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December 18, 2020

Via Electronic Filing

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

Re: Mark Center Solar Project, LLC,
OPSB Case No. 20-1612-EL-BGN

Dear Ms. Troupe:

Enclosed for filing in the above-referenced case is a copy of the Application of Mark Center Solar Project, LLC ("Mark Center") for a Certificate of Environmental Compatibility and Public Need is proposing to develop, construct, and operate up to 110 megawatt ("MW") solar-powered electric facility in Mark Township, Defiance County, Ohio.

Name of Applicant: Mark Center Solar Project, LLC
422 Admiral Boulevard
Kansas City, MO 64106

Name/Location of Proposed Facility: Mark Center Solar Project, LLC
110 MW Solar-Powered Electric Facility
Mark Township, Defiance County, Ohio

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

Notarized Statement: See Attached Affidavit of Scott Zeimetz, Vice President of Mark Center Solar Project, LLC

Sincerely on behalf of
MARK CENTER SOLAR PROJECT, LLC

Dylan F. Borchers

Enclosure

BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of **Mark Center Solar Project, LLC** for a Certificate of Environmental Compatibility and Public Need for a Solar Facility Located in Defiance County, Ohio.	)))))	Case No. 20-1612-EL-BGN

AFFIDAVIT OF MARK CENTER SOLAR PROECT, LLC

STATE OF MISSOURI :
: ss.
COUNTY OF Jackson :

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

1. I am the VP of Mark Center Solar Project, LLC ("Mark Center") which is the Applicant under this Application.

2. Mark Center's Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need to develop, construct, and operate a 110 megawatt ("MW") solar-powered electric facility was prepared and reviewed by Mark Center employees that are the primary individuals in charge of the development of Mark Center on whom I reasonably rely as subject matter experts.

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

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

Mark Center Solar Project, LLC

Sworn to before and signed in my presence this 17th day of December 2020.

Notary Public

[SEAL]

Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need for the Mark Center Solar Project, LLC

Case No: 20-1612-EL-BGN

PUBLIC VERSION

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List of Abbreviations and Acronyms

AC	alternating current
AEP	American Electric Power
ANSI	American National Standards Institute
Applicant	Mark Center Solar Project, LLC
BMP	Best Management Practice
B&M	Burns & McDonnell
DC	direct current
Certificate	Certificate of Environmental Compatibility and Public Need
CIA	Critical Issues Analysis
COD	Commercial Operation Date
Commonwealth	Commonwealth Heritage Group, Inc.
CWA	Clean Water Act
dBA	A-weighted decibels
EMFs	electromagnetic fields
Epsilon	Epsilon Associates, Inc.
FAA	Federal Aviation Administration
Frac Out Plan	Standard Horizontal Directional Drilling Construction Inadvertent Return Control Plan
gen-tie	generation tie-line
HDD	horizontal directional drilling
HHEI	Headwater Habitat Evaluation Index
IEEE	Institute of Electrical and Engineers
IPaC	Information for Planning and Construction
JEDI	Jobs and Economic Development Impacts
KOP	Key Observation Point
kV	kilovolt
kWac/year	kilowatt alternating current per year
kW_{DC}	kilowatts DC
L_{eq}	equivalent sound level

MET	meteorological
module	solar panel
mph	miles per hour
MV	medium voltage
MVA	megavolt ampere
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NEC	National Electrical Code
NESC	National Electrical Safety Code
NHL	National Historic Landmark
NPDES	National Pollutant Discharge Elimination System
NPV	net present value
NRHP	National Register of Historic Places
NREL	U.S. Department of Energy National Renewable Energy Laboratory
O&M	operation and maintenance
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
OPSB	Ohio Power Siting Board
PILOT	Payment in lieu of taxes
PJM	PJM Interconnection, LLC
POI	Point of Interconnection
PPA	power purchase agreement
Project	Mark Center Solar Project
PV	photovoltaic
QHEI	Qualitative Habitat Evaluation Index
RUMA	Road Use Maintenance Agreement
Savion	Savion, LLC
SHPO	State Historic Preservation Office
SIS	System Impact Study

SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
T/E	threatened and endangered
UL	Underwriters Laboratories
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.

4906-4-01 PURPOSE AND SCOPE

(A) GENERAL

This application is intended to satisfy the requirements of the Ohio Administrative Code (OAC) Rule 4906-4 for issuance by the Ohio Power Siting Board (OPSB) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the Mark Center Solar Project (Project) as submitted by Mark Center Solar Project, LLC (Applicant).

(B) WAIVERS

The Applicant is not requesting any waivers at this time.

4906-4-02 PROJECT SUMMARY AND APPLICANT INFORMATION

(A) PROJECT SUMMARY AND APPLICANT INFORMATION

The Applicant, a wholly owned subsidiary of Savion, LLC (Savion), proposes to construct and operate the Project, a utility-scale solar-powered electric generation facility in Defiance County, Ohio, with a nameplate capacity of 110-megawatts (MW) alternating current (AC), (hereinafter referred to as MW). The Project will connect to the regional transmission grid via an existing switchyard that is located at the site. The Project is anticipated to operate for 30 to 40 years. A conservative approach was taken for the studies included in the application that consider the lifespan of the Project to ensure that benefits are not overestimated. An estimated 30-year Project lifespan was utilized for these evaluations (e.g. Economic Impacts Study).

(1) General Purpose of the Facility

The purpose of the Project is to provide 110-MW of clean, cost-effective, renewable energy to the PJM Interconnection, LLC (PJM) transmission grid. The Project will generate electricity using virtually no fuels or water and with effectively zero air emissions and waste generation.

This Project is intended to fill the need for a more diverse national energy portfolio that will include a higher percentage of energy generated through use of renewable resources.

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

The Project is in Mark Township, Defiance County, Ohio, near the communities of Sherwood to the east, and Mark Center to the west. The Project will be located entirely on privately owned parcels where the Applicant has secured long-term leases with the landowners. Several local roads surround and intersect the Project, including State Highway 18, which makes up the Project's northernmost boundary; Openlander Road, which makes up part of the easternmost boundary; Williams Center Cecil Road, which makes up part of the westernmost boundary; and Fountain Street Road which is a portion of the southern boundary and bisects the eastern half of the Project Area. The total Project Area encompasses 877 acres. The Applicant is proposing to permit the entirety of the Project Area. Based on the current Project design, the Facility, which is composed of all components and infrastructure necessary for solar energy generation, will occupy approximately 665 acres of the Project Area. The 665-acre Facility is also referred to as the Project footprint. The Applicant has made considerable effort to depict the Facility layout in its final form to the extent possible at this stage of development. However, the exact placement of the Facility components is subject to change prior to construction. The additional permitted area will allow for any adjustments to the Facility design that may be necessary in the future. The studies included in this application were completed for all 877 acres of the Project Area or within the Project footprint as applicable based on the individual resource.

The Project will have a generating capacity of 110-MW and will include photovoltaic (PV) solar panels (modules) mounted on a tracker to maximize solar energy capture and electric generation of the array. Electricity generated by the modules is sent to inverters located throughout the array that would convert the electricity from direct current (DC) to AC. A series of medium voltage (MV) underground and/or overhead electric AC collection lines will transfer the electricity from the inverters to a new project substation. A short (<300 ft) overhead generation tie-line (gen-tie) will deliver electricity from the new project substation to the point of interconnection (POI) located within the existing switchyard that connects to the regional transmission grid.

A detailed description of each Project component can be found in OAC Section 4906-4-03(B) in this application.

(3) Suitability of the Site for the Proposed Facility

The Applicant has determined the Project Area to be suitable for utility-scale solar facility development based on the following factors: proximity to available transmission capacity, landowner and community interest, economic analysis, and evaluation of site suitability. A detailed description of the Applicant's siting process and the Project Area's suitability is included in OAC Section 4906-04-04 of this application.

(4) Project Schedule

The Project has been under development since 2016 and, during that time, multiple transmission, environmental, engineering, and cultural studies have been completed. In addition, interconnection studies with PJM commenced in the fourth quarter of 2016. In accordance with Rule 4906-3-03, the Applicant posted a virtual public information presentation about the Project and held one live virtual public meeting in November 2020. The virtual public information presentation was made available to the public on November 9, 2020. The live virtual public meeting was held on November 12, 2020 and allowed participants to either phone-in or log-in on their computers and ask questions and provide comments on the Project to both the Applicant's team as well as the OPSB staff. Project construction is expected to begin as early as the second or third quarter of 2022, with commercial operations beginning in the second or third quarter of 2023. Additional information regarding Project schedule can be found in Section 4906-4-03(C) of this application.

(B) Future Plans for Additional Generation Units or Facilities in the Region

(1) Description of any plans for future additions of electric power generation units

The Applicant is seeking an OPSB Certificate to construct a 110-MW solar energy project located within the Project Area included within this application. Currently, there are no plans to add additional electric power generation units to the Project.

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

The Applicant is a wholly owned subsidiary of Savion and was formed specifically for the purpose of developing the Project. Founded in 2019, the Savion team is comprised of utility-scale solar and energy storage experts that have developed over 11 gigawatts of solar projects across 25 states that are either in operation, under construction, or in development. Savion has more than 100 employees and is headquartered in Kansas City, Missouri. Savion develops projects and secures power purchase agreements (PPA) that are ultimately transferred to other entities. The Project will be constructed, operated, and maintained by the Applicant.

4906-4-03 PROJECT DESCRIPTION IN DETAIL AND PROJECT SCHEDULE IN DETAIL

(A) DESCRIPTION OF THE PROJECT AREA'S GEOGRAPHY, TOPOGRAPHY, POPULATION CENTERS, MAJOR INDUSTRIES, AND LANDMARKS

(1) Project Area Map

Figure 3-1 shows the geographic features of the proposed Project Area, at a scale of 1:24,000, as well as those features within a 2-mile radius. The proposed features specifically include:

(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; and

(e) Major institutions, parks, cemeteries, and recreational areas.

There are no parks or recreational areas within 2 miles of the Project. The Project layout depicted in Figure 3-1, and all subsequent figures, represents the current design of the Project. The Applicant has made considerable effort to depict the layout in its final form to the extent possible at this stage of development. However, the exact placement of the Project components is subject to change prior to construction but will remain within the limits of the Project Area. Final engineering will depend on various considerations including the exact make and model of the equipment procured for the Project. Given the time length of the OPSB certification process and market realities for utility-scale solar facilities it is not economically feasible (in the application) to identify the equipment models to be used and give the precise location within the fence of the various components. Because of rapidly advancing technology (both as to cost and performance) and dynamic markets, the final model selections must occur close to the start of construction. Further, the financing for procurement and construction of a project will be attracted by, and based on, the final model choices and final engineering and design based on those models. Only after the models have been selected and final design and engineering is completed can the precise locations of the key components be identified. Those locations, in turn, will drive those of the ancillary components, including the piles, collection lines, and roads. Requiring the submission of the final site plan with the application would result in procurement decisions and final design and engineering that are obsolete by the time of financing and construction start. In fact, they could likely be obsolete before a certificate is issued for the Project.

The final layout will remain within the Project Area that has been studied for environmental, engineering, and visual impacts. The cultural resource surveys were based on the Project footprint rather than the larger Project Area, therefore additional cultural resource surveys will be completed for any portion of the final layout that extends beyond the Project footprint identified within this application. Any final adjustments to the layout will not cause additional impacts beyond what is discussed in this application. The final layout will be provided to OPSB no later than 30 days prior to the start of construction.

(2) Project Area, in acres, of all Owned and Leased Properties

The Facility will occupy approximately 665 acres within the Project Area, entirely on private land secured under agreements with the landowners. Individual Project parcels are depicted in the preliminary site plan included as Exhibit A. The additional land in the Project Area was secured to allow flexibility for the Project design to be optimized.

(B) DESCRIPTION OF THE GENERATION FACILITY

The Project is a 110-MW solar facility capable of providing clean, renewable electricity. Solar modules convert sunlight into DC electricity which is then converted to AC electricity through inverters. Transformers step up the AC electricity to a higher voltage so that it can connect to the regional transmission grid.

Project components will include PV solar modules mounted on a single-axis tracker racking system supported by steel posts. Other components of the PV system include combiner boxes, inverters, high voltage transformers, junction boxes, DC and AC electrical collection systems, a Project substation, and gen-tie lines. In addition, the Project will include an operation and maintenance (O&M) trailer, meteorological (MET) towers, access roads, and fencing. During construction, the Project will include temporary laydown yards, temporary construction management trailers, and stormwater management features. Project components are discussed in more detail in OAC Section 4906-4-03(B)(1) in this application and are depicted in the preliminary site plan included as Exhibit A.

Approximately 27,456 linear feet of private access roads will be constructed within the facility with all-weather gravel. Roads will not exceed 16 feet (4.9 meters) in width, except for turning radii, which will not exceed 50 feet (15.2 meters) in radius. The Project solar arrays will be secured with approximately 53,856 linear feet of perimeter fence, which will not exceed 7 feet (2.1 meters) in height.

PV solar modules will be mounted on a tracker racking system and oriented in rows running from north to south, angled at a degree that maximizes solar resource efficiency. To improve

efficiency, a tracker system rotates approximately +/- 60-degrees east-west to track the sun as it moves through the sky each day. The racking system will be supported by approximately 46,000 steel posts installed with a pile-driving machine. The center height of the racking structures will be approximately 4 feet (1.2 meters) to 6.8 feet (2.1 meters) above the ground. When the modules are tilted at their maximum angle, the highest point of each module will be approximately 9 feet (2.7 meters) to 15 feet (4.5 meters) above the ground. The modules will be connected using DC cables that can either be buried in a trench or attached to the racking system. The DC cables gather at the end of racking systems to combiner boxes which are connected to cables routing to an inverter.

Approximately 25 inverters would be installed throughout the Project to convert the DC power from the 1,500volt DC collection system to AC power, which will then be transmitted to a Project substation via the 34.5-kilovolt (kV) AC collection system. The AC collection system will include underground and/or overhead segments. Underground segments of the AC collection system will be buried a minimum of 3 feet (0.9 meters) below grade; and overhead portions will not exceed a maximum height of 45 feet (13.7 meters) above grade. The AC collection system will be comprised of MV cable that will transfer electricity to the Project substation. Approximately 2,587,200 linear feet of DC collection system cables and 110,880 linear feet of AC collection cables would be installed throughout the Project. Collection cables are often congregated into common trenches and run adjacent to one another.

The Project will require one substation that will include one 140-mega volt ampere (MVA) transformer and all necessary equipment to step up incoming MV electricity to the high voltage electricity necessary to interconnect into an existing 69kV switchyard that will be owned and operated by American Electric Power (AEP). The gen-tie line will be no more than 300 feet (91.4 meters) in length and will be constructed by the Applicant. AEP will be responsible for any additional transmission equipment located within the switchyard for the Project. It is anticipated that the gen-tie poles and substation components will not exceed 110 feet (33.5 meters) above grade.

(1) Description of the Generation Equipment

Project generation equipment includes PV solar modules that will convert sunlight directly to electricity. Bi-facial modules are being considered for this Project that will convert both direct sunlight and reflected sunlight to electrical power. The remaining Project equipment either transmits, converts, or transforms electricity generated by the solar modules.

(a) Type, Number of Units, Estimated Net Demonstrated Capacity, Heat Rate, Annual Capacity Factor, and Hours of Annual Generation

PV solar modules have not been procured for the Project as explained in 4906-4-03(A)(1); however, it is anticipated that the Facility will be composed of 390-watt to 540-watt panels, provided by Jinko, Trina, Longi, or other similar Tier 1 module suppliers. Table 3-1 below summarizes the potential module type, technology, wattage, and the approximate number of panels needed for the Facility. Regardless of the specific model, the solar modules will be approximately 3 to 3.5 feet (0.9 to 1.1 meters) wide by 6 to 7.5 feet (1.8 to 2.3 meters) tall and approximately 1 to 2 inches (2.5 to 5 centimeters) deep. Manufacturer specifications for Trina, Longi, and Jinko modules are provided in Exhibit B. In addition, manufacturer specifications for potential tracking systems and inverter models that may be used by the Project are also included in Exhibit B. As discussed in Section 4906-4-08(A)(1)(c), all equipment procured for the Project will be compliant with applicable Underwriters Laboratories (UL), Institute of Electrical and Engineers (IEEE), National Electrical Code (NEC), National Electrical Safety Code (NESC), and American National Standards Institute (ANSI) listings. If the Applicant uses a technology other than those included in Exhibit B, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the start of construction.

Table 3-1 Solar Module Specifications

Solar Module Manufacturer	Module Type	Module Technology	Module Wattage	Approximate Number of Panels
Longi	Polycrystalline/ Monocrystalline	Mono-Facial, Bi-Facial, PERC, Half Cut Cells	520W – 540W	254,000 – 245,000
Jinko	Polycrystalline/ Monocrystalline	Mono-Facial, Bi-Facial, PERC, Half Cut Cells	455W – 475W	291,000 – 278,000

Table 3-1 Solar Module Specifications

Solar Module Manufacturer	Module Type	Module Technology	Module Wattage	Approximate Number of Panels
Risen	Polycrystalline/ Monocrystalline	Mono-Facial, Bi-Facial, PERC, Half Cut Cells	370W – 390W	386,000 – 367,000
Trina	Polycrystalline/ Monocrystalline	Mono-Facial, Bi-Facial, PERC, Half Cut Cells	475W – 505W	262,000 – 278,000

Key:
W = watt

Racking system technology has not been procured for the Project; however, it is anticipated that the Facility will include a NEXTracker, Array Technologies, or similar racking system. Manufacturer specifications for NEXTracker and Array Technologies racking systems being considered are included in Exhibit B. If the Applicant uses a racking technology other than those included in Exhibit B, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the start of construction.

Inverters have not been procured for the Project; however, it is anticipated that the Facility will include TMEIC or similar inverters. Manufacturer specifications for the TMEIC inverters being considered are included in Exhibit B. If the Applicant uses an inverter technology other than those included in Exhibit B, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the start of construction.

The annual net capacity factor for the Facility is expected to be approximately 24.34% and the hours of annual generation is expected to be 234,496 megawatt hours. Net demonstrated capacity will be 110-MW delivered to the regional transmission grid. Heat rate is not applicable to solar facilities.

(b) For Wind Farms, Turbine Size

This section is not applicable for solar facilities.

(c) Fuel Quantity and Quality

Fuel quantity and quality are not applicable for solar facilities.

(d) Pollutant Emissions and Estimated Quantities

The Project will generate electricity without producing pollutant emissions. Therefore, this section is not applicable to solar facilities.

(e) Water Volume Requirement, Source, Treatment, and Discharge

The Project will not require any cooling water during operation and, therefore, will not need to treat or discharge water. However, the Project will include an O&M trailer that will require a water source and sanitary sewer capacity. Water can be obtained from an on-site well or brought in from off site. The Project will either connect to the public sanitary sewer or a septic system may be installed. The Applicant will coordinate with local authorities to determine the availability of public utility infrastructure in the vicinity of the Project and will obtain all necessary permits prior to construction. In addition, Project modules may require occasional cleaning, which would require minimal water usage.

(2) Construction Method, Site Preparation and Reclamation Method, Materials, Color and Texture of Surfaces, and Dimensions of Facility Components

In general, the Project construction process will include securing the land, installation of stormwater detention basins and other erosion control plans, clearing vegetation (Project anticipates minimal clearing), grading (Project anticipates minimal grading), installation of temporary power, and construction of temporary laydown yards and access roads. Further detail on each component is provided below.

(a) Electric power generation plant or wind-powered electric generation turbines, including towers and foundations

Solar modules are installed on steel posts that are approximately 6 inches by 7 inches (15.2 by 17.8 centimeters). Posts are typically 10 to 15 feet (3.0 to 4.6 meters) long and are driven 7 to 11 feet (2.1 to 3.4 meters) below grade, depending on soil conditions. Posts are primarily installed

by pile drivers. The Project, as designed, would require installing approximately 46,000 posts. Modules are supported on posts with the help of a racking mechanism. Forklifts are used to deliver the torque tubes required for the racking structures. Once the posts are driven in the ground, racking mechanisms are installed primarily by hand and modules are then bolted to the torque tubes.

(b) Fuel, waste, water, and other storage facilities

There will be no fuel, waste, water, or other storage facilities on site during operations. Diesel fuel for construction vehicles and equipment will be stored in appropriate containment in the laydown yards located away from any stream or wetland areas.

(c) Fuel, waste, water, and other processing facilities

There will be no fuel, waste, water, or other processing facilities associated with the Project.

(d) Water supply, effluent, and sewage lines

The Project will include an O&M trailer that will require a water source and sanitary sewer capacity. Water can be obtained from an on-site well or brought in from off site. The Project will either connect to the public sanitary sewer or a septic system could be installed. The Applicant will coordinate with local authorities to determine the availability of public utility infrastructure in the vicinity of the Project and will obtain all necessary permits prior to construction.

(e) Associated electric transmission and distribution lines and gas pipelines.

No new gas pipelines will be needed for the Project. One short overhead gen-tie line will be constructed to deliver electricity from the Project substation to an existing POI switchyard that already connects to the regional transmission grid.

(f) Electric collection lines

There are two types of collection system (also called collection circuits or collection lines) for a solar project: AC collection and DC collection.

DC collection lines (1,500 volt) connect the modules to the inverter electrically. Modules are connected electrically above ground on the rear side and at the end of each row. Collection lines are trenched underground or hung over the racking systems by using a cable system which feeds to the combiner box. The DC collection from the combiner boxes to the inverters is run underground. Approximately 2,587,200 linear feet of DC collection system cables would be installed throughout the Project. Collection cables are often congregated into common trenches and run adjacent to one another.

AC collection lines (34.5kV) will connect the inverters to the Project substation. The collection lines connected to the inverters create circuits generally loaded up to 30 MW. The number and loading of circuits are determined by electrical, geotechnical, and equipment parameters. The AC collection system will be installed underground via open cut trench or plowed methods or overhead via self-supporting or guyed poles. Horizontal directional drilling (HDD) may also be used. Approximately 110,880 linear feet of AC collection cables would be installed throughout the Project.

(g) Substations, switching substations, and transformers

Preliminary design includes one Project substation with one 140-MVA transformer and all necessary equipment to step up incoming MV electricity to the high voltage electricity necessary to interconnect via a gen-tie line into an existing 69kV switchyard that will be owned and operated by AEP. The location of the substation/switchyard complex is depicted in all Facility mapping.

A common control enclosure will be installed on site that will house the protection, communication, and supervisory control and data acquisition equipment necessary to safely operate the substation. The substation will be approximately two acres total in area and located adjacent to the POI switchyard. The substation/switchyard complex will be fenced in and protected according to the NESC.

(h) Temporary and permanent meteorological towers

The Project will include four permanent MET towers that will be approximately 14 feet (4.3 meters) tall and installed on a concrete base adjacent to inverters. MET stations consist of a pyranometer to measure the solar irradiance, an anemometer to measure the wind speed and direction, and a thermometer. The location of the MET towers will be determined during the final design stage.

(i) Transportation facilities, access roads, and crane paths

Approximately 27,456 linear feet of new access roads will be constructed for the Project. These roads will be private, constructed of aggregate gravel, and will not exceed 16 feet (4.9 meters) in width, except for turning radii, which will not exceed 50 feet (15.2 meters) in radius. Access roads will be constructed to support the size and weight of vehicle traffic on site.

The highest traffic volume will occur during peak construction periods, when racking systems are being installed and PV solar modules are being assembled concurrently. Except for the transformer delivery, construction traffic is not expected to include oversize or overweight loads.

The construction of the solar array will not utilize large cranes and, therefore, crane paths are not necessary throughout the Project Footprint. A crawler-type crane will be used to erect the substation. Due to the proposed location of the substation and the adjacent existing road, a designed crane path is not necessary to access the substation.

(j) Construction laydown areas

The Project will include one laydown area throughout construction that will be no more than four acres in size. The location of the laydown area is depicted in the Facility figures. The laydown area will include construction contractor trailers, equipment storage containers, diesel fuel storage for construction equipment, a laydown area for materials and supplies, including solar modules and racking equipment, and an employee parking area. The laydown area will be restored once construction is complete, provided it is not used for other Project components. Any temporary electrical lines will be removed once construction is complete.

(k) Security, operations, and maintenance facilities or buildings

The Project will include an O&M trailer that will house administrative, operation, and maintenance equipment and an office space for Project personnel. The O&M trailer and associated infrastructure would occupy approximately two acres. The Facility will be surrounded by approximately 53,856 linear feet of 7-foot (2.1-meter) perimeter fencing.

(l) Other pertinent installations

After construction, temporarily disturbed areas will be restored. The Facility will be graded to natural contours where possible and prepared for final seeding. Once construction is complete, the permanent access roads will be dressed as necessary to ensure their long-term function. Erosion control methods during and after construction will depend on the contours of the land, as well as requirements of relevant permits.

(3) New Electric Transmission Line

The only new transmission lines associated with the Project will be the 69kV gen-tie line delivering electricity to the existing POI switchyard that will be owned and operated by AEP. The gen-tie line would be no more than 300 feet (91.4 meters) in length.

(4) Project Area Aerial Map

Figure 3-2 depicts the proposed Facility and its nearby roads and property lines at a scale of at least 1:12,000 and includes 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; and
(d) Property lines.

(C) PROJECT SCHEDULE

(1) Project schedule in Gantt Format

The Project schedule is provided in Figure 3-3 and includes the following milestones:

(a) Acquisition of land and land rights

The Project will be built on private land under purchase option, lease, and easement to the Applicant. OAC Section 4906-4-06(A) in this application details the acquisition of land and land rights for the Project.

(b) Wildlife, environmental, and cultural surveys/studies

Wildlife, environmental, and cultural surveys/studies were completed between October 2016 and November 2020, and included the following:

- Construction route study (Exhibit J);
- Geotechnical engineering report (Exhibit L);
- Glare analysis (Exhibit N);
- Sound level assessment (Exhibit O);
- Wetland and waterbody delineation field survey (Exhibit P);
- Threatened and endangered (T/E) species habitat field survey (Exhibit Q);
- Critical issues analysis (CIA; Exhibit S);
- Hydrology Assessment (Exhibit T);
- Desktop cultural resources review (Exhibit U);
- Architectural history survey (Exhibit V);
- Archaeological field survey (Exhibit W); and
- Visual resources assessment (Exhibit X).

The results of these surveys are summarized in OAC Section 4906-4-06 and -08 in this application.

(c) Receipt of grid interconnection studies and other critical path milestones for project construction

Interconnection studies commenced in the fourth quarter of 2016 and are continuing through the fourth quarter of 2020. A signed interconnection agreement is expected in the first quarter of 2021.

(d) Preparation of the application

Development of the application commenced in the third quarter of 2020 and has been ongoing since then.

(e) Submittal of the application for certificate

This application will be submitted in the fourth quarter of 2020.

(f) Issuance of the certificate

The Applicant anticipates that OPSB will issue a Certificate by the fourth quarter of 2021.

(g) Preparation of the final design

The Applicant anticipates that preparation of the final design will commence shortly after receipt of a Certificate in the fourth quarter of 2021 and be completed during the second quarter of 2022.

(h) Construction of the facility

Construction of the Project is planned to commence as early as the second or third quarter of 2022 and be completed by the third quarter of 2023.

(i) Placement of the facility in service

The Project is expected to be in service by the second or third quarter of 2023.

(2) Proposed construction sequence

An engineering procurement and construction contractor will be selected prior to construction. Construction will begin after the necessary permits are received and the electrical

interconnection process is finalized. Project construction will begin with workforce mobilization and the initial site preparation work including grading, placement of erosion control measures, and any necessary vegetation and tree removal. Localized site grading is expected to be required over smooth areas of rolling terrain within the array to accommodate the racking system. Minimal grading may be required for the Project substation and the O&M trailer, but access roads will be constructed at grade when possible.

Next, general site improvements will be made such as access improvements and preparation of the construction laydown area. The Facility components (racking system, PV solar modules, collection system, and inverters) will be installed next along with access roads. The Project will be constructed in blocks, and multiple blocks will be constructed simultaneously. Commissioning of electrical equipment will be conducted prior to placement of the Facility in service. As portions of the Project near completion, temporary laydown areas will be vacated and disturbed areas will be reseeded and re-vegetated consistent with the vegetation management plan (Exhibit C). Once installation is complete, the O&M trailer and associated permanent infrastructure (storage, lighting, etc.) will be completed. All temporary restroom facilities will be removed upon completion of the O&M trailer.

After construction, temporarily disturbed areas, including the construction laydown area, will be restored. While only minimal grading of the site is anticipated, if applicable, the Facility will be graded to natural contours where possible and prepared for final seeding. Once construction is complete, the permanent access roads will be dressed as necessary to ensure their long-term function. Erosion control methods during and after construction will depend on the contours of the land, as well as requirements of relevant permits.

(3) Impact of Critical Delays on the In-Service Date

Due to the complexity of preparing a utility-scale solar facility for permitting, construction, financing, off-takes, etc., impacts of any delays can vary widely. Critical delays may have material impacts and adverse effects on Project financing, including the Applicant's ability to procure PV solar modules and other Facility components. Such delays may push the in-service

date back, which would cause significant financial burden to the Applicant, as discussed in OAC Section 4906-4-06(D) of this application.

4906-4-04 PROJECT AREA SELECTION AND SITE DESIGN

(A) SELECTION OF THE PROJECT AREA

(1) Description of the Study Area or Geographic Boundaries of the Area Considered for Development and Rationale for Selection

The Project is in Mark Township, Defiance County, Ohio near the communities of Mark Center to the west, and Sherwood to the east. The Applicant chose to develop in this area because the properties are adjacent to an existing AEP 69 kV switchyard and transmission line that distributes power to the PJM grid.

(2) Map of the Study Area and General Sites Evaluated

A map of the Project Area (Study Area) is provided as Figure 3-2. The Applicant evaluated land within Defiance County to determine whether it was suitable for solar development.

(3) Qualitative and Quantitative Siting Criteria Utilized

From a qualitative perspective, open, flat ground, access to transmission, and interested landowners were key to identifying the site. Quantitative siting criteria is based upon estimates of solar resource from data collected on-site, required transmission upgrade and interconnection costs, and project size.

(4) Description of the Process and how the Siting Criteria were Utilized

Savion's solar site selection process is comprised of four primary components: transmission proximity, geophysical and environmental review, landowner and community interest, and competition research.

The process begins with identifying areas with access to nearby transmission facilities. Once a point of interconnection onto the grid is identified, large areas of open ground are analyzed to determine suitability based on land use and environmental concerns. Areas with large concentrations of wetlands, sloped terrain, or undisturbed forested areas are generally avoided, narrowing the number of potential project areas considerably. Research into county parcel data is then completed in order to identify land ownership. Several potential landowners are contacted in order to determine interest and to refine the initial site boundary. Research into the community and competitor's actions may then be completed in order to determine if a site is likely to be successful. A project only moves into advanced development if there is landowner support, competitive economics, and positive results from initial environmental and transmission studies.

(5) Description of the Project Area(s) Selected for Evaluation

The Applicant selected the subject site for further development because of interest and positive feedback from landowners and local officials, and positive results from initial transmission studies. In addition, due to the nature of the site (i.e., previously disturbed cultivated cropland), solar development construction and operations will not have a significant impact on natural resources.

(B) DESIGNING THE FACILITY LAYOUT

(1) Constraint Map

Figure 4-1 presents a map of the Project Area with the setbacks and other constraints.

(2) Criteria Used to Determine the Facility Layout and Site Design

The layout of the Project has been optimized to utilize available land and still provide environmental and visual setbacks to achieve a minimal impact to natural resources and adjacent residents' viewsheds. All these setbacks have been made proactively by the Applicant in order to limit impacts to the various resources. The ground coverage ratio of the solar modules was selected to obtain the most efficient energy production. The solar modules have been setback a minimum of 300 feet (91.4 meters) from the adjacent residences, 50 feet (15.2 meters) from public road centerlines, and 85 feet (25.9 meters) from the existing railroad centerline that bisects

the Project Area. The Project has been designed such that all 13 wetlands and one perennial stream delineated in the Project Area have been avoided. Ephemeral streams were also avoided with the site design with the exception of one stream (Stream 2) that is proposed to be crossed by an access road. Should it become necessary to impact wetlands or additional streams in the final design, the Applicant will coordinate with U.S. Army Corp of Engineers (USACE) and the Ohio Environmental Protection Agency (OEPA) to obtain the required permits. Based on the final design and any proposed impacts to Stream 2, the Applicant will coordinate with OEPA to obtain an Ephemeral Stream General Permit.

(3) Description of Number and Type of Comments Received

The public information meeting was a combination of an available recorded presentation and a live meeting held virtually on November 12, 2020. A presentation about the Project was posted online on November 9, 2020 for the public to view prior to the meeting. The recorded presentation was just over 30 minutes in length and included a combination of slides and narrative from subject matter experts providing an overview of the Project. The presentation concluded with information on the many avenues for the public to ask questions and provide comments on the Project to both the Applicant and the OPSB. On November 12, 2020, a video conference was held that allowed participants to either phone-in or log-in on their computers to hear and/or view a similar presentation to the pre-recorded one. The presentation was repeated twice during the three-hour time span and the remaining time was used as a question and answer session.

Approximately 30 participants attended the video conference. Community feedback was generally positive. A list of questions asked during the public information meeting is provided in Exhibit D.

The Applicant's responses to the inquiries are consistent with the information provided in this application. In addition, the Applicant launched a Facebook page (https://www.facebook.com/markcentersolarproject/) and website (https://www.markcentersolarproject.com/) to provide interested individuals a way to seek Project related information and connect with Project representatives. The Applicant's social

media campaign has proven to be an effective communication tool. Facebook page messaging has resulted in over 900 interactions with the page, of which 95% were indicative of support for the Project, as indicated in the third-party Facebook Metrics report included in Exhibit E. Since launching the social media campaign, seven residents have reached out directly to Project representatives to inquire about the Project. These inquires have resulted in several phone calls and in-person meetings to further engage the community and garner local support for the Project.

4906-4-05 ELECTRIC GRID INTERCONNECTION

(A) CONNECTION TO THE REGIONAL ELECTRIC GRID

PJM is the Regional Transmission Operator that coordinates the movement of wholesale electricity throughout 13 states and the District of Columbia in the Midwest and Mid-Atlantic, including Ohio. The Applicant will be connecting the Project to AEP's existing Mark Center 69 kV substation, also referred to as a switchyard, that connects to the PJM grid.

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

(1) Generation Interconnection Request Information

The Applicant submitted two transmission filings with PJM for the Project to interconnect to AEP's Mark Center 69 kV substation with a total capability of 109.9-MW. The first queue position was submitted under Mark Center Solar Project, LLC for 49.9 MW and assigned queue position AC1-167. The second request was submitted under Defiance County Solar Project, LLC for 60 MW and was assigned queue position AE2-322. To date, both Feasibility Studies and System Impact Studies (SIS) have been completed for the two queue positions for the Project. An expansion of the existing Mark Center 69 kV substation will be required to accommodate the interconnection as identified in the SIS for PJM queue AC1-167. The expansion would include the installation of a new 69 kV circuit breaker, installation of associated protection and control equipment, 69 kV line risers, supervisory control and data acquisition system, and 69 kV revenue metering. The total cost of the Project estimated in the AC1-167 SIS report is $1,100,000. The AE2-322 SIS report did not require any additional infrastructure or costs to accommodate the

interconnection, as it assumes all expansions described in the AC1-167 SIS will be completed to accommodate the interconnection. The AE2-322 SIS report also assumes that both AC1-167 and AE2-322 will share the same generator lead line that would connect at the Mark Center 69kV substation. Similar results are expected in the final study phase – Facilities Studies, which are currently in progress for both queue positions and are expected to be issued by December 31, 2020 for AC1-167 and first quarter 2021 for AE2-322. An Interconnection Service Agreement will be executed upon completion of the Facilities Studies and is anticipated to be executed in the first quarter of 2021. The completed system studies for queue positions AC1-167 and AE2-322 are attached in Exhibit F to the application.

(2) System Studies on Generation Interconnection Request

The Project queue position AC1-167 received its Feasibility Study on May 1, 2017; and SIS in May 2018. The Project queue position AE2-322 received its Feasibility Study in October 2019; and SIS in February 2020. The complete studies are contained in Exhibit F to the application.

4906-4-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

(A) CURRENT AND PROPOSED OWNERSHIP OF THE PROPOSED FACILITY

The Applicant is a wholly owned subsidiary of Savion. Savion develops projects and secures PPAs that are ultimately transferred to other entities. The Project will be constructed, operated, and maintained by the Applicant.

The Applicant holds all landowner agreements. These agreements will not change the ownership status of the private lands within the Project Area. All landowner agreements are summarized in Table 6-1 below.

Table 6-1 Participating Landowners

Parcel Number	Owner	Status	Parcel Size (Acres)	Acreage within Project Area	Acreage within Facility Footprint
G19-0023-0-010-01	Henry C. & Imogene J. Wilson	Leased	172	172	148
G19-0023-0-010-00	Henry C. & Imogene J. Wilson	Leased	79	79	57
G19-0023-0-007-01	Alan L. & Arlene E. Culler	Leased	70	70	51
G19-0023-0-006-00	Alan L. & Arlene E. Culler	Leased	56	56	54
G19-0023-0-004-00	Alan L. & Arlene E. Culler	Leased	69	64	57
G19-0023-0-005-00	Alan L. & Arlene E. Culler	Leased	12	12	9
G19-0026-0-002-00	Alan L. & Arlene E. Culler	Leased	40	40	33
G19-0026-0-004-00	Rolland L. Wolfrum, et al.	Leased	43	43	29
G19-0026-0-003-00	Rolland L. Wolfrum, et. al.	Leased	35	35	32
G19-0026-0-005-00	Rolland L. Wolfrum, et. al.	Leased	79	71	59
G19-0022-0-010-00	Rolland L. & Gina Wolfrum	Leased	76	76	66
G19-0022-0-007-00	Rolland L. & Gina Wolfrum	Leased	45	45	13
G10-0022-0-009-00	Levon C. Cline & Ruby A. Cline Trust	Leased	114	114	59
TOTAL			890	877	665

Note: Due to rounding, acres for each parcel do not sum to the totals provided

(B) CAPITAL AND INTANGIBLE COSTS

(1) Estimates of Capital and Intangible Costs for the Various Alternatives

The Applicant will invest approximately [redacted] million to develop the Project with capital costs totaling $[redacted] million for equipment, onsite labor, etc. and intangible costs including permitting, other development costs, and business overhead totaling approximately $[redacted] million.

Alternative project areas were ruled out, as explained in Section 4906-4-04, prior to conducting detailed cost analyses.

(2) Cost Comparison with Similar Facilities

Based on the current estimated cost per kilowatt of $[redacted]/kilowatts DC (kW_{DC}), which has some variability based on things like discount rates, the Project's costs are consistent with costs for other solar facilities in the Midwest and with others developed by Savion. Lazard's Levelized Cost of Energy Analysis provides a means of quantifying and comparing the cost of different energy generation technologies in the U.S., reporting that utility-scale solar crystalline PV projects across the U.S. range from $825 to $975 per kW_{DC}, so the anticipated cost for this Project is within the national range (Lazard 2020).

(3) Present Value and Annualized Cost for Capital Costs

Capital costs spent through the fourth quarter of 2020 are accounted for and all additional capital costs will be incurred through construction, culminating with the Project's commercial operation date (COD) in the second or third quarter of 2023. Because of the short timeline to the Project's COD, the present value and annualized capital costs will be similar to the costs presented above.

As no other Project location alternatives were considered, no additional present value or annualized cost estimates for capital costs are provided.

(C) Operation and Maintenance Expenses

(1) Estimated Annual Operation and Maintenance Expenses

The O&M costs for the Project during the first two years of commercial operation are estimated to be approximately $[redacted] annually, for a total of $[redacted] million for the first two years combined (excluding costs associated with tax and lease payments or increases due to inflation).

(2) Operation and Maintenance Cost Comparison

The Applicant expects the annual O&M cost of the Project, including labor, to be approximately $[redacted] (excluding taxes, land leases, and inflation) or $[redacted] per kilowatt alternating current per year (kWac/year). The U.S. Department of Energy, National Renewable Energy Laboratory (NREL), issued a report benchmarking the cost of installed solar energy in the first quarter of 2018 across the U.S. and found that annual O&M costs for utility-scale, fixed-tilt PV solar was approximately $9.10 per kWac/year and $10.40 per kWac/year when using tracking systems (NREL 2018). These costs exclude inverter replacements. Based on this national average, the Project is below the national average cost for annual O&M costs.

(3) Present value and Annualized Expenditures for Operating and Maintenance Costs

The present value of the total annual O&M cost (excluding taxes, land leases, and inflation) can be calculated using a nominal 9% discount rate and 2% escalation over the approximate 30-year lifespan of the Project. Based on these assumptions, the net present value (NPV) of the O&M costs over the life of the Project is approximately $[redacted] million.

(D) Estimated Cost for a Delay

Due to the complexity of preparing a modern solar energy facility for permitting, construction, financing, off-takes, etc., impacts of any delays can vary widely. Critical delays may have material, adverse effects on Project financing, including the Applicant's ability to procure PV solar modules and other Project components. Such delays may push the in-service date back. A

monthly delay in the in-service date is estimated to have an NPV loss of a minimum of $[redacted] per month.

(E) ECONOMIC IMPACT OF THE PROJECT

The Project will have a positive impact on the local economy primarily through construction spending and jobs, and related tax revenue benefits for the local governments and school districts as described below. Strategic Economic Research, LLC conducted a thorough economic impact assessment of the Project and the resulting report is provided in Exhibit G. To quantify the potential impact on the local economy, the Jobs and Economic Development Impacts (JEDI) PV Model developed by the NREL was utilized in the economic assessment. The JEDI PV Model is an input-output model that measures the spending patterns and location-specific economic structures that reflect expenditures supporting varying levels of employment, income, and output. For this Project, three types of expenditures were considered: direct impacts, indirect impacts, and induced impacts. In order to determine construction impacts, final demand multipliers were used to estimate the total economic outputs at the county and state levels.

The JEDI model utilizes state-specific industry multipliers obtained from IMPLAN (Impact analysis for Planning). The Project's construction expenditures in Defiance County, of which the majority will be construction payroll expenses, are estimated to total approximately $11.5 million and a total of nearly $23.2 million in the state of Ohio. The Applicant estimated that construction of the Project would create approximately 168 jobs in Defiance County and 322 total within the State of Ohio. The Applicant has estimated that the O&M of the Project will require approximately three onsite employees and another approximately eight jobs will be created within the State of Ohio through indirect and induced impacts. Payrolls for those jobs during operation are estimated to total approximately $338,738 in Defiance County and a total of $672,963 annually in the state of Ohio.

(1) Annual Total and Present value of Construction and Operation Payroll

Per the JEDI model, the Project will create employment opportunities primarily during the approximate 12-18 month construction period and it is estimated that the annual total and present value of payroll for direct, indirect, and induced jobs will equal approximately $23.2 million in the State of Ohio.

O&M earnings are expected to total approximately $[redacted] thousand annually over the 30-year life of the Project when considering direct, indirect, and induced impacts for the State of Ohio. Assuming an 9% discount rate and 2% escalation, the present value of the annual O&M payroll is approximately $[redacted] million.

(2) Construction and Operation Employment and Estimates

As a result of the construction and operation of the Project, both short- and long-term jobs will be created as a result of the Project. During construction, Project development staff and on-site labor are anticipated to include 88 workers from Defiance County and another approximately 55 workers from across Ohio, bringing the total number of direct jobs from the Project to approximately 143 workers statewide. Further, it is predicted with the JEDI model that more than 179 indirect and induced jobs would be created within the State of Ohio, including 80 in Defiance County, as a result of an increased need for jobs related to truck transportation, manufacturing, and food and beverage stores, etc. In total, approximately 322 new direct, indirect, and induced jobs will be created in the state of Ohio as a result of Project construction, which includes 168 new jobs in Defiance County.

Estimating the portion of projected employment that would come directly from the region is difficult. While many positions can be filled utilizing local labor, such as equipment operators, truck drivers, laborers, and electricians, there will also be some specialized skilled positions required for construction of the Project. It is anticipated that some of these specialized positions will need to be filled using non-regional workers, due to the specialized training required for each position.

The local housing market would not be impacted during construction of the Project for two reasons: 1) most of the construction positions will be filled by laborers from the local community, and 2) construction workers not from the local community would only temporarily relocate to the area and it is anticipated that they would return home after construction is complete. Thus, there is no anticipated impact on supply in the local housing market.

During the operational phase of the Project, the Applicant expects that approximately three full time equivalent positions would be required for O&M of the Project and an additional approximately eight indirect and induced jobs would be created within the State of Ohio during operations.

(3) Estimated County, Township, and Municipal Tax Revenue

The Applicant anticipates entering into a payment in lieu of taxes (PILOT) agreement with Defiance County, whereby real property and tangible personal property taxes will be abated, however a fixed payment will be made based on the nameplate capacity of the Project. The PILOT is estimated to be an annual payment of $7,000/MW to the local taxing district. This agreement would result in annual local government revenues of approximately $770,000, and more than $23.1 million over the 30-year life of the Project. The tax abatement structure is currently being discussed with the county and will be finalized after application submission. Local school districts would receive the largest portion of the PILOT payments, with an estimated $385,000 provided annually while Mark Township would receive approximately $154,000 each year. The remaining approximately $231,000 annually would be provided to Defiance County. Over the life of the Project this results in more than $11.5 million in payments to the local school districts, $4.6 million to the township, and $6.9 million to Defiance County. The economic impact assessment of the Project and resulting report, provided as Exhibit G, was prepared with these, more conservative, numbers to consider this payment as well as potential upfront payments negotiated with Defiance County to achieve optimal implementation for both the county and the Applicant.

(4) Estimated Economic Impact of the Proposed Facility on Local Commercial and Industrial Activities

The Project will result in a positive overall economic impact on the local economy, including local commercial and industrial activities. There will be direct, indirect, and induced "multiplier effects" from the construction and operation of the Project. These effects can create indirect impacts, such as employment created in producing and transporting solar modules, and induced impacts resulting from the increase in the employees' income and spending (i.e., local restaurants hiring additional staff to accommodate construction laborers spending their wages on meals). The total output (value of production) from the construction of the Project is anticipated to be nearly $20.1 million in Defiance County and $44.7 million in the State of Ohio. Annual operations of the Project are expected to result in approximately $910,000 in output for Defiance County and over $1.7 million for the State of Ohio as a result of O&M of the Project.

In addition, there will be a significant benefit to the local economy through lease payments to landowners. As part of the economic impact assessment conducted for the Project, Strategic Economic Research, LLC analyzed the estimated value of land use in Defiance County for a solar lease versus crop production. The detailed results of this comprehensive analysis are available in Sections IV and V of the Economic Impact Assessment (Exhibit G) and show that the land use value of solar far exceeds the value of crop production over the projected 30-year life of the Project. The analysis utilized a "real options" model to consider the critical factors affecting the decision to execute a solar lease on agricultural land. The model estimated the expected returns from crop production, taking into account market price of crops and average yields. Based on the analysis, a solar lease would provide the landowner with higher monetary returns than crop production in all 500 simulations included in the analysis. The economic impact assessment of the project also discusses the "market forces" and leasing specifics that landowners may consider when allowing their land to be used for solar; noting it differs from residential or commercial development, where the land is often owned in fee without decommissioning requirements or financial surety. At the end of the solar lease term, land may be restored to the original condition and likely returned to crop production or another agricultural use.

Additional value to local economies will result from the increased diversification of the county and state economic bases. Economic diversification ensures greater stability of the economy by minimizing the effects of business cycles associated with specific industry.

(F) PUBLIC RESPONSIBILITY

(1) Public Interaction

Representatives of the Applicant have conducted meetings with the local government and the general public to gather support for the Project and assure that, to the extent possible, their comments and suggestions have been incorporated into the construction and design of the Project. The Project is located within Mark Township in Defiance County and does not encompass any municipalities.

The Project has been under development since 2016. Since that time, Project representatives have met with multiple landowners and residents to discuss the Project. In addition, Project representatives have formed strong relationships with the following local organizations:

- Defiance County Community Improvement Corporation
- Mark Township Trustees
- Defiance County Commissioners
- Central Local School District

The Applicant's involvement in the local community has included presentations at local rotary organizations and contributions to Defiance County Fair and 4-H projects.

The Applicant launched a Facebook page and created a Project website to engage the public, provide Project information, answer questions, and solicit feedback from the local community. Social media has proven to be an effective communication tool for the Project, as the Facebook page has resulted in over 900 interactions and additionally, has been used to conduct opinion polls. These interactions have given the Applicant valuable insights into community interests and allowed Project representatives to respond to questions. The Project Facebook page is monitored

and maintained by a third party and a recent Facebook Page Metrics Report for the Project is included in Exhibit E.

During the construction period, the Applicant's contractor will establish a 24 hour a day, seven day a week "hot line" for emergency and complaint notices. During operations, site staff will be qualified to attend to requests and complaints with the necessary corporate support. Surrounding landowners will be provided with contact information for site staff. Additionally, emergency contact numbers will be on posted placards at Project entrances that will allow anyone from the public to contact operations staff. The Applicant has also developed a Complaint Resolution Plan to address how complaints will be handled and potential mitigation techniques to be implemented for the Project.

No less than seven days prior to commencing construction, the Applicant will distribute this Complaint Resolution Plan to the affected property owners and tenants via first class mail. A copy of the Complaint Resolution Plan and the notification letter are included in Exhibit H.

(2) Insurance

Liability insurance will be maintained at all times during development, construction, and operation of the Project. The Applicant, a wholly owned subsidiary of Savion, has general liability and excess liability policies on the development phase of the Project.

All solar modules will be installed on property under lease or easement or owned by the Applicant. Terms of the leases or easements include requirements for the Applicant to pay annual rent; to pay for all tax-related payments resulting from the solar installation; to minimize impacts on the landowner's current use of the property; and to remove the solar modules upon termination of the land agreement. In addition, the terms of the leases require the Applicant to provide insurance for all Project components and to indemnify the landowner and other third parties from liability claims resulting from the construction and operation of the Project. The Applicant will carry insurance during development, construction, operation, and decommissioning that will ensure proper indemnification for the landowner and other third parties and for the interests of the Applicant.

A Certificate of Development Liability Insurance is provided as Exhibit I, a portion of which has been filed under seal.

(3) Road and Bridge Impacts

Burns & McDonnell (B&M) conducted a construction route study to identify road surface types and conditions, bridge and culvert locations and conditions, road and bridge posted load restrictions, and potential overhead clearance issues along the roads that will be used during construction. The findings of the B&M construction route study are summarized below, and the complete report is contained in Exhibit J.

It is anticipated that there will be four access points to the Facility that will be utilized during construction, one along State Route 18 (Defiance Avenue) and three others on County Route 39 (Fountain Street Road). Construction equipment, supplies, and general construction traffic will enter the Facility along those access roads. Based on those access points, B&M evaluated the roadways immediately surrounding the Project Area for their use as potential construction routes (Exhibit 2 within the Construction Route Study included as Exhibit J).

B&M obtained Annual Average Daily Traffic volumes for the state and county roads along the construction routes, and combined with field observations, it was determined that the roadways have adequate sight distance and do not carry high traffic volumes.

The field survey found that there are four bridges along the construction routes, all of which appear to be in good condition. One of these bridges, located on County Route 122 (Farmer Mark Road), is weight-restricted to 34 tons. It is scheduled to be replaced by a non-weight-restricted bridge in Spring 2021. The remaining three bridges have no posted load restrictions. All the roads along the construction routes are asphalt, and none are temporarily or permanently load restricted. One road, County Route 122 (Farmer Mark Road) is in fair condition. The remaining roads are in good condition.

No issues related to vehicle clearance at overhead electrical crossings or tree overhang locations were identified and no other significant concerns to the existing roads were identified by B&M.

During construction, local drivers may experience minor delays as a result of waiting for safe passage on the construction routes when construction and delivery vehicles enter and exit the Facility. Road closures, lane closures, or access restrictions are not anticipated during construction or operation of the Facility. The Facility will not generate a significant volume of traffic during construction or operation, so any additional future traffic associated with the Facility will be negligible.

Roadway damage could occur during construction as a result of the additional traffic and drivers using the road shoulder, resulting in rutting on the shoulder and rutting or heaving of the pavement on the edges. Impacts to road pavement could be exacerbated if winter construction occurs as a result of the cold and wet conditions. In order to ensure that a corrective action process is established to address any damaged elements of the roadway caused by vehicle trips generated by construction, a Road Use Maintenance Agreement (RUMA) between the Applicant and Defiance County will be executed. The RUMA will also address implementation of work zone measures to ensure the safety of the public as well as the construction team.

(4) Transportation Permits

The Defiance County Engineer's Office is responsible for maintaining County Routes 122 (Farmer Mark Road), 39 (Fountain Street Road), and 33 (Jericho Road) and the local Township Trustees maintain jurisdictional authority on their roadway system. Township routes T-124 (Openlander Road) and T-123 (William Center Cecil Road) are maintained by Mark Township. State Route 18 is maintained by the Ohio Department of Transportation (ODOT). All necessary permits will be coordinated with the applicable entities prior to the start of construction. In addition to the RUMA executed with Defiance County, the Project will require Construction Access Drive Permits from Defiance County for each of the access points to the Facility. No special hauling permits are anticipated for the Project with the exception of an overweight permit that will be required for delivery of the transformer. There is no plan to utilize public rights-of-way for the Project, however if needed, right-of-way permits will be obtained from the entity

responsible for the affected roadway. All permits will be obtained at least 30 days prior to the start of construction.

Any necessary traffic controls will be implemented in accordance with ODOT standards and specifications.

(5) Decommissioning

At the end of the life of the Project, expected to be 30 to 40 years, the Applicant will decommission the Project following the Decommissioning Plan prepared by Environmental Consulting & Technology, Inc., for the Project and included in Exhibit K. The Project will have only modest impacts to the land and will be relatively easy to decommission. Decommissioning the Project should not require any soil or groundwater remediation as operation of the Project will not generate hazardous waste or wastewater. All aboveground features and buried structures up to a depth of 36 inches (0.9 meters) will be removed and disposed of offsite. The only materials that may be left in place at the Facility are access roads requested by landowners and switchyard, interconnection facilities, and similar utility facilities that are not owned by the Applicant. Buried structures greater than 36 inches (0.9 meters) below grade (e.g. collection lines, foundations, etc.) will remain in place. Project restoration efforts will return the land to substantially its original topography. Restoration shall include returning the soil to its pre-development state to allow any prior agricultural use to resume if the landowner so chooses.

Decommissioning costs for the Project will be recalculated prior to commencing construction and will consider salvage of the solar components (Net Decommissioning Cost). If the decommissioning cost exceeds the salvage value of the solar components and therefore, the Net Decommissioning Cost is a positive value, then the Applicant will post decommissioning funds in the form of a performance bond where the company is the Principal, the insurance company is the Surety, and the OPSB is the Obligee. The Decommissioning Plan and financial assurance will be reviewed again in year 10 of Project operations and every five years thereafter to assess the value of the financial assurance per the current Net Decommissioning Cost estimate.

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

(A) REGULATION CONTEXT

The Project will be constructed and operated in compliance with all federal, state, and local regulations for air and water pollution, solid and hazardous wastes, and aviation.

(B) AIR QUALITY REGULATIONS

(1) Preconstruction Air Quality and Permits

(a) Ambient Air Quality of the Proposed Project Area

Air quality within a geographic area is classified by the U.S. Environmental Protection Agency (USEPA) based on National Ambient Air Quality Standards (NAAQS). Areas with pollutant levels below the NAAQS are considered to be in attainment, whereas areas with persistent air quality problems are designated as nonattainment areas. Defiance County is in attainment for all criteria pollutants regulated by the USEPA: Particulate Matter <10 μm and <2.5 μm (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), carbon Monoxide (CO), nitrogen oxide (NO_2) and ozone (O_3). The USEPA also administers the Regional Haze Program to reduce air pollution that causes visibility impairment. There are no areas in the state of Ohio protected by the Regional Haze Program as listed under 40 CFR § 51.300 (OEPA 2015).

The OEPA conducts air quality monitoring to identify exceedances of criteria pollutants in the atmosphere. An air monitoring network is maintained by the OEPA that includes 135 monitoring sites within the State of Ohio. To provide a general characterization of ambient air quality in the Project Area, the most recent data collection from the nearest monitoring sites was reviewed. Table 7-1 provides mean and maximum measurements of criteria pollutants at the closest available monitoring sites, including Lima in Allen County (within 50 miles of the Project Area), New Paris in Preble County (within 110 miles of the Project Area), Columbus in Franklin County (within 130 miles of the Project Area), and Waterville in Lucas County (within 50 miles of the Project Area) (OEPA 2019a).

Table 7-1 Ambient Air Quality Monitoring Measurements Nearest to the Project Area

Pollutant	Closest Monitoring Site ID	City/ County	Averaging Period	NAAQS Standard*	Mean	Highest Maximum Reading
PM_{10}	39-135-1001	New Paris/ Preble	24-hour	150 µg/m^3	16.8	42
$PM_{2.5}$**	39-135-1001	New Paris/ Preble	24-hour	35 µg/m^3	9.24	37.9
Sulfur dioxide	39-003-0009	Lima/Allen	1-hour	75 ppb	0.04	6.0
Carbon monoxide	39-135-1001	New Paris/ Preble	8-hour	9 ppm	Not reported	0.4
			1-hour	35 ppm	Not reported	0.5
Nitrogen dioxide	39-049-0038	Columbus/Franklin	1-hour	100 ppb	10.28	49.0
Ozone***	39-095-0027	Waterville/Lucas	8-hour	0.070 ppm	0.066****	0.081

*Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table

**Note: Violation only occurs when the annual 4th highest daily maximum 8-hour concentration averaged over three years exceeds the standard.

Source: OEPA 2019a.

Key:

µg/m^3 = micrograms per cubic meter

NAAQS = National Ambient Air Quality Standards

PM_{10} = Particulate Matter ≤10µm

$PM_{2.5}$ = Particulate Matter ≤2.5µm

ppb = Parts per billion

ppm = Parts per million.

(b) Air Pollution Control Equipment for the Proposed Facility

No air pollutants are associated with the operation of the Project. Therefore, no air pollution control equipment is needed.

(c) Applicable Federal and/or Ohio Air Quality Standards and Limitations

There are no federal or state regulations related to New Source Performance Standards, applicable air quality limitations, NAAQS, or Prevention of Significant Deterioration increments that are applicable to the Project as there are no emissions associated with the operation of the Project.

(d) Required Permits to Install and Operate Air Pollution Sources

No air pollutants are associated with the operation of the Project. Therefore, no air permits are required.

(e) Air Monitoring Station Locations and Major Pollution Point Sources

There are no emissions associated with the Project, therefore, the location of air monitoring stations and other current or anticipated point source locations are not provided.

(f) Compliance with Permits and Standards

As described above, no air pollutants are associated with the operation of the Project. Therefore, no federal or state regulations apply, and no air permits are required.

(2) Plan for Emissions and Fugitive Dust Control During Construction

The operation of heavy construction equipment and vehicles will produce some particulate emissions from engine exhaust and fugitive dust generation during travel on unpaved roads and construction activities. These operations will be temporary and limited to active areas of construction and, therefore, will not result in significant impacts on air quality.

Best management practices will be followed during site preparation and construction to control fugitive dust emissions, including using water to wet down open soil surfaces to limit fugitive dust. Water will be used only in periods of high heat and when the soil is deemed dry enough so as not to reach saturation during normal travel.

(3) Air Quality for the Operation of the Proposed Facility

(a) Ambient Air Quality Monitoring Plans

No air pollutants are associated with the operation of the Project. Therefore, no air quality monitoring plan is needed.

(b) Map of Estimated Concentrations in Excess of Significant Emission Rates

There are no air emissions from operation of the Project, therefore, a map of the estimated concentrations in excess of USEPA "Significant Emission Rates" is unnecessary.

(c) Air Pollution Control Equipment Failure

No air pollutants are associated with the operation of the Project. Therefore, no air pollution control equipment is needed and there is no potential for equipment failure.

(C) WATER QUALITY

(1) Preconstruction Water Quality and Permits

(a) List of Water Quality Permits

Based on the final Project layout, the following water quality permits will be obtained, as necessary, for the Project. All permits will be obtained by the Applicant prior to Project construction:

- An Ohio National Pollutant Discharge Elimination System (NPDES) construction stormwater general permit, OEPA Permit No. OHC000005.
- A USACE permit under Section 404 of the Clean Water Act (CWA) for disturbances to waters of the United States (as necessary for intermittent and perennial stream and wetland crossings, although not required based on the current preliminary design and construction methodologies).
- An OEPA Water Quality Certification under Section 401 of the CWA (as necessary for disturbance to streams and wetlands, although not required based on the current preliminary design and construction methodologies).
- An OEPA Isolated Wetland/Ephemeral Stream Permit under Section 6111.021 and 6111.03 (J) of the Ohio Revised Code based on the proposed crossing of an ephemeral stream (Stream 2) by a proposed access road for the Project.

(b) Map of Water Monitoring and Gauging Stations

There will be no water discharge into streams or waterbodies from the Facility; therefore, no mapping of water monitoring and gauging stations are provided for the Project.

(c) Monitoring and Gauging Station Information

No water discharge will occur from the site; therefore, no monitoring and gauging station information is provided for the Project.

(d) Existing Water Quality of the Receiving Stream

No water discharge will occur from the site; therefore, there will be no receiving streams and no water quality information is provided for those streams.

(e) Water Discharge Permit Application Data

No water discharge will occur from the site; therefore, no data for a water discharge permit is provided for the Project.

(2) Water Quality During Construction

(a) Map of Water Monitoring and Gauging Stations

No water discharge will occur from the site; therefore, no mapping of monitoring and gauging stations is provided for the Project.

(b) Estimated Quality and Quantity of Aquatic Discharges

Aquatic discharges to streams or wetlands are unlikely to occur during construction of the Project. However, a Spill Prevention, Control, and Countermeasure (SPCC) Plan will be developed to manage hazardous material storage on site to prevent accidental releases and will address the proper methods to contain and mitigate a spill, and the agencies to notify, in the rare event that a spill occurs. The Applicant will follow all measures indicated in the SPCC Plan and monitor for aquatic discharges draining from the site, such as an oily sheen on storm water, etc. to ensure that the water resources are not at-risk during construction.

There is the potential for erosion and sedimentation to occur within the nearby streams and wetlands as a result of ground disturbance during construction or when constructing the access road across Stream 2. However, the Applicant will implement a Stormwater Pollution Prevention Plan (SWPPP) to limit erosion from stormwater within the Project Area and minimize sedimentation of nearby streams and wetlands.

Shallow groundwater was not observed in any of the geotechnical soil test borings or test pit explorations conducted by Mott MacDonald. The soil boring test depths ranged from 20 to 48.5 feet while the test pit explorations ranged in depth from 8 to 10 feet (see Exhibit L).

(c) Mitigation Plans

While aquatic discharges during construction of the Project are not expected to be significant and would only be temporary in nature, several measures will be implemented to ensure surface water quality protection, including a SWPPP and SPCC Plan. The SWPPP and SPCC will be provided to the OPSB no later than 30 days prior to construction.

The SPCC Plan, as required by the USEPA, will address methods to prevent the potential release of hazardous substances during construction of the Project. If any spills do occur during construction, the SPCC Plan will also detail the proper methods to address the spill and agencies to notify. Hazardous materials stored on site during construction will be stored in accordance with the SPCC Plan to prevent a release. If a spill were to occur during construction and inadvertently reaches a waterway, it is only expected to cause a minor increase in turbidity over a short timeframe. A minor increase in turbidity for a short duration is unlikely to cause a serious threat to the drinking water quality of the particular water body in which the aquatic discharge occurs.

The SWPPP, required by OEPA as part of the NPDES Construction Storm Water General Permit Number OHC000005, will require the use of sediment and erosion control measures and best management practices (BMPs) during construction to implement storm water pollution prevention measures. BMPs that will be used during construction to prevent excess stormwater runoff from the construction areas will be defined in the SWPPP, when developed. Any increase

in stormwater discharges resulting directly from the construction of the Project will be documented in the SWPPP and permitted through the NPDES Construction Storm Water General Permit, OEPA Permit Number OHC000005. Furthermore, measures will be taken to maintain the site with BMPs for post-construction runoff control, as required, to ensure that all new facilities consistent with the operation of the Project do not create any additional storm water runoff than was generated during preconstruction conditions. The Applicant will implement OEPA Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays to further ensure that stormwater runoff is minimized at the site.

Groundwater impacts will be minimized through SWPPP implementation. However, should shallow groundwater be encountered during excavation, it may be pumped out and discharged into a designated upland area (approved by the landowner) to temporarily retain the water until it can infiltrate back into the ground. Specific details relating to the pumping of groundwater from an excavation area will be included in the SWPPP. Temporary sediment traps or the controlled release of water over vegetated upland areas will be utilized during construction to intercept and manage sediment-laden runoff from any dewatering activities that are necessary, allowing sediment to settle prior to discharge.

Direct impacts to perennial and intermittent streams and wetlands have been avoided in the preliminary Project design; however, if it becomes necessary to impact a stream or wetland to accommodate a fence, electrical, or road crossing in the final design, the crossing(s) will be coordinated with USACE and the OEPA. An access road is currently proposed to cross one ephemeral stream (Stream 2). If the final design of the Project includes this ephemeral stream crossing, then the Applicant will obtain an Isolated Wetland and Ephemeral Stream Permit from OEPA for the crossing, as necessary.

There is the potential for erosion and sedimentation to occur within the nearby streams and wetlands during construction. To mitigate any potential impacts that may occur to these aquatic resources, appropriate erosion and sediment control measures (e.g., silt fences or straw bale dikes or other stormwater control measures) will be used to limit the area of impact to surface waters. Further, the construction corridors and any clearing of vegetation in or near these features will be

minimized to reduce potential impacts. These specific measures will be outlined in more detail once the SWPPP has been developed.

If necessary, the Project intends to employ HDD techniques to install cables underneath roads and streams (if applicable). Currently, there is one HDD location proposed as part of the current site design as the AC collector cabling will likely need to be bored under the existing CSX Corporation railway that bisects the site in order to connect arrays on the north side of the site to the project substation. HDD drilling will be conducted per local codes and authority having jurisdiction guidelines and a Standard Horizontal Directional Drilling Construction Inadvertent Return Control Plan (Frac Out Plan; Exhibit M) will be implemented should an inadvertent drilling fluid release occur during construction. Before any drilling operations begin, all erosion and sedimentation controls included in the SWPPP will be installed and inspected by a qualified environmental inspector. The SWPPP, federal and state permit(s), landowner restriction list, and any other applicable documents will be reviewed before any ground disturbance occurs on the Project.

HDD has the potential for surface disturbance through an inadvertent drilling fluid release. In order to mitigate any potential impacts from HDD fluid releases, the Frac Out Plan (Exhibit M) provides a framework for HDD efforts and steps to take should a release occur. The areas that present the highest potential for fluid release are the drill entry and exit points where the overburden depth is minimal. A pit will be constructed, in the upland areas away from streams and wetlands, at the entrance and exit points to provide temporary storage for the drilling fluid seepage until it can be removed. The pits will be lined with geotextile and be sized to accommodate the maximum volume of drilling fluid that may need to be contained within the pits. A secondary containment around the pits will be created with straw bales and silt fencing to contain any seepage and minimize any migration of the mud to the work area. If any fluid releases occur, a containment structure will be placed at the affected area to prevent migration of the release. If the release is large enough for collection, the drilling mud will be collected and disposed of per the HDD Fluid / Cutting Disposal procedures. If the release is not large enough for collection, the affected area will be diluted with fresh water and restored as necessary. Proper steps will be taken to prevent silt-laden water from entering a wetland or stream. If the release

occurs in a stream, the contractor will attempt to place containment structures to prevent the spread. If public health and safety are threatened due to the release, drilling operations will be shut down until the threat is eliminated and appropriate agencies notified. All disturbed areas will be stabilized and restored per specifications in the SWPPP. The construction environmental manager will be contacted immediately if the release is returned to a stream, wetland, or other water body.

These mitigation measures will ensure that impacts to groundwater, surface waters, and wetlands are avoided or minimized to the maximum extent practicable during the construction of the Project.

(d) Changes in Flow Patterns and Erosion

Given the BMPs and mitigation measures that will be implemented during construction of the Project as specified in the SWPPP, it is not expected that the flow patterns in the Project Area will be significantly changed from preconstruction conditions. Impacts to wetlands and perennial and intermittent streams have been avoided with the current design which minimizes the potential for flow pattern changes and erosion. One ephemeral stream is proposed to be crossed by an access road. If this access road crossing cannot be avoided in the final design, then the culvert design for crossing the ephemeral stream will be engineered such that drainage and flow of this feature will be unaffected. Once final design of the Project is complete, potential impacts to streams and wetlands will be evaluated to determine if any permits are required for the Project.

Steep slopes have been avoided that would exacerbate erosion. The majority of the Project has been sited on agricultural land and, therefore, only minimal clearing and grading will be required. The Applicant has attempted to identify drain tiles within the Project Area so that the site design can include avoidance so that onsite drainage is not affected by construction of the Project. If agricultural drain tiles are damaged during construction of the Project, the Applicant will work with the landowner to fix the drain tile and implement measures so that any offsite water flow to adjacent landowner's properties is avoided. Any drain tile damaged as a result of the Project would be repaired promptly, so long as it could be determined that the damage was a

direct result of the Project and any requested repair methods are not outside reasonable requirements to remedy the issue. The affected landowner may agree to not having the damaged drain tile repaired only if the drain tile system of adjacent landowners remain unaffected by the non-repair of the landowner's drain tile system. Additionally, the BMPs that will be implemented during construction will control erosion and sediment that may result from site clearing and grading and would also control water flow and erosion if a drain tile were to be damaged during construction.

(e) Equipment Proposed for Control of Effluents

There will be no effluent associated with construction of the Project. Therefore, no equipment is needed for control of effluent discharge and no impacts on water resources are expected from the Project.

(3) Water Quality During Operation of the Facility

(a) Map of Water Monitoring and Gauging Stations

No water discharge will occur from the site; therefore, no water monitoring and gauging station information is provided.

(b) Water Pollution Control Equipment and Treatment Processes

No pollutants will be associated with the operation of the Project that would be released into surface water. Furthermore, the proposed Project will have minimal staffing requirements. Therefore, the O&M trailer is not expected to consume significant water or generate large amounts of sanitary waste. The O&M trailer will have a wastewater source to be determined.

(c) Schedule for Receipt of NPDES Permit

There is no expected discharge of water related to the operation of the Project. As such, no NPDES permits will be necessary for operations.

As implemented during construction, the Applicant will apply OEPA Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays to further ensure that stormwater runoff is minimized at the site.

(d) Flow Diagram for Water and Water-borne Wastes

No water or water-borne waste discharge will occur from the site; therefore, a quantitative flow diagram is not provided for the Project.

(e)Water Conservation Practices

Minimal water may be required to clean solar modules if necessary. In addition, the O&M trailer will include a water source. Given the low volume of water anticipated for Project operations, water conservation practices will not be necessary for the Project.

(D) SOLID WASTE

(1) Preconstruction Solid Waste

(a) Nature and Amount of Debris and Solid Waste

Construction of the Project is not expected to result in the removal of any structures that are currently present in the Project Area. Limited amounts of woody vegetation debris may be generated during the preconstruction site clearing and grubbing activities described in 4906-4-03(B)(2).

(b) Plans to Deal with Waste

Woody debris generated during construction will be chipped and either used or composted within the Project Area. However, if that is not feasible, then a private contractor will be hired to properly dispose of the debris at an authorized solid waste disposal facility.

(2) Solid Waste During Construction

(a) Nature and Amounts of Debris and Solid Waste Generated During Construction

Construction of the Project will generate minimal non-hazardous solid waste. This material will consist primarily of plastic, wood, cardboard, metal packing/packaging materials, construction scrap, and general refuse.

(b) Storage and Disposal of Wastes

The solid waste generated will be collected from the construction sites and other work areas and disposed of in dumpsters located at the construction laydown areas. In addition, multiple dumpsters will be located at construction office trailers, restrooms, and parking areas during construction. On an as-needed basis, a private contractor will empty the dumpsters and dispose of the refuse at an authorized solid waste disposal facility.

(3) Solid Waste During Operation

(a) Amount, nature, and composition of Solid Waste Generated During Operation

The Project will generate a small amount of non-hazardous waste from the O&M trailer that will be recycled or disposed of properly.

(b) Storage, Treatment, Transport, and Disposal of Solid Waste

Generation of solid waste by the O&M trailer is expected to be minimal and will be monitored by O&M staff members who will coordinate removal with local waste disposal services, as needed.

(4) Waste Permits

Operation of the Project will not require acquisition of licenses or permits for the generation, storage, treatment, transportation, and/or disposal of waste.

(E) AVIATION

(1) Aviation Facilities

Arend Airport, a private airport in Mark Center, Ohio, is the closest airport, located approximately 2 miles southwest from the Project Area (Figure 7-1). Rogers Private Airport, located approximately 2.8 miles northeast of the Project Area, is the only other airport within a 5-mile radius of the Project Area.

(2) FAA Filing Status

The Applicant hired Stantec Consulting Services, Inc. (Stantec) to conduct a glare analysis to identify any potential Project impacts to pilots, roads, railroads, and nearby residents. The findings of the analysis indicated that no glare from the Project is predicted to impact roadways, railroads, or residents adjacent to the Project. The Applicant also utilized the Federal Aviation Administration (FAA) Notice Criteria Tool and it was determined that the Project did not need to be filed with the FAA. The complete glare analysis report is contained in Exhibit N.

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

(A) HEALTH AND SAFETY

Consistent with OAC Rule 4906-4-08(A), the following details the Applicant's commitment to comply with health and safety regulations.

(1) Safety and Reliability of Equipment

(a) Major Public Safety Equipment

Measures to prevent unauthorized site entry and unsafe practices will be implemented during Project construction and operation. During the construction phase, temporary, highly visible, plastic mesh fencing will be erected around equipment and spare part storage yards, laydown areas, and other potential construction hazards. The temporary fencing will be supplemented by signs cautioning the public of potential dangers, and providing 24-hour emergency numbers, operator contact information, and instructions for emergency personnel.

During the construction phase, the Applicant will coordinate with local emergency responders to discuss proper rescue techniques and other items specific to on-site equipment safety. Training programs will occur to ensure that responders are prepared to address Project-specific emergencies should they arise. On-site construction workers will adhere to industrial safety standards to avoid injury. Regulations set forth by the national Occupational Safety and Health Administration cover safety issues associated with electricity, construction equipment operation, and other hazards that may be encountered at the Project during construction.

(b) Equipment Reliability

The proposed solar PV modules are designed to have a typical lifespan of 30 years and will conform to all UL, IEEE, NEC, NESC, and ANSI listings. A licensed professional engineer will certify the electrical system design. The Applicant will ensure that inspections of all components are completed regularly to provide safe and reliable operation.

(c) Generation Equipment Manufacturer's Safety Standards

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

(d) Measures to Restrict Public Access

The Project will be enclosed with perimeter fencing that complies with the NESC. The fence will either be a 6-foot (1.8-meter) chain link fence topped with 1-foot (0.3 meter) of three strand barbed wire or a 7-foot (2.1 meter) chain link fence. A decision regarding fence type will be made with final design. Access will be controlled by gates.

(e) Fire Protection, Safety, and Medical Emergency Plan(s)

An Emergency Response Plan will be prepared for the Project. Construction and maintenance personnel will be trained and will have the equipment to deal with emergency situations that could occur at the Facility. In addition, the Applicant will ensure all local emergency responders

will be trained prior to commissioning of the Project on how to respond to any emergencies related to the Project.

(2) Impact of Air Pollution Control Equipment Failure

As described above, no air pollutants will be associated with the operation of the Project. Therefore, no on-site air pollution control equipment will be necessary.

(3) Sound from Construction and Operation of the Facility

(a) Construction Sound Levels at the Nearest Property Boundary

Epsilon Associates, Inc. (Epsilon) conducted a sound level assessment to establish existing sound levels in the Project Area and evaluate potential sound impacts from the construction of the Project on all structures within one mile of the Project. Epsilon's Sound Level Assessment Report is included in Exhibit O. Epsilon utilized the Federal Highway Administration's Roadway Construction Noise Model software to predict the sound levels associated with construction of the Project. Depending on the phase of construction, primary noise-producing equipment could include backhoes, bulldozers, dump trucks, impact pile drivers, mobile cranes, and flatbed trucks. Sound levels during each phase of construction were predicted assuming that the equipment was located at the closest solar module to a property line and at the closest receptor, which were 30 feet and 285 feet, respectively. The sound level modeling for the different aspects of Project construction are detailed below.

(i) Blasting Activities

Blasting activities will not be necessary for the Project and, therefore, will not result in sound impacts.

(ii) Operation of Earth Moving Equipment

Earthmoving equipment anticipated to be used during construction include a dump truck, bulldozer, and backhoe. The operation of this equipment could range in sound level from 84 A-weighted decibels (dBA) to 86 dBA at a distance of 30 feet (9.1 meters) (closest property line), and 65 dBA to 67 dBA at a distance of 285 feet (86.9 meters) (closest monitoring receptor). The

sound resulting from these operations reflects the worst-case sound levels and will occur infrequently and over a short duration at each location. Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence (approximately 7am to 7pm), and with the setbacks implemented by the Applicant, operation of earth moving equipment should not pose undue quality of life concerns for residents near the Project Area.

(iii) Driving of Piles, Rock Breaking or Hammering, and Horizontal Directional Drilling

The solar modules are mounted on racks which are supported by posts. There are approximately 46,000 posts that will need to be driven to support the racks. The posts will be embedded at a depth between 7 and 11 feet (2.1 to 3.4 meters) below grade, depending on soil conditions. The operation of an impact pile driver used to drive the posts could result in sound levels ranging from 99 dBA to 106 dBA at a distance of 30 feet (9.1 meters) and 79 dBA to 86 dBA at a distance of 285 feet (86.9 meters). The sound resulting from these pile driving activities reflects the worst-case sound levels and will occur infrequently and over a short duration at each location. Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence, and with the setbacks implemented by the Applicant, operation of the impact pile drivers should not pose undue quality of life concerns for residents near the Project Area.

(iv) Erection of Structures

The erection of solar PV modules and inverters will require the use of mobile cranes and flatbed trucks. The predicted sounds levels for this equipment range from 79 dBA to 85 dBA at a distance of 30 feet (9.1 meters) and 60 dBA to 65 dBA at 285 feet (86.9 meters). The sound resulting from these operations will occur infrequently and over a short duration at each location. Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence, and with the setbacks implemented by the Applicant, erection of structures should not pose undue quality of life concerns for residents near the Project Area.

(v) Truck Traffic

The use of dump trucks and flatbed trucks will be necessary during construction of the Project in order to transport materials and equipment throughout the Project Area. Predicted sound levels for truck traffic is included as part of the operation of earth moving equipment and erection of structures activities detailed above. The sound resulting from these operations will occur infrequently and over a short duration at each location. Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence, and with the setbacks implemented by the Applicant, truck traffic should not pose undue quality of life concerns for residents near the Project Area.

(vi) Installation of Equipment

Installation of the equipment for the Project will primarily be related to the use of mobile cranes and flatbed trucks as detailed in the erection of structures activities detailed above. The sound resulting from these operations will occur infrequently and over a short duration at each location. Such levels would not generally be considered acceptable on a permanent basis, but as a temporary, daytime occurrence, and with the setbacks implemented by the Applicant, installation of equipment should not pose undue quality of life concerns for residents near the Project Area.

(b) Operational Sound Levels at the Nearest Property Boundary

In order to assess the impact of sound that will result from operation of the Project, Epsilon conducted field surveys to establish the ambient sound levels in the Project Area and then utilized Cadna/A modeling software to predict the sound levels that will result from operation of the Project at nearby structures. Operational sound at the Project will result from the Project inverters and substation.

Epsilon conducted field sampling surveys at five different sound monitoring locations throughout the Project Area (see locations in Figure 5-1 in Exhibit O) in order to establish the background (equivalent sound level [L_{eq}]) sound levels within the Project Area. Background sound monitoring in the Project Area indicated that the average daytime L_{eq} for the area ranged from 45 to 57 dBA while the average nighttime L_{eq} ranged from 38 to 50 dBA. While there are no existing federal, state, or local regulations applicable to the Project, operational sound

predicted for the Project was evaluated against the 5 dBA increase over ambient sound level used by OPSB to evaluate wind energy facilities, which would establish limits of 50 to 62 dBA during the day and 43 to 55 dBA at nighttime based on ambient sound levels within the Project Area. The predicted operational Project sound levels at the nearest residence to an inverter (approximately 580 feet from) is 40 dBA, which is below the 43 dBA ambient threshold used to evaluate wind energy facilities when ambient nighttime sound levels are 38 dBA as measured at this receptor. The closest receptor to the substation is approximately 545 feet away with an ambient sound level of 40 dBA. Under the worst-case nighttime scenario, this receptor has modeled sound levels of 45 dBA, which matches the 5 dBA increase allowed for wind energy facilities. Because the Project only generates electricity during daylight hours when the sun is shining, the nighttime sound levels are a worst-case sound scenario on which to base operational sound levels.

(i) Operational Sound from Generation Equipment

Epsilon modeled a total of 25 inverters conservatively operating at full load, and the Project substation with one transformer. Broadband L_{eq} sound levels produced by the inverters and Project substation range from 21 to 45 dBA and represent the worst-case sound levels associated with the Project. At all receptor locations using this worst-case scenario sound levels are still at or below the nighttime wind energy limit. Upon procuring inverter technology for the Project, the Applicant will provide inverter noise data and the modeled worst-case noise impact at a non-participating residence based on noise data on the selected inverter.

(ii) Processing Equipment

Processing equipment is not associated with the Project and, therefore, will not result in sound impacts.

(iii) Associated Road Traffic

Vehicle traffic to access the Project will not significantly contribute to route road traffic sound. Road traffic associated with construction of the Project is addressed above in OAC Section 4906-4-08(A)(3) of this application.

(c) Sound-sensitive Areas within One Mile

The sensitive receptors identified in the Project Area or within a 1-mile buffer around the Project Area are depicted in Figure 8-1. There are 151 residences, two churches, one cemetery and one school building within a 1-mile radius of the Project Area. Of the identified sensitive receptors, 32 residences are within 1,500 feet of Project facilities, none of which are within 300 feet of the nearest solar module, inverter, or substation.

The Applicant does not anticipate major sound impacts at these locations as the Project worst-case sound levels are below the 5 dBA increase over L_{eq} limit for wind energy projects applied to the sound evaluation for this Project.

(d) Mitigation of Sound Emissions During Construction and Operation

The Project is not expected to have significant sound impacts at any residences or other sensitive receptors during construction or operation of the Project as minimization and mitigation measures have been included in the Project design.

The Applicant maximized Project setbacks from property lines to the extent practical to minimize impact to adjacent residences. In addition, the following sound minimization and mitigation procedures will be implemented during construction:

- General construction activity shall be limited to the hours of 7 a.m. to 7 p.m., or until dusk when sunset occurs after 7 p.m. If noise-generating construction needs to occur outside of 7 a.m. to 7 p.m., or until dusk when sunset occurs after 7 p.m., then neighbors adjacent to the sound generating construction will be notified prior to conducting those construction activities.
- During the construction period, the Applicant's contractor will establish a 24 hour a day, seven day a week "hot line" for emergency and complaint notices. During operations, site staff will be qualified to attend to requests and complaints with the necessary corporate support. Surrounding landowners will be provided with contact information for site staff. The Applicant has also developed a Complaint Resolution Plan to address how

complaints will be handled and potential mitigation techniques to be implemented for the Project (Exhibit H).

(e) Preconstruction Background Sound Study

Epsilon conducted a sound level assessment to establish existing sound levels in the Project Area and evaluate potential sound impacts from the construction and operation of the Project on nearby structures. Epsilon's Sound Level Assessment Report is included in Exhibit O.

(4) Water Impacts

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

Groundwater well information for the Project Area and surrounding vicinity was obtained from OEPA and are depicted in Figure 8-2 (OEPA 2020a). There are no water wells within the Project Area. There are 110 water wells within a 1-mile radius of the Project Area. Given that minimal excavation is associated with the Project and pile driving will only occur to depths of 7 to 11 feet (2.1 to 3.4 meters) below grade, and that there are no water wells found within the Project Area, the Applicant does not anticipate impacts to the water supply. Additionally, the closest water well is more than 1,000 feet away from the nearest infrastructure component.

One drinking water source protection area is located within 1-mile of the Project Area at St. John Lutheran Church-Sherwood and depicted in Figure 8-2. St. John Lutheran Church-Sherwood is listed under the OEPA "Drinking Water Source Protection Checklists" as having a water source protection plan (OEPA 2020b). However, given the location in relation to the Project and the localized radius of the Source Water Protection Area, it is not expected that construction of the Project would affect groundwater at that location. To provide protection for water resources within the Project Area and the surrounding area, SWPPP and SPCC Plans will be implemented during construction to minimize and prevent the potential for discharges to surface waters. The potential exists for aquatic discharges (e.g., sediment, oil, etc.) to occur during the Project construction. If discharges do occur, they are anticipated to be limited in quantity and duration, resulting in minor changes to water quality of the particular water body in which the aquatic discharge occurs and impacts to water supplies would be minor.

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

As described above, no water pollutants will be associated with the operation of the Project. Therefore, no on-site water pollution control equipment will be necessary and no impacts to public and private water supplies will occur.

(c) Aquifers, Water Wells, and Drinking Water Source Protection Areas Directly Affected by the Proposed Facility

The Project Area is underlain by the Lake Maumee River Alluvial Aquifer, which is an unconsolidated aquifer, and is depicted in Figure 8-2 (ODNR 2000). There are 110 water wells and one drinking water source protection area located within 1-mile of the Project Area as depicted in Figure 8-2. However, no impacts to these water sources are anticipated as described above.

(d) Compliance with Drinking Water Source Protection Plans

One drinking water source protection area is present at the St. John Lutheran Church-Sherwood within one-mile of the Project Area. However, there are no concerns with compliance for the protection area described above.

(e) Flood Potential and Mitigation

A small portion of the Project Area falls within a Federal Emergency Management Agency-designated 100-year floodplain, as depicted in Figure 8-2. However, all Project infrastructure is located outside of the 100-year floodplain areas.

(5) Geological Features, Topographic Contours, and Wells

Figure 8-3 depicts the proposed Project, geological features of the proposed Project Area, and topographic contours. There are no existing gas and oil wells or injection wells within the Project Area.

(a) Site Geology Suitability

The Applicant hired Mott MacDonald to conduct a geotechnical investigation for the Project Area. The findings of the Mott MacDonald geotechnical engineering study are contained in Exhibit L and briefly summarized below.

The geotechnical investigation consisted of 24 geotechnical borings, standard penetration tests, split-spoon soil sampling, bulk soil sampling, 26 test pits, general soil laboratory testing, electrical resistivity testing, and axial and lateral pile load testing. This geotechnical investigation supports evaluation of the strength, compressibility, stiffness, and density characteristics of the soil in the Project Area, as well as evaluates the general suitability of the Project equipment proposed.

In general, the geotechnical investigation results indicated the Project Area soils are suitable for support of the proposed Project infrastructure. A limited number of boring locations indicated the potential need for replacement of the existing soil with compacted engineered fill but may be unnecessary depending on final site design. Further, the study confirmed that the access roads and additional infrastructure such as substation and switchyard locations can be designed using typical best practices, which are summarized in Exhibit L.

(b) Site Soil Suitability

The geotechnical investigation found that the predominate soil type is a silty, clayey soil type, with some sand present in localized areas below 43 feet. In general, the results of Mott MacDonald's geotechnical engineering study indicate that Project Area soils are suitable for support of the proposed Project infrastructure.

(c) Test Borings

As indicated above, 24 test borings were conducted by Mott MacDonald within the Project Area in October 2020. All test borings were completed in accordance with American Society for Testing and Materials standards and were analyzed at a qualified laboratory for moisture content, particle-size, Atterberg limits, unconfined and consolidation tests, and other tests, as required. Test boring logs are provided in Appendix C of Exhibit L.

(6) Wind Velocity

Climate data from the Ohio State University College of Food, Agricultural and Environmental Sciences was reviewed to characterize wind velocities in the vicinity of the Project. Table 8-1 summarizes daily average wind speeds recorded in 2019 at the closest weather station to the Project Area, located in Custar, Ohio (OSU 2020).

Data provided in Table 8-1 indicates that wind speeds were most commonly observed in the range of 2 to 7.5 miles per hour (mph) with 62 percent of daily average measurements within this range. Wind effects at these speeds are generally described as light breezes, where wind is felt on the face (RMetS 2018).

Table 8-1 Daily Average Wind Speeds in Custar, Ohio in 2019

Average Daily Wind Speed (mph)	Number of Days	Percent of Total Days
0 to 0.5	1	0.3%
0.6 to 1	0	0.0%
1.1 to 1.5	1	0.3%
1.6 to 2	6	1.6%
2 to 2.5	15	4.1%
2.6 to 3	19	5.2%
3.1 to 3.5	20	5.5%
3.6 to 4	18	4.9%
4.1 to 4.5	26	7.1%
4.6 to 5	25	6.8%
5.1 to 5.5	17	4.7%
5.6 to 6	21	5.8%
6.1 to 6.5	21	5.8%
6.6 to 7	19	5.2%
7.1 to 7.5	25	6.8%
7.6 to 8	11	3.0%
8.1 to 8.5	19	5.2%

Table 8-1 Daily Average Wind Speeds in Custar, Ohio in 2019

Average Daily Wind Speed (mph)	Number of Days	Percent of Total Days
8.6 to 9	14	3.8%
9.1 to 9.5	15	4.1%
9.6 to 10	13	3.6%
10.1 to 10.5	11	3.0%
10.6 to 11	9	2.5%
11.1+	39	10.7%
Total	**365**	**100.0%**

Source: OSU 2020
mph = miles per hour

The potential for high wind velocity will be taken into account during development of the Project's final design. The posts that support the racking systems will be embedded at an appropriate depth for the site-specific soil conditions to minimize any potential damage from high wind velocities. The racking systems undergo wind tunnel testing to accurately determine the wind loadings that the racking system may experience. The rows on the outside of the arrays will have a more robust design (thicker steel, shorter spans between piles) since those rows may experience greater wind loading than the rows in the interior of the arrays. The racking system will also include a stowing feature, which will tilt panels to a certain angle, usually between 0 and 30 degrees from horizontal, to reduce the wind loading on the solar panels. Several anemometers will be placed throughout the site to measure wind speed. Once the wind reaches a certain speed, the trackers will be directed to move into stow mode.

(7) Blade Shear

The Project is not a wind facility; therefore, there is no potential impact from blade shear for the Project.

(8) Ice Throw

The Project is not a wind facility; therefore, there is no potential impact from ice throw for the Project.

(9) Shadow Flicker

The Project is not a wind facility; therefore, there is no potential impact from shadow flicker for the Project.

(10) Radio and TV Reception

The maximum height of solar modules will be 15 feet (4.6 meters) and, therefore, interference with radio and TV reception is not anticipated as the Project will lack tall structures, exposed moving parts, and will only generate very weak electromagnetic fields (EMFs) that dissipate rapidly over short distances.

(11) Radar Interference

The maximum height of solar modules will be 15 feet (4.6 meters) and, therefore, interference with military or civilian radar systems is not anticipated as the Project will lack tall structures, exposed moving parts, and will only generate very weak EMFs that dissipate rapidly over short distances.

(12) Navigable Airspace Interference

There are no public airports or heliports within five miles of the Project Area. There are however, two private airports located approximately 1.9 and 2.9 miles from the Project Area (see Figure 7-1). Given the distance to the airports, no interference is anticipated. The Applicant hired Stantec to conduct a glare analysis to identify any potential Project impacts to pilots, roads, railroads, and nearby residents. The findings of the analysis indicated that no glare from the Project is predicted to impact airports or heliports. The Applicant also utilized the FAA Notice Criteria Tool and it was determined that the Project did not need to be filed with the FAA. The complete glare analysis report is contained in Exhibit N.

(13) Communication Interference

The maximum height of solar modules will be 15 feet (4.6 meters) and, therefore, interference with any microwave communication paths or systems is not anticipated as the Project will lack tall structures, exposed moving parts, and will only generate very weak EMFs that dissipate rapidly over short distances. In general, the magnetic effects from utility-scale solar projects, which could disrupt communication systems, are expected and known to be negligible beyond 330 feet from the source (Sponheimer Consulting 2020). The Project is setback from property lines and the components that generate electromagnetic fields (i.e. inverters) are located on the interior of the facility, at least 580 feet from the closest structure. Therefore, amateur radio system disruption is not expected as a result of the Project.

(B) ECOLOGICAL RESOURCES

(1) Ecological Resources in the Project Area

(a) Ecological Resources Map

Figure 8-4 is a map at 1:24,000 scale of the Project Area and a 0.5-mile radius from the Project Area and contains the following information:

(i) The proposed Facility and Project Area;
(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; and
(v) Highly erodible soils and slopes of twelve percent or greater.

(b) Field Survey Map of Vegetation and Surface Waters

Figure 8-5 provides a map at a scale of 1:12,000 of the area within 100 feet (30.5 meters) of the Project Area and all field-delineated features, including vegetation, wetlands, and streams.

Stantec conducted wetland delineation and threatened and endangered (T/E) species habitat field surveys to assess the vegetative communities as well as delineate and characterize surface water

and wetland resources in the Project Area. The results of the survey were used to inform the Project design and minimize impacts to wetlands, streams, and native vegetative communities. Stantec conducted field surveys on August 31 – September 3, 2020 and the results are provided in the Wetland and Waterbody Delineation report included in Exhibit P, and the Threatened and Endangered Species Habitat Survey Report included in Exhibit Q.

Habitat within the Project Area is predominately composed of cultivated agricultural cropland totaling 835.9 acres and comprise 95.3% of the Project Area. At the time of the surveys the fields were planted with soybean (*Glycine max*). Areas of old field are present and composed of a sapling-shrub layer dominated by honey locust (*Gleditsia tricanthos*) and an herbaceous layer dominated by fuller's teasel (*Dipsacus fullonum*), velvet leaf (*Abutilon theophrasti*), soft brome (*Bromus inermis*), Canada goldenrod (*Solidago canadensis*), flat-top goldentop (*Euthamia graminifolia*), and poison ivy (*Toxicodendron radicans*) totaling 26.6 acres and comprise 3.1% of the Project Area. Existing roadways total 5.6 acres and comprise 0.6% of the Project Area. Areas of second growth deciduous forest are present and composed of overstory species dominated by shagbark hickory (*Carya ovata*), slippery elm (*Ulmus rubra*), and green ash (*Fraxinus pennsylvanica*) with an herbaceous layer dominated by mesic species of sedge (*Carex* sp.) totaling 4.8 acres and comprise 0.5% of the Project Area. Areas of developed, residential open space are present and composed of several planted yard trees including Colorado blue spruce (*Picea pungens*), Norway spruce (*Pidea abies*), silver maple (*Acer saccharinum*), eastern red cedar (*Juniperus virginiana*) and white cedar (*Thuja occidentalis*), with an herbaceous layer dominated by Kentucky bluegrass (*Poa pratensis*), English plantain (*Plantago lanceolata*), fuller's teasel, lesser burdock (*Arctium minus*), smooth brome, and Queen Anne's lace (*Daucus carota*) totaling 2.4 acres and comprise 0.3% of the Project Area. Areas of wetlands composed of overstory species, burr oak (*Quercus macrocarpa*), silver maple, and green ash, and a sapling-shrub species dominated by sandbar willow (*Salix interior*) with herbaceous species dominated by fringed sedge (*Carex crinita*), barnyard grass (*Echinochloa crus-galli*), reed canary grass (*Phalaris arundinaea*), rice cut-grass (*Leersia oryzoides*), broad-leaf cat-tail (*Typha latifolia*) and narrow-leaf cat-tail (*Typha angustifolia*) total 1.2 acres and comprise 0.1% of the Project Area. The remainder of the site is composed of scrub-shrub habitat, which is dominated by eastern cottonwood (*Populus deltoides*), sandbar willow, amur honeysuckle (*Lonicera maackii*), and

autumn olive (*Elaeagnus umbellata*) with herbaceous species dominated by reed canary grass totaling 0.8 acres and comprise 0.1% of the Project Area. Developed high intensity industrial areas comprise 0.1 acre of the Project Area. Below, Table 8-2 provides a summary of the acreages of vegetative communities delineated within the Project Area.

Table 8-2 Habitat Types Identified within the Mark Center Solar Project Area

Habitat Category	Acres	Land Use (%)
Agriculture	835.9	95.3%
Old Field	26.6	3.1%
Existing Roadway	5.6	0.6%
Second Growth Deciduous Forest	4.8	0.5%
Developed Open Space - Residential	2.4	0.3%
Wetlands	1.2	0.1%
Scrub-Shrub Vegetation	0.8	0.1%
Developed, High Intensity Industrial Land	0.1	<0.1%
Total	**877**	**100.0%**

Note: Due to rounding, acres may not sum to the total within the table and used throughout the application

Thirteen wetlands were delineated during field surveys within the Project Area totaling approximately 1.2 acres. Figure 8-5 depicts the locations of the delineated wetlands and streams within the Project Area.

The function and values of these wetlands were assessed using Ohio Rapid Assessment Methods for Wetlands. The categorization of wetlands was conducted in accordance with OAC Rule 3745-1-54. All thirteen delineated wetlands, based on the Ohio Rapid Assessment Method scores, are low quality wetlands within minimal functional value. Four wetlands, with a total of 0.2 acre of Category 1 palustrine emergent (PEM) wetlands, were identified in the Project Area that are considered to be potentially jurisdictional by the USACE. The remaining wetlands delineated within the Project Area, including approximately 0.2 acre of delineated Category 1 palustrine forested (PFO) wetlands, 0.1 acre of delineated Category 1 palustrine scrub-shrub (PSS) wetlands, and 0.8 acre of Category 1 PEM wetlands are potentially isolated wetlands and would be under the jurisdiction of the OEPA. These wetlands have no direct connection to other potentially jurisdictional Waters of the U.S. (WOUS) features.

Three streams were delineated during the field survey. Two ephemeral streams, Streams 2 and 3, totaling 3,052 linear feet within the Project Area, and one perennial stream, Stream 1 (Platter Creek), totaling 3,882 linear feet within the Project Area.

The functional assessment of the streams was completed using the OEPA Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI). The classification of the streams, ephemeral, intermittent, or perennial, were determined per the definition in the 22250 Federal Register/Vol. 85, No. 77 (effective June 22, 2020). Stream 1, Platter Creek, was classified as a perennial stream, potentially a WOUS and therefore likely an USACE-jurisdictional stream. The two unnamed tributaries to Platter Creek, Stream 2 and Stream 3, were classified as ephemeral flow regimes, therefore they are not likely to be USACE-jurisdictional and, therefore, would be regulated by OEPA.

An Approved Jurisdictional Determination request was submitted to the USACE Buffalo District on November 24, 2020 in order to gain confirmation on the jurisdictional status of the delineated streams and wetlands. This request was logged as request LRB-2020-01595.

(c) Literature Survey of Plant and Animal Life

Stantec conducted a desktop literature review and corresponding field habitat assessment for federally and state-listed T/E species for Defiance County to assess their potential occurrence within the Project Area (Exhibit Q). The U.S. Fish and Wildlife Service (USFWS) information for Planning and Construction (IPaC) screening tool was used to evaluate federal T/E species that might be potentially present in the Project Area (USFWS 2020a). Five federally endangered species and two federally threatened species were identified during the IPaC review to be potentially present in the Project Area. Further correspondence with USFWS on October 9, 2020 is provided in Exhibit R and reduced the number of species with the potential to be present within the Project Area to just two, the Indiana bat (*Myotis sodalis*; federal and state-listed endangered) and northern long-eared bat (*Myotis septentrionalis*; federal and state-listed threatened). There is no designated critical habitat for any of the federally listed T/E species that overlaps with the Project Area.

The Ohio Department of Natural Resources does not have a publicly available state-maintained screening tool for specific project sites; therefore, the list of potential state-listed T/E species within the Project Area was generated based on the comprehensive list for Defiance County (ODNR 2020). The ODNR reports ten state-listed endangered species and nine state-listed threatened species that occur in Defiance County. To refine the potential state-listed T/E species within the Project Area, ODNR was consulted and in their response received November 17, 2020, a list of 15 state-listed T/E bird, fish, reptile, mammal, and mussel species were provided, as listed in Table 8-3. Both federally listed T/E species were also included within the ODNR correspondence.

Table 8-3 List of Potential State Threatened and Endangered Species Within or Near the Project Area

Common Name	Scientific Name	Status	Habitat
Birds			
Northern Harrier	*Circus hudsonius*	SE	Grasslands, lightly grazed meadows, old fields, dry, upland prairies, shrub-steppe, and marshes with low, thick vegetation.
Fish			
Greater Redhorse	*Moxostoma valenciennesi*	ST	Medium sized to large rivers and sometimes reservoirs or large lakes. Moderate to fast flowing streams that flow clear. Clean sand, gravel, or boulders.
Reptile			
Copperbelly Water Snake	*Nerodia erythrogaster neglecta*	SE, FT	Mosaic of shallow wetlands surrounded by forested uplands. Hibernate in crayfish burrows of forested wetlands.
Mammals			
Indiana Bat	*Myotis sodalis*	FE, SE	Forests, riparian corridors, and wetlands for summer roosting and foraging. Caves or abandoned underground mines for hibernacula.
Northern Long-eared Bat	*Myotis septentrionalis*	FT, SE	Forests, riparian corridors, wetlands and buildings for summer roosting and foraging. Caves or abandoned underground mines for hibernacula.

Common Name	Scientific Name	Status	Habitat
Easter Tri-colored Bat	*Perimyotis subflavus*	SE	Forests, riparian corridors, caves, mines and rock crevices for foraging and roosting.
Little Brown Bat	*Myotis lucifugus*	SE	Man-made structures, hollow trees for roosting. Forging over open water. Caves, tunnels, and abandoned mines for hibernacula.
Mussels			
Northern Riffleshell	*Epioblasma torulosa rangiana*	FE, SE	Streams with riffles and firmly packed substrates of fine to course gravel.
Clubshell	*Pleurobema clava*	FE, SE	Small to medium rivers with coarse sand and gravel in runs.
Rabbitsfoot	*Theliderma cylindrica*	FT, SE	Small to medium rivers with swift currents and gravel and cobble. Medium to large rivers in sand and gravel.
Rayed Bean	*Villosa fabalis*	FE, SE	Smaller, headwater creeks with gravely or sandy substrates.
White Catspaw	*Epioblasma obliquata perbliqua*	FE, SE	Creeks and small rivers with stable sand and cobble substrates.
Threehorn Wartyback	*Obliquaria reflexa*	ST	Large rivers, moderately strong current, and stable gravel, sand, and mud substrates.
Black Sandshell	*Ligumia recta*	ST	Medium to large reivers, strong current, coarse sand, gravel, and cobbles substrates.
Fawnsfoot	*Truncilla donaciformis*	ST	Large and medium rivers, moderate current, sand or mud substrates.

Key: FE – Federal Endangered; FT – Federal Threatened; SE – State Endangered; ST – State Threatened

Sources: Badra 2001; Brack et al. 2010; Butler 2002; Cornell Lab of Ornithology 2020; NatureServe 2020; ODNR DOW and USFWS 2020; Parmalee and Bogan 1998; USFWS 1994, 2007, 2015, and 2020b, and 2020c; Watters et al. 2009.

(d) Plant and Animal Field Survey Results

To supplement the desktop review, Stantec assessed potential habitat availability for federally and state listed T/E species in the Project Area during field surveys as detailed in Exhibit Q. During field surveys, the vast majority of the Project Area was delineated as agriculture land (95.3%), with minimal areas of higher-quality natural habitat that could provide potentially suitable habitat for T/E species. A northern harrier was observed hunting in the Project Area during the field surveys. The habitat assessment concluded that second growth deciduous forest habitat may provide potential suitable habitat for federal and state listed species including: Indiana bat, northern long-eared bat, eastern tri-colored bat, and little brown bat. Platter Creek

(Stream 1) may provide potential suitable habitat for the state-listed freshwater mussel species within the Project Area. In addition, the northern harrier may utilize agricultural and old field habitat for hunting.

(e) Additional Ecological Studies

In November 2017, E & E conducted a preliminary desktop critical issues analysis (CIA) for a portion of the Project Area and in April 2020, Stantec conducted a CIA for the remaining portion of the Project Area. The two CIA documents did not identify significant development constraints that could potentially impact the proposed Project, including potential impacts to ecological resources. The desktop CIA reports are provided as Exhibit S.

(2) Potential Impacts to Ecological Resources During Construction

(a) Construction Impacts on Ecological Resources

The development of the Project is not likely to result in significant impacts to ecological resources that may potentially occur within the Project Area or surrounding vicinity as a result of micro-siting efforts to avoid impacts to potentially suitable habitat or construction outside of critical periods.

No impacts to state-listed T/E mussel species, greater redhorse, or copperbelly water snake will occur within the Project Area as no instream work in a perennial stream will occur. No impacts are expected for the northern harrier as a result of Project construction, as there is no suitable grassland habitat where the species may nest.

With the Applicant committing to implementation of tree-clearing activities in the delineated second growth deciduous forest habitat outside of the active season (October 1 through March 31) and no removal of man-made structures, the Indiana bat, northern long-eared bat, eastern tri-colored bat, and little brown bat will not be adversely affected by the Project construction or operation.

The remainder of the Project will be constructed exclusively in agricultural or developed land, which provides minimal habitat for wildlife and is not preferred habitat for any of the other identified federal or state-listed T/E species.

The Applicant undertook an extensive siting process to minimize and avoid impacts to wetlands and streams. No wetlands or perennial streams will be impacted by the Project, and only one ephemeral stream (Stream 2) is currently proposed to be crossed by Project infrastructure. Because Stream 2 is classified as an ephemeral stream, the OEPA is likely to take jurisdiction of the stream rather than USACE. If the final design will impact Stream 2, the Applicant will coordinate with the OEPA to obtain an Ephemeral Stream General Permit. Therefore, the Applicant anticipates no additional wetland permits will be required from the OEPA or USACE. Avoidance of wetland and perennial stream habitat during the Project construction will avoid potential impacts to fish, insect, reptile, and mussel species identified during the desktop or field-based T/E habitat review.

A little over 4.2 acres of forested habitat will be disturbed during construction, primarily for the installation of solar modules. The impacts to wildlife as a result of clearing a little more than 4.2 acres of forested habitat is expected to be almost negligible due to its small size and isolated location. In addition, further removal of woody vegetation will be minimized. When possible, trees and brush will be manually pruned or trimmed rather than removed.

(b) Mitigation Procedures for Construction Impacts

In addition to the extensive micro-siting efforts mentioned above, the Applicant will work to avoid, minimize and, if necessary, mitigate ecological construction impacts. These include specific efforts to minimize disturbance to soils, a Frac Out Plan (Exhibit M), delineation and marking of surface waters and wetlands, procedures for inspection and repair of erosion control measures, and methods to protect vegetation in proximity to the Project.

(i) Restoration and Stabilization of Disturbed Soils

After construction, temporarily disturbed areas will be restored. The Facility will be graded to natural contours where possible and prepared for final seeding. Once construction is complete,

the permanent access roads will be dressed as necessary to ensure their long-term function. Erosion control methods during and after construction will be specified within the SWPPP and will depend on the contours of the land, as well as requirements of relevant permits.

Permanent stabilization seeding will be completed immediately following the completion of construction. To the extent possible, the Applicant will implement the pollinator habitat recommendations provided by ODNR Division of Wildlife pertaining to the Ohio Pollinator Habitat Initiative. This could include reseeding areas disturbed during construction with a low-growth, native grass seed mix or native prairie grasses, under the solar modules and a native species, pollinator-friendly seed mix in select open areas outside of the array and within the Project perimeter fence line. Agricultural areas will be seeded with a temporary cover crop as specified by the landowner after construction. Natural areas will be seeded with an appropriate seed mixture to control erosion and allow revegetation to the pre-construction vegetative community.

The Project is considered to be permanently stabilized when all soil disturbed activities have been completed and a uniform perennial vegetative cover with a density of 70% has been achieved in all areas of the site not covered by other permanent ground covers. Any seed, straw, and/or matting used within the Project Area will meet Ohio stormwater standards (OH-DSWC 2014).

(ii) Frac Out Contingency Plan

If necessary, the Project will employ HDD techniques to install cables underneath roads and streams, although none have been identified within the Project Area. The Frac Out Plan has been prepared for the Project by the Timmons Group and is included in Exhibit M. There is an HDD crossing proposed as part of the current site design, boring underneath the existing CSX Corporation railway that bisects the site. If the final site design requires HDD, it will be conducted per local codes and guidelines of authorities having jurisdiction. Before any drilling operations begin, all erosion and sedimentation controls included in the SWPPP will be installed and inspected by a qualified environmental inspector. The SWPPP, state permit(s), landowner

restriction list, and any other applicable documents will be reviewed before any disturbance occurs.

HDD has the potential for surface disturbance through an inadvertent drilling fluid release. The areas that present the highest potential for fluid release are the drill entry and exit points where the overburden depth is minimal. A pit will be constructed at the entrance and exit points to provide temporary storage for the drilling fluid seepage until it can be removed. The pits will be lined with geotextile and be sized to accommodate the maximum volume of drilling fluid that may need to be contained within the pits. A secondary containment around the pits will be created with straw bales and silt fencing to contain any seepage and minimize any migration of the mud to the work area. If any fluid releases occur, a containment structure will be placed at the affected area to prevent migration of the release. If the release is large enough for collection, the drilling mud will be collected and disposed of per the HDD Fluid / Cutting Disposal procedures. If the release is not large enough for collection, the affected area will be diluted with fresh water and restored as necessary. Proper steps will be taken to prevent silt-laden water from entering a wetland or water body. If the release occurs in a water body, the contractor will attempt to place containment structures to prevent the spread. If public health and safety are threatened due to the release, drilling operations will be shut down until the threat is eliminated. All disturbed areas will be stabilized and restored per specifications in the SWPPP. The construction environmental manager will be contacted immediately if the release is returned to a stream, wetland, or other water body.

(iii) Demarcation of Surface Waters and Wetlands

Wetlands within the Project Area were identified during a field survey and will be flagged in advance of the start of construction to ensure that construction teams are aware of their location. Impacts to surface water and wetlands during construction will be minimized through the implementation of a SWPPP to prevent erosion and sedimentation into nearby waterbodies under OEPA's NPDES General Permit for Construction Activities. Silt fencing will be installed along the construction right-of-way in all areas adjacent to wetlands, in accordance with the SWPPP. Further, areas disturbed during construction will be restored to preconstruction conditions as soon as possible in order to further minimize the impact of construction.

(iv) Procedures for Inspection and Repair of Erosion Control Measures

A SWPPP will be prepared prior to construction as a condition of OEPA's NPDES General Permit that is required for the Project. The SWPPP will prescribe specific erosion and sediment control measures to be used and the location in which these measures will be implemented. Generally, structural erosion control devices such as straw bales, berms, and check dams will be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff from exposed areas of the site. Silt fences will be installed immediately after completing each phase of work to effectively retain sediment where erosion would occur in the form of sheet and rill erosion (e.g., clearing and grubbing, excavation, embankment, and grading).

Mott Macdonald conducted a hydrology analysis and scour evaluation for the Project in December 2020. Reports for these studies are included in Exhibit T. The proposed conditions will result in an increase of impervious area (e.g., driveways, electrical equipment, and substation) and a change in vegetation (agricultural to meadow). As the flow depth and velocities increase due to these changes so will the potential for scour to occur is likely only in areas where the flow velocities are greater than 2.0 feet per second (fps). Potential for ponding at depths greater than 2 was (0.6 meters) was only identified in areas along Platter Creek where no facility components are sited.

(v) Methods to Protect Vegetation

Tree clearing has been minimized with the site design and will result in approximately 4.2 acres of tree clearing. Vegetation surveys conducted for the Project did not identify any sensitive vegetative communities or plant types, therefore, no specific vegetation protection methods are needed. Additional details regarding vegetative management during construction are presented in Exhibit C.

(vi) Disposing of Downed Trees, Brush, and Other Vegetation

Any vegetation removed during construction will be segregated, stockpiled, and hauled off site by a waste disposal service.

(vii) Avoidance Measures for State and Federally Listed and Protected Species and Habitat

To minimize impacts to federally and state-listed T/E species, the Project has been sited, to the extent practicable, within previously disturbed areas, such as agricultural fields and along existing farm roads and forest edges. The minimal tree clearing associated with Project construction will be conducted outside the active season for bats to avoid potential impacts to federal and state-listed T/E bat species that may utilize the trees for roosting. Should clearing need to occur within the restrictions, consultation with the USFWS would be initiated to determine the most appropriate measures to ensure impacts to the species are minimized.

(3) Potential Impact to Ecological Resources During Operation and Maintenance

(a) Evaluation of the Impact of Operation and Maintenance on Undeveloped Areas and Animals

Adverse impacts to ecological resources during O&M of the Facility, including undeveloped areas, are not anticipated. O&M activities will include site visits for firmware updates, fixing faulty equipment, cleaning solar modules, standard test procedures and a security patrol. A light-duty vehicle will be used for the maintenance. Gravel roads will be installed to provide site and inter-row access with the Project.

(b) Procedures to Avoid, Minimize, and Mitigate Impacts of Operation and Maintenance

Once the Project is in operation and site restoration of the Project Area is complete, there will only be impacts to one ephemeral stream, Stream 2. No additional impacts to wetlands or streams, trees or natural habitats, are expected once the Project is in operation. Operation of the Project will not involve the discharge of water or wastewater into streams or water bodies, nor will Project operation require the use of water for cooling or other activities. Therefore, no measurable impacts on the quality and quantity of surrounding water resources (including wetlands, surface waters, and groundwater) are anticipated. Grasses and other invasive plant species will be managed through mowing and spot applications of herbicides. Additional details regarding vegetative management during O&M are presented in Exhibit C.

(c) Post-construction Monitoring of Wildlife Impacts

Post-construction monitoring of wildlife is not anticipated as no adverse impacts to wildlife species are expected.

(C) LAND USE AND COMMUNITY DEVELOPMENT

(1) Land Use in the Region and Potential Impacts of the Facility

(a) Land Use Map

Figure 8-6 is a 1:24,000 scale map depicting the following features within 1-mile of the Project Area:

(a) The proposed Project Area;

(b) Land use;

(c) Structures; and

(d) Incorporated areas and population centers.

Based on coordination with Mark Township, Defiance County and Mark Township do not have zoning or land use designations, therefore the land use identified within Figure 8-6 is based on a modified land cover classification analysis.

(b) Structures Near the Facility

Table 8-4 provides additional detail related to the proximity of identified structures to Project facilities, specifically:

(i) Structures within 1,500 feet (457.2 meters) of the generation equipment, the distance between the structure or property line and the equipment;

(ii) Structures within 250 feet (76.2 meters) of a collection line, access road, or other associated components, the distance between both the structure and the property line and the associated facility; and

(iii) Lease status of the property.

There are thirty-two residences within 1,500 feet (457.2 meters) of generation equipment (e.g., solar modules, inverters, or substations), none of which are located within 250 feet of generation equipment. All residences are at least 300 feet from solar modules, inverters, or the substation.

Table 8-4 Structures Near Project Facilities

Structure Type	Facility Type	Distance (feet)	Lease Status
Residence	Solar Array	1,039 ft	Not Leased
Residence	Solar Array	1,133 ft	Not Leased
Residence	Solar Array	1,191 ft	Not Leased
Residence	Solar Array	1,274 ft	Not Leased
Residence	Solar Array	1,294 ft	Not Leased
Residence	Solar Array	1,297 ft	Not Leased
Residence	Solar Array	1,318 ft	Not Leased
Residence	Solar Array	1,404 ft	Not Leased
Residence	Solar Array	1,423 ft	Not Leased
Residence	Solar Array	1,424 ft	Not Leased
Residence	Solar Array	303 ft	Not Leased
Residence	Substation	311 ft	Not Leased
Residence	Solar Array	313 ft	Not Leased
Residence	Solar Array	376 ft	Not Leased
Residence	Solar Array	405 ft	Not Leased
Residence	Solar Array	468 ft	Not Leased
Residence	Solar Array	504 ft	Not Leased
Residence	Solar Array	514 ft	Not Leased
Residence	Solar Array	515 ft	Not Leased
Residence	Solar Array	518 ft	Not Leased
Residence	Solar Array	541 ft	Not Leased
Residence	Solar Array	543 ft	Not Leased
Residence	Solar Array	624 ft	Not Leased
Residence	Solar Array	643 ft	Not Leased
Residence	Solar Array	693 ft	Not Leased
Residence	Solar Array	724 ft	Not Leased
Residence	Solar Array	760 ft	Not Leased
Residence	Solar Array	782 ft	Not Leased
Residence	Solar Array	823 ft	Not Leased
Residence	Solar Array	831 ft	Not Leased
Residence	Solar Array	908 ft	Not Leased
Residence	Solar Array	947 ft	Not Leased

(c) Evaluation of the Land Use Impacts

Approximately 95.3% of the land use within the Project Area is active agriculture land. The remainder of the Project Area (4.7%) includes natural areas (i.e. second growth deciduous forest, old field, scrub-shrub, and wetlands) and developed land uses (see Table 8-2).

The Applicant took a conservative approach to calculating the land use impact of the Facility by assuming that all disturbance and land use impacts during construction would be permanent. Permanent impacts include all area inside the perimeter fence of the Facility and the space in between the Facility components (i.e. solar modules, inverter pads, access roads, construction laydown areas, O&M trailer, substation, and POI switchyard) and access roads outside the perimeter fence. The one exception to this approach is avoidance of wetlands and streams that are located within the fence line. With the exception of one ephemeral stream crossing with an access road, the solar modules, inverters, access roads, substation, and all other Facility infrastructure have been sited to avoid these important ecological features within the fence line to ensure there are no impacts. Using this conservative assumption, approximately 648.3 acres of agricultural land, 13 acres of old field, and 4.2 acres of second growth deciduous forest will be impacted. Less than 1 acre combined of scrub-shrub, and existing roadway/residential will be impacted by the Facility. Table 8-5 presents permanent land use impacts anticipated for each Project component.

Table 8-5 Project Land Use Impacts by Project Component

Project Component	Permanent Disturbance (acres)
Agricultural	
Solar Field[1]	648.3
Existing Roadway/Residential	
Solar Field[1]	<0.1
Second Growth Deciduous Forest	
Solar Field[1]	4.2
Scrub-Shrub	
Solar Field[1]	<0.1
Old Field	
Solar Field[1]	13.0

[1] includes all Project infrastructure within the fence line including construction laydown areas, O&M trailer, substation, and POI switchyard as well as access roads outside perimeter fence

(d) Structures to be Removed or Relocated

The Applicant does not anticipate removing structures to accommodate the Project.

(2) Wind Farm Map

The Project is not a wind farm; therefore, this section is not applicable to the Project.

(3) Setback Waivers

No setback waivers are applicable to this Project as it is not a wind farm.

(4) Land Use Plans

(a) Formally Adopted Plans for Future Use of the Project Area and Surrounding Lands

Neither Defiance County nor Mark Township currently have a Comprehensive Land Use Plan which would guide future use of the Project Area and surrounding areas. Further, there is currently no zoning within Defiance County or Mark Township that could be used to restrict development based on zoning restrictions. Because there is nothing currently in place, the Project is not likely to hinder development in adjacent areas if a Comprehensive Land Use Plan is developed or changes in land use are proposed in the future.

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

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

(c) Impact on Regional Development

The Project is expected to aid regional development by increasing local tax revenues and contributing to the local economy, as shown in Exhibit G, the Economic Impact Report, and discussed in OAC Section 4906-4-06(C) of this Application. Aside from these benefits, including a significant increase in funding to schools, the Project is not expected to negatively impact housing, transportation system development, or other public services and facilities.

(d) Compatibility with Current Regional Plans

Solar facilities are compatible with rural landscapes in that they will not significantly impact schools, housing, and transportation; and upon decommissioning of the Project, the land can return to agriculture use. In addition, solar facilities provide supplemental income to rural property owners and increase local tax revenues and contribute to the local economy. Construction and operation of the Project will not interfere with future proposed development.

(e) Current Population Counts and 10-year Population Projections

The population of Defiance County from the 2010 U.S. Census was 39,037. The most recent estimated population count for Defiance County in 2019 was 38,087, with a current population density of approximately 92.6 persons per square mile, an annualized percentage change of - 0.3%. The projected population for Defiance County is 38,090 in 2020 and 36,490 in 2030 (Ohio Office of Research 2020a,b). The population of Mark Township from the 2010 Census was 908 and was estimated to be 875 in 2019, an annual decrease of -0.4%. The only populated place within 5 miles of the Project Area is the village of Sherwood which had a recorded population of 827 during the 2010 U.S. Census and was estimated to be 811 in 2019, indicating an annual decrease of -0.2% (Ohio Office of Research 2020b). Using the average annual rate of change since the 2010 U.S. Census, the population for Mark Township and the Village of Sherwood are expected to be approximately 837 and 793, respectively in 2030.

(D) CULTURAL AND ARCHAEOLOGICAL RESOURCES

(1) Recreation Areas and Registered Landmarks

Figure 8-7 depicts all recreation areas and registered landmarks of cultural significance within a 10-mile radius of the Project Area.

(2) Impacts on Registered Landmarks

Stantec, with assistance from Commonwealth Heritage Group, Inc. (Commonwealth), identified registered landmarks of cultural significance within a 10-mile radius of the Project Area (see Exhibit U). To identify these resources, Stantec and Commonwealth reviewed cultural resource GIS data obtained from the National Park Service's website for National Register of Historic

Places (NRHP) and National Historic Landmark (NHL) listings, as well as known archaeological sites, historic aboveground structures, cemeteries, and survey data information from the Ohio Online Mapping System, which is maintained by the State Historic Preservation Office (SHPO). This review was part of an extensive background research effort conducted in support of an archeological assessment and historic architectural surveys completed by Commonwealth in October 2020 after consultation and concurrence with the SHPO on the survey methodologies. The findings of the assessment and surveys are summarized below.

The reconnaissance-level architectural history field survey was completed for all structures greater than 50 years old within 0.5 miles of the Project footprint. Additionally, Commonwealth also surveyed and assessed any NRHP-listed or determined eligible properties within 0.5 and 2 miles from the Project footprint. As a result of the survey, 62 newly recorded resources over 50 years of age were surveyed. Based on the evaluation criteria used to make determinations as to whether a property should be considered eligible for the NRHP, Commonwealth recommended that all 62 properties are not eligible for further research or listing in the NRHP. The full Phase I History/Architecture Survey report is provided in Exhibit V. Based on the results of the survey Commonwealth concluded that the Project will have no effect on historic properties within the survey area. The History/Architecture Survey report was submitted to SHPO in December 2020 for comment. Agency response is pending and will be submitted to the OPSB upon receipt.

Commonwealth also conducted archeological investigations within the entire Project footprint between October 20 and 29, 2020 to identify and document previously unrecorded archaeological sites that are eligible for listing in the NRHP and that may be impacted by the ground disturbing activities of the proposed Project. Commonwealth's archaeological field survey report is included in Exhibit W. A total of 666.3 acres were surveyed by pedestrian survey and surface collection. Ten previously unrecorded archaeological sites were documented as a result of the archaeological survey. Four of the sites were prehistoric isolates and the remaining six were historic period domestic and farmstead refuse scatters. One of the ten sites had both prehistoric and historic components. Commonwealth recommended all ten sites not eligible for listing in the NRHP due to a lack of information potential and impaired integrity. It was therefore the opinion of Commonwealth that the Project would not have an impact on

archaeological sites listed, or eligible for listing, in the NRHP, and no additional archaeological testing was necessary. The archaeological survey report was submitted to SHPO in December 2020 for comment. Agency response is pending and will be submitted to the OPSB upon receipt.

(3) Impacts on Recreational Areas

Stantec identified recreational areas within 10 miles of the Project Area using publicly available GIS data sources which are depicted in Figure 8-7. Twenty-six recreational areas were identified that include state and local parks, watercraft launches, natural areas and preserves, state conservation areas and recreation areas, and agricultural easements related to the Ohio Farm and Ranch Lands Protection, Wetland Reserve, and Clean Ohio Fund Farmland Preservation programs. While 26 recreational areas are within 10 miles, none are within 2 miles of the Project Area. Based on distance from the Project Area, it is not expected that the Project will have any effects on recreational areas.

Stantec conducted a visual resources assessment within the Project Area, and within a 2-mile (3.2 kilometers) and 10-mile (16.0 kilometers) radius. The findings of the Stantec visual resources assessment are summarized below and the complete report is contained in Exhibit X.

(4) Visual Impact

(a) Visibility and Viewshed Analysis

A viewshed analysis was conducted by Stantec using GIS software to determine locations within 10 miles of the Project that could potentially have views of the Project. A viewshed analysis is a GIS raster model output that shows a project's theoretical visibility in its surrounding vicinity based on topography and the dimension of project components. Stantec created a digital elevation model based on available topographical data and assuming the maximum height of Project components would be 15 feet, which is the maximum height of the solar modules under consideration by the Applicant for the Project. A Visual Resources Technical Report is provided as Exhibit X that describes the methods and assumptions used for the viewshed analysis in more detail.

A graphical representation of the results of the viewshed analysis is provided in Figure 2 of Exhibit X and is shaded to show the ranges of visibility of the Project, from full view to partial views. Because the viewshed model does not account for intervening vegetation or structures, and because of the flat terrain upon which the model was based, potential visibility of the Project appears to be high, and there are few areas within a 10-mile radius of the Project Area that would not theoretically have visibility of the Project. However, as a result of factors such as vegetation, structures, atmospheric conditions, and distance decay associated with the declining visibility of 15-foot-tall solar modules over long distances, and the results of the simulations at distances of approximately 2 miles, it is unlikely that the Project would actually be visible at those distances, so the analysis therefore focused on views within 2 miles of the Project. Sites within 2 miles of the Project valued for scenic quality and other potentially sensitive receptors include Mark Center United Methodist Church, St. John Lutheran Church, Sherwood Baptist Church, Sherwood United Methodist Church, and Colby Cemetery. The Visual Resources Technical Report provided as Exhibit X includes the locations of these resources, as well as other scenic resources within 10 miles of the Project (see Figure 8-7 and Exhibit X, Figure 3).

The distance between the Project and its nearest publicly accessible areas, namely nearby local roads, along with the frequent presence of intervening vegetation or structures means that the entire expanse of the Project would rarely be visible and any view of the Project from vehicles traveling along roadways would be intermittent and of short duration.

(b) Existing Landscape and Scenic Quality

Agriculture land uses is the dominate feature in the predominantly flat landscape, in northwestern Ohio. The visual character of this part of Defiance County is defined by the contrast between the predominantly flat farmland that is bordered by clusters of mature trees and vegetation. Development is mostly concentrated within Mark Center and Sherwood. However, low-density residences, structures and equipment associated with the farming operation are dispersed throughout the Project Area and visible in most views from the surrounding roadway network.

The Project footprint is mostly fields utilized for cultivated-crop agriculture, with some stands of

trees and vegetation. The northern boundary of the Project footprint is adjacent to the south of State Route 18 and the footprint is bisected by the Napoleon, Defiance, Western Railroad (owned by CSX Corporation), which extends east to west and between Mark Center and the Village of Sherwood. Residences are aligned with the roadways that extend through the Project footprint, including the east/west routes of Fountain Street and Fountain Street Road; and the north/south routes of Farmer Mark Road, Williams Cecil Center Road, and Openlander Road.

Defiance County does not identify specific scenic resources or protected views within the County. However, ODNR lists the Maumee River, located about 2.5 miles south of the Project area, a designated scenic and recreational river. From the City of Defiance, State Route 424 is designated the Maumee Valley Scenic Byway, but this route is not within the 10-mile radius of the Project footprint.

Though located entirely within Defiance County, the Project footprint's 10-mile radius includes portions of Paulding County and Williams County in Ohio, and Allen County and Dekalb County in Indiana.

(c) Landscape Alterations and Impacts

The presence of the Project would be visually unique to the local landscape and would alter the existing visual character. In close view of the Project (within approximately 0.2 miles), the solar modules would be highly visible and identifiable to viewers. The Project would be particularly evident along State Route 18, a primary highway in this part of Defiance County, and in sustained views near residences, as shown in the simulations. The Project would also be highly visible along Fountain Road. In this part of the Project Area, the solar modules would appear as part of the larger, working landscape, which already contains elements of mechanization, such as the existing AEP switchyard. However, in views where the solar modules would be set back from the Project fence, the proposed security fence would be the most prominent Project feature as it would extend above the horizon. Visibility of the Project decreases with distance and is absorbed into the existing agricultural landscape at distances of approximately 0.5 mile. It would remain within the background of views and would not appear more prominent than the expanse of flat farmland that occupies most of the foreground, or the surrounding residences and farm

structures. This decrease in visibility defines the outer extent of the Project's actual viewshed, and it affirms the decision to focus this evaluation on views no further than 2 miles from the Project footprint. As such, the Project would very likely appear less visible in views from distances further away, particularly views from elevations more consistent with the Project footprint.

(d) Visual Impacts to Cultural and Archaeological Resources

As discussed in OAC Section 4906-4-08(D)(2) of this application, the architectural history survey completed for the Project by Commonwealth identified no NHLs, no properties listed on the NRHP, and no NRHP-eligible properties within 2 miles of the Project Area. Since no aboveground historic structures or historic districts are in the Project Area, the Project should have no direct effect on these resources. No indirect visual effects are expected because views of the Project from these resources will likely be minimal or non-existent due to distance, terrain, and existing vegetation.

Additionally, archaeological investigations conducted by Commonwealth identified 10 previously unrecorded archaeological sites either by pedestrian reconnaissance and surface collection or shovel testing. Commonwealth recommended all 10 sites not eligible for listing in the NRHP. Therefore, direct or indirect visual effects to archaeological resources listed, or eligible for listing in the NRHP, are not anticipated to occur. The archaeological survey report was submitted to SHPO in December 2020 for comment. Agency response is pending and will be submitted to the OPSB upon receipt.

(e) Photographic Simulations

Stantec visual resources specialists reviewed Project plans, aerial imagery, and other data to identify potential viewpoints in the vicinity of the Project to be used in creating photographic visual simulations. Photographs were taken in October 2020. The view from each viewpoint was photographed at eye level using a 35-millimeter, 18-megapixel, single lens reflex camera equipped with a 18-55-millimeter focal length lens set to 31 millimeters. This configuration allows for a 50-millimeter focal length, the industry-accepted standard for approximating the field of vision in a static view of the human eye. The time at which each viewpoint was

photographed was documented to allow for accurate matching between the sun's position in the sky and the orientation of the tracking modules in the simulations.

Stantec, in coordination with the Applicant, selected a representative subset of photographed viewpoints for use as Key Observation Points (KOPs). The location of the five KOPs in relation to the Project footprint are shown on Figure 1 in Exhibit X. The photographs from the KOPs were used to generate photo-realistic simulations of the Project in order to compare the existing and proposed conditions. The simulations were developed through a three-dimensional computer model using a combination of AutoCAD files and GIS layers and exported to Autodesk's 3-dimensional Studio Max for production and incorporating the Project facility specifications.

The simulations generated for the Project at the five KOPs are shown in Figures 7 – 11 in Exhibit X. A more detailed description of existing and proposed conditions for each of the KOPs is provided in Exhibit X, but overall while a development of this type and size would be unique to the local landscape, at distances of approximately 0.5 mile the Project visibility decreases and is mostly absorbed into the agricultural landscape.

(f) Visual Impact Minimization

Photo simulations developed to evaluate visual impacts established that the Project would be highly visible from locations 0.1 to 0.2 miles away, but at distances of 0.5 mile, would appear mostly absorbed into the existing agricultural landscape. As part of its stakeholder outreach efforts, the Applicant has mapped all residences within 0.5 mile of the Project footprint and prepared aerial imagery to show the degree to which existing built or natural features may partially to fully block residential views toward the Project. This information is included in the Mark Center Visual Impact Mitigation Plan provided as Exhibit Y. This exercise helps to further the understanding of the limited locations throughout the local landscape where the entirety of the proposed Project would be visible without obstruction. Where necessary, the Applicant will work with adjacent landowners to analyze the impact to their viewshed and determine the best mitigation options, as necessary.

(E) AGRICULTURAL DISTRICTS AND IMPACTS TO AGRICULTURAL LAND

(1) Mapping of Agricultural Land

Figure 8-8 depicts all agricultural land within the Project Area. Nine of the parcels that comprise the Project Area, totaling 449 acres, are enrolled in the Agricultural District Program based on information provided by the Defiance County Auditor (personal communication November 23, 2020).

There are no Concentrated Animal Feeding Operations within the Project Area or Defiance County.

(2) Agricultural Information

(a) Acreage Impacted

Land use in the Project Area is primarily agricultural with approximately 832 acres, or 95% of the total Project Area, dedicated to corn and soybean cultivation. For the life of the Project, approximately 648.3 acres of agricultural land will be converted to accommodate the Project facilities. This acreage represents approximately 0.3% of the land currently used for farming in Defiance County. Of the agricultural land utilized for the Project Facility, approximately 352 acres is currently enrolled in the Agricultural District program.

(b) Evaluation of the Impact of Construction, Operation, and Maintenance of the Proposed Facility

(i) Field Operations

The Project will occupy approximately 648.3 acres of land currently utilized for agricultural production. Field operations will cease prior to commencing construction. However, following decommissioning of the Project, the land can be reverted to agricultural production.

(ii) Irrigation

The land used for agriculture within the Project Area is not currently irrigated, therefore there are no proposed impacts to irrigation usage as a result of construction, operation, or maintenance of the Project.

(iii) Field drainage systems

The Applicant conducted a Project Drainage Tile Assessment and Construction Impact Report for the Project that is included as Exhibit Z. The known drain tile locations within the Project Area are depicted in Figure 8-8. The purpose of the assessment was to identify the location of subsurface drain tiles within the Project Area and develop mitigation for potential impacts. The Applicant was able to use publicly available GIS data and drain tile layout maps provided by the landowners, when available, to prepare a schematic of the drain tile system within the Project Area. The majority of the drain tiles within the Project Area are lateral tiles that provide localized drainage – damage to these lateral tiles would rarely affect adjacent landowners. Lateral tiles feed to larger main tiles. Damage to a larger main could cause drainage issues on adjacent properties if impacted and will therefore be avoided with the Project design or repaired or rerouted if unavoidable.

The Applicant has determined that spacing between lateral tiles within the Project Area is between 30 and 50 feet. This spacing does not impose a significant constraint on the Project design, as project components, such as the solar modules, can be placed between the drain tiles. However, there is potential for impacts to the drain tile system from steel posts and transmission line poles driven into the ground and cutting trenches to install underground collection systems. The final site layout will be completed taking the drain tile locations into consideration to minimize potential impacts. The Applicant plans to avoid impacts to all main tiles. Lateral tiles will be avoided to the extent practicable. Procedures will be developed to identify locations where tiles have been damaged and repairs performed, as necessary, as part of the overall construction and site restoration (post-construction) process. During operations, facility personnel will monitor the site for signs of damaged tile (i.e. saturated soils or areas of ponding). A local contractor who specializes in the installation and repair of agricultural drain tiles will be hired to perform any necessary repairs.

(iv) Structures used for Agricultural Operations

No agricultural-related structures will be impacted by Project construction, operation, or maintenance.

(v) Viability as Agricultural District Land

Figure 8-8 depicts Project parcels that are enrolled in an Agricultural District Program. Once the Project is operational, these parcels will no longer be eligible for inclusion in the program. Once the Project is decommissioned, the parcels could be re-enrolled in the program.

(c) Avoidance and Mitigation Procedures During Construction, Operation, and Maintenance to Reduce Impacts to Agricultural Land, Structures, and Practices

The Project has been designed to minimize its impact and reduce its overall footprint to the extent practicable, reducing the amount of agricultural land removed from production during the life of the Project. However, agricultural production within the perimeter fence line will cease prior to construction activities commencing. The Applicant will compensate the landowner for destruction or loss of any crops caused by the Project.

(i) Avoidance or Minimization of Damage to Field Tile Drainage Systems and Soils

The Applicant has prepared a Project Drain Tile Assessment and Construction Impact Report for the Project that is included as Exhibit Z. The known drain tile locations within the Project Area are depicted in Figure 8-8. The assessment involved the use of publicly available GIS data and maps provided by the landowners, when available, to map the locations of drain tiles, both lateral and main tiles, within the Project Area. The Applicant will take the mapped drain tile system into consideration when preparing the final site layout to minimize potential impacts. The Applicant plans to avoid impacts to all main tiles. Lateral tiles will be avoided to the extent practicable. Procedures will be developed to identify locations where tiles have been damaged and repairs performed, as necessary, as part of the overall construction and site restoration (post-construction) process. During operations, facility personnel will monitor the site for signs of damaged tile (i.e. saturated soils or areas of ponding). A local contractor who specializes in the installation and repair of agricultural drain tiles will be hired to perform any necessary repairs.

(ii) Timely repair of Damaged Field Tile Systems

The Applicant will use commercially reasonable efforts during construction to promptly repair any drain tile that is noticeably damaged. This means that any drain tile damaged as a result of the Project would be repaired promptly, so long as it could be determined that the damage was a direct result of the Project and any requested repair methods are not outside reasonable requirements to remedy the issue. The affected landowner may agree to not having the damaged drain tile repaired only if the drain tile system of adjacent landowners remain unaffected by the non-repair of the landowner's drain tile system.

(iii) Segregation of Excavated Topsoil Decompaction and Restoration of Topsoil

The Applicant will segregate excavated topsoil, and de-compact and restore all topsoil to original conditions unless otherwise agreed to by the landowner. Topsoil will not be significantly compacted during the laying of the substation foundation or racking posts. Additionally, areas below the solar arrays will be planted with low-growth native grass seed mix to promote precipitation infiltration and reduce stormwater run-off and soil erosion.

4906-4-09 REGULATIONS ASSOCIATED WITH WIND FARMS

The Project is not a wind farm; therefore, these regulations are not applicable.

References

Badra, P. J. 2001. Special animal abstract for *Pleurobema clava* (northern clubshell). Lansing, Michigan: Michigan Natural Features Inventory.

Brack, Virgil Jr., Dale W. Sparks, John O. Whitaker Jr., Brianne L. Walters, and Angela Boyer. 2010. Bats of Ohio. Indiana State University Center for North American Bat Research and Conservation.

Butler, R. S. 2002. Status assessment report for the rayed bean, *Villosa fabalis*, occurring in the Mississippi River and Great Lakes systems. U.S. Fish and Wildlife Service Regions 3, 4, and 5, and Canada. 62 pp.

Cornell Lab of Ornithology. 2020. All about birds. Available at https://www.allaboutbirds.org/news. Accessed October 2020.

Lazard. 2020. "Lazard's Levelized Cost of Energy Analysis – Version 14.0." Available at https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf. Accessed December 2020.

NatureServe. 2020. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, VA. U.S.A. Available at http://explorer.natureserve.org. Accessed July 2020.

Ohio Department of Natural Resources (ODNR) Division of Wildlife and United States Fish and Wildlife Service. 2020. Ohio Mussel Survey Protocol. Available at https://ohiodnr.gov/static/documents/wildlife/permits/dow-protocol-ohio-mussel-survey.pdf. Accessed October 2020.

ODNR. 2000. Aquifer – Unconsolidated Aquifers of Ohio. Available at https://ohiodnr.gov/wps/portal/gov/odnr-core/home/resources/metadata-downloads. Accessed June 2020.

ODNR. 2020. State Listed Wildlife and Plant Species by County. Division of Wildlife. Available at https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/wildlife/documents-publications/wildlife-plants-county. Accessed December 2020.

Ohio Environmental Protection Agency (OEPA). 2015. Regional Haze State Implementation Plan for Ohio. Division of Air Pollution Control. Available at https://epa.ohio.gov/Portals/27/sip/regional/Regional_Haze_SIP_2015-FINAL.pdf. Accessed December 2020.

OEPA. 2019a. Ohio Air Quality 2018. Division of Air Pollution Control. Available at https://www.epa.state.oh.us/Portals/27/ams/Ohio_Air_Quality_2018_final.pdf. Accessed December 2020.

OEPA. 2020a. Ground Water Quality Characterization Program. Available at https://epa.ohio.gov/ddagw/gwqcp#115414902-access-data. Accessed December 2020.

OEPA. 2020b. Drinking Water Source Protection Checklists. Available at https://epa.ohio.gov/Portals/28/documents/swap/Checklist-Oct2020.pdf. Accessed December 2020.

OEPA. 2020c. "Concentrated Animal Feeding Operations." Division of Surface Water. Available at https://www.epa.state.oh.us/dsw/cafo/index#126567134-cafo-npdes-permits-in-ohio. Accessed April 2020.

Ohio Division of Soil and Water Conservation (OH-DSWC). 2014. "Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development, and Urban Stream Protection." Division of Soil and Water Conservation. Available at https://epa.ohio.gov/Portals/35/storm/technical_assistance/Intro_11-6-14-1.pdf. Accessed December 20202.

Ohio Office of Research. 2020a. Ohio County Profiles, Defiance County. Available at https://www.development.ohio.gov/files/research/C1021.pdf. Accessed December 2020.

Ohio Office of Research. 2020b. 2019 Population Estimates for Cities, Villages, and Townships. Available at https://www.development.ohio.gov/files/research/P5027.pdf. Accessed December 2020.

Ohio State University (OSU). 2020. CFAES Weather System, Northeast Station. The Ohio State University, College of Food, Agricultural, and Environmental Studies. Available at https://www.oardc.ohio-state.edu/weather1/stationinfo.asp?id=9. Accessed December 2020.

Parmalee, P. W. and A. E. Bogan. 1998. The Freshwater Mussels of Tennessee. University of Tennessee Press: Knoxville, Tennessee. 328 pp.

Royal Meteorological Society (RMetS). 2018. The Beaufort Scale: How is Wind Speed Measured? Royal Meteorological Society. Available at https://www.rmets.org/resource/beaufort-scale. Accessed December 2020.

Sponheimer Consulting. 2020. Assessment of whether power conversion equipment for large photovoltaic arrays will generate electrical noise that will potentially affect common 2-way radio systems. Sponheimer Consulting.

USFWS. 1994. Clubshell (Pleurobema clava) and Northern Riffleshell (Epioblasma torulosa rangiana) Recovery Plan. Prepared for the U.S. Fish and Wildlife Service, Hadley, Massachusetts. 68 pp.

USFWS. 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 258 pp.

USFWS. 2015. Copperbelly water snake: Nerodia erythrogaster neglecta. Available at https://www.fws.gov/midwest/endangered/reptiles/cws/pdf/NCWSFactSheetMay2015.pdf. Accessed September 2020.

USFWS. 2020a. Information for Planning and Consultation. U.S. Fish and Wildlife Service. Available at https://ecos.fws.gov/ipac/. Accessed December 2020.

USFWS. 2020b. Northern Long-eared Bat (*Myotis septentrionalis*). Available at https://www.fws.gov/midwest/Endangered/mammals/nleb/nlebFactSheet.html. Accessed October 2020.

USFWS. 2020c. 2020 Range-wide Indiana Bat Survey Guidelines, March 2020. Available at https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/FINAL%20Range-wide%20IBat%20Survey%20Guidelines%203.23.20.pdf. Accessed October 2020.

Watters, G. T., M. A. Hoggarth, and D. H. Stansbery. 2009. The Freshwater Mussels of Ohio. The Ohio State University Press, Columbus, OH. 421 pp.

Summary: Application of Mark Center Solar Project, LLC electronically filed by Teresa Orahood on behalf of Dylan F. Borchers