station units, and any other ancillary power requirements for the plant operational needs (e.g. lighting, security, etc.). Fiber optics or wireless systems will be used to provide connectivity to the SCADA and all electrical plant performance monitoring, and meteorological measurements station
- Step-up transformers at the inverter skids will increase voltage from between 300 and 600 volts to 34.5 kV
- Medium voltage collection switchgear combining the incoming feeders from all power blocks and exporting net REGS output via an ACSR line to the point of common coupling at the substation.

Commissioning and Testing

Following the structural and electrical installation, the system will be tested according to industry standards to ensure reliable and safe operation of the facility. This process will include testing of some or all electrical components individually as well as coordinated testing with the utility or transmission operator.

[4906-4-03(B)(2)(a)]:

Not applicable.

[4906-4-03(B)(2)(b)]:

The Project requires no fuel and generates no waste during operations or on-going maintenance. Little water will be needed during construction, which may be obtained by trucking in water or on-site. During the operations and maintenance phase of the project extremely limited quantities of water will be needed for periodic module washing.

[4906-4-03(B)(2)(c)]:

The Project will require no processing facilities for fuel, waste, or water. The Project requires no fuel, generates no waste, and the minor amounts of plain clean water required for cleaning of dirt and debris from the modules will be absorbed harmlessly into the ground.

[4906-4-03(B)(2)(d)]:

The Project will adhere to a SWPPP that complies with all local, state, and federal permits and regulations applicable. Effluent and sewage lines will not be needed and do not apply to the Project, and little water will be needed during construction, which may be obtained by trucking in water or from on-site sources. During the operations and maintenance phase of the Project extremely limited quantities of water will be needed for periodic module washing.

[4906-4-03(B)(2)(e)]:

The point of interconnection from the project to the transmission grid is located on the project site. All electrical equipment required to interconnect the project to the grid will be contained on site, including, but not limited to, transformers, project substation, electric collection lines, and transmission and distribution lines. The Project does not require any gas and there will be no gas pipelines.

[4906-4-03(B)(2)(f)]:

Electric collection lines will be used to move the Project's energy output from the project to the project substation and finally onto the 345-kV transmission line that runs through the project site.

[4906-4-03(B)(2)(g)]:

A Project substation will be constructed on site in order to move the project's output to the electric grid via the 345-kV transmission line, located on the Project site.

[4906-4-03(B)(2)(h)]:

Permanent small meteorological stations will be installed at the Project Area to compare the real-time and historical performance of the project to weather conditions prevailing on site. The meteorological stations at solar power plants are an order of magnitude smaller than those at wind power sites and are installed on masts not taller than 10 feet and are usually not visible from any significant distance from the site.

[4906-4-03(B)(2)(i)]:

Access roads will be built strategically around the Project Area to maximize access to the site for trucks from nearby highways and minimize traffic on local roads. The exact location of the access roads has not been determined, but they will be built in compliance with state, county and local rules and regulations. The access roads will be wide enough to accommodate trucks and equipment needed during construction activities.

The Project does not require tall cranes, so no crane paths will be needed during any phase of the Project.

[4906-4-03(B)(2)(j)]:

The construction of the Project will require temporary laydown areas that will be located fully within the site. The final location of the construction laydown areas has not been determined as of the filing of this application, but all laydown areas constructed in compliance with all state, county, and local rules and regulations.

[4906-4-03(B)(2)(k)]:

A firm will be hired to provide security services for the Project Area during construction and on-going operations and maintenance through the life of the Project. A separate facility or building will not need to be constructed for security services.

[4906-4-03(B)(2)(l)]:

Not applicable.

3. NEED FOR NEW TRANSMISSION

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

"(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:

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

The Project will connect directly to the existing 345 kV Stuart-Clinton line via a newly constructed substation, and therefore will not create the need for new electric transmission lines. Due to the nature of the technology, no gas pipelines will be associated with the Project.

4. PROJECT MAP

OPSB 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:

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

Applicant seeks authorization to construct and operate the Project, at a maximum capacity of 300 MWac, within the Project Area. The Project Area is divided into two different use categories. First, the Project Substation and Utility Substation will be located on a parcel of land adjacent to and immediately west of the existing transmission line. The remaining portions of the Project Area are available to

construct and operate the Project, which will include all ancillary equipment necessary to operate the Project and includes, Inverters, DC Collector System, and interior roads.

A map with a satellite-generated aerial photograph background showing a maximum layout of the Project is attached as **Figure 2**. The map shows the locations of the Project Substation and the solar arrays. The map also shows the road names, property lines, and each of the major features of the Project in relation to the above two categories of land comprising the Project Area.

The solar arrays are depicted at their maximum aerial extent, but in one or more areas may not extend as far as indicated. Similarly, the depictions of the specific components within each solar arrays are illustrative only; the final locations will be determined in the final design of the Project.

Prior to the start of construction, Applicant will submit to the Board for its review final designs for the Project. These final designs will address all of the following:

- (1) the location of the Project Substation, and the termination of the AC Collector System within the Project Substation Parcel;
- (2) the location of AC Collector System within the AC Collector Corridors;
- (3) the perimeters of each solar array within the remainder of the Project Area;
- (4) the orientation (north-south or east-west) of the arrays within each solar array;
- (5) the location of the arrays, the DC Collector System, the Inverters, the Access Roads, and the beginning of the AC Collector System within each solar array;
- (6) the location of the Access Roads within the Project Area; and
- (7) the specific component manufacturers and equipment vendors.

The Application has been prepared to present the Project at its maximum aerial extent within the Project Area and, therefore, its broadest and most significant impact. Applicant has conducted the necessary studies for the entire Project Area to facilitate the use of any portion of it for the construction and operation of the Project.

Importantly, and although not reflected in the scale of the above map, most of the land surface within each solar array will be unoccupied by any equipment. Sufficient open space on each side of an array is necessary to preclude adjacent arrays from blocking sunlight to each other. Open space between and around arrays and Inverters also is needed to allow for the manual cleaning of panels, the performance of routine maintenance, vegetative maintenance, and the repair and replacement of major components.

C. PROJECT SCHEDULE

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

- *"(C) The applicant shall provide a detailed project schedule.*
 - *The applicant shall provide a proposed project schedule in Gantt chart format covering all major activities and milestones, including:*
 - *Acquisition of land and land rights.*
 - *Wildlife and environmental surveys/studies.*
 - *Receipt of grid interconnection studies and other critical path milestones for project construction.*
 - *Preparation of the application.*
 - *Submittal of the application for certificate.*
 - *Issuance of the certificate.*
 - *Preparation of the final design.*
 - *Construction of the facility.*
 - *Placement of the facility in service.*
 - *The applicant shall describe the proposed construction sequence.*
 - *The applicant shall describe the potential impact of critical delays on the*
 - *in-service date.*

Response:

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

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 proposed sequence of construction of the Project is delineated in Section [4906-4-03(B)(2)], along with a detailed discussion of the construction process.

[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 complete the Project. The cost for delays is described in Section [4906-4-06(D)]. Delays requiring the construction to be postponed in excess of a year may endanger the contract for electricity sales from the Project.

IV. PROJECT AREA SELECTION AND SITE DESIGN

A. SELECTION OF PROJECT AREA

OPSB 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's site selection process included dozens of potential sites across Appalachian Ohio evaluated across the criteria of solar resource availability, topography, proximity to potential interconnection, land cost, ecological, cultural, and hydrological impact, among others.

The area of interest included all counties in Appalachian Ohio. Appalachian Ohio is a region of 32 counties stretching from outside Cincinnati to the northeastern corner of the state. A map depicting the counties of Appalachian Ohio, which is also the Study Area Map, is included as **Figure 4**. Eight of the counties in Appalachian Ohio were considered economically at-risk in fiscal year 2017, including Highland County, and four additional counties in the region were considered economically distressed, including neighboring Adams and Pike Counties. This is a region where economic development can have a real impact, and for this reason, the Applicant focused exclusively on this region for site selection.

No formal scoring system with weighted values assigned to siting criteria was used. Rather, based on its experience developing hundreds of MWs of solar projects in the United States over the past decade, the Applicant exercised its judgment across a series of filters and studies to identify the best potential project. Dozens of potential sites in the area were identified by desktop

analysis based on proximity to potential interconnection, then subjected to evaluation based on solar resource availability, wetland data, flood zone data, ecological resource data, threatened and endangered species habitat data, and topography data, again using desktop analysis. This second filter eliminated the great majority of sites under consideration, as large swaths of Appalachian Ohio are not flat enough across a wide enough area to be considered a feasible site of this magnitude. Further, the solar resource improves dramatically in the southwest corner of the state.

After detailed study of multiple potential projects, the proposed site ultimately provided the best characteristics for solar power plant development. Those attractive characteristics include cost-effective interconnection, flat topography, and minimal environmental, cultural, ecological, and hydrological impact. Further, the landowners with which the Applicant has executed site control agreements have each been willing to agree to make his or her land available for the project. Each of the properties which constitute the proposed site represent a decision on the part of its landowner. A project of this size requires thousands of acres, in this case spread across multiple owners. Without the willingness of these owners to transact with the project, there is no Project.

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

A critical factor in site suitability is the availability of suitable transmission infrastructure to deliver power to load in a cost-effective manner. Attractive interconnection characteristics allow the project to deliver the highest value to Ohio power consumers at the lowest cost. The location of the 345kV Stuart-Clinton line on the proposed project area allows the project to interconnect without incurring the cost of building a generation tie line from the project site to the point of interconnection. Interconnection at a high-voltage 345kV line also allows for a large project to interconnect without rebuilding miles of existing transmission lines and minimizes losses across the transmission system. Overall, the interconnect configuration at this location is highly cost-effective.

Extensive study of the project area reiterates that the impact of the project on existing jurisdictional wetlands, native species, and environmental and cultural resources is minimal and mitigable. The following reports have been included in the application: The Economic Report can be found in **Exhibit C**, the Transportation Study found in **Exhibit D**, the Noise Evaluation Report found in **Exhibit E**, the Desktop Geotechnical Evaluation found in **Exhibit F**, the Ecological Reports in **Exhibit G**, the Land Use Report in **Exhibit H**, the Cultural Resources Report in **Exhibit I** and the Viewshed Analysis Report is found in **Exhibit J**.

The Applicant is not proposing any alternative locations for the Project. A map of the study area is included as **Figure 4**.

B. PROCESS OF DESIGNING PROJECT LAYOUT

OPSB 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 is provided in **Figure 5**. The constraints shown on the map include those listed above: setbacks from residences, property lines, utility corridors, and public rights-of-way. The map also shows additional constraints Applicant considered, such as streams and wetlands.

The following clarifications and exclusions apply to the setbacks shown:

- **Property Lines:** Setbacks are only to property lines at the exterior of the property. When two contiguous parcels are included in the project, there are no setbacks between the parcels even if under separate ownership. Property lines are based on GIS data. Setback locations will be adjusted following detailed site surveys. In consultation with Highland County, the established setbacks from property boundaries is 50 feet.
- **Public Road Rights-of-Way:** Setback locations are estimated based on roadway centerlines from the US Census Bureau 2017 TIGER database. Setbacks locations will be adjusted to actual ROW edges following detailed site surveys.
- **Streams and Ditches:** Setbacks are based on delineated features identified through the completion of a Wetlands and Jurisdictional Waters Delineation (appended in the Ecological Resources Analysis ("ERA") in **Exhibit G**) as well as the Delineation Resources Map included as **Figure 11**. Non-jurisdictional water features do not require a setback except for ease of construction. It should be noted that the Applicant has submitted a preliminary jurisdictional determination ("PJD") to the ("USACE") and if the boundaries of jurisdictional features are revised then the Project will be modified accordingly.

- Wetlands: Setbacks are based on delineated wetlands. Fencing will be routed so wetlands are not inside the fenced project area. As the project includes perimeter roads, this provides an effective setback of 30' from the edge of wetlands.
- Residences: No residences will be retained on the parcels used for the project. As such, the setback from residences is no less than the setback from property lines.
- Utility Rights-of-Way: At present, the only identified utility ROWs in the project are distribution lines along the roads and the 345kV transmission line crossing the site. Distribution lines are assumed to be located in the road ROW and are thus included in the road ROW setback. Setbacks from the 345kV transmission line are based on typical ROW widths (150') for those lines. Setbacks will be adjusted to actual ROW edges following detailed site surveys.

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

The Project Area was designed to allow for a solar generation facility that will produce electricity at the lowest cost using the land under contract and avoiding or accounting for a variety of site-specific constraints. The specific parcels included were those that reflect the most suitable characteristics for solar development: (1) minimal slopes; (2) previously cleared and disturbed; (3) dry; (4) adjacent, in close proximity, or contiguous to other parcels; and (3) avoidance or minimization of impacts to sensitive features (such as streams and wetlands). Also, the layout necessarily was significantly influenced by the decisions of individual property owners whether to participate.

Ground-mounted solar arrays are highly modular and largely standardized across multiple vendors. They are well-suited to accommodating a variety of spatial site constraints. It was not necessary, therefore, for Applicant to consider alternative site designs or equipment. The Project Area contains sufficient geographic area to construct the project using industry-standard equipment while conforming to the various constraints.

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

In compliance with Board requirements, Applicant held a public informational meeting regarding the Project on September 17, 2018.

The public information meeting was held at Whiteoak High School, which is approximately two miles southeast of the Project Area. Among other visual aids regarding the Project and general information about solar energy, Applicant displayed the required boundary map showing the proposed Project at a scale sufficient to allow affected property owners to identify their property in relation to it. Applicant also supplied comment cards with appropriate mailing addresses for comments to be sent after the meeting concluded. The Applicant gave a brief presentation of the Project, answered questions and educated the public in attendance in the manner to be able to submit questions and become involved in the process. Representatives of the Ohio Power Siting Board were also in attendance with materials to allow the public to be involved in the OPSB process.

The session provided the public with basic information about the project and enabled them to ask questions and raise any concerns. Three (3) written comments cards and various oral comments were received at the public meeting. No significant objections or concerns were raised during the meeting or via the comment cards. Follow-up comment letters were received from the public with comments raising concerns about the Project related to health concerns, potential increase in crime due to increase in construction workers, impacts to personal viewsheds, location of the Project area, property values and support for the Project. Each of these categories (health and safety, viewshed impacts, and economic impacts) have all been addressed in their respective subsections. The Project is not anticipated to result in an adverse impact for any of these resource categories.

V. ELECTRIC GRID INTERCONNECTION

A. CONNECTION OF PROJECT TO REGIONAL ELECTRIC GRID

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

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

Response:

[4906-4-05(A)]

The Project will be connected to the regional electric grid through a new connection to the Dayton Power & Light 345 kV via a line tap. The interconnection will deliver power into the regional transmission system managed by PJM which allows power to be delivered regionally. The Project Area lies substantially within the service territory of American Electric Power.

B. INFORMATION ON INTERCONNECTION OF PROJECT

OPSB 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)]

The Applicant applied for interconnection to the PJM queue on September 26, 2016 and was assigned a queue position of AC1-085. The application requested interconnection for a maximum output of 400 MW AC and has identified 152 MW of the Project as a Capacity resource. The 152 MW capacity allocation may increase pending discussion with the regional transmission operator.

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

PJM issued the Generation Interconnection Feasibility Study Report Queue Position AC1-085 (Revised) for the Project ("Feasibility Study Report") in February 2017 PJM issued the Generation Interconnection System Impact Study Report for PJM Generation Interconnection Request Queue Position AC1-085 ("System Impact Report") for the Project in November 2017 and revised the study in September 2018. Copies of the Feasibility Study Report and the System Impact Study Report are attached as **Exhibit A** and **Exhibit B**, respectively. The PJM website locations for these studies are as follows:

https://www.pjm.com/pub/planning/project-queues/feas_docs/ac1085_fea.pdf

https://www.pjm.com/pub/planning/project-queues/impact_studies/ac1085_imp.pdf

The Applicant entered into a Facility Study Agreement in November 2017, and the results of that study are expected to be issued by PJM in October 2018 concurrently with the Interconnection Services Agreement and Interconnection Services Construction Agreement. Applicant plans to execute the Interconnection Services/Construction Services Agreement in November 2018.

VI. ECONOMIC IMPACT AND PUBLIC INTERACTION

A. CURRENT AND PROPOSED OWNERSHIP STATUS OF PROJECT

OPSB 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:

[4906-4-06(A)]

The Applicant owns all the assets that comprise the Project. Applicant holds all the development rights, including options-to-purchase rights, for 100% of the land in the Project Area. Applicant also has all rights needed for any project easements and rights of way that might be necessary. Prior to construction, Applicant will exercise the right to purchase the land for exclusive ownership, or will assign the rights to purchase the land to a partner entity in return for an acceptable lease agreement which gives Applicant the right to exclusively occupy the land for at least 35 years with extension options. Other assets comprising the Project include consulting and bank agreements, engineering reports, and other analysis. There are currently no physical assets on the property; all physical equipment will be acquired in the future. The applicant owns the Project and may raise capital under a project finance structure to finance the construction and operation of the project.

B. CAPITAL AND INTANGIBLE COSTS

OPSB 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 total estimated capital and intangible costs of the Project is expected to range between approximately \$[REDACTED] to \$[REDACTED], inclusive of intangible costs and dependent on the final module, racking, and inverter suppliers and modules selected. The assumed cost of the Project is in the middle of the estimated range.

The Applicant is not proposing alternatives to the Project Area. Therefore, no cost comparisons between alternatives is included.

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

Applicant's previous facilities have cost between \$■■■■/kW and \$■■■■/kW based on the timing of when the facilities were built, site conditions, and other project-specific needs. This Project will fall within that range as well.

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

Capital costs for the Project will include development costs, engineering and construction design/planning, legal costs, financing costs, interconnection costs, equipment costs, and construction related costs. The costs will be incurred within two (2) years of commencement 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

OPSB 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 two (2) years of commercial operation, the annual operations and maintenance cost of the Project are expected to be approximately \$[REDACTED]. Solar facility operation and maintenance are procedural and well-defined. Additional cost optimizations may be made in the future.

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

Operation and maintenance costs for solar facilities have declined over the past decade. The Project is expected to be one of the most efficient solar plants in existence.

The annual operations and maintenance costs for Applicant's other solar facilities have ranged from approximately \$[REDACTED], depending on location, site conditions, and type of project. The larger projects on optimal site condition tend to be at the lower end of this range. These estimated costs exclude property taxes and land cost payments. The operations and maintenance costs are similar to costs expected at other facilities under development by Applicant in other states in the US.

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

The annual operation and maintenance costs 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 operation and maintenance costs for the Project is between \$[REDACTED]
[REDACTED]

D. COST FOR A DELAY

OPSB 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:

[4906-4-06(D)]

The cost of month-to-month delays beyond the anticipated in-service date is approximately \$[REDACTED] per month.

E. ECONOMIC IMPACT OF PROJECT

OPSB 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:

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

Applicant engaged BBC Research and Consulting ("BBC") to evaluate the anticipated economic impact of the construction and operation of the Project on Highland County, Ohio. BBC Research & Consulting is one of the largest and most respected privately-held economic research and consulting firms in the Rocky Mountain region. BBC was originally part of a research division at the University of Denver specializing in local economic research. Since beginning operations in 1970, BBC has provided market, policy, economic, financial, and statistical research to public and private sector clients across the country. A complete copy of BBC's Economic Impact Report dated October 2018 for the Project ("Economic Impact Report") is attached as **Exhibit C**.

As described in the Economic Impact Report, the Project is expected to generate substantial new employment. The Project is estimated to create approximately 268 new construction-related jobs, across the 18-month construction duration. The construction of the Project also is estimated to result in the creation of approximately 214 secondary effect jobs from the expenditure of new and increased wages in the local economy. BBC estimates that the total payroll from these construction-related jobs will be approximately \$56 million.

BBC also estimated that the Project will result in the creation of approximately 5 new operation-related jobs, with an additional 10 secondary jobs. These new positions would remain in existence over the 35-year life of the Project. BBC estimates that the total annual payroll from these operation-related jobs will be approximately \$2.5 million.

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

The Economic Impact Report (**Exhibit C**) also includes an examination of the probable increases in county and township tax revenue resulting from the Project. The Applicant expects to be successful in designating the Project as a "qualified energy project" ("QEP") and securing a related agreement for

payment in lieu of taxes ("PILOT") with Highland County, pursuant to Section 5727.75 of the Ohio Revised Code and under procedures developed by the Ohio Development Services Agency.

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

The Project is expected to have several positive economic impacts on commercial activities in the local area. The Economic Impact Report (**Exhibit C**) estimates that, during the construction phase, the Project is expected to generate new economic output of approximately \$73,000,000. Of this total, an estimated \$23,000,000 is expected to derive from secondary effect output, which in part reflects spending in at local commercial establishments of substantial construction-related wages. BBC estimates the cumulative total output from the Project to create approximately \$985 Million over the 35-year project life, and 2,998 job-years of employment.

F. PUBLIC RESPONSIBILITY

1. PUBLIC INTERACTION

OPSB 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:

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

Applicant held a public informational meeting on September 17, 2018 to introduce the Project to the community in a formal manner. Announcement of the meeting was posted in local newspapers, and approximately 85 attendees registered by signing in. One purpose of this meeting was to satisfy the requirements of the Ohio Power Siting Board process. In this meeting, the Project team displayed a map showing the location of the Project as well as the location of each parcel of property either (1) within the Project Area; or (2) contiguous to the Project Area. This map was of sufficient scale to enable affected property owners and tenants to identify their property in relation to the Project. Applicant solicited written comments on the Project at the public information meeting, provided the public with information as to how to submit comments to the Applicant subsequent to the meeting.

Applicant's interaction with the public regarding the siting of the Project, which continues, has also included one-on-one outreach to individual property owners in the vicinity of the Project Area and informal consultations with local officials. As part of determining the best location for the Project, Applicant communicated with numerous property owners within the area. Ultimately, a total of six families, each owning property of varying sizes of acreage chose to participate in the Project. Applicant also conferred with a variety of local officials as part of its due diligence in making the original siting

decision. Consultations with local officials have included the County Commissioners, both Boards of Trustees in Whiteoak and Clay Townships.

Applicant will require that the general contractor retained to construct the Project identify a specific person whose responsibilities include addressing any complaints, concerns or comments from the public during construction. Applicant also will require that information be posted to provide the public with contact information to submit complaints, concerns or comments regarding construction and that a prompt response be made to any such complaint, concern or comment (for which a response either is requested or clearly implied). The general contractor and Applicant will take reasonable efforts to expeditiously resolve any complaints or concerns.

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

- (1) affected property owners and tenants who were provided notice of the public information meeting;
- (2) attendees of the public information meeting who requested updates regarding the Project and provided a mailing address for that purpose; and
- (3) any other person who requests updates regarding the Project and provides a mailing address for that purpose.

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

With respect to operations, Applicant will require that the company retained to operate the Project post its contact information at or near the entrance of each solar array and the Project Substation. Applicant also will require that information be posted to provide the public with contact information to submit complaints, concerns or comments regarding operation and that a prompt response be made to any such complaint, concern or comment (for which a response either is requested or clearly implied). The operator and Applicant will take reasonable efforts to expeditiously resolve any complaints or concerns

2. INSURANCE

OPSB 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:

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

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, throughout this period, umbrella insurance coverage against claims and liability for personal injury, death and property damage arising from the construction, operation or decommissioning of the Project in the amounts of \$10 Million per occurrence and \$10 Million in the aggregate.

Applicant will work with the local authorities to develop a common understanding for the use and protection of the roads. This documented understanding will include the Applicant and its engineering, procurement, and construction contractor in conjunction with the county and township authorities. A pre vs. post road survey may be conducted for the purposes of determining any contribution of construction-related activities to any potential damage to the roads. An agreement can then be put in place to ensure that any attributable damages are properly repaired to bring the roads back to a condition at least as good as the pre-survey conditions.

3. TRANSPORTATION

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

"(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.

(A) 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:

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

The Applicant retained Fisher Associates P.E., L.S., L.A., D.P.C. ("Fisher") to evaluate the anticipated impact of the Project on roads and bridges and any needed improvements prior to construction or likely repairs needed following construction. Fisher also was retained to advise the Applicant regarding any required transportation-related permits and local traffic coordination. A complete copy of Fisher's

Transportation Effect and Route Evaluation Study, dated October 2018 ("Transportation Report"), is attached as **Exhibit D**.

Based on Fisher's report, the Project is expected to have only very modest impacts on roads, bridges, and traffic in the local community and adequate measures will be taken to improve or repair roads as necessary to their original condition. Some transportation permits and local authority coordination may be required for various activities. Permits may include an oversize/overweight permit for the transportation of substation transformer equipment; road use agreements with the county regarding any culvert modifications; and coordination with local highway departments regarding traffic controls. Transportation permits will be the responsibility of the EPC contractor and the list of permits required will be finalized prior to the commencement of construction. All required permits will be obtained, as applicable, during the appropriate stages of Project construction and completion. No significant impacts to roads or transportation are anticipated because of the Project and no major permits or approvals are anticipated. The Fisher report should be read in its entirety to provide a detailed analysis of the information required in this subsection.

4. DECOMMISSIONING

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

"(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:

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

The Project will have only a slight impact on the land, and the components requiring removal at the end of the Project's useful life, or in the unexpected case that Project is abandoned, will be relatively easy to decommission. The racking will be affixed to the land with simple posts that are driven or rotated into the ground, probably to a depth of no more than eight (8) feet. Racking will not have concrete foundations. The Inverters and pyranometers will be installed on pre-fabricated foundations, which can be lifted out of place, versus poured foundations. Although the equipment for the Project Substation may be installed on poured concrete, it will not cover a large area. Access Roads will be constructed of aggregate material or covered in grass--not paved--and roads built for the Project and those existing within the Project use following decommissioning of the Project. The DC Collector System and the buried portions of the AC Collector System will be buried more than three (3) feet below grade and, therefore, need not be removed to return farm fields to cultivation.

It is not expected that the decommissioning of the Project will entail the need to conduct any soil or groundwater remediation. The operation of the Project will not produce any hazardous waste or wastewater. The only materials that may be left on the Project Area are roads desired by the property

owner, lines buried at least three (3) feet below grade, and possibly piles (if any) from racking broken off more than three (3) feet below grade. Solar panels contain only very small, often only trace, amounts of hazardous substances, all of which are safely encased in glass. Even if damaged by breakage or fire, solar panels are exceedingly unlikely to cause any contamination necessitating remediation of soil or water.

Applicant will develop a comprehensive plan that will outline the responsible parties, schedules, and projected costs for decommissioning the Project and restoring the Project Area to substantially its pre-construction condition ("Decommissioning Plan"). The Decommissioning Plan will provide for the safe removal and sale, re-deployment, recycling or proper disposal of all components of the Project, including components containing rare or valuable materials. The duration of decommissioning activities is expected to be from six (6) and nine (9) months. The Decommissioning Plan will be provided to the Board's Staff once it is finalized.

The Decommissioning Plan will prioritize reuse and recycling over land disposal as waste. Most of the materials used in current generating facilities are reusable or recyclable. Given recent and expected trends, it is likely that the percentage of components that will be reusable or recyclable in the future will increase. Although little recycling has been needed to date due to the relative youth of the commercial PV industry, an effort was launched in 2016 by the Solar Energy Industry Association to develop a national recycling program for PV panels (SEIA, 2016). The ultimate goal of the program is to make the entire U.S. solar industry landfill-free.

Even if PV panels used for the Project are not fully recyclable in 30-40 years, it is unlikely that they will constitute waste that is classified as hazardous or dangerous. Many suppliers of the two most common types of PV panels, both crystalline or thin film, already have demonstrated that their products pass the "Toxic Leaching Characteristic Procedure" promulgated by the U.S. Environmental Protection Agency pursuant to the Resource Conservation and Recovery Act. As a result, PV panels generally are not considered "hazardous waste" and may be disposed of as routine waste in municipal landfills, though it would be the Applicant's priority to recycle or repurpose Project components to the extent feasible.

The Decommissioning Plan will require that the Project Area 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.

Components of the Applicant's Decommissioning Plan will include the preliminary net costs to restoring the Project site to its current use unless another use is identified at the end of the Project's useful life. This determination will be agreed upon between the Applicant and the officials in Highland County. The total cost of decommissioning the Project would be calculated, with a built in percentage to cover unanticipated contingencies as the difference between the full cost to remove the Project components without regard to salvage and the cost to remove the Project factoring in salvage values. Applicant proposes to initiate this calculation prior to the start of construction and revisit the evaluation at Year 10 of the Project and every five years thereafter. If during the Project life, the net value of decommissioning exceeds its salvage value, the Applicant will post an acceptable and marketable form

of security acceptable to the County. Further, the Decommissioning Plan will include a marketable and customary set of defined terms as to the length of time, the Applicant may have to remove Project components.

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

A. PURPOSES OF RULE

OPSB 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:

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

This section provides environmental data regarding air, water, solid waste, and aviation with regard to current site conditions, potential impacts of the proposed solar farm, and any proposed mitigation measures. Due to the minimal environmental impact of utility-scale solar farms compared with other major energy generating facilities, several requirements may not apply and are noted as such in the following sections.

B. AIR QUALITY

1. PRECONSTRUCTION AIR QUALITY AND PERMITS

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

- *"(1) The applicant shall submit information regarding preconstruction air quality and permits.
 - *Provide available information concerning the ambient air quality of the proposed project area and any proposed alternative project area(s).*
 - *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.**

- *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.*
- *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).*
- *Except for wind farms, provide a map of at least 1:100,000 scale containing:*
- *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.*
- *The location of major present and anticipated air pollution point sources.*
- *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)]

The Project is located in the southwest corner of Highland County, Ohio. Adjacent counties include Brown, Adams, Pike, Ross, Clinton, and Fayette. The ambient air quality in Highland County, as well as all adjacent counties, is currently in attainment with U.S. Environmental Protection Agency's ("US EPA's") National Ambient Air Quality Standards (NAAQS). None of these counties are considered US EPA nonattainment areas for criteria air pollutants.

The Project is located approximately 25 miles east of the Cincinnati metropolitan area, which is situated in Clermont County. The air quality in the Cincinnati area, including Clermont County, is currently in nonattainment with US EPA NAAQS for 8-hour ozone. According to US EPA, "ground level or 'bad' ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOCs) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC. Breathing ozone can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases, such as asthma. Ground level ozone can also have harmful effects on sensitive vegetation and ecosystems."

Electrical generation facilities using coal or natural gas result in increased emissions of NOx and VOCs, and contribute to increased ozone levels. Solar energy provides a cleaner alternative to these facilities, potentially resulting in a reduction of ozone sources for the region. The Project is not anticipated to contribute to any ozone nonattainment. The use of solar energy in lieu of other energy generating facility types in the region may even result in a reduction of ozone sources contributing to the nonattainment issue in the Cincinnati metropolitan area.

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

Subsections (b) through (f) do not apply to the Project. Solar panels generate electricity without releasing pollutants into the atmosphere. No generators, boilers, or other equipment requiring an air permit are anticipated for the Project. There would be no long-term air quality effects associated with routine operations of the solar farm. Therefore, no air control equipment is required and federal and/or Ohio new source performance standards (NSPS) do not apply.

2. AIR EMISSIONS AND DUST DURING CONSTRUCTION

OPSB 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:

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

Construction activities associated with the proposed project would generate particulate matter or dust from soil disturbances. Any dust would be widely dispersed across the Project Area and short-term in nature, and would be minimized by dust suppression (watering). Fugitive emissions from construction will be reduced or mitigated through the use of Best Management Practices (BMPs). BMPs for dust control include spraying water on exposed surfaces to minimize dust, limiting the area of uncovered soil to the minimum needed for each activity, selective siting of staging areas, using a soil stabilizer (chemical dust suppressor) where necessary, sweeping and mulching, using a temporary gravel cover or tarps, and covering trucks transporting soil, sand, or other loose material off-site. A construction contractor will be utilized who understands and implements these BMPs for dust suppression.

3. AIR QUALITY FOR OPERATION

OPSB 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:

[4906-4-07(B)(3)]

Operation of the Project will not be a detriment to maintenance of the NAAQS, as the operations will not have emissions associated with traditional energy generation. Operation of the Project will reduce the need to operate such traditional energy generating facilities that have a negative impact on air quality. The operations of the Project may have a beneficial impact on ambient air quality and, as such, subsections (a) through (c) do not apply to the Project.

C. WATER QUALITY

1. PRECONSTRUCTION WATER QUALITY AND PERMITS

OPSB 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)]

Prior to the start of construction, if required, the Applicant will obtain the following permits:

- The Ohio National Pollutant Discharge Elimination System (NPDES) construction storm water general permit, Ohio EPA Permit No OHC000004.
- In accordance with the NPDES Permit, the Project will seek approval by Ohio EPA of a SWPPP for erosion control and storm-water management at the Project Area.

Due to the avoidance of any areas potentially classified as wetlands or jurisdictional waters with 10-foot buffers in place, the need for permitting with the U.S. Army Corps of Engineers ("USACE") under Section 404 of the federal Clean Water Act and related water quality certification from the Ohio Environmental Protection Agency ("Ohio EPA") pursuant to Section 401 of the federal Clean Water Act will not be required for this Project.

The Project will not create any identifiable, water-related discharges of the kind typically associated with traditional electric generation and industrial facilities. Accordingly, it will include no water pollution control equipment or wastewater treatment processes.

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

Subsection (b) through (e) are inapplicable. The Project will not generate any wastewater and there will be no impacts to water quality resulting from the construction and operation of the facility. The Project does not require any traditional wastewater discharge permits and will not include any water pollution control equipment or treatment processes. There will be no water monitoring or gauging stations, receiving streams or associated sampling data related to the Project.

2. WATER QUALITY DURING CONSTRUCTION

OPSB 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)]

In accordance with the NDPES Permit, a SWPPP will be developed for the construction of the facility and all construction activity shall conform to the plan. Water, eroded materials and other potential pollutants shall be prevented from entering the streams or watercourses as described in the SWPPP. Construction activities shall be performed by utilizing methods that prevent entrance or accidental spillage of solid matter, contaminants debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes and underground water sources. Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses shall not be performed without prior approval of appropriate state agencies.

Due to the level terrain of the area, very little grading will be required and racking will generally conform to existing topography. Construction will require minimal tree clearing because the majority of the Project Area consists predominantly of agricultural fields. Construction will include minor excavations for buried electrical and communication lines and the development of roads.

As a result, subsections (a) through (e) do not apply to the Project. The construction of the Project will not result in any aquatic discharges and does not include any shoreline facilities. Monitoring and gauging stations are not required. There are no anticipated changes in flow patterns and erosion. No effluents will be discharged to water bodies and receiving streams.

3. WATER QUALITY DURING OPERATION

OPSB 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 waterborne 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)-(d)]

Subsection (a) through (d) are not applicable to the Project because its operation will not utilize a significant quantity of water and will not generate wastewater. The Project will not include any water quality monitoring stations, water pollution control equipment and treatment processes, or a NPDES permit for any point source discharge. The Project will not generate any water or water-borne waste, including sewage, blowdown, chemical and additive processing, waste water processing, run-off and leachates from fuel or solid wastes, or oil-water separators and other surfaces.

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

The operation of the Project will require very limited quantities of water for the occasional cleaning of solar panels. No on-site facility operations requiring water sources, such as office space, are planned for the facility. No appreciable amounts of water will be utilized in Project operations.

D. SOLID WASTE

1. SOLID WASTE IN PROJECT AREA

OPSB 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:

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

The Project Area is rural in nature and consists primarily of agricultural crop fields. It has a relatively low population density and only a modest number of structures. The site predominantly consists of

agricultural fields that will be cleared of crops at the time of site development. The applicant does not plan to demolish any structures for the development of the Project at this time and the need for solid waste removal prior to construction will be minimal.

2. CONSTRUCTION

OPSB 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:

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

Facility construction will generate some solid nonhazardous waste, primarily plastic, wood, cardboard and metal packing/packaging materials, construction scrap, and general refuse. The quantity of waste generated in construction is estimated at approximately 93,000 cubic yards. Construction waste will be collected and disposed of in dumpsters. A private contractor will empty the dumpsters on an as needed basis and dispose of the refuse at a licensed solid waste disposal facility. The amount of construction waste will be minimized and recycling will be utilized, where possible. Construction of the Project will not generate any hazardous wastes.

3. OPERATION

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

"(3) The applicant shall provide information regarding solid waste during operation of the facility. Provide an estimate of the amount, nature, and composition of solid wastes generated during the operation of the proposed facility.

(A) Describe proposed methods for storage, treatment, transport, and disposal of these wastes. "

Response:

[4906-4-07(D)(3)]

Project operations will not result in generation of solid waste. The Project's operations will not require acquisition of waste generation, storage, treatment, transportation, and/or disposal licenses or permits. If minimal waste is generated for disposal, it would be accumulated in small amounts in appropriate trash receptacles and disposed of in a sanitary landfill.

4. PERMITS

OPSB 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:

[4906-4-07(D)(4)]

This requirement does not apply to the Project because it will not generate any waste that requires a permit to generate, store, treat, transport or dispose.

E. AVIATION

OPSB 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)]

A review for public use airports, helicopter pads, or landing strips within five (5) miles of the Project Area was conducted. One small airport/landing strip was identified approximately 4.28 miles southwest of the Project Area (OH96 Neals Airport, Mount Orab, Ohio). No other public use airports, helicopter pads, or landing strips were identified within 5 miles of the site. There are no private use airports, helicopter pads, or landing strips within or adjacent to the Project Area. A figure depicting the 5-mile radius and identified airport (Aviation Map) is provided as **Figure 6**.

Hecate Energy has made reasonable attempts to consult with Mr. Wendell Neal, owner of the private Neals airport, regarding the Project and any potential impacts that may occur regarding to airport operations. Both the airport and private owner's phone number have been disconnected. However, a letter has been sent by overnighted mail, with signature requested, to Mr. Neal advising of the Project. As of the filing of this Application, the Applicant has not received a response. It should be noted that the airport runway is oriented east-west and the Project is located 4.3 miles northeast of the airport. Based on distance, flight path orientation, and FAA screening (discussed in the following subsection), the Project is not anticipated to have any impact on flight operations at Neals Airport.

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

The Federal Aviation Administration ("FAA") provides a process for aeronautical studies of obstructions to air navigation under Title 14 of the Code of Federal Regulations Part 77- Safe, Efficient User, and Preservation of the Navigable airspace. According to CFR Title 14 Part 77.9, if requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA:

- (a) Any construction or alteration that is more than 200 ft. above ground level (AGL) at its site.
- (b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
 - (1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.

The FAA has developed an online tool (the FAA Notice Criteria Tool) to determine whether a proposed structure meets the above criteria requiring FAA Filing. The Applicant has entered several data points from the proposed Project solar panel array into the tool (8' AGL for data points located north, south, east, and west) as well as the location of the proposed substation (75' AGL on the south-central portion of the Project). Based on the input of project parameters into the Notice Criteria Tool, FAA Filing was determined not to be required. The Notice Criteria Tool results are provided as **Figure 7**. Based on the above analysis, the Project does not pose a hazard to air navigation requiring filing with the FAA.

Additional FAA concerns regarding solar facilities include the potential effect of "reflectivity" (also known as "glint" and/or "glare") to ensure that it does not have the potential to cause brief losses of vision for pilots during the final runway approach or air traffic controllers. Based on the distance of the Project with regard to the nearest airport (Neals Airport, 4.28 miles southwest), the Project will not be visible, and will present no risk of glare, to pilots making final approaches. Based on the above, the Project does not pose a hazard to air navigation.

VIII. HEALTH AND SAFETY, LAND USE AND ECOLOGICAL INFORMATION

A. HEALTH AND SAFETY

1. SAFETY AND RELIABILITY OF EQUIPMENT

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

"(1) 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 any 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 Project will be fully enclosed and encircled by an at least 6' high, chain link perimeter fence (or similar as permitted/allowed by the local jurisdiction). Ingress and egress from the Project Area will be controlled by locked gates with only qualified and approved personnel having access to combinations or keys for the gate locks. In addition to the full site perimeter fencing, the Project Area will be posted with highly visible signage including messages of "No Trespassing" and "High Voltage Equipment" to further notify the public that this is an electrical generation facility and that the site should not be accessed. Signage will be mounted at approximate eye level for easy identification by the public.

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

This Project will be constructed with only bankable, reliable and fully certified equipment including solar PV modules, inverters, racking, wiring, transformers and electrical switchgear. All equipment shall be UL-listed as required and shall adhere to all local and national building and electrical codes. Warranty periods for the major project components below, although in many cases these warranties can be extended through an additional fee to the manufacturer.

| Product Supplied | Warranty |
|---|---|
| Multi-crystalline PV modules | 10-yr Product and 25-yr Performance |
| Utility-scale inverter solutions | 5 years (can be extended to 10 years) |
| Single-Axis Trackers | 10 years |
| Transformers | 12 months after energizing or 18 months after shipping from the factory |

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

This Project will be constructed with only bankable, reliable and fully certified equipment including solar PV modules, inverters, racking, wiring, transformers and electrical switchgear. Safety manuals or similar documentation from the manufacturers will be provided once the final equipment vendors are selected. All equipment shall be UL-listed as required and shall adhere to all local and national building and electrical codes. All equipment associated with the solar PV generation project will be enclosed within the project boundary fence as to be fully inaccessible (well beyond any required setbacks) by the general public. All required setbacks per the local jurisdictional permitting process and local and national building and electrical codes will be observed.

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

The Project will be fully enclosed and encircled by an at least 6' high, chain link perimeter fence (or similar as permitted/allowed by the local jurisdiction). Ingress and egress from the solar project area will be controlled by locked gates with only qualified and approved personnel having access to combinations or keys for the gate locks. In addition to the full site perimeter fencing, the project perimeter will be posted with highly visible signage including messages of "No Trespassing" and "High Voltage Equipment" to further notify the public that this is an electrical generation facility and that the site should not be accessed. Signage will be mounted at approximate eye level for easy identification by the public.

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

The Applicant will work proactively with the Emergency Management Agency in Highland County to develop an agreed-upon set of procedures and protocols for managing risk of fire and for responding in the event of a fire or other emergency at the facility. These procedures and protocols shall be in the form of a Fire & Emergency Services Manual that shall be completed by the Applicant and accepted by the Emergency Management Agency or Staff prior to issuance of a certificate of occupancy, if required, to begin producing electric power. The Manual will specify the roles of responsible parties in the event of a fire or other emergency at the site. The plan will include at a minimum:

- Clear statements on the responsibility for fire response decision making.
- Related emergency communications direction as well as emergency phone numbers and key points of contact.
- Special training for fire and emergency services personnel and a tour of the site to ensure upfront awareness of the site and equipment as well as points of ingress/egress.
- Designated shutoff procedure and location for equipment shutoff.
- Maps outlining location of key equipment including:
 - Location of lock box (or if desired the Director of Fire & Emergency Services will be provided with a key to the facility in advance)
 - Inverters
 - Transformers
 - System/electrical cut-off switches
 - Points of ingress/egress at the facility
 - Cleared access around the site

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

Prior to the commencement of construction, both representatives of the Applicant and of the EPC team will set up meetings in advance to coordinate with affected local officials and emergency personnel. This coordination would entail close communication with the Highland County Engineer, representatives of both Clay and Whiteoak Township and the Emergency Management Agency, Highland County Office. Additional measures required by the County would be followed as necessary. A manual will be developed in coordination with all County/Township stakeholders to identify potential hazards (including those that might affect emergency responders), as well as proper signage denoting high voltage safety warnings, coordination of lockboxes for access if necessary, and 24/7 contact information, as might be required.

2. FAILURE OF AIR POLLUTION CONTROL EQUIPMENT

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

"(2) 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:

[4906-4-08(A)(2)]

This requirement does not apply to the Project because it will not include any stationary sources of air emissions and, therefore, no air pollution control equipment.

3. NOISE FROM CONSTRUCTION AND OPERATION

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

"(3) 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 non-participating 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 proposed facility, and the operational noise level at each habitable residence, school, church, and other noise-sensitive receptors, under both day and nighttime operations.*
- (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:

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

Terracon Consultants, Inc. (Terracon) was retained by the Applicant to investigate the potential noise impacts from the construction and operation of the proposed Highland solar farm in accordance to Ohio Power Siting Board Requirement 4906-4-08(A)(3).

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

Terracon's noise assessment evaluates noise levels expected during construction. Blasting activities would not be required for the Project. Construction considerations did include earth moving equipment, driving of piles, erection of structures, traffic, and installation of equipment that would be typical of the installation of solar farm equipment. Based on the noise assessment results, construction noise associated with the Project is anticipated to be minimal.

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

Terracon's noise assessment evaluates noise levels expected during operation, to include processing equipment and associated road traffic. Based on the noise assessment results, operational noise associated with the Project is anticipated to be minimal.

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

The City of Buford, which includes two churches and a recreational area, is located approximately one mile from the Project; Based on the findings of Terracon's noise assessment, noise impacts are not anticipated to extend beyond immediately adjacent properties. No noise impacts would be anticipated to the City of Buford and associated sensitive receptors.

Based on the findings of the noise assessment, sound levels will be minimal and consistent with those currently occurring in the area for agricultural equipment. Additionally, construction is anticipated to occur during normal working hours. As such, the Project is not anticipated to require any mitigation efforts.

Terracon's noise assessment provides a comparison of Project noise with preconstruction background noise and has determined that noise associated with the Project is anticipated to be relatively consistent with noise levels typical to the area characterized by agricultural crop farming operations. Terracon's Noise Evaluation is included in **Exhibit E**.

4. WATER IMPACTS

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

"(4) 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-d)]

Subsections (a) through (d) were not found to be applicable due to the following:

- the Project will not have any impact on public or private water supplies;
- the Project will not utilize any pollution control equipment;
- the Project will not impact water wells, aquifers, or drinking water source protection areas;

and as such the Project would not need to comply with any water source protection plans.

Response:

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

The Applicant reviewed the following Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels inclusive of the site: 39071C0350E, dated 3/3/2011 and 39071C0375E, dated 3/3/2011. Based on the FEMA FIRM data, the entirety of the site lies in Zone X (unshaded), areas determined to be outside the 0.2% annual chance floodplain with the exception of the far northwest corner. No Project development is proposed to occur in the far northwest corner of the site, located within the 100 year floodplain. Based on the Project's location outside of any 100-year or 500-year floodplains, the probability for flooding is low. The FEMA map is included as **Figure 8**.

5. GEOLOGIC FEATURES, TOPOGRAPHY AND WELLS

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

"(5) 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:

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

Figure 9 depicts the geology of the site along with topographic contours. Additionally, a desktop geotechnical evaluation was completed for the Applicant by Terracon (**Exhibit F**). Based on Terracon's desktop geographical evaluation, the subsurface conditions at the project site consist of poorly drained soils formed in loess and Illinon-age glacial till averaging 30 feet thick, over Lower Silurian (Dayton Limestone, Noland Formation, and Brassfield Undivided) and Upper Ordovician (Drakes Formation and Waynesville Formation) shale and limestone bedrock.

Geotechnical and geologic considerations such as flood inundation, shallow groundwater, erosion, landslides, debris flows, rock fall, shrink swell soils, collapse-prone soils, sinkholes, earthquake shaking, fault rupture, liquefaction, seiches, can be of major concern when evaluating a site. Based on review of geologic maps and the geographical location of the property, Terracon reported that geologic hazards such as those listed pose little risk to the site. Additionally, Terracon reviewed/considered desktop information with regards to seismic hazards, restrictive layers, depth to groundwater, shrink-swell and collapsible soils, frost heave potential, soil corrosivity, and soil type at the project site. Based on the review, the following factors were identified that may affect the foundation design for the development of the site as a solar plant:

- Presence of soils corrosive to unprotected concrete and steel
- Areas of shallow groundwater

Based on the information reviewed, Terracon reported the site is considered to be suitable for development of photovoltaic solar electric arrays provided the above factors are accounted for in the design and cost estimating for the proposed project.

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

The Applicant has scheduled a field geotechnical evaluation of the site, to include soil test borings, and evaluate subsurface soils properties, static water level, rock quality, percent recovery, and depth and description of bedrock. Approximately 25 borings are planned to develop further characterization of the subsurface conditions at the site, The installation of borings are planned during the fourth quarter of 2018, after the crops have been harvested and the fields are clear for access. Within 3 weeks of boring advancement, test boring logs will be submitted to the board to include information regarding subsurface soil properties, static water level, rock quality description, percent recovery, and depth and

description of bedrock contact. The geotechnical scope of work will include proper closure procedures for the soil test borings (backfill of the soil test borings and tamping).

6. HIGH WINDS

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

"(6) 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:

[4906-4-08(A)(6)]

This requirement does not apply to the Project because its components are not susceptible to damage from high winds. All project equipment will be installed, given the site-specific subsurface soil conditions, at sufficient depths to preclude any adverse influence from wind. Single-axis trackers are designed to tilt into a stow position in high winds to avoid a sail effect on the panels. When wind speeds exceed tolerability, the tracker automatically adjusts to a horizontal position that allows airflow over and under the panels.

7. BLADE SHEAR

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

"(7) The applicant shall evaluate and describe the potential impact from blade shear at the nearest property boundary and public road, including its plans to minimize potential impacts and instruct workers of potential hazards. "

Response:

[4906-4-08(A)(7)]

This requirement does not apply to the Project because it will not include blades.

8. ICE THROW

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

"(8) The applicant shall evaluate and describe the potential impact from ice throw at the nearest property boundary and public road, including its plans to minimize potential impacts and instruct workers of potential hazards. "

Response:

[4906-4-08(A)(8)]

This requirement does not apply to the Project because it will not include any unenclosed, moving parts that potentially could throw ice. Any ice "drop" from elevated equipment would fall only short distances and wholly secured within the fence lines of the solar arrays and the Project Substation.

9. SHADOW FLICKER

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

"(9) The applicant shall evaluate and describe the potential impact from shadow flicker at habitable residences within at least one-half mile of a turbine, including its plans to minimize potential impacts. "

Response:

[4906-4-08(A)(9)]

This requirement does not apply to the Project because it does not include any wind turbines and the Project will not include any moving parts that could potentially produce shadow flicker at any habitable residence.

10. TV AND RADIO RECEPTION

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

"(10) 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:

[4906-4-08(A)(10)]

The Project is not expected to have any material impact on radio or TV reception because it lacks tall structures, it lacks exposed moving parts, and it will only generate very weak electromagnetic fields ("EMFs"), and only during the day, that will dissipate rapidly within short distances. "PV arrays generate EMF in the same extremely low frequency (ELF) range as electrical appliances and wiring found in most homes and buildings" (MDER, 2015). In a recent study of three (3) solar arrays in Massachusetts, electric fields levels measured along the boundary were not elevated above background

(Massachusetts Clean Energy Center, 2012). Applicant is aware of no research that indicates that the Project has the potential to interfere with radio or television reception.

11. RADAR SYSTEMS

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

"(11) 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:

[4906-4-08(A)(11)]

The Project is not expected to have any measurable 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 only generate very weak EMFs that will dissipate rapidly within short distances. The Federal Aviation Administration ("FAA") has concluded that solar arrays do not cause radar interference:

"Radar interference occurs when objects are placed too close to a radar sail (or antenna) and reflect or block the transmission of signals between the radar antenna and the receiver (either a plane or a remote location).

Due 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 beneath the ground and away from any signal transmission.

Off-airport solar projects are even more unlikely [than on-airport solar projects] to cause radar interference unless located close to airport property and within the vicinity of a radar equipment and transmission pathways" (FAA Guidance, 2010).

Applicant is aware of no research that indicates that the Project has the potential to interfere with any radar systems.

12. MICROWAVES

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

"(12) 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:

[4906-4-08(A)(12)]

The Project is not expected to have any adverse impact on microwave communication paths because it lacks any tall structures with the potential to block those paths. The only structure at the Project at an appreciable height will be a single lighting mast at the Project Substation. The lightning mast will not interfere with any microwave transmissions because it will be too narrow and, in any event, will be located immediately adjacent to the (existing) Utility Substation, comprised of similar equipment. Applicant is aware of no information that suggests that the Utility Substation is causing, or that the Project would cause, interference with any microwave transmissions.

B. ECOLOGICAL RESOURCES

1. ECOLOGICAL RESOURCES IN PROJECT AREA

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

"(1) 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 fields.*
- (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 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) 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:

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

On behalf of the Applicant, Terracon completed an ERA to determine the ecological resources within the Project Site and adjacent areas. Terracon performed a desktop review of plant and animal species, land use, wildlife resources, and wetlands and water features within the Project Site boundaries and within a 0.5-mile buffer surrounding the Project Site boundaries. Field surveys were conducted to identify potential wetlands and jurisdictional waters, and rare, threatened, or endangered species habitat within the Project Site boundaries. A complete copy of Terracon's ERA Report dated September 2018 is attached as **Exhibit G**.

A map depicting the above-listed ecological resources located within the Project Site boundaries and within a 0.5-mile buffer surrounding the Project Site boundaries is attached as **Figure 10**. This map shows the following: (1) the Project Area boundaries; (2) undeveloped and forested land use; (3) wildlife areas (there are no wildlife areas, nature preserves or other conservation areas); (4) surface water features including national wetland inventory mapped features and on-site delineated features; and (5) highly-erodible soils and slopes of 12% or more grade.

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

Terracon conducted a wetland delineation on the entirety of the Project Site to identify potential wetlands and jurisdictional waters. The background, methods and field results of the wetland delineation are outlined in Section 4 ("Field Survey Results") of the ERA Report (**Exhibit G**). A map depicting vegetative cover as well as a water features map of delineated wetlands and streams on-site is included in the ERA Report in **Exhibit G**.

Terracon identified thirty-one wetland features totaling 287.18 acres and thirty streams totaling 49,821 linear feet within the Project Area boundaries. There are no anticipated impacts to wetlands and streams as a result of the Project. Section 5 of **Exhibit G** discusses impacts in greater detail.

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

Terracon also performed an extensive desktop review of plant and animal life located within the Project Area boundaries and a 0.5-mile buffer surrounding the Project Area boundaries. The review included wildlife conservation areas, sensitive species such as migratory birds and bald eagles, and threatened and endangered species within the vicinity of the site. The literature review is found in Section 3.6 ("Wildlife Resources") of the ERA Report (**Exhibit G**). Plant life is addressed separately in Section 3.5 ("Land use").

Terracon determined that the Project Area and 0.5-mile buffer are not known to provide adequate habitat for sensitive bird species, and that there are no records of bald eagle nests. Terracon determined that the federal- or state-listed species that could potentially be present in the area would be expected to inhabit the wooded areas or associated streams observed on-site. Terracon concluded, however, that there are no anticipated impacts to the wooded areas located on-site and no planned in-stream work. As such, for the majority of listed species, the proposed work is “not likely to affect”. Based on the desktop evaluation of listed species and potential habitat, there is potentially suitable habitat on-site for three federally-listed species; Northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalis*), and the Running buffalo clover (*Trifolium stoloniferum*).

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

Terracon conducted a field survey of the Project Area to confirm the information collected in the desktop review. These field observations did not constitute formal presence/absence surveys for specific species. The field observations of the Project Area did confirm that suitable bat habitat was present on site for the listed bat species. Due to the presence of suitable habitat for the Indiana bat and Northern long-eared bat, any tree clearing would need to be performed seasonally (from October 1 to March 31). In addition, an incidental take of Northern long-eared bats is excepted in this location under the 4(d) rule. No suitable habitat was observed for the Running buffalo clover, which resulted in a no effect finding. The Threatened and Endangered Species Survey report has been submitted to United States Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR). Early coordination with ODNR can be found in **Exhibit G**.

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

Terracon conducted a desktop review to assist the Applicant with identifying specific issues that would render the Project Area either economically unfeasible for development or that would pose an unacceptable level of risk if development were pursued. Terracon’s prior research consisted of reviewing Presence or Absence of Wetlands and Jurisdictional Waters, Wilderness Areas and Wildlife Refuges, Threatened and Endangered Species, and the listing of on-site and off-site facilities on federal or state hazardous material databases using a regulatory database provider. The Area Study report also provided historical aerial photography and a recent topographic map of the project site to assess the likelihood of land uses that may use, store, and/or dispose hazardous materials. The desktop review, although preliminary, provided enough information to confirm that the Applicant sited allocation for the Project.

2. POTENTIAL IMPACT DURING CONSTRUCTION

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

"(2) 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)(I) 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) *Measures to divert storm water runoff away from fill slopes and other exposed surfaces.*

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

(vii) *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.*

(viii) *Avoidance measures for major species and their habitat. "*

Response:

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

Terracon determined the potential adverse impacts of the Project construction on natural resources. A comprehensive list of impacts is outlined in Section 5.0 of the ERA Report (**Exhibit G**). The impacts addressed include conversion of the Project site from cultivated cropland to commercial solar development, impacts to wetlands and jurisdictional waters, and the impacts to wildlife and their habitat. The ERA Report also includes the linear feet of each stream and the acreage of each wetland.

The Project was sited to be constructed on previously disturbed, flat, cultivated cropland that will require minimal grading and minimal tree clearing. The conversion of the Project Site from agricultural use, which already provides minimal habitat for wildlife, to commercial solar development should have no significant or adverse impacts on wildlife in the Project Site. This will also remove a significant amount

of land out of agricultural use and thereby reduce agricultural runoff and nutrient loading to nearby waterbodies.

The Project Area is also comprised of approximately 10% wooded areas and approximately 8% of those wooded areas are wetland. Due to the presence of suitable habitat for the Indiana bat and Northern long-eared bat, any tree clearing would need to be performed seasonally (from October 1 to March 31). Project designs are also expected to avoid all wetlands and jurisdictional waters within the Project Area so there are no anticipated impacts to plant and animal life from the Project.

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

The Project has prioritized avoidance measures for sensitive habitats such as eliminating the need for clearing of forested areas, avoidance of wetland features, and no proposed in-stream work. In addition to these avoidance measures to minimize impacts to ecological resources within the Project Site boundaries, the Applicant will utilize mitigation procedures to further minimize impacts to ecological resources on-site. While no formal mitigation plan is required, the Applicant will implement the following mitigation measures to reduce its impacts:

- Sensitive areas including wetlands and jurisdictional waters have been delineated by designating boundaries with flagging tape and mapped with global positioning unit (GPS) technology. Additionally, a ten-foot buffer has been placed on all wetlands and jurisdictional waters on Project designs to minimize any incidental disturbance from construction activities;
- There is no anticipated crossing of streams or wetlands, so a frac out contingency plan is not applicable to the construction of the Project;
- The Applicant will develop a SWPPP and incorporate appropriate erosion and sediment control BMPs to increase soil stability and ensure that waterbodies are not adversely impacted. Inspections will occur once per week and within 24 hours of a 0.5" or greater rainfall event to meet federal and state compliance. Inspections will cease when the site has reached final stabilization;
- Construction personnel will be provided information regarding on-site resources and procedures and techniques to avoid, minimize, and remediate potential environmental impacts to these resources;
- Project designs are expected to avoid all wooded areas, wetlands and jurisdictional waters in the Project Area;
- Any vegetative debris, such as residual crops, will be stored at a staging location in an upland area and removed to the appropriate off-site facility.
- After construction, the impacted areas of the Project Area will be re-vegetated with a mix of native grasses that will enhance soil structure and organic content, stabilize ground cover, reduce soil erosion and storm water runoff, and minimize noxious and invasive plant growth. In addition, native grasses provide pollinator habitat that can benefit nearby agriculture; and
- As necessary, environmental inspections will be employed to ensure appropriate implementation and faithful observance of these minimization measures. Additionally, the

Applicant will restore any incidentally-disturbed waterbodies from construction to pre-construction conditions within one growing season.

3. POTENTIAL IMPACT DURING OPERATION

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

"(3) 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)(I) 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)]

There are no anticipated impacts to ecological resources, including the undeveloped areas in the Project Area, during the operation and maintenance of the Project. The Project will not emit air pollutants or produce wastewater or significant amounts of solid waste. The Project will be a relatively inactive operation. Only a small group of personnel will be required for operation of the Project and will perform minor duties in the Project Area including: maintenance and repair of equipment on an as-needed basis, maintenance of vegetative ground cover, and security and/or emergency response.

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

After construction, the Project will be a relatively inactive operation. There are no anticipated impacts to sensitive areas including forested areas, and wetlands and jurisdictional waters, which will remain as undeveloped areas on the Project Area. The Project Area will be vegetated with a mix of native grasses to minimize noxious and invasive plant growth. Operational and maintenance personnel may use commercially-available herbicide as needed to prevent any noxious weed growth. Due to the solar array being constructed solely in cultivated cropland, the use of herbicides is not anticipated to have an adverse impact on any wooded areas, or wetlands or jurisdictional waters in the Project Area.

The Project will be re-vegetated with a mix of native grasses which will enhance soil structure and organic content, stabilize groundcover, reduce soil erosion and storm water runoff as well as provide much needed pollinator habitat. Pollinators will benefit nearby agriculture and flowering plants in the Project Area.

The Applicant has no post-construction monitoring plan in place as there are no anticipated impacts to wildlife. The Project will be a relatively inactive operation that will not emit air pollutants or produce wastewater or significant amounts of solid waste.

C. LAND USE AND COMMUNITY DEVELOPMENT

1. LAND USE IN PROJECT AREA AND POTENTIAL IMPACTS

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

"(1) The applicant shall provide information regarding land use in the region and potential impacts of the facility.

(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)(I)(a) of this rule, a table showing the following:

(i) For all structures within one thousand feet of the generation equipment or wind turbine, the distance between the structure and the equipment or nearest wind turbine.

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

(iii) For each structure in the table, whether the structure is on a property that 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)(I)(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 map and tables required by the above are attached as **Figure 12**, **Figure 13**, and **Figure 14** respectively.

Response:

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

The project site is only located within Highland County. **Figure 12** provides the map showing the Project and 1-mile radius with associated land use. Based on the map, the land within the Project and 1-mile radius includes two types of land use categories: residential and agricultural. The dominant land use category in the radius and Project is agricultural land, which is characterized by row crops (cotton, corn, and soybeans). Part of the agricultural acreage is under the United States Department of Agriculture Conservation Reserve Program (CRP). As part of this program, land owners remove environmentally sensitive land from agricultural production. Land is enrolled in the program for between 10 and 15 years in length and require renewal. Once the land transfer is complete, the Project will no longer contain any acreage in the CRP program.

The closest Population center includes the town of Buford, located approximately 1 mile west. Based on the project's distance from Buford, there is no visual or aesthetic impact anticipated resulting from the Project. Based on the nature of the surrounding land use (agricultural crop land), minimal impact from a land use perspective is anticipated. The only potential impact related to land use results from residential properties in the viewshed.

Single family homes and structures located on the Project will not be removed and solar arrays will not be constructed within those residential areas. **Figure 14** provides a table identifying off-Project structures located within 250 feet to 1,000 feet of solar equipment. The Applicant will make a reasonable effort to coordinate with adjacent landowners in the project line of sight, and ensure minimal visual impact occurs to adjacent properties. Based on these coordination efforts, the Project is anticipated to be compatible with Project-site and surrounding land use types.

Response:

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

It is not anticipated that any material structures will be demolished or relocated to accommodate the Project.

2. MAP REQUIRED FOR WIND FARMS

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

"(2) 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, 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 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 in the event that all owners of property adjacent to the turbine agree to such waiver. "

Response:

[4906-4-08(C)(2)]

This requirement is not applicable to the Project because it does not include wind turbines.

3. LAND USE PLANS

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

"(3) 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 and ten-year population projections for counties and populated places within five miles of the project area. "

Response:

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

There are no plans associated with the Project and surrounding lands. Highland County drafted a Highland County Comprehensive Plan in 2003, which is discussed in Section (c) below.

Response:

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

Applicant has no plans for concurrent or secondary use of the Project Area.

Response:

[4906-4-08(C)(3)(c) & (d)]

Based upon the existing industries and the lack of new industries anticipated within the Study Area, no impacts are anticipated on the existing commercial and industrial developments except for the potential for those existing facilities to have reduced utility expenses.

Due to the rural nature of the area, very few local and regional plans have been prepared. Within the Study Area, only one plan has been drafted the Highland County Comprehensive Plan. The Project Area is located within Highland County. The plan was drafted in 2003 and has not been updated since. The plan provides guidance on land use, environmental issues, transportation, community investment, community character, open space, and land preservation. The plan focused on five priority actions:

- 1) Develop a protocol for review and approval of development proposals
- 2) Modify subdivision regulations to support managed growth
- 3) Discourage random driveway cuts and intersections along major thoroughfares
- 4) Support the agricultural economy and preserve valuable farmland
- 5) Zone in a manner that reflects the needs of the county.

Both the Project Area and the Study Area are rural areas, consisting of predominately agricultural land uses. The Proposed Project will modify the existing land use of the Project Area, from agriculture to energy development; however, the modification in land use is not anticipated to impact surrounding areas uses and will not contradict the principles of future development outlined in the Highland County Comprehensive Plan.

The impacts of the Project on regional development are considered minimal. The Project will result in job creation and the production of a clean energy source. The development of solar panels will result in minimal impact to valuable agricultural soils, enabling the Project area to return to agricultural use subsequent to any future decommissioning. Impacts to the local community are primarily limited to the immediately adjacent properties. Adjacent properties include agricultural land and residential properties. The Applicant will make a reasonable effort to coordinate with adjacent landowners in the project line of sight, and ensure minimal visual impact occurs to adjacent properties. Any transportation impacts would be temporary during construction and would not result in long-term transportation changes to the region. No significant changes are anticipated for the remaining regional development categories, including housing, commercial and industrial development, schools, system development, and public services. Based on the review of the comprehensive plan, surrounding land use, and development plans, the Project appears to be compatible with the regional development plans of the surrounding area.

Response:

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

Estimates of current population and ten-year population projections for counties and populated places within five (5) miles of the Project Area are provided in the Land User Report provided in **Exhibit H**.

D. CULTURAL AND ARCHAEOLOGICAL RESOURCES

A Cultural Resources Literature Review (**Exhibit I**) was completed for the Applicant by Terracon, which provides review and consideration for previously recorded cultural resources on the site and within a 5-mile radius. Additionally, the literature review includes a probability assessment for the existence of previously unrecorded archeological resources beneath the site. The Applicant has provided consideration for the probability of archeological resources in project design. The portions of the Project containing or located in close proximity to surface waters have been avoided wherever possible. Additionally, the Applicant has provided consideration for the previously recorded cultural resources as part of a Visual Analysis Report for the Project, which are further discussed in the subsequent sections.

To fully evaluate for the presence of previously unrecorded cultural resources impacted by the Project, the Applicant has begun early coordination with Ohio State Historic Preservation Office (SHPO), and intends to complete a Phase I Archeological Survey of the Project footprint. The Archeological Survey is planned during the fourth quarter of 2018, after the crops have been harvested and the fields are clear for access. The findings of the Survey will be provided to Ohio SHPO for their review and consideration and will be utilized with respect to the Project footprint.

1. RECREATION AREAS AND LANDMARKS IN PROJECT AREA

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

"(1) 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 five 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 Ohio historical society, or the Ohio department of natural resources. "

Response:

[4906-4-08(D)(1)]

The Applicant has provided the resources map required above in **Figure 15**.

2. IMPACTS ON REGISTERED LANDMARKS

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

"(2) 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:

[4906-4-08(D)(2)]

A Cultural Resources Literature Review and Visual Resource Survey were completed for the Applicant by Terracon, which provides review and consideration for previously recorded cultural resources on the site and within a 5-mile radius. Based on Terracon's Review, no previously recorded cultural resources were identified on the Project footprint. Numerous recorded cultural resources were identified within the

5-mile radius. Due to their locations off the project site, the potential impact to these resources would be considered visual.

To determine the potential for impact, Terracon utilized Light Detection and Ranging (LiDAR) technology to evaluate the potential for visibility within both a 2-mile and 5-mile radius of the Project. Based on the review, almost no visibility was identified beyond 2-mile from the Project, except for some small areas. Terracon completed a review of cultural resources within 2-mile and within the 5-mile areas denoted by LiDAR as having limited visibility. It was determined through the Review that no previously recorded cultural resources would be visually impacted by the Project.

3. IMPACTS ON FORMALLY-ADOPTED RECREATION AREAS

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

"(3) The applicant shall describe the identified recreation areas within five 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 areas within five miles of the project area and describe plans to mitigate any adverse impact. "

Response:

[4906-4-08(D)(3)]

To determine the potential for impact, Terracon utilized LiDAR technology to evaluate the potential for visibility within both a 2-mile and 5-mile radius of the Project. Based on the review, almost no visibility was identified beyond 2-mile from the Project, except for some small areas. Terracon completed a review of recreational resources within 2-mile and within the 5-mile areas denoted by LiDAR as having limited visibility. Based on the results of the Visual Resource Survey, no recreational areas were identified with the potential for visibility for the Project.

4. VISUAL IMPACTS

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

"(4) The applicant shall evaluate the visual impact of the proposed facility within at least a five-mile radius from the project area. The applicant shall:

- (a) Describe the visibility of the project, including a viewshed analysis and corresponding map of the study area.
- (b) Describe the existing landscape and evaluate its scenic quality.
- (c) Describe the alterations to the landscape caused by the facility, 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)(I) 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 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:

The Applicant has evaluated the potential visual impact of the Project for all of the conditions set forth by the OPSB included above. The results of the Viewshed Analysis Report are included in **Exhibit J**.

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

The viewshed analysis included a review of potential visibility within a 5-mile radius from the Project boundaries. Light Detection and Ranging (LiDAR) data was used to develop a visibility map within the 5-mile radius (**Figure 16**). Based on the results of the LiDAR accounting for topography, existing vegetation and development, and the low profile of the Project it was determined that it would be unlikely that the Project would be visible outside of a 2-mile radius.

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

The Project Area and surrounding area primarily consists of agricultural fields, small forested areas, sparse residential development and an overhead utility easement. The area is relatively flat with areas of gently undulating topography. The nearest communities are Buford located approximately one mile to the southwest and Mowrystown located two miles to the southeast of the Project boundaries. The Project and vicinity are typical of southwest Ohio with predominately agricultural land and rural residential development.

The Project will not significantly alter the landscape of the Project area and surrounding area. Due to its low profile the facility will generally only be visible from the immediately adjacent properties. Therefore, the Project will have a minimal impact on the scenic quality of the surrounding area.

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

The Viewshed Analysis Report concludes that the visibility of the Project will be limited to within a two mile radius from the Project boundaries. Even within the two mile radius the Project's visibility will be slight. The Project will predominately be visible from the adjacent properties and from the roads that bisect the Project Area. These roads include Marconette Road (CR 141), Stringtown Road (CR 60), Gath Road (CR 2), Edwards Road (CR 56), and OH 138. With the exception of OH 138 these are small residential routes with limited traffic. OH 138 is a two-lane road that runs connects the communities of Buford and Hillsboro.

Photo simulations were conducted from nearby properties surrounding the site as well as the above mentioned roadways and are included In the Viewshed Analysis Report. No scenic resources were found to be impacted by the site. As such, the simulations depict a representation of the project from a variety of immediately surrounding properties. The Project, as anticipated, has the most significant impact from non-vegetated areas along adjacent/bisecting roadways. However, none of the areas of visibility were from designated scenic resources and therefore the aesthetic impact is minimal.

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

The sparsely populated and rural setting of the Project limits the potential for visual impacts. The properties that will be most visually impacted will be adjacent residential properties without vegetative screening. No visual impacts are anticipated for any of the designated scenic resources evaluated within 5-miles of the project. If a previously unidentified scenic resource were to be identified within the viewshed during any point of the development process, consultation will occur with the landowner/managing entity of the parcel and/or the SHPO, as determined appropriate, to ensure minimization and mitigation of impacts to the resource during project design. The Applicant will make reasonable efforts to coordinate with landowners of adjacent properties regarding viewshed impacts or concerns, in order to limit visual impacts on neighboring properties in the line of sight.

E. AGRICULTURAL DISTRICTS AND AGRICULTURAL LAND

1. AGRICULTURAL RESOURCES IN PROJECT AREA

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

"(1) 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:

[4906-4-08(E)(1)]

The above-required map is attached as **Figure 17**. It identifies all agricultural land, and separately classifies all land enrolled in the Current Agricultural Use Value (CAUV) program and/or listed as agricultural districts. All parcels, with the exception of one, are enrolled in the CAUV program. Only three parcels are listed as agricultural districts. The map categorizes agricultural land as one of the following agricultural uses, based on the 2017 data from the National Agricultural Statistics Service (NASS) 2017 Cropland Data Layer Program: (1) Soybeans/Cotton; (2) Corn/Soybeans; and (3) Deciduous Forest. The Project boundary and location of solar array panels are also illustrated on **Figure 17**.

2. IMPACTS TO AGRICULTURAL RESOURCES

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

"(2) 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)]

Of the 3,300-acre Project boundary, the Applicant expects to utilize approximately 1,839-acres for the solar modules. Of this acreage, 1,794 is CAUV land and 45 is considered an agricultural district. The proposed 1,839-acre area includes development for the proposed solar array, access roads, and substation. The area of disturbance will be in areas currently utilized for agricultural purposes (row crops). Approximately 1,461 acres of agricultural land and wooded land would not be developed.

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

The Project will utilize land currently used for agricultural crop production, including soybeans, corn, and cotton. Field operations in areas the solar project will utilize will not continue following the commencement of construction. Agricultural activities may resume following the eventual decommissioning of the solar site.

Following construction of the Project, the areas utilized for the Project will no longer be irrigated. The Applicant will ensure irrigation lines damaged in connection with the construction for the solar farm be promptly repaired or replaced and will do so in coordination with designated land owners and tenants.

The Applicant will avoid drainage tiles where possible and will subsequently repair any tiles that are impacted. The Applicant will work with landowners to minimize impact to the existing drainage system by avoiding tile mains and repairing damaged tiles wherever feasible. Existing drainage ditches will be avoided as well.

A majority of the Project will avoid residential structures and storage facilities used for agricultural operation. A few sheds and outbuildings may be removed in areas utilized for the solar project and those structures have been included in impact total of agricultural land use. However, the applicant is anticipating the avoidance of significant structure removal wherever possible.

A total of three parcels in the Project Area are identified as agricultural district land (Parcel ID: 45-23-000-480.00, 45-23-000-480.02, and 45-23-000-506.00). Landowners may choose to remove their land parcels from agricultural districts following a five-year period or incur a penalty to remove their land parcels during the five-year period. A total of 45 acres of the 171, acres from agricultural district Parcel ID: 45-23-000-480.00 would be developed for solar array installation. Following decommissioning of the solar project, agricultural activities as a listed agricultural district in Parcel ID: 45-23-000-480.00 may resume; therefore, there are no intended long-term impacts to the integrity of the agricultural district. Impacts to the remaining listed agricultural district parcels are not anticipated because no solar development will occur on those parcels.

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

The Applicant will work with the landowner to locate functional drainage tiles and irrigation lines prior to construction activities. The locations of the drainage tiles will be physically marked on the surface above the areas where the functional drainage tiles is located. The Applicant will ensure that drainage tiles or irrigation lines damaged in connection with the construction for the solar farm be promptly repaired or

replaced. Any drainage tiles or irrigation line damaged during construction activities will be repaired by a local drainage tiles contractor using commercially feasible efforts, and repairs will be performed to meet all state and local code requirements. Any topsoil that will be disturbed or displaced will be used on site to evenly grade or be available for the landowner's use. Relatively little topsoil will be significantly compacted during the laying of the substation foundation or solar array piles. Additionally, areas below the solar arrays will be planted with low-growing seed mix of native grasses and other low-maintenance varieties to promote precipitation infiltration and reduce water run-off and soil erosion.

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Summary: Application Body Text electronically filed by Ms. Karen A. Winters on behalf of Hecate Energy Highland LLC