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September 2, 2022

Ms. Tanowa Troupe, Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3797

Re: Application

Case No. 22-549-EL-BGN
In the Matter of the Application of Oak Run Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar Powered Electric Generation Facility in Madison County, Ohio.

Case No. 22-550-EL-BTX
In the Matter of the Application of Oak Run Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Transmission Line in Madison County, Ohio.

Dear Ms. Troupe:

Accompanying this letter is Oak Run Solar Project, LLC's ("Applicant") application for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility and associated Transmission Facilities in Madison County, Ohio ("Application"). The original Application was electronically filed, and the required number of copies both in hard copy and electronic have been provided to the Docketing Division.

Along with this filing, we also provided the Docketing Division copies of the redacted portions of the Application Narrative, Application Exhibit I, and Application Exhibit K, and have filed a Motion for Protective Order and Memorandum in Support, requesting protective treatment of the confidential information contained therein.

The Applicant further notes that the information presented in the preapplication notification letters filed on June 7, and July 18, 2022, regarding a request for waiver, has been revised. Along with the filing of this Application, the Applicant is filing a Motion for Waiver of certain provisions of the Ohio Power Siting Board's rules contained in Ohio Administrative Code ("O.A.C.") Chapter 4906-4 for the Generation Facility. With regard to the Transmission Facilities, the Applicant is

also filing a Motion for Waiver from certain requirements related to the alternate transmission line route and the full evaluation of the alternate route in O.A.C. Rules 4906-2-04(C)(4), 4906-5-05(B), 4906-5-06, 4906-5-07, and 4906-5-08.

In addition, the Application specifies that Project construction is expected to begin as early as the fourth quarter of 2023, with commercial operations beginning for the first 200- to 400-MW portion of the Project as early as the fourth quarter of 2025. Additional 200-MW tranches will be built on a rolling basis with the full 800-MW Project operational by the end of the fourth quarter of 2027. The Project will be sited on approximately 6,050 acres rather than 6,060 acres as stated in the preapplication notification letters. All other information in the preapplication notification letter remains unchanged.

In accordance with O.A.C. Rule 4906-2-04, we make the following declarations:

Name of the Applicant:

Oak Run Solar Project, LLC
(Savion LLC)
422 Admiral Boulevard
Kansas City, Missouri 64106

Name and location of the facility:

Oak Run Solar Project, LLC
Monroe, Somerford, and Deercreek Townships
Madison County, Ohio

Name of authorized representative:

Christine M.T. Pirik
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Notarized Statement:

See attached Affidavit of Scott Zeimetz,
Vice President, Oak Run Solar Project, LLC

Respectfully submitted,

/s/ *Christine M.T. Pirik*
Christine M.T. Pirik (0029759)
(Counsel of Record)
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(*Counsel agree to receive service by email.*)
Attorneys for Oak Run Solar Project, LLC

Enclosures

4854-7128-5296 v1 [88534-8]

BEFORE THE
OHIO POWER SITING BOARD

In the Matter of the Application of Oak Run Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Madison County, Ohio.	)))))	Case No. 22-549-EL-BGN
In the Matter of the Application of Oak Run Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Transmission Line in Madison County, Ohio.	))))	Case No. 22-550-EL-BTX

AFFIDAVIT OF
OAK RUN SOLAR PROJECT, 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 on my personal knowledge:

1. I am the Vice President of Oak Run Solar Project, LLC, which is the applicant under this Application.

2. I have reviewed Oak Run Solar Project, LLC's Application for a Certificate to Construct a Solar-Powered Electric Generation Facility and to Construct a Transmission Line in Madison County, Ohio.

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.

Scott Zeimetz, Vice President of
Oak Run Solar Project, LLC

Sworn to before and signed in my presence this 31st day of AUGUST 2022.

Notary Public

CLIFTON LEE NIX II
Notary Public - Notary Seal
STATE OF MISSOURI
Jackson County
My Commission Expires: Jan. 10, 2025
Commission #21672121

4895-5664-9008 v1 [88534-8]

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

Case Nos: 22-549-EL-BGN and 22-550-EL-BTX

Table of Contents

List of Tables

List of Figures

List of Exhibits

List of Abbreviations and Acronyms

AC	alternating current
ANSI	American National Standards Institute
Applicant	Oak Run Solar Project, LLC
AEP	American Electric Power
APE	Area of potential effect
ASCE	American Society of Civil Engineers
BESS	battery energy storage system
btr	Between the Rows
Certificate	Certificate of Environmental Compatibility and Public Need
CHG	Commonwealth Heritage Group
COD	Commercial Operation Date
CR	County Road
CWA	Clean Water Act
dBA	A-weighted decibels
DC	direct current
EMFs	electromagnetic fields
Epsilon	Epsilon Associates, Inc.
ESRP	Emergency Services and Response Plan
FAA	Federal Aviation Administration
Frac Out Plan	Standard Horizontal Directional Drilling Construction Inadvertent Return Control Plan
gen-tie	generation tie-in line
G2	G2 Consulting Group
HDD	horizontal directional drilling
HHEI	Headwater Habitat Evaluation Index
IEEE	Institute of Electrical and Engineers
IPaC	Information for Planning and Consultation
JEDI	Jobs and Economic Development Impacts
KOP	Key Observation Point

kV	kilovolt
kWac	kilowatts AC
kWdc	kilowatts DC
Leq	equivalent sound level
Lmax	maximum sound level
L50	median sound level
Mannik & Smith	The Mannik & Smith Group, Inc.
MET	meteorological
mG	milligauss
mm	millimeter
module	photovoltaic 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
NFPA	National Fire Protection Association
NIH	National Institute of Health
NPDES	National Pollutant Discharge Elimination System
NPV	net present value
NRCS	U.S. Department of Agriculture, National Resource Conservation Services
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
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency

OPSB	Ohio Power Siting Board
OPHI	Ohio Pollinator Habitat Initiative
OSHA	Occupational Health and Safety Administration
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PILOT	Payment in lieu of taxes
PJM	PJM Interconnection, LLC
POI	Point of Interconnection
PPA	power purchase agreement
Project	Oak Run Solar Project
PSS	Palustrine Scrub/Shrub Wetland
PV	photovoltaic
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
RUMA	Road Use Maintenance Agreement
Savion	Savion, LLC
SCADA	supervisory control and data acquisition
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
Stantec	Stantec Consulting Services, Inc.
STU	shovel test unit
SWPPP	Stormwater Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
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
WHO	World Health Organization

EXECUTIVE SUMMARY

Oak Run Solar Project, LLC (the Applicant), is developing the 800-megawatt alternating current Oak Run Generation Facility and associated Transmission Line Facilities in portions of Monroe, Somerford, and Deercreek Townships in Madison County, Ohio. The Project may also contain a large-scale co-located battery energy storage system up to 300 megawatts (MW) in size. The Project Area will encompass approximately 6,050 acres of land. All components and infrastructure necessary for the Generation Facility, the Transmission Line Facilities, and the battery energy storage system will occupy approximately 4,400 acres of the Project Area.

Ohio Administrative Code (OAC) Rules 4906-4 and 4906-5 set forth the Ohio Power Siting Board's requirements for a Certificate of Environmental Compatibility and Public Need for the Generation Facility and the Transmission Line Facilities, respectively. On June 24, 2022, the Administrative Law Judge granted the Applicant's request to jointly file the standard generation and associated transmission certificate applications (Case Nos. 22-549-EL-BGN and 22-550-EL-BTX, respectively). The enclosed application, therefore, addresses and responds to the requirements in both OAC Rule 4906-4 for generation facilities and OAC Rule 4906-5 for transmission facilities. For ease of review, the Applicant has attached a document as Exhibit A that walks through all of the requirements in both OAC Rule 4906-4 and OAC Rule 4906-5 and explains where the responses to those requirements are located in the narrative to this application.

As shown in detail throughout the narrative and the reports included as exhibits to this application, the Applicant is dedicated to numerous commitments that ensure the Project provides minimum impact to the community, including, but not limited to, the following:

- 300-foot panel setbacks from non-participating residences;
- 150-foot setback from non-participating parcels;
- 150-foot setback to roadways;
- A wildlife perimeter fence that will not exceed 7 feet in height;

- Only utilizing Tier 1 equipment suppliers and expects solar panels to pass the Toxicity Characteristic Leaching Procedure testing regulated by the U.S. Environmental Protection Agency;
- A Storm Water Pollution Prevention Plan during construction and best management practices to reduce erosion and sedimentation in compliance with Appendix A of the storm water general permit as the Project Area is within the Big Darby Creek Watershed;
- A performance bond to cover the cost of decommissioning the Project; and
- Vegetative screening and/or agrivoltaic programs within the Project Area that would have the objective of minimizing the viewshed impacts.

In addition, the Project will bring numerous benefits to the community and the state of Ohio, including: employment opportunities for Madison County and the state of Ohio with the value of payroll totaling an estimated $54.3 million and $105 million, respectively; and annual real property and tangible personal property tax revenues to the local tax districts of approximately $7.2 million, and approximately $216 million over the 30-year life of the Project.

Further, the Applicant is affiliated with Between the Rows, LLC, which was established in 2021 to collaborate with The Ohio State University College of Food, Agricultural, and Environmental Sciences to research the best practices to cultivate crops in conjunction with utility-scale solar production. The results of this on-going collaboration and research could greatly enhance the benefits from the Project.

Finally, the Applicant is proud of their on-going community outreach efforts and thorough engagement with a variety of stakeholders during the development of the Project. The Applicant has maintained consistent communication with the Madison County Board of Commissioners, introducing the Project as early as April 2021 and working with them for more than a year to identify the best avenues to address and engage the public, incorporating feedback, and providing consistent updates to them and the broader community on Project progress. Through a series of Pproject-specific community meetings, two Public Information Meetings, and numerous outreach efforts to engage directly with the community, other public officials and trustees, neighbors, landowners, environmental advocates, and other interested parties, the Applicant is confident they can build and operate the Oak Run Project to be both a good neighbor and a valuable asset to the local community.

1. PURPOSE AND SCOPE

(A) GENERAL

This application is intended to satisfy the requirements of the Ohio Administrative Code (OAC) Rule 4906-4 and 4906-5 for issuance by the Ohio Power Siting Board (OPSB) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the Oak Run Solar Project (Generation Facility) and associated Transmission Line and Step-up substation (Transmission Line Facilities), collectively referred to as the Project or Project Facilities, as submitted by Oak Run Solar Project, LLC (Applicant).

(B) WAIVERS

The Applicant has prepared a combined application for the Generation Facility (OPSB Case No. 22-549-EL-BGN) and the supporting Transmission Line Facilities (Case No. 22-550-EL-BTX) after being granted a waiver by the OPSB from OAC Rule 4906-3-04(B) which calls for separate filings for standard generation and associated electric transmission certificate applications. The waiver was granted on June 24, 2022. With the Transmission Line Facilities passing through the areas where the Generation Facility is located, the scientific studies for both the Generation and Transmission Line Facilities have been analyzed jointly. Further, the results of those studies have been documented in reports that cover both the Generation and Transmission Line Facilities. While these reports distinguish between the locations of the Generation Facility components and the Transmission Line Facilities, the overall review and analysis for each study is combined into one report. Thus, it is most beneficial and efficient to file one application that includes all reports for both sets of facilities. A crosswalk is provided in Exhibit A that demonstrates how the application has been structured to achieve compliance with OAC Rules 4906-4 and 4906-5 within a combined application.

The Applicant is requesting a waiver for the 10-mile distance for the evaluation of land and water recreational trails, scenic rivers, scenic routes or byways, and registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance as specified in OAC Rule 4906-4-08(D)(2)-(4). The Applicant proposes instead to evaluate those resources to a

distance of five miles, which is more in line with the visibility of a solar energy facility and transmission line.

A waiver is also being requested for certain requirements related to the alternate transmission line route and the full evaluation of the alternate route in OAC Rules 4906-2-04(C)(4), 4906-5-05(B), 4906-5-06, 4906-5-07, and 4906-5-08. The request for the waiver is related to the requirements for a formal routing and siting evaluation and detailed information relating to the alternate route.

2. PROJECT SUMMARY AND APPLICANT INFORMATION

(A) PROJECT SUMMARY AND APPLICANT INFORMATION

The Applicant, a subsidiary of Savion, LLC (Savion), which is a part of the Shell Group, proposes to construct and operate the Project, a utility-scale solar-powered electric generation facility in Madison County, Ohio with a nameplate capacity of 800-megawatts (MW) alternating current (AC), (hereinafter referred to as MW). The Project may also contain a large-scale co-located battery energy storage system (BESS) up to 300 MW in size. Finally, the Project will include two 230 kilovolt (kV) aboveground generation tie-in lines (gen-tie lines), built fully within the Project boundary that run from the internal Project substations to facilitate the Project's interconnection to the regional transmission grid via a Project step-up substation. The Project is anticipated to operate for a minimum of 30 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 Impact and Land Use Analysis, payment in lieu of taxes [PILOT]).

(1) General Purpose of the Facility

The purpose of the Project is to generate and deliver 800-MW of clean, cost-effective, renewable energy to the PJM Interconnection, LLC (PJM) transmission grid. The completed Project will generate electricity using virtually no fuels or water and with effectively zero air emissions and operational 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 from renewable resources.

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

The Project is in an unincorporated portion of Madison County, Ohio, approximately 0.5 miles south and west from the Village of Plumwood and approximately 5 miles north of the city of London. The Project Area is located in portions of Monroe, Somerford, and Deercreek Townships. The Project will be located entirely on privately-owned parcels for which the Applicant has secured purchase options. The Project Area is bounded on the west by Tradersville-Brighton Road (County Road [CR] 113 and CR 121) and Green Lane (CR 112), Rosedale-Milford Center Road (CR 11) to the north, and Marysville-London Road (State Route [SR] 38) to the east with the Transmission Line Facilities continuing east across Marysville-London Road. Urbana-West Jefferson Road (SR 29) runs northwest/southeast through the northern portion of the Project Area. The total Project Area encompasses approximately 6,050 acres. The Applicant is proposing to permit the entirety of the Project Area. Based on the current Project design, the Project, which is composed of all components and infrastructure necessary for both the Generation and Transmission Line Facilities, will occupy approximately 4,400 acres of the Project Area. The approximately 4,400-acre Project is also referred to as the Project footprint. The Applicant has made considerable effort to depict the Project 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. Permitting the entirety of the Project Area at this time 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 6,050 acres of the Project Area, with the exception of archaeology surveys which surveyed 5,850 acres. It is anticipated that the remaining acres will be surveyed immediately following harvest 2022 and all land yet to be surveyed is associated with the Transmission Line Facilities.

The Project will have a generating capacity of 800-MW and will include photovoltaic (PV) solar panels (modules) mounted on a tracker to maximize solar energy capture and electric generation of the array. Additionally, the site may also include a 300-MW BESS. 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 collection lines will transfer the electricity from the inverters to one of two new Project substations. From each of the 230 kV Project substations, the energy will be supplied to the regional transmission grid through two new 230 kV aboveground, monopole gen-tie lines that will convey electricity to the Project step-up substation. The Project step-up substation will contain equipment to step up incoming 230 kV electricity to interconnect into a new 765 kV switchyard that will be constructed, owned, and operated by American Electric Power (AEP) and is adjacent to the Project step-up substation. AEP will also construct, own, and operate a 765 kV transmission line to interconnect the switchyard to AEP's existing Marysville-Flatlick 765 kV transmission line. The AEP 765 kV switchyard and 765 kV transmission line will be permitted separately with OPSB. A detailed description of each Project component can be found in Section 3(B) in this application.

(3) Suitability of the Site for the Proposed Facility

The Applicant has determined the Project Area to be suitable for a utility-scale solar facility and associated transmission line facilities based on the following factors: open, flat ground, access to transmission, interested landowners, and increasing demand for energy in Ohio. All were key to identifying the site. A detailed description of the Applicant's siting process and the Project Area's suitability is included in Section 4 of this application.

(4) Project Schedule

The Project has been under development since 2019 and, during that time, multiple transmission, environmental, engineering, and cultural resource studies have been completed. Interconnection studies with PJM commenced in the third quarter of 2020. Preparation of the OPSB application began in the second quarter of 2022 and two public information meetings were held on June 22, 2022, and August 2, 2022. It is anticipated that the Certificates will be issued in the third quarter of 2023. Final designs will be completed in the fourth quarter of 2023 and Project construction is expected to begin as early as the fourth quarter of 2023, with commercial operations beginning for the first 200 to 400-MW portion of the Project as early as the fourth quarter of 2025.

Additional 200-MW tranches will be built on a rolling basis with the full 800-MW Project operational by the end of the fourth quarter of 2027. Additional information regarding Project schedule can be found in Section 3(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 currently seeking OPSB Certificates to construct an 800-MW solar energy facility, and up to 300-MW BESS, with two 230 kV gen-tie lines and a Project step-up substation located within the Project Area as specified in this application. Utilizing the infrastructure constructed as part of this Project, the Applicant is evaluating the potential for a second, 800-MW solar energy facility and 300-MW BESS in the vicinity of the current Project Area. Additional interconnection queue positions have been filed with PJM anticipating a potential second phase. The second phase of the project, which is in the early stage of development, will be studied and permitted separately from the current application.

(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. Savion, a Shell Group portfolio company, operating on a stand-alone basis with a growing portfolio of more than 19-gigawatts of solar and/or energy storage projects in development, contracted, under construction, or in operation across 27 states, is one of the largest, most technologically advanced utility-scale solar and energy storage project development companies in the U.S. Savion currently manages an energy project portfolio in Ohio with more than 3,400-MW of solar and energy storage projects contracted, under construction, in operation, or in the active development pipeline. Savion has 157 employees and is headquartered in Kansas City, Missouri. The Project will be constructed, operated, and maintained by the Applicant.

(C) REVIEW OF NEED

(1) Need for the Proposed Facility

The Transmission Line Facilities are needed to be able to transmit the 800-MW of electricity generated by the Generation Facility to the PJM regional grid where it can be utilized by commercial and residential customers. The two 230 kV gen-tie lines running from the Project substations east through the solar facility and across SR 38 will connect the solar energy produced by the PV modules to the existing AEP Marysville-Flatlick 765 kV transmission line, located approximately 0.6 miles east of the Project's step-up substation.

(a) ***Purpose of the Facility***

The purpose of the Transmission Line Facilities is to deliver power generated by the Generation Facility to AEP's transmission system, located within the PJM regional grid. Combined, the Generation and Transmission Line Facilities will generate solar-powered electricity to fill the need for a more diverse national energy portfolio that will include a higher percentage of energy generated by renewable resources. Constructed solar energy facilities use virtually no fuels or water and produce effectively zero air emissions and operational waste.

(b) System Conditions and Local Requirements

The Transmission Line Facilities are required to deliver electricity from the Generation Facilities to the PJM grid. It is anticipated that the electricity from the Project will be sold through a long-term power purchase agreement (PPA) to be executed with a utility, commercial customer, or local municipality. Renewable energy facilities, like the Project, can also attract new businesses seeking long-term contracts for renewable power to the area, providing further investment in the community.

Based on the analysis of the solar resources, interconnection capacity on the existing AEP Marysville-Flatlick 765 kV transmission line, land use compatibility, and market for renewable energy, the Applicant has determined that there is a need for the Project.

(c) Load Flow Studies and Contingency Analyses

PJM conducted load flow and contingency analysis in their Feasibility and System Impact Studies. No overloads or voltage deficiencies were identified. In addition, the two 230 kV transmission lines proposed in this application pose no voltage or thermal violations to the system.

A single-line diagram, depicting the two 400-MW Project substations and two 150-MW BESS for the Generation Facility, the two 230 kV gen-tie lines, the Project step-up substation, and point of interconnection (POI) switchyard (to be constructed, owned, and operated by AEP) is provided below in Figure 2-1.

As further detailed in Section 5, the Applicant has filed two queue positions with PJM to evaluate the new infrastructure and equipment upgrades needed to reliably interconnect the 800-MW Generation Facility to the AEP Marysville-Flatlick 765 kV transmission line. The Feasibility Study and System Impact Study for both queue positions have been received and are provided in Exhibit B.

(d) System Performance and Transcription Diagrams

A system performance and transcription diagram for the Project is provided as Figure 2-2.

(e) Base Case Data for Natural Gas Pipelines

There are no natural gas pipelines associated with the Project, therefore no base case data for natural gas pipelines are provided.

(2) Regional Expansion Plans

(a) Electric Power Transmission Lines Long-Term Forecast and Regional Planning

The Applicant is not an electric distribution company or utility, therefore no long-term forecast and regional planning information is provided.

Figure 2-1. Single Line Diagram of the Oak Run Solar Project

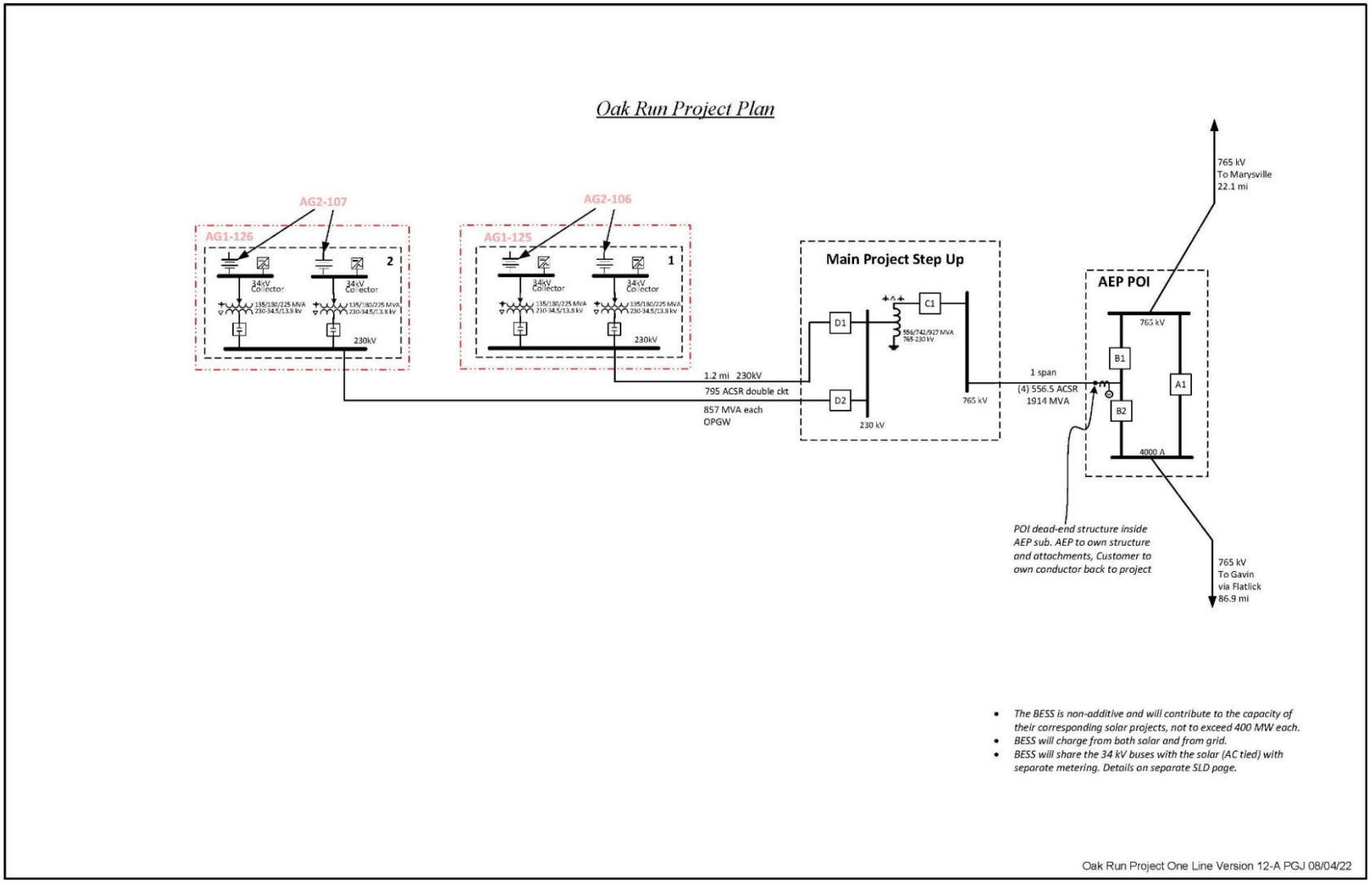
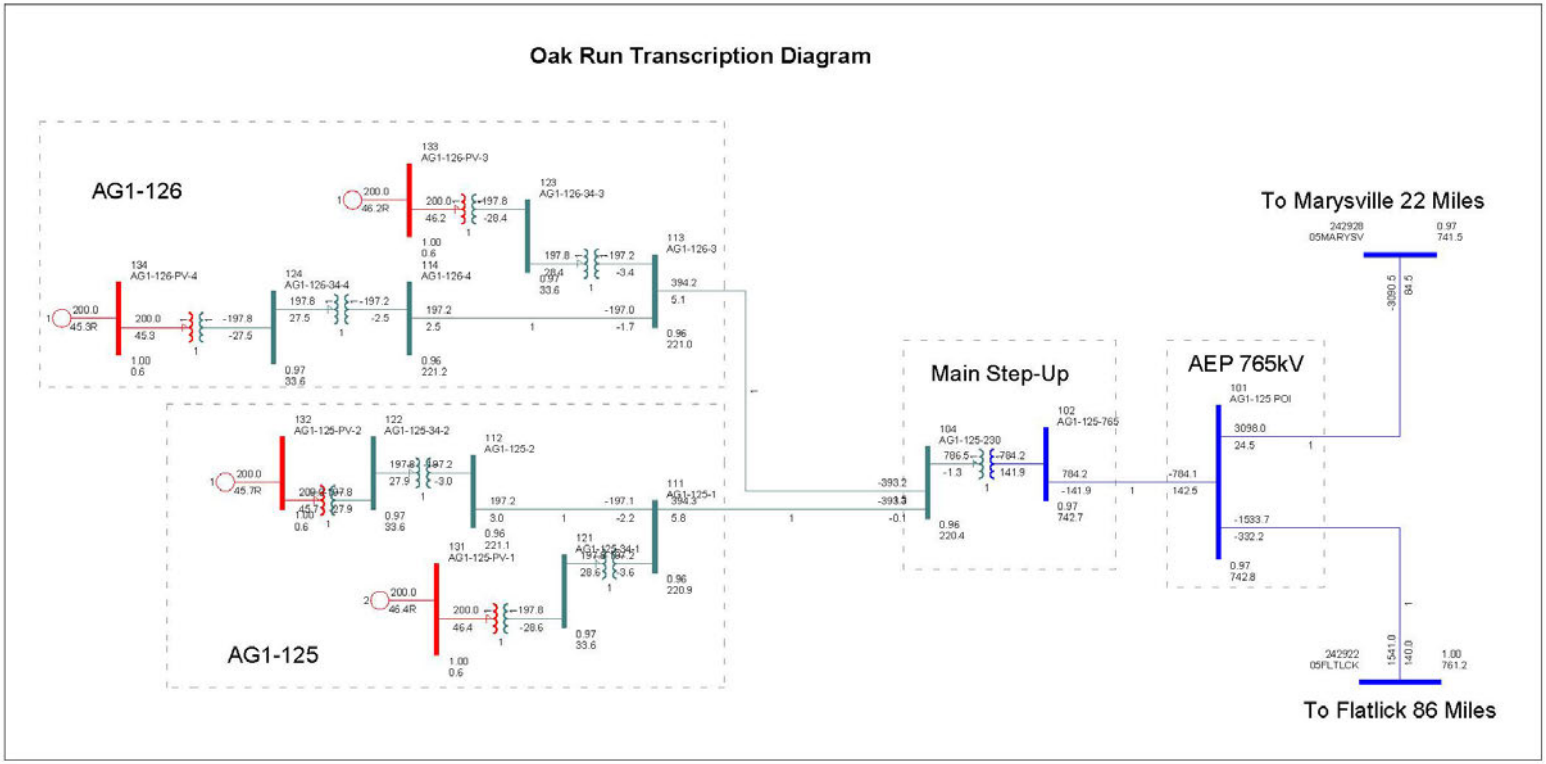


Figure 2-2. Transcription Diagram of the Oak Run Solar Project



While no forecast and regional planning studies are provided, the Applicant has ensured that interconnection of the Project to the PJM regional grid can be safely achieved, and any new infrastructure and equipment upgrades needed to achieve that have been identified. The Applicant has received System Impact Studies for both 400-MW interconnection requests associated with the Project (AG1-125 and AG1-126) and PJM determined that there are no thermal or voltage impacts to deliverability, multiple facility contingencies, and short circuit, with either interconnection request. The System Impact Studies identified limited contributions to previously identified overloads and potential congestion due to local energy deliverability, and contribution to previously identified reinforcements. Copies of the System Impact Studies for both queue positions are provided in Exhibit B.

(b) Gas Pipelines and Associated Facilities Long-Term Forecast and Regional Planning

There are no gas pipelines associated with the Project, therefore no long-term forecast and regional planning information related to gas pipelines is provided.

(3) Electric Power System Economy and Reliability Impact Analysis

As explained above, the Applicant has submitted Project interconnection requests to PJM to assess the potential for the Project to be safely connected to the regional grid without causing network impacts. Based on the information contained in the System Impact Studies (Exhibit B), the Project can be safely interconnected to the PJM regional grid provided the identified interconnection upgrades are completed and contingency overloads are addressed by AEP and the Applicant.

(4) Options to Eliminate the Need for the Electric Power Transmission Line

The Applicant evaluated potential options that could eliminate the need for the Transmission Line Facilities before determining that the currently proposed design is necessary. There are no electrical transmission lines in the Project Area with sufficient capacity to accommodate the 800-MW Generation Facility. Due to the distance from the generators within the Project Footprint, the Project required a high voltage collection system to transmit the power to the Project step up

substation. The selection of the two 230 kV gen-tie lines eliminates the need for additional lower voltage above ground transmission lines and increases the efficiency of the power transmission.

3. PROJECT DESCRIPTION AND PROJECT SCHEDULE

(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 Project 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.

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 length of time for the OPSB certification process and market realities for utility-scale solar facilities, it is not economically feasible at the time of this 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 with respect to cost and performance, and dynamic markets, the final model selections must occur closer 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.

The final layout will remain within the Project Area that has been studied for environmental, engineering, sound, and visual impacts. 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 pre-construction conference with OPSB staff.

(2) Project Area and Owned and Leased Properties

The Generation and Transmission Line Facilities will occupy approximately 4,400 acres within the larger 6,050-acre Project Area, entirely on private land secured with executed purchase options or pending sale contracts with the landowners. The 42 individual parcels that comprise the Project Area are depicted in the preliminary site plan included as Exhibit C and in Figure 3-1. The additional land in the Project Area was secured to allow flexibility for the Project design to be optimized. Project infrastructure may not be constructed on all the parcels.

(B) DESCRIPTION OF THE FACILITY

The Project is an 800-MW solar Generation Facility with associated Transmission Line Facilities capable of providing clean, renewable electricity to the electric grid. Solar energy is captured by solar modules that convert sunlight into DC electricity which is then converted to AC electricity through inverters after the electricity runs from the modules through MV cabling to the inverters. The electricity from the inverters is then further routed using MV cabling to substations where transformers step up the AC electricity to a higher voltage so that it can connect to the regional transmission grid at the POI.

Project components will include north-south oriented trackers with single portrait PV modules mounted on a single-axis racking system supported by steel posts embedded into the ground. The PV solar facility will also include combiner boxes mounted at the end of each tracker, inverters

spaced through the site, high voltage transformers located at both internal 230 kV Project substations, junction boxes, DC and AC electrical collection systems buried underground and connected to each inverter, and two dedicated 230 kV gen-tie lines secured on steel monopoles that will route the energy to the step-up substation. The step-up substation that increases the voltage from 230 kV to 765 kV is necessary to facilitate the interconnection to the existing AEP Marysville-Flatlick 765 kV transmission line and the regional transmission grid.

The Project may also include a battery system up to 300-MW in size that would include the batteries stored in container boxes, inverters, and switchgear.

In addition, the Project will include an operation and maintenance (O&M) trailer, meteorological (MET) towers, access roads, and two styles of fencing: wildlife friendly fencing around the solar arrays and chain link fencing around the three Project substations and BESS facilities. During construction, the Project will include temporary laydown yards, temporary construction management trailers, and temporary stormwater management features that will ultimately be converted to permanent stormwater management features. Project components are discussed in more detail in Section 3(B)(1) in this application and are depicted in the preliminary site plan included as Exhibit C.

Approximately 232,000 linear feet (70,713.6 meters) of new access roads will be constructed for the Project, consisting of gravel. In addition, there are 20-foot-wide access paths designed around the perimeter between the solar arrays and the fence line of the site that will not be graveled and can be utilized for additional maintenance. Gravel roads will not exceed 16 feet (4.9 meters) in width, except for roads to substations and battery storage systems, which will not exceed 24 feet (7.3 meters) and have minimum turning radii of 50 feet (15.2 meters). Access points into the Project from existing county and/or state roads will be constructed to meet local requirements. The arrays containing the PV modules and inverters will be secured with approximately 130,300 linear feet of wildlife perimeter fence, which will not exceed 7 feet (2.1 meters) in height. Additionally, the high voltage systems including BESS, Project substations, and step-up substation will be secured with approximately 18,000 linear feet of chain link fence, which will not exceed 7 feet (2.1 meters) in height per the National Electrical Safety Code (NESC).

PV solar modules will be mounted on a single-axis tracker racking system and oriented in rows running from north to south to track the sun to maximize output. To improve efficiency, a tracker system rotates approximately +/- 60-degrees east-west to track the sun as it moves through the sky each day. Each tracker system will be supported by approximately 14 steel piles and the entire racking system will be supported by approximately 261,800 steel piles installed with a pile-driving machine. The center height of the racking structure will be a range due to ground undulations and will be approximately 4.5 feet (1.3 meters) to 6.5 feet (2 meters) above the ground. When the modules are attached and tilted at their maximum angle (sunrise or sunset), the highest point of each module will be between approximately 9 feet (2.7 meters) to 12 feet (3.7 meters) above the ground, depending on the final tracker and module selection. The modules will be connected using DC cables that can either be buried underground via trenching or attached to the racking system via a cable mounting system. The DC cables gather at the end of each racking system to combiner boxes which are connected to cables routing to an inverter.

Approximately 243 inverters would be installed throughout the Project to convert the DC power from the 1,500-volt DC collection system to AC power, which will then be transmitted to a Project substation via the 34.5-kV AC collection system. The MV AC collection system will be installed underground and buried at a minimum of 3 feet (0.9 meters) below grade. The MV AC collection system will be comprised of three cables that will transfer electricity to one of the 230 kV Project substations. Approximately 312,000 linear feet of trenching will be needed to accommodate the 933,000 linear feet cables, as there are three cables per trench. These collection cables are often congregated into common trenches and run adjacent to one another. When multiple trenches are required, it is common to space approximately 10 feet on center.

The MV AC collection system will be routed to one of the two 230 kV Project substations. Each 230 kV Project substation will include one 225-mega volt ampere (MVA) transformer; an additional 225-MVA transformer when the BESS is added, and all necessary equipment to step up incoming MV electricity to a 230 kV high voltage network fully within the Project Facility. The 230 kV electricity will exit each 230 kV Project substation via overhead gen-tie lines. The gen-tie lines will be hung on steel monopole structures that would be approximately 120 feet

(36.5 meters) above the ground, spaced approximately 800 feet apart and constructed within a 225-foot right-of-way (ROW). The Applicant currently estimates that approximately 26 poles will be needed. The overhead gen-tie lines will connect to the Project step-up substation that will include four 309 MVA single-phase transformers (three in operation and one as a back-up for emergency use) and all necessary equipment to step up incoming 230 kV electricity necessary to interconnect into a new 765 kV switchyard that will be permitted, constructed, owned, and operated by AEP. AEP will be responsible for any additional transmission equipment located within the switchyard for the Project. The Project 230 kV gen-tie lines will total approximately 3.6 miles (5.8 kilometers) in length and will be constructed by the Applicant. The alternate gen-tie line would slightly reduce the gen-tie length by approximately 0.05 miles (0.08 kilometers). It is anticipated that the gen-tie poles and substation components will not exceed 120 feet (36.5 meters) above grade. Additional structures will be required for lightning protection within the substations and could exceed heights of 120 feet (36.5 meters). The Project substations will be protected from direct strike lightning strikes by shield wires and/or masts which are connected directly to the ground grid. Lightning protection shall be determined in accordance with risk calculations included in National Fire Protection Association (NFPA) 780. Lightning protection equipment shall be either Class 1 or Class 2, depending on the height of the structure to be protected in accordance with NFPA 780 or Underwriters Laboratory (UL) 96, which should not exceed 75 feet above ground.

All Project equipment will be compliant with applicable UL, Institute of Electrical and Electronics Engineers (IEEE), National Electric Code (NEC), NESC, and American National Standards Institute (ANSI) listings.

The Project is anticipated to operate for a minimum of 30 years. At the end of the Project life, all Project equipment and infrastructure will be decommissioned following the process outlined in the Preliminary Decommissioning Plan (Exhibit D). A final Decommissioning Plan will be prepared prior to Project construction and will be submitted to OPSB at least 30 days before the start of pre-construction conference with OPSB staff.

(1) Description of the Facility 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. Supplemental generation equipment either transmits, converts, or transforms electricity generated by the solar modules.

Transmission Facility equipment includes steel monopole structures to support the gen-tie lines that transfer electricity from each of the two Project substations to the Project step-up substation. As noted, a 765 kV switchyard and transmission line connecting to the existing AEP Marysville-Flatlick 765 kV transmission line will be permitted, constructed, owned, and operated by AEP in order to allow electricity from the Project to connect to the regional grid.

(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 Section 3(A)(1); however, it is anticipated that the Facility will be composed of 435-watt to 670-watt panels, provided by Canadian Solar, First Solar, JA Solar, Jinko, Longi, Maxeon, Risen, Trina, VSUN or other similar module suppliers. All manufacturers under consideration are Tier 1 module suppliers. The Tier 1 designation comes from BloombergNEF and indicates a supplier that a bank is likely to offer debt financing for (BloombergNEF 2020). Table 3-1 below summarizes the potential module type, technology, wattage, and the approximate number of panels needed for the Generation Facility. Regardless of the specific model, the solar modules will be approximately 3.5 to 4.5 feet (1.1 to 1.3 meters) wide by 6.5 to 7.5 feet (2.0 to 2.3 meters) tall and approximately 1 to 2 inches (2.5 to 5.0 centimeters) deep. Manufacturer specifications for the modules listed in Table 3-1 are provided in Exhibit E. In addition, manufacturer specifications for potential tracking systems and inverter models that may be used by the Project are also included in Exhibit E. As discussed further in Section 8(A)(1), all equipment procured for the Project will be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings. If the Applicant uses a technology other than those included in Exhibit E, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the pre-construction conference with OPSB staff.

Table 3-1 Solar Module Specifications

Solar Module Manufacturer	Module Type	Module Technology	Module Wattage	Approximate Number of Modules
Canadian Solar	BiHiKu6	Monocrystalline, Bi-Facial	520W - 550W	1,891,000 - 2,000,000
Canadian Solar	BiHiKu7	Monocrystalline, Bi-Facial	640W - 665W	1,564,000 - 1,625,000
JA Solar	JAM72D30	Monocrystalline, Bi-Facial	525W – 550W	1,891,000 - 1,981,000
Jinko Solar	Eagle 72HM G5b	Monocrystalline, Bi-Facial	525W – 545W	1,909,000 - 1,981,000
Longi	LR5-72HBD	Monocrystalline, Bi-Facial	530W – 550W	1,891,000 - 1,963,000
Maxeon	Performance 5	Monocrystalline, Bi-Facial	520W – 545W	1,909,000 - 2,000,000
Risen	RSM110-8	Monocrystalline, Bi-Facial	530W – 550W	1,891,000 - 1,963,000
Risen	RSM120-8	Monocrystalline, Bi-Facial	580W – 600W	1,734,000 - 1,794,000
Trina Solar	TSM-DEG19C.20	Monocrystalline, Bi-Facial	530W – 550W	1,891,000 - 1,963,000
Trina Solar	TSM-DEG21.20	Monocrystalline, Bi-Facial	635W - 670W	1,553,000 - 1,638,000
VSUN	144BMH-DG	Monocrystalline, Bi-Facial	435W – 450W	2,312,000 - 2,391,000
First Solar	Series 6 CuRe	Monocrystalline, Mono-Facial	450W - 480W	2,167,000 - 2,312,000

Racking system technology has not been procured for the Project; however, it is anticipated that the Generation Facility will include a GameChange Solar, NEXTracker, Array Technologies, FTC or similar racking system. Manufacturer specifications for the four brands of racking systems being considered are included in Exhibit E. If the Applicant uses a racking technology other than those included in Exhibit E, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the pre-construction conference with OPSB staff.

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

The Project will potentially include two 150-MW BESS facilities, totaling up to 300-MW of storage capacity. A battery has not been selected; however, it is anticipated that the Generation Facility will include a Tesla Megapack model or similar battery. The Applicant intends to use the four-hour Tesla MegaPack battery. If the Applicant uses BESS technology other than the Tesla Megapack included in Exhibit E, the appropriate manufacturer specification will be provided to the OPSB no later than 30 days prior to the pre-construction conference with OPSB staff.

Based on the annual predicted sunlight hours for the Project location and the capacity of the Generation Facility, the annual net capacity factor for the Generation Facility is expected to be approximately 25.76% and the hours of annual generation is expected to be 1,800 gigawatt hours. The net demonstrated capacity of the Generation Facility will be 800-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

Electricity generation from solar facilities, such as the Project, generates 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, during operation the Project would include an O&M facility that would potentially require a water source and restroom facilities. Further, during construction temporary water will be needed for construction trailers, the O&M building, and potentially dust control. It is anticipated that water use could either come from existing water wells onsite, new water wells could be drilled, or water could be trucked in. The O&M building will be the size of a small office and the proper permits will be obtained if a well and septic system are included in the final design.

In addition, during operations the PV modules may require occasional cleaning. Water for cleaning can be obtained from one of the existing on-site wells or brought in from off-site and is expected to utilize no more than 1 liter of water per module in the limited instances where cleaning is needed, expected to be no more than once per year.

(2) Site Clearing, Construction, and Reclamation Methods

In general, the Project construction process will include installation of stormwater detention basins and other erosion control plans, clearing vegetation (Applicant anticipates minimal clearing), grading (Applicant 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 a tracking system with a tilting movement from a horizontal position. This tilting movement (+/- 60 degrees from horizontal) enables a greater exposure of the module to the sun throughout the day. The trackers are installed on steel piles that are approximately 6 inches by 7 inches (15.2 by 17.8 centimeters). Piles are typically 10 to 15 feet (3.0 to 4.6 meters) long and would be driven approximately 10 feet (3.0 meters) below grade, depending on soil conditions. Piles are primarily installed by pile drivers. The Project as designed would require installing approximately 261,800 steel piles. Modules are supported on

posts with the help of a racking mechanism. Forklifts are used to deliver the steel frame required for the racking structures. Once the piles are driven into the ground, racking mechanisms are installed primarily by hand and modules are then bolted to the frame.

The Project's two 150-MW BESS facilities will include batteries stored in container boxes, inverters, and switchgear. Approximately 328 battery containers and 82 transformers will be used to accommodate the 300-MW of storage. The batteries will be stored in container boxes that are approximately 28.9 feet by 5.4 feet and 9.2 feet tall (8.8 m by 1.6 m by 2.8 m). The foundations for the BESS components will be shallow cast in place pillar concrete foundations. The BESS containers will be located on top of the concrete pillars and will be placed by a small mobile crane. Each container will be connected to an inverter by underground cabling which then will be connected to the switchgear via underground cabling. The switchgear will be connected to the adjacent Project substation that will be fed by the PV modules. The proposed footprint for each of the BESS facilities is approximately 11 acres.

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

During construction of the Project Facility, diesel fuel for construction vehicles and equipment will be stored in appropriate containment in the temporary laydown yards located away from any stream or wetland areas. These items will be removed after construction. During operation, limited quantities of oil used for cooling and insulation of transformers for the inverters and at the substations may be needed. A Spill Prevention Control and Countermeasures (SPCC) plan will be in place to manage the oil should a spill occur. There will be no other bulk fuel, waste, water, and other storage facilities on the Generation Facility during operations.

Existing farm buildings are present in the Project Area. These buildings, along with the O&M building, may be used to store O&M equipment during operations.

(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

Construction and operations will require a water supply either from existing water wells, drilling a new well, or having water delivered. Construction trailers and the O&M buildings would either utilize portable toilets or have an onsite septic system designed per Madison County standards. Portable toilets and washing stations would be serviced by a contracted company.

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

Two overhead 230 kV gen-tie lines will be constructed by the Applicant to deliver electricity from the Project substations, located within the Generation Facility on the west side of SR 38, to the new Project step-up substation, located on the eastern side of SR 38. The ROW width for the gen-tie lines will be 225 feet (68.6 meters) and is located on private land, secured under a purchase option by the Applicant. The gen-tie lines will be hung on steel monopole structures that would be approximately 120 feet (36.5 meters) above the ground, spaced approximately 800 feet (243.8 meters) apart and constructed within the ROW.

The northern gen-tie line will run southwest from the northern Project substation turning southeast and paralleling SR 29 for approximately 1.05 miles. The southern gen-tie line will run north and then northeast from the southern Project substation through the Generation Facility for approximately 1.10 miles before joining with the northern gen-tie line on the north side of SR 29. The Preferred gen-tie route, with both lines hung on single monopoles, would continue to parallel SR 29 to the southeast for approximately 0.40 miles before turning east and crossing SR 38 for approximately 0.90 miles where it would connect to the Project step-up substation. The Applicant currently estimates that approximately 26 poles will be needed for the Preferred gen-tie line. The Alternate gen-tie route would go east-southeast from the junction point of the northern and southern gen-tie lines for approximately 1.25 miles through the Generation Facility and across SR 38 approximately 0.10 miles north of the Preferred gen-tie route before connecting to the step-up substation. The total length for the Preferred Transmission Route is approximately 3.45 miles (5.6 km) and the length of the Alternate gen-tie lines is approximately 3.40 miles (5.5 km). With the 225-foot ROW, the acreage required for the Preferred Transmission Route is approximately 94.10 acres and the acreage of the Alternate gen-tie is

92.70 acres. The ROW for the gen-tie lines, both preferred and alternate are entirely within the Project Area where land has been secured.

The final pole type has not been selected, but based on the anticipated gen-tie pole height and typical design parameters, it is expected that the gen-tie poles will be buried to a depth between 15 and 20 feet (4.6 meters and 6.1 meters). Final depth will also consider the results of the geotechnical investigations for the Project. The poles are anticipated to have a diameter of 3 to 4 feet (0.9 to 1.2 meters). The conductor size and the insulator arrangement of the gen-tie line has not yet been determined. It is anticipated that the gen-tie poles can be directly embedded into the ground, however, should reinforced foundations be necessary, concrete and rebar steel will be used to erect the poles. The gen-tie pole structures will be designed to meet NESC requirements for loading and wind conditions within the Project Area. For poles directly embedded, the holes will be backfilled with native soil, gravel, or concrete as the engineering design specifies.

No new gas pipelines will be needed for the Project.

(f) Electric Collection Lines

There are two types of collection systems (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. DC Collection cables are often congregated into common trenches and run adjacent to one another within and adjacent to the solar panel array areas to connect to the inverters.

AC collection lines (34.5 kV) will connect the inverters to the Project substations. The collection lines connected to the inverters create circuits generally loaded up between 15 MW to 20 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 312,000 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.

(g) Substations, Switching Substations, and Transformers

Preliminary design for the Generation Facility includes two Project substations, each with one 225-MVA transformer. An additional 225-MVA transformer would be necessary at each Project substation to accommodate the energy storage component system. Each Project substation will also have all necessary equipment to step up incoming MV electricity to a 230 kV high voltage network. Each substation will be approximate 15 acres in size and are depicted in all Project Facility mapping. A common control enclosure will be installed at each Project substation that will house the protection, communication, and supervisory control and data acquisition (SCADA) equipment necessary to safely operate the substation. The Project substations will be fenced with 7-foot chain link fencing and protected according to the NESC.

The step-up substation part of the Transmission Line Facility will include four 309 MVA single-phase transformers and all necessary equipment to step up the incoming 230 kV electricity to 765 kV to facilitate interconnection into a new 765 kV switchyard that will be permitted, constructed, owned, and operated by AEP. The Project will construct a concrete barrier for sound mitigation on two sides of the single phase transformers, which will be approximately 22 feet high and 210 feet long. The POI dead-end structure will be located inside the new AEP switchyard. AEP will own the structure and attachments, while the Applicant will own the conductor back to the Project. The step-up substation will we approximately 17.6 acres in size and will be encircled by 7-foot chain link fencing and protected according to the NESC.

(h) Temporary and Permanent Meteorological Towers

The Project will include approximately 32 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 232,000 linear feet of new access roads will be constructed for the Project Facility. Gravel roads will be constructed with all-weather gravel and will not exceed 16 feet (4.9 meters) in width, except for roads to substations and battery storage systems, which will not exceed 24 feet (7.3 meters) and have minimum turning radii of 50 feet (15.2 meters). Access roads will be constructed to support the site 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 deliveries, construction traffic is not expected to include oversize or overweight loads.

The construction of the Project Facility will not utilize large cranes and, therefore, crane paths are not necessary throughout the Project Facility. A crawler-type crane will be used to erect the BESS and Project substations and step-up substation. The crane will be positioned just off the Project substation access road which will eliminate the need for a designed crane path.

(j) Construction Laydown Areas

The Project will require many laydown areas throughout construction. The current site layout includes up to 12 identified laydown areas, totaling approximately 25 acres of land. The location of the laydown area is depicted in the Project Facility figures; however, the exact location, size, and quantity of temporary laydown areas will be determined by the EPC Contractor. 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.

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

The Project will include two O&M trailer-type structures that will house administrative, operation, and maintenance equipment and an office space for Project personnel. Each O&M trailer and associated infrastructure would occupy approximately 3.5 acres. The Generation Facility will be surrounded by approximately 130,300 feet of up to 7-foot (2.1-meter) agricultural, wildlife friendly, security fencing, as required. The Project substations, BESS facilities, and step-up substation will be secured with approximately 18,000 linear feet of 7-foot chain link fence per the NESC. Safety signs will be attached to the fences. All fences will have lockable gates to restrict access.

(l) Other Pertinent Installations

There are no other pertinent installations related to the Project. Erosion control methods during and after construction will depend on the contours of the land, as well as requirements of the National Pollutant Discharge Elimination System (NPDES) construction storm water permit but it is expected that onsite storm water detention ponds will be necessary during construction and into operation. The potential locations of the storm water features are depicted in Figure 3-2.

(3) New Electric Transmission Line

The only new transmission lines associated with the Project will be the gen-tie lines delivering electricity from the new Project substations to the step-up substation. The total length of the proposed gen-tie lines will not exceed approximately 3.45 miles (5.5 kilometers) in length and will not exceed 120 feet (36.6 meters) above grade. The proposed location of the gen-tie line, as well as the alternate gen-tie line is depicted in Figure 3-2.

(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 Applicant began the process of acquiring land rights in 2020. The Project will be built on private land the Applicant has secured with purchase options. Section 6(A) in this application details the acquisition of land and land rights for the Project.

(b) Wildlife, Environmental, and Cultural Surveys/Studies

Wildlife, environmental, engineering, and cultural surveys/studies began in October 2021 and are complete with the exception of the archaeological field survey. It is anticipated that the remaining 150 acres for the archaeological survey will be surveyed immediately following harvest 2022.

The surveys and studies include the following:

- Construction route study;
- Geotechnical engineering report;
- Glare analysis;
- Sound level assessment;
- Wetland and waterbody delineation field survey;
- Threatened and endangered (T/E) species habitat field survey;
- Bat presence/probable absence surveys;
- Hydrology Assessment;
- Architectural history survey;
- Archaeological field survey; and
- Visual resources assessment.

The results of these surveys are summarized in Sections 6, 7, and 8 in this application.

(c) Receipt of Grid Interconnection Studies and Other Critical Path Milestones for Project Construction

Interconnection studies commenced in the third quarter of 2020 and are ongoing, as detailed in Section 5 of the application.

(d) Preparation of the Application

Development of the application commenced in the second quarter of 2022 and has been ongoing since then.

(e) Submittal of the Application for Certificate

This application will be submitted in the third quarter of 2022.

(f) Issuance of the Certificate

The Applicant anticipates that OPSB will issue a Certificate by the third quarter of 2023.

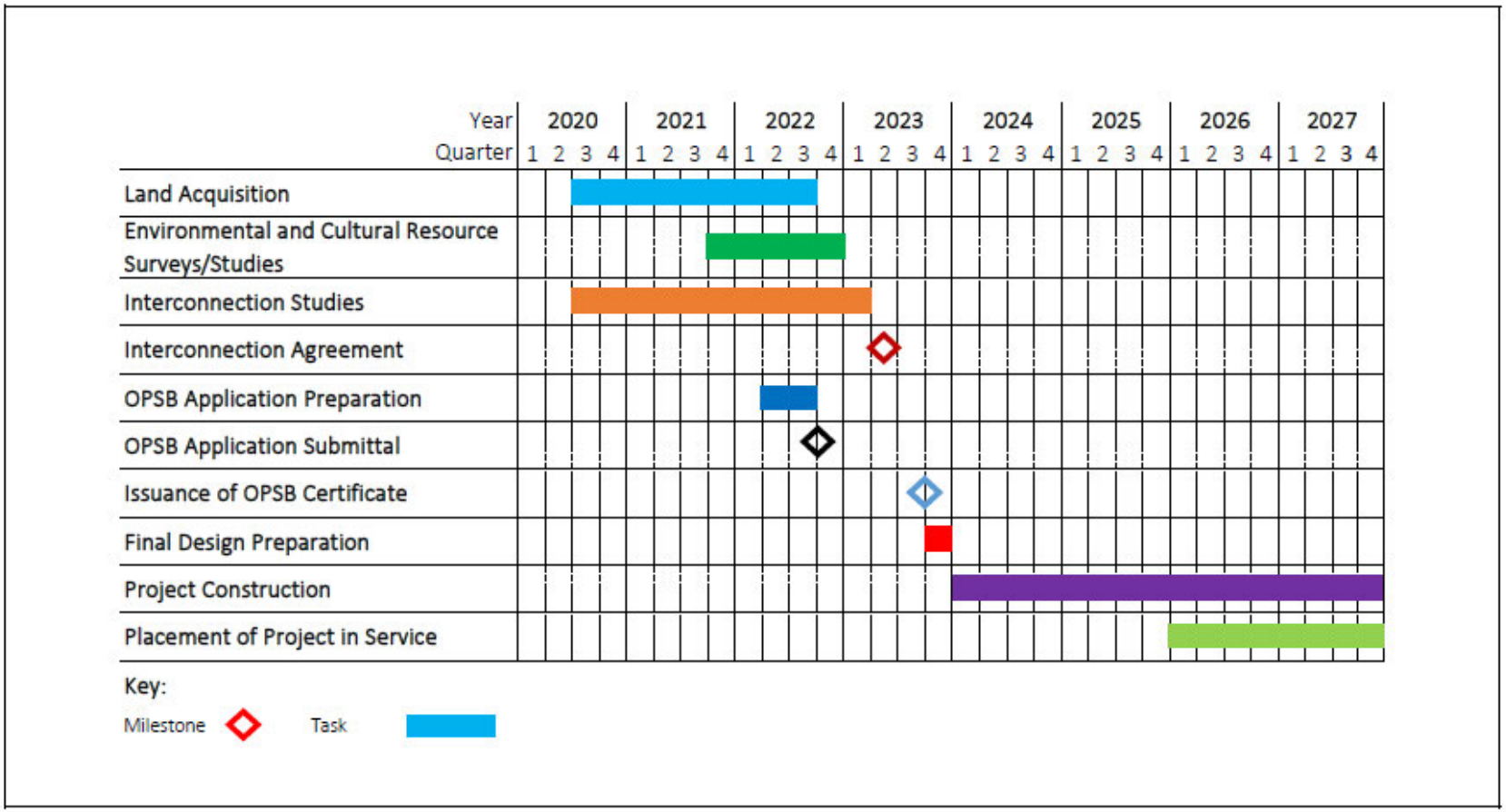
(g) Preparation of the Final Design

The Applicant anticipates that preparation of the final design for the first 200 to 400-MW portion of the Project will commence shortly after receipt of a Certificate in the third quarter of 2023 and be completed during the fourth quarter of 2023.

(h) Construction of the Facility

Construction of the Project could commence as early as the fourth quarter of 2023 with the first 200 MW stage as early as the fourth quarter of 2025. The Project will likely be built in 200 MW stages over several construction seasons as materials and crews are available. The entire 800-MW build out may take 48 months total and end in the fourth quarter of 2027.

Figure 3-3 Oak Run Solar Project Schedule



Project commitments related to reclamation and revegetation will be completed for each 200 MW stage as it completes construction.

(i) Placement of the Facility in Service

The first 200 to 400 MW of the Project are expected to be in service by the fourth quarter of 2025, with subsequent 200 MW tranches coming online as construction is completed with the total 800-MW Project in-service by fourth quarter of 2027.

(2) Proposed Construction Sequence

An EPC contractor will be selected by the Applicant prior to construction to manage the equipment and material procurement, as well as all construction permits required prior to groundbreaking. The Applicant intends to construct the Project in stages, with construction occurring on the initial 200 to 400 MW portion of the Generation Facility and the Transmission Facility first and then the balance of the Generation Facility will be constructed in subsequent 200-MW tranches. Each tranche of the Project will be managed as a separate construction effort, with site preparation, installation of Project equipment, restoration, and commissioning occurring on a rolling basis throughout the potential 48-month construction period. This discrete, rolling, construction process minimizes the amount of ground disturbance, noise impacts, and traffic ongoing at the site at one time as would occur if the Project were to be built in a single 800-MW construction effort. 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, switchyard, BESS, and the O&M buildings, 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 areas. 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. The Project

substations, step-up substation, and BESS will be constructed concurrently with the PV array sites. The process for construction of the gen-tie lines will include digging holes for the poles, setting the poles with the use of cranes, and then connecting the conductors to the pole insulators. Commissioning of electrical equipment will be conducted prior to placement of the Project 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 F). Once installation is complete, the O&M buildings and associated permanent infrastructure (storage, lighting, etc.) will be completed. All temporary restroom facilities will be removed upon completion of the O&M buildings.

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 Project 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 Project Facility components. Such delays may push the in-service date back, which would cause significant financial burden to the Applicant, as discussed in Section 6(D) of this application.

4. PROJECT AREA SELECTION AND ROUTE ALTERNATIVES ANALYSIS

(A) PROJECT AREA AND ROUTE SELECTION STUDY

The Applicant applied and/or considered a variety of criteria to identify the Project Area proposed for the location of this Project, including: strong land fundamentals and compatible land use; existing transmission interconnection infrastructure; and limited environmental constraints.

Within the application, the Applicant has identified a preferred and alternate gen-tie route that connects the Project substations to the Project step-up substation. The Project step-up substation location was established as part of the PJM interconnection studies and moving the location of this feature at this time would result in significant delays to the Project as a new interconnection request would need to be submitted and the Feasibility Studies and System Impact Studies would need to be redone. Based on the limited options for alternatives associated with the Transmission Facility and the proposed facilities for both the preferred and alternate gen-tie routes being wholly within the Project Area, the Applicant has submitted a waiver from the requirement to provide a fully developed route selection study for the Transmission Facilities.

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

The Project is located in portions of Monroe, Somerford, and Deercreek Townships, Madison County, Ohio. The Project Area was specifically identified for development due to the following key attributes:

- Its close proximity to the Marysville – Flatlick 765 kV transmission line which had available capacity to support the 800 MW Generating Facility,
- Increasing demand for energy in Ohio,
- Landowners interested in signing purchase options for the land,

- Madison County's approval of an Alternative Energy Zone for the County in accordance with ORC 5727.75,
- Relatively flat topography, and
- Few environmental and land use constraints.

The area for development has been continuously refined from the early stages of development through the pre-application stage as identification of environmental features, existing infrastructure, equipment, public input, and Project efficiency were incorporated into the Project design.

The study areas considered for the Transmission Facility components were limited to portions of the Project Area between the Generation Facility Project substations and the POI near the existing Marysville–Flatlick 765 kV transmission line.

(2) Map of the Study Area and Sites/Routes Evaluated

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

As previously noted, the study area for the Transmission Facility was based on the location of the Project substations associated with the Generation Facility and the existing Marysville-Flatlick 765 kV transmission line. While not illustrated, five different gen-tie scenarios for the gen-tie line and interconnection options in proximity to the Project Area were preliminarily reviewed to assess their feasibility but were ultimately dismissed due to one or more issues.

(3) Qualitative and Quantitative Siting Criteria Utilized

From a qualitative perspective, open, flat ground, few environmental constraints, access to transmission lines, a supportive community, and interested landowners were key to identifying the Project Area for the Generation Facility. Quantitative siting criteria is based upon estimates of project size, solar resource from data collected on-site, plus required transmission upgrades

and interconnection costs. Transmission interconnection for the Project is accommodated by the existing AEP Marysville – Flatlick 765 kV transmission line, eliminating the need for long gen-tie lines or expensive interconnection upgrades. The Project Area has been utilized for agricultural practices and provides few natural environmental constraints, and those that were identified can be avoided by the Project design.

As noted, the Generation Facility Project substations and the POI near the existing Marysville-Flatlick 765 kV transmission line limited the flexibility in locating the gen-tie lines. Two primary siting criteria used in developing the preferred and alternate gen-tie routes were landowners willing to sell or grant an easement for the gen-tie ROW and minimizing the length of the gen-tie lines. In addition, the Applicant utilized the following criteria to refine the preferred and alternate gen-tie corridors:

- Minimize number of parcels crossed;
- Minimize roadway crossings;
- Minimize forest clearing;
- Minimize stream and wetland crossings; and
- Minimize proximity to sensitive receptors.

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

The Applicant's solar siting 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 line facilities. Once a POI onto the grid is identified, large areas of open ground are analyzed to determine suitability based on land use and environmental concerns. Areas with existing pipelines, 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 any potential 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, it is competitive from an economic perspective, and positive results from initial environmental and transmission studies.

The process for siting gen-tie lines and other interconnection facilities is slightly different than that of a solar energy facility process as they are intended to connect the solar energy facility to the point of grid interconnection and have set start and end points. With the start and end points identified, the process of siting gen-tie lines includes evaluation of potential ROWs using the criteria specified above. This includes weighing the various criteria as not all siting criteria have equal importance (e.g., willing landowners are more important than the number of parcels crossed in many instances). After identifying available land for use to construct the gen-tie line, the Applicant uses available environmental, development/land use, and engineering data to compare potential routes. Data to inform the analysis is pulled from publicly available databases as well as site-specific field collected data. The specific criteria used for comparison of gen-tie alternatives and associated metrics for each are summarized in Table 4-1.

Table 4-1 Siting Criteria for Gen-Tie Routes

Criteria	Metric	Rationale
Length of Gen-Tie Route	Miles	Longer gen-tie lines increase costs, visual impact and generally have a larger environmental impact
Area of ROW	Acreage	Larger ROW requires more O&M costs to maintain
Number of parcels crossed	Number	Increased development and potentially design/construction challenges
Number of roadways crossed	Number	Increased permitting effort, safety, and visual impact
Acreage of forest clearing	Acres	Minimizing forest clearing reduces potential to impact sensitive habitats and associated threatened or endangered species
Number of stream/wetland crossings	Number	Minimizing wetland and stream crossings reduces potential to impact water quality as well as sensitive habitats and associated threatened or endangered species

Criteria	Metric	Rationale
Number of sensitive receptors within 100/250/500 ft	Number	Minimizing the number of nearby sensitive receptors limits impacts to local residents, including visual impacts

(5) Description of the Project Area and Routes Selected for Evaluation

The Applicant selected the Project Area 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 primary nature of the site (i.e., previously disturbed cultivated cropland), construction and operations of the Project will not have a significant impact on natural resources.

The preferred and alternate gen-tie routes were identified following a comprehensive evaluation of willing landowners in proximity to the Generation Facility. No formal corridor analysis or route selection study was completed beyond the preferred and alternate gen-tie line locations as the Applicant was limited by ideal routes limiting viewshed impacts and minimizing distance to AEP's existing Marysville-Flatlick 765 kV transmission line and landowners willing to contract their land for the gen-tie line. With those parameters the Applicant arrived at the two options presented in this application, the preferred and alternate gen-tie line routes.

The composition of the preferred and alternate gen-tie ROW corridors are largely similar due to their relatively short distances, proximity to each other, and the minimal number of development and natural resource constraints within the vicinity. The length and therefore total ROW acreage is slightly greater for the preferred gen-tie route (98.2 acres) as compared to the alternate route (96.3 acres) but based on the habitat mapping assessment completed for the Project, the preferred route avoids several acres of habitat clearing. The ROW corridors for both gen-tie options are predominately composed of agricultural fields, with approximately 92.3 acres (94.1% of the corridor) of the preferred gen-tie route and 87.9 acres (91.3%) of the alternate gen-tie route corridors identified as agricultural fields. Maintained lawns are the next most common habitat type within the preferred and alternate gen-tie corridors with 4.2 acres identified in both (4.3%

and 4.4% of the acreage, respectively). Existing Roadway, Industrial and Scrub-Shrub habitat types combined for approximately 1 acre (approximately 1%) of the ROW acreage for both the preferred and alternate gen-tie corridors. The largest difference in habitat types between the preferred and alternate corridors was upland forest where the preferred gen-tie corridor has 0.8 acre of upland forest (less than 1%) but the alternate gen-tie corridor has 3.2 acres of upland forest (3.4%). The difference in upland forest that would need to be cleared was the primary rationale for selecting the preferred gen-tie line route. Both the preferred and alternate gen-tie lines were sited to avoid wetlands identified within the Project Area and stream crossings for the two routes only occur at one location that the two options share.

(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 minimal impact to natural resources and adjacent residents' viewshed. All of these setbacks have been made proactively by the Applicant in order to limit impacts from the Project.

The ground coverage ratio was selected to obtain the most efficient energy production while minimizing the overall footprint of the Generation Facility. In the current Project design, all Project equipment and infrastructure, including the perimeter fence, has been set back a minimum of 300 feet (91.4 meters) from the adjacent residences. Project equipment and infrastructure has also been set back a minimum of 150 feet (45.7 meters) from public road pavement edges and all non-participating parcels.

To avoid impacts to wetlands and streams within the Project Area when designing the Project layout, the Applicant used wetland and stream habitat data obtained from the field survey efforts and then implemented design setbacks from those identified features unless an alternative

construction method could be implemented to avoid stream and wetland impacts (e.g., HDD or spanning with infrastructure). Per Ohio Department of Natural Resources' (ODNR's) "Guidance for Proposed Solar Energy Facilities in Ohio" (2022) the Applicant implemented a 120-foot (36.6 meters) setback from streams and wetlands as a design constraint for all Project equipment and infrastructure. The exception to this setback was for collection cables, gen-tie lines, and perimeter fencing where the equipment can be installed via HDD to avoid impacts or the feature can be spanned to avoid impacts. Further discussion of the proposed stream crossings and construction methods are described in Section 7(C)(2) and 8(B)(2). Where possible, the Applicant also avoided areas of upland forest with the design to minimize the need for forest clearing. Table 4-2 below summarizes the constraints and associated setbacks.

Table 4-2 Oak Run Solar Project Constraints and Setbacks

Constraint	Setback (feet)
Non-participating residences	300
Non-participating parcels	150
Roadways (pavement edge)	150
Streams/wetlands	120

Table 4-3 provides a summary of the characteristics of the preferred and alternate gen-tie corridors presented within the application. The table summarizes the criteria used to evaluate the routes after implementing the constraints listed above for the Transmission Facility. More discussion of the resources quantified in this table are presented in the applicable, subsequent sections of the application.

Table 4-3 Oak Run Solar Project Gen-Tie Line Alternatives Comparison

Criteria	Preferred Route	Alternate Route
Length of Gen-Tie Route	3.45 miles	3.40 miles
Area of ROW	98.1 acres	96.3 acres
Number of parcels crossed	6	6
Number of roadways crossed	2	2
Acreage of forest clearing	0.8 acres	3.2 acres
Number of stream/wetland crossings	1	1
Number of sensitive receptors within 100/250/500 ft	0/0/0	0/0/3

(3) Public Involvement in the Siting Process

Two public information meetings were held for the Project. The first meeting was held on June 22, 2022, and the second on August 2, 2022. Both meetings were held near the Project Area, at Monroe Elementary in London, Ohio from 4:30 p.m. to 7:00 p.m. Notification for both meetings was conducted in compliance with OAC 4906-3-03 and a summary of each meeting is provided in Exhibit G. While only one meeting is required, the Applicant held a second meeting as they are committed to engaging with the community to try to develop this complex Project in a manner that best accommodates environmental, land use, and community needs. Additionally, the Applicant voluntarily held this second meeting in light of the fact that in the current review of OAC Rule 4906-3, OPSB has proposed a rule revision that would require a second public meeting.

During the first public meeting on June 22, 2022, the Applicant hosted an open house style meeting and included education stations related to a variety of topics. Representatives for the Applicant were available to answer questions from the public related to the Project and OPSB Staff was present to address questions regarding the Certificate process. It is estimated that 45 to 50 people attended this meeting. In addition to speaking with Project representatives, the public was able to register their attendance at the meeting and submit questions to be recorded as part of the OPSB process via paper comment cards available at the meeting. Thirty-nine attendance/ comment cards were received during the June 22, 2022 meeting. Copies of the attendance cards are provided in Exhibit G. In addition to the OPSB comment cards, the Applicant had a separate comment box for questions that could be submitted and responded to during a panel format question and answer session held for the last 45 minutes of the public meeting. Topics raised during that question-and-answer session included disposal/toxicity of the modules, durability of the modules in extreme weather events, source of the solar modules, tax revenue, water quality, use of prime farmland, vegetation management control, and cultural resources.

For the second public meeting held August 2, 2022, an open house style meeting with a variety of education stations was used for the first half of the meeting, but for the last hour, the Applicant provided a presentation surrounding the content of the OPSB application the Applicant

will submit. The second meeting also included the presentation of a detailed site design, as is presented within this application. The site design presented during the second meeting was developed using feedback received from the initial public meeting where increased setbacks from roadways and condensing the site design were discussed with community members. The second public meeting also included an interactive GIS station, staffed by the Applicant, where residents could measure distances from their homes or property to the various Project components. The Applicant was able to engage with landowners at the GIS station and work to further microsite the Project infrastructure based on real-time feedback. The feedback received at that station will be incorporated into the design of the Project. Comment cards were again available for the attendees to utilize for submitting questions or comments about the Project, however, no comment cards were received during the second meeting. It is estimated that 30-40 community members and local officials attended the second meeting. For approximately the last hour of the public meeting the Applicant provided a detailed presentation of the Project, including the updated site design, and the OPSB process and required studies and assessments that have been completed for the Project. A copy of the presentation is provided in Exhibit G. The presentation allowed the public who attended the meeting to ask questions throughout the presentation. Topics raised during the presentation were similar to those raised during the first meeting and included loss of prime farmland, toxicity/safety of modules, and water quality.

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/oakrunsolarproject/) and website (https://www.oakrunsolarproject.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 16,000 interactions with the page, of which 86% were positive, as indicated in the third-party Facebook Metrics report included in Exhibit H. Since launching the social media campaign, several residents have reached out directly to Project representatives to inquire about the Project. These inquiries have resulted in several email exchanges to answer questions and discuss the Project in further detail in person. There has been

one email exchange where an individual did not provide contact information or even a name, yet requested detailed information about the Project equipment and components. The identity of this individual has since been made known and the Applicant has had the opportunity to discuss concerns and provide information surrounding his initial inquiries, which are also addressed in this application.

5. 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 Marysville-Flatlick 765 kV line that is a part of 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 400 MW solar energy generation interconnection requests with PJM for power generation in August 2020. The first request was assigned queue position AG1-125 and the second request was assigned queue position AG1-126. The two queue positions combined would encompass the Project's nameplate capacity of 800 MW.

Queue positions for the battery storage facilities associated with the Project were also initiated with PJM. Two separate interconnection requests for 150 MW of storage, totaling 300 MW, were filed and were given queue positions AG2-106 and AG2-107. The queue requests were filed in January 2021.

The PJM assigned queue positions can be found at the following website: https://pjm.com/planning/services-requests/interconnection-queues.

(2) System Studies on Generation Interconnection Request

Queue position, AG1-125 and AG1-126 received their Feasibility Study reports in January 2021 and System Impact Studies in August 2021. Network upgrades identified in the Feasibility Study for queue position AG1-125 include the construction of a new three circuit breaker 765 kV switching station, configured as a ring bus. Additional upgrades identified include installation of protection and control equipment, 765 kV line risers, a SCADA system, and 765 kV revenue metering.

The Feasibility Study for queue position AG1-126 assumes a direct interconnection to the proposed AG1-125 switching station and limits the need for upgrades to a new 765 kV circuit breaker and protection and control equipment, 765 kV line risers, SCADA system, and 765 kV revenue metering. Estimates from the Feasibility Studies show the total cost of the AG1-125 queue position network upgrades to total approximately $44,277,000 and the AG1-126 network upgrades to be approximately $8,852,000.

System Impact Studies for both queue positions were received from PJM in August 2021. The System Impact Study for queue position AG1-125 was consistent with the Feasibility Study regarding interconnection upgrades and reduced anticipated costs slightly to approximately $43,277,000. As part of the System Impact Study for AG1-126, the POI has been combined on the same attachment facility as AG1-125, eliminating the need for an additional 765 kV breaker. Based on this new assumption, interconnection costs for AG1-126 were reduced to approximately $45,000. The completed PJM studies for queue positions AG1-125 and AG1-126 are attached in Exhibit B of the application.

The Applicant anticipates the Facilities Study for queue positions AG1-125 and AG1-126 to be received in Quarter 1 of 2023. Copies of those studies will be filed with the OPSB upon receipt.

Feasibility Studies for the battery storage facilities have not yet been received. The Applicant anticipates receipt of the Feasibility Studies for each respective queue position, AG2-106 and AG2-107, in January 2023. Copies of those studies will be filed with the OPSB upon receipt.

6. ECONOMIC IMPACT AND PUBLIC INTERACTION

(A) CURRENT AND PROPOSED OWNERSHIP OF THE PROPOSED FACILITY

The Applicant is a wholly owned subsidiary of Savion, which is a Shell Group portfolio company. Savion develops projects and secures PPAs that may be transferred to other entities, or retained by Shell Group for long-term ownership and operation. The Project will be constructed, operated, and maintained by the Applicant.

The Applicant holds all purchase agreements for parcels that are part of the Project Area. All parcels that are part of the Project Area are summarized in Table 6-1 below.

Table 6-1 Project Participating Landowners

Parcel Number	Owner	Status	Approximate Size (Acres)	Acreage within Project Area	Acreage within Facility
25-00005.000-411	MIDWEST FARMS LLC	Purchased Option Executed	231.8	231.8	176.4
25-00004.000-402	MIDWEST FARMS LLC	Purchased Option Executed	117.8	117.8	0.0
25-00002.000-399	MIDWEST FARMS LLC	Purchased Option Executed	15.0	15.0	14.2
11-00224.000-187	MIDWEST FARMS LLC	Purchased Option Executed	184.0	184.0	148.7
06-00009.000-460	MIDWEST FARMS LLC	Purchased Option Executed	124.7	124.7	124.7
06-00009.000-461	MIDWEST FARMS LLC	Purchased Option Executed	209.9	209.9	172.2
11-00453.000-766	MIDWEST FARMS LLC	Purchased Option Executed	<1	<1	0.0

Table 6-1 Project Participating Landowners

Parcel Number	Owner	Status	Approximate Size (Acres)	Acreage within Project Area	Acreage within Facility
25-00005.000-406	MIDWEST FARMS LLC	Purchased Option Executed	37.4	37.4	20.2
25-00005.000-415	MIDWEST FARMS LLC	Purchased Option Executed	112.2	112.2	103.6
06-00002.000-438	MIDWEST FARMS LLC	Purchased Option Executed	36.4	36.4	36.4
25-00006.000-413	MIDWEST FARMS LLC	Purchased Option Executed	123.1	123.1	107.5
06-00009.000-454	MIDWEST FARMS LLC	Purchased Option Executed	38.0	38.0	38.0
25-00002.000-398	MIDWEST FARMS LLC	Purchased Option Executed	88.7	88.7	86.0
25-00005.000-414	MIDWEST FARMS LLC	Purchased Option Executed	138.5	138.5	115.4
06-00009.000-455	MIDWEST FARMS LLC	Purchased Option Executed	146.5	146.5	146.5
06-00009.000-462	MIDWEST FARMS LLC	Purchased Option Executed	17.3	17.3	2.1
25-00005.000-405	MIDWEST FARMS LLC	Purchased Option Executed	6.9	6.9	4.3
06-00009.000-459	MIDWEST FARMS LLC	Purchased Option Executed	282.9	282.9	253.4
11-00224.000-186	MIDWEST FARMS LLC	Purchased Option Executed	69.1	69.1	57.9
11-00224.000-185	MIDWEST FARMS LLC	Purchased Option Executed	135.4	135.4	105.6
06-00009.000-457	MIDWEST FARMS LLC	Purchased Option Executed	1.5	1.5	1.5

Table 6-1 Project Participating Landowners

Parcel Number	Owner	Status	Approximate Size (Acres)	Acreage within Project Area	Acreage within Facility
11-00224.000-188	MIDWEST FARMS LLC	Purchased Option Executed	362.5	362.5	302.8
11-00224.000-189	MIDWEST FARMS LLC	Purchased Option Executed	276.6	276.6	169.0
06-00009.000-452	MIDWEST FARMS LLC	Purchased Option Executed	470.0	470.0	271.9
24-00570.000-162	MIDWEST FARMS LLC	Purchased Option Executed	242.3	242.3	0.0
25-00005.000-409	MIDWEST FARMS LLC	Purchased Option Executed	202.5	202.5	176.4
06-00009.000-458	MIDWEST FARMS LLC	Purchased Option Executed	153.6	153.6	129.8
06-00009.000-456	MIDWEST FARMS LLC	Purchased Option Executed	89.0	89.0	63.6
25-00005.000-412	MIDWEST FARMS LLC	Purchased Option Executed	198.0	198.0	170.0
25-00005.000-408	MIDWEST FARMS LLC	Purchased Option Executed	245.8	245.8	182.4
25-00005.000-410	MIDWEST FARMS LLC	Purchased Option Executed	23.2	23.2	17.1
25-00005.000-407	MIDWEST FARMS LLC	Purchased Option Executed	428.5	428.5	405.4
06-00009.000-372	MIDWEST FARMS LLC	Purchased Option Executed	0.3	0.3	0.3
06-00009.000-453	MIDWEST FARMS LLC	Purchased Option Executed	869.5	869.5	760.1
11-00340.000-127	Gary N. Watson, Successor Trustee of the Norman E. Watson	Purchase Agreement Executed	44.2	44.2	1.8

Table 6-1 Project Participating Landowners

Parcel Number	Owner	Status	Approximate Size (Acres)	Acreage within Project Area	Acreage within Facility
	Family Trust U/T/D September 5, 1991				
11-00340.000-128	Gary N. Watson, Successor Trustee of the Norman E. Watson Family Trust U/T/D September 5, 1992	Purchase Agreement Executed	47.2	47.2	0.6
11-00384.000-216	Gary N. Watson, Successor Trustee of the Norman E. Watson Family Trust U/T/D September 5, 1993	Purchase Agreement Executed	74.7	74.7	0.0
11-00384.000-289	Gary N. Watson, Successor Trustee of the Norman E. Watson Family Trust U/T/D September 5, 1994	Purchase Agreement Executed	3.6	3.6	0.0
11-00384.000-392	Gary N. Watson, Successor Trustee of the Norman E. Watson Family Trust U/T/D September 5, 1995	Purchase Agreement Executed	2.6	2.6	0.0
11-00384.000-390	Gary N. Watson, Successor Trustee of the Norman E. Watson Family Trust U/T/D September 5, 1996	Purchase Agreement Executed	48.5	48.5	0.0
11-385.000-391	Patricia J. Watson	Purchase Agreement Executed	1.0	1.0	0.0
11-00092.001.69	Green Agri-Capital LLC	Purchase Agreement Executed	150.5	150.5	35.8
Total			**6,051.6**	**6,051.6**	**4,401.7**

Note: Due to rounding and use of a generic Project Area that includes public roadways, 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] to develop the Project with capital costs totaling approximately [redacted] for equipment, onsite labor, etc. and intangible costs including permitting, other development costs, and business overhead totaling approximately [redacted].

The [redacted] capital cost estimate includes approximately [redacted] for the BESS portion of the Project, and approximately [redacted] for the solar project facility, which includes [redacted] to construct the 230 kV gen-tie lines and approximately [redacted] to construct the Project step-up substation.

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

(2) Cost Comparison with Similar Facilities

Based on the current estimated cost per kilowatt of [redacted]/kilowatts AC (kWac), which has some variability based on factors like discount rates, the Project's costs are consistent with costs for other solar facilities in the Midwest and with others developed by Savion. The U.S. Energy Information Administration provides cost data for solar energy facilities installed during 2020, which is the most recent year available. Installed costs for single-axis utility scale solar in the U.S. are estimated at $1,114/kWac (NREL 2021). Battery storage costs are not included in that solar cost estimate. Costs for the Project are comparable with the national average.

(3) Present Value and Annualized Cost for Capital Costs

Capital costs spent through the third quarter of 2022 are accounted for and all additional capital costs will be incurred through construction, culminating with the Project's commercial operation date (COD) for the first 200 to 400-MW portion of the Project anticipated in the fourth quarter of

2025. 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 pursued, 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] for the first two years combined (excluding costs associated with tax 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, and inflation) or [redacted] per kilowatt direct current per year (kWdc/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 2021 across the U.S. and found that annual O&M costs for utility-scale, single-axis PV solar was approximately $16.06 per kWdc/year (NREL 2021). However, this nationwide annual O&M average cost included costs for equipment replacement and not just the operations and maintenance effort at the site, as is reflected in the Applicant's O&M budget. 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 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].

(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 that would likely exceed $1,000,000 per month. Because PPA negotiations are still underway, this number is estimated. In addition, any delay will postpone revenues to the County and the local school district that will result from the Project.

(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 and land use analysis of the Project and the resulting report is provided in Exhibit I. To quantify the potential impact of a solar energy facility on the local economy, the Jobs and Economic Development Impacts (JEDI) PV Model developed by 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 (development and onsite jobs), indirect impacts (module and supply chain), and induced impacts (changes in household spending as a result of employment). 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 and Madison County-specific industry multipliers obtained from IMPLAN to determine jobs and economic output from the Project at the County and State levels. Note that the economic impact evaluated within the JEDI model does not include the BESS portion of the Project as the JEDI model does not have the capacity to evaluate that component, thus the analysis is a conservative estimate of the Project's economic impact.

As part of the economic impact and land use analysis conducted for the Project, Strategic Economic Research, LLC also analyzed the estimated value of land use in Madison County for a solar energy facility versus crop production. The results predict 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 land use decision to utilize the land for a solar energy facility. The model estimated the expected returns from crop production, taking into account market price of crops and average yields, temperature and farming practices, and cost of inputs including seed, fuel, herbicide, pesticide and fertilizer. Based on the analysis, a solar project would provide higher monetary returns than crop production in all 500 simulations included in the analysis.

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

Per the JEDI model, the Project will create employment opportunities primarily during the up to approximate 48-month construction period, and it is estimated that the total value of payroll for development and onsite labor will total an estimated $54.3 million in Madison County and $105 million in the state of Ohio. Because of the short timeline between the Project's construction start and its in-service date, the present value and annualized capital costs will be similar to the costs presented above. When adding in supply chain and induced impacts, the total construction payrolls are estimated to equal approximately $209.3 million in the state of Ohio.

Onsite O&M earnings are expected to total approximately $906,000 annually over the 30-year life of the Project. With supply chain and induced impacts for the state of Ohio the payroll long-term earnings for the state of Ohio are approximately $3.4 million per year. Assuming a 9% discount rate and 2% escalation, the present value of the annual onsite O&M payroll is approximately $12.0 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 from the Project. During construction, Project development staff and on-site labor are

anticipated to include 833 workers from Madison County and another approximately 348 workers from across Ohio, bringing the total number of direct jobs from the Project to approximately 1,181 workers statewide. Further, it is predicted with the JEDI model that more than 1,148 supply chain and induced jobs could be created within the state of Ohio, including 564 in Madison County, as a result of an increased need for jobs related to truck transportation, manufacturing, and food and beverage stores, etc. In total, approximately 3,033 new development and onsite labor, supply chain, and induced jobs are estimated to be created in the state of Ohio as a result of Project construction, which includes 1,487 new jobs in Madison 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. The Project Area is located within 100 miles of three major metropolitan areas and job markets (Columbus, Dayton, and Cincinnati). 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 18 full time equivalent positions would be required for operations and maintenance of the Project, all anticipated to be within Madison County. An additional approximately 45 supply chain 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 PILOT agreement with Madison 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 $9,000/MW to the local taxing district. This agreement would result in annual local government revenues of approximately $7.2 million, and approximately $216 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 over $4.3 million provided annually. Madison County General Fund would receive more than $370,000 annually while Somerford Township would receive approximately $63,000 each year, Monroe Township would receive approximately $43,000 each year, and Deercreek Township would receive approximately $69,000 each year. The remaining approximately $2.3 million annually would be provided to Veterans Relief, Mental Health, MRDD Health, Health Services, Senior Citizens, Emergency Response, Local Library, and Tolles Career & Technical Center. Over the life of the Project this results in almost $130 million in payments to the local school districts, $5.2 million to the townships, and $80.8 million to the other local Madison County services. The economic impact and land use analysis of the Project and resulting report, provided as Exhibit I, was prepared with these, more conservative, numbers to consider this payment as well as potential upfront payments negotiated with Madison County to achieve optimal implementation for both the County and the Applicant.

(4) Estimated Economic Impact of the Proposed Facility

The Project will result in a positive overall economic impact on the local economy, including local commercial and industrial activities. There will be development and onsite labor, supply chain, and induced "multiplier effects" from the construction and operation of the Project. These effects can create supply chain 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 $151.0 million in Madison County and

$421.9 million in the state of Ohio. Annual operations of the Project are expected to result in approximately $3.1 million in output for Madison County and approximately $8.4 million for the state of Ohio as a result of operation and maintenance of the Project.

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 industries.

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(F) PUBLIC RESPONSIBILITY

(1) Public Interaction

Representatives of the Applicant have conducted meetings with the local government and the general public to provide information and 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.

(a) Counties, Townships, Villages, and Cities Near the Facility

The Project is located within Somerford, Deercreek, and Monroe Townships in Madison County and does not encompass any municipalities.

(b) Public Officials Contacted

The Project has been under development since July 2020. Since that time, Project representatives have met with multiple landowners and residents to discuss the Project. In addition, Project representatives have engaged with a number of local organizations, including but not limited to:

- Madison County Commissioners and Administrator
- Madison County Engineer

- Jobs Ohio
- Chamber of Commerce – Madison County
- Somerford Township Trustees; Deercreek Township Trustees; Monroe Township Trustees
- Madison County 4-H/The Ohio State University Extension
- Madison County Farm Bureau
- Madison Soil and Water Conservation District, Madison County
- Darby Creek Association
- Jonathan Alder School District; London City School District; Mechanicsburg School District
- Friends of Madison County Parks and Trails; and
- H.E.L.P House Community Outreach

The Application has engaged with all three school districts that overlap with the Project Area, including participating in the Mechanicsburg School District Career Fair on May 13, 2022.

The Applicant's involvement in the local community has included supporting the local 4-H through The Ohio State University Extension with a donation to Camp Clifton 4-H camp. Additional donations have been made to community organizations such as Pheasants Forever, H.E.L.P House Community Outreach, London Strawberry Festival, Madison County Fair, Mechanicsburg Summer Celebration, and Mechanicsburg First Responder's Car Show Festival.

(c) Public Information and Complaint Resolution Programs

To facilitate local communication and engagement, the Applicant opened a local office in Mechanicsburg, Ohio. This office is open from 10 AM to 5 PM, from Monday through Thursday, and on Friday by appointment. The office is staffed with one to two solar representatives who are available to answer questions and represent the Project.

In addition, the Applicant has launched a unique public engagement campaign for neighbors of the Project to receive residential rooftop solar systems. Senior development representatives are

reaching out to personally meet with 57 adjacent homeowners, none of whom own land that is within the Project Area. The Applicant will inform these homeowners of the Project and answer questions, in hopes of creating a personal relationship. The Applicant will offer these neighbors a rooftop solar system paid for by the Applicant, to be designed and installed by OGW Energy Resources, a solar company based in Tipp City, Ohio who has been in business for over 10 years. This work would be conducted by OGW Energy Resources via a contract with the homeowner.

While the Applicant prioritized the rooftop solar program to educate the community about the benefits of solar, not all the homeowners will choose to proceed with the solar program. Some may not wish to install solar, and others may not have roofs that are suitable for solar panels. Instead, the Applicant will offer other benefits such as roof repairs, energy efficiency, tree planting, or even direct financial payments. The Applicant offers flexibility to each landowner to cater to the individual needs and desires of each of the neighboring residents.

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 16,000 interactions, with approximately 86% of the reactions being positive. 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 H.

During the construction period, the Applicant's construction 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 posted on 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 J. The Applicant intends to submit quarterly (January, April, July, and October) complaint summary reports to the OPSB for the first five years of operation.

(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 Project equipment will be installed on property owned by the Applicant. The Applicant intends to make PILOT payments rather than property tax for the land used for the Project. If a PILOT agreement cannot be reached, then the Applicant will be responsible for all tax-related payments resulting from the Project construction. The Applicant will carry insurance during development, construction, operation, and decommissioning of the Project that will ensure proper indemnification.

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

(3) Road and Bridge Impacts

Stantec Consulting Services, Inc. completed a Construction Route and Road Condition Assessment for the Project, provided as Exhibit L. Stantec reviewed maps of the proposed Project design to identify roads internal to the Project Area and potential roads to be used during construction. Potential complications and concerns identified as part of the desktop review were noted. Prior to construction, the Applicant will enter into a road use maintenance agreement (RUMA) with the Madison County Engineer. The Applicant will maintain roads during and at the conclusion of construction and during decommissioning. It will be the Applicant's obligation to maintain roads in a condition similar to or better than pre-construction conditions. A final

transportation management plan, including the county-required RUMA will be prepared and submitted as part of the Project's pre-construction filings and provided to the OPSB prior to the pre-construction conference with OPSB staff.

Stantec visited the Project Area to complete an on-site evaluation of the roadways that are within the Project Area and adjacent to the Project Area. State of Ohio highways, including SR 29 and SR 38 have been built and are maintained to Ohio Department of Transportation (ODOT) standards. The expectation is State highway standards are suitable to accommodate large and heavy loads and, for the purpose of this analysis, are deemed to be suitable for traffic associated with the Project.

Interstate-70 is located approximately 5 miles south of the Project and will serve as an east/west connection for regional traffic to the Project. The roads connecting the Project to the interstate are designed and maintained to ODOT standards and deemed to be suitable for the traffic associated with the Project.

Existing vehicle traffic volume for the Project Area was only observed, not formally counted. Annual Average Daily Traffic data is not available for the roadways considered in this report. The traffic observed was mainly personal vehicles. Large agricultural equipment or smaller all-terrain vehicles are expected on occasion on the public rights of way. A detailed capacity analysis was not completed for this study. The terrain of the Project Area is relatively flat, and the roads have mild alignment changes. The roads are built to accommodate two-way travel with either marked or unmarked lanes. Generally, the paved roads are in good to fair condition. Some areas of greater wear and cracking are noted in the photo log; however, no failing areas were observed.

There are several existing culverts within the Project vicinity ranging in size from 18-inch concrete to large box culverts. The culverts were noted, but not inspected, during the field observation. The culverts generally appeared to be in good condition.

In addition to culvert crossing there are several bridge spans (spans <10 feet). The bridge on Green Lane at the south end of the Project Area was noted with posted reduced load limits. It was recommended that use of the roadway should be limited during construction. If the road cannot be avoided during construction, the bridge should be evaluated by a structural engineer prior to development of the transportation management plan. There are several power and communication lines in the Project Area. All the aboveground lines were elevated and unlikely to interfere with trucks or equipment. No poles were observed near intersections with concerns of impacting turning movements.

During the up to 48-month construction phase of the Project, large and heavy vehicles will be utilized. Upon completion of construction, the day-to-day operation of the Project will not require large volumes or heavy traffic. Typical vehicles used during day-to-day operations will be pick-up trucks, small box trucks, vans, and small to mid-sized tractors for solar panel maintenance and site work (vegetation management, etc.).

Timing of construction will be considered by the Applicant during Project planning to minimize the load impact on the roadways to reduce damage. During the spring months (usually through April), there is snow melt in the area resulting in heavily saturated soils. Due to the reduced stability of the roadways and freeze thaw cycles, most of the damage to the roads is seen in the spring months. While weight restrictions are possible, SR 29 and SR 38 will not typically see restrictions. Tradersville-Brighton Rd (CR 113) has posted weight limits reduced by 25% from February 1st through June 1st. Additional roads in the area may see temporary reductions as well. Some of the township roads may not be frequently cleared of snow or deiced during the winter months. Additional coordination of trucking routes or timing will need to be considered from November through March.

Access on and off existing roadways presents a significant safety concern for roads proposed to be utilized during Project construction and operation. Adherence to posted speed limits is an important factor in reducing accidents. All roads have a speed limit of 55 miles per hour (mph), although they are not posted. However, for safety reasons, and to prevent pavement damage from loaded trucks, speeds should be limited to 35 mph on roadways in nonstandard condition (either

due to weather or changed road conditions). In nonstandard conditions, unloaded trucks can travel at higher speeds up to 45 mph (10 mph below speed limit).

(4) Transportation Permits

Access Permits must be obtained from the respective jurisdictional office prior to construction. The jurisdictions associated with the public roads and bridges likely to be used for the Project are as follows:

- ODOT District 6 – SR 29 and SR 38;
- Madison County Engineer – Tradersville-Brighton Rd (CR 113), Green Ln (CR 112);
- Rosedale-Milford Center Rd (CR 11); and
- Monroe Township – Thomas Rd (Township Road 121)

In addition to the RUMA executed with Madison County, no special hauling permits are anticipated for the Project, with the exception of an overweight permit that will be required for delivery of the substation transformers. There is no plan to utilize public rights-of-way for the Project, with the exception of utility crossing permits and driveway permits. If other right-of-way permits are needed, they will be obtained from the entity responsible for the affected roadway. All permits will be obtained 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 a minimum of 30 years, the Applicant will decommission the Project. The process by which the Applicant will decommission the Project is provided in the Preliminary Decommissioning Plan prepared by Stantec for the Project and included in Exhibit D. All aboveground features and buried structures will be removed to a depth of 3 feet below the ground surface and disposed of offsite for recycling, reuse, or disposal at licensed and approved facilities. The only materials that may be left in place at the Project are

access roads or laydown yards, the step-up substation, and AEP's interconnection facilities. Project restoration efforts will return the land to its original topography. Restoration shall include returning the soil to its pre-development state, including decompaction of soil, to allow any prior agricultural use to resume.

Decommissioning costs for the Project, based on the final site design and selected equipment, will be recalculated prior to commencing Project construction. The Applicant will provide a copy of the final Decommissioning Plan to the OPSB Staff at least 30 days prior to the pre-construction conference with OPSB. Decommissioning costs will be reevaluated every five years until the Project Facility is ready for decommissioning. The Applicant will post decommissioning funds in the form of a performance bond as required by OPSB where the company is the Principal, the insurance company is the Surety, and the OPSB is the Obligee.

7. 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. Madison 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), ozone (O_3) and lead (Pb). 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 Ohio Environmental Protection Agency (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 122 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 were reviewed. Table 7-1 provides mean and maximum measurements of criteria pollutants at the closest available monitoring sites, including the city of Columbus (within 25 miles of the Project Area), Paint Township in Madison County (within 15 miles of Project area) and the city of Marion (within 45 miles of the Project Area) (OEPA 2021).

(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 emissions associated with the operation of the Project, therefore 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.

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

Pollutant	Closest Monitoring Site ID	City/ County	Averaging Period	NAAQS Standard[1]	Mean	Highest Maximum Reading
PM_{10}	39-049-0034	Columbus/ Franklin	24-hour	150 µg/m^3	14.8	40
$PM_{2.5}$*	39-049-0038	Columbus/ Franklin	24-hour	35 µg/m^3	7.43	36.0
Sulfur dioxide	39-049-0034	Columbus/ Franklin	1-hour	75 ppb	0.05	5.0
Carbon monoxide	39-049-0038	Columbus/ Franklin	8-hour	9 ppm	Not reported	1.6

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

Pollutant	Closest Monitoring Site ID	City/ County	Averaging Period	NAAQS Standard[1]	Mean	Highest Maximum Reading
			1-hour	35 ppm	Not reported	1.9
Nitrogen dioxide	39-049-0038	Columbus/ Franklin	1-hour	100 ppb	8.35	45.0
Ozone**	39-097-0007	Paint Township/ Madison	8-hour	0.070 ppm	Never exceeded standard	0.065
Lead	39-101-0004	Marion/ Marion	3-month	0.15 µg/m^3	0.01	Not reported

[1] USEPA 2016

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

**Annual 4th highest daily maximum 8-hour concentration averaged over three years.

Source: OEPA 2021.

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.

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

No air pollutants are associated with the operation of the Project. Therefore, no permits to install and operate air pollution sources 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 major pollution 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.

Fugitive dust emissions during site preparation and construction will be mitigated using best management practices (BMPs), including using water, or other acceptable substance to disperse on bare soil surfaces if conditions warrant it, per the requirements of the Ohio NPDES construction storm water general permit (OEPA Permit No. OHC000005). This method will be implemented during periods of high heat and dry conditions and when the soil is dry enough that it will not 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 ambient 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 not applicable to the Project.

(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

Any large construction project that disturbs more than 1 acre of land is required to obtain an Ohio NPDES construction storm water general permit (OEPA Permit No. OHC000005). The Project will be required to adhere to Appendix A of the storm water general permit as the Project Area is within the Big Darby Creek Watershed. This is the only storm water permit that is anticipated to be needed by the Project. The Applicant will obtain the permit at least 30 days prior to the start of Project construction.

The Project as currently designed has avoided permanent impacts to streams and wetlands from all Project infrastructure. There are 10 locations where collection lines (six crossings), gen-tie lines (one crossing), or security fencing (three locations) cross a stream, however these locations will either be directionally bored in the case of the collection line or the crossing will be spanned by the gen-tie line and fencing so that there is no disturbance to the stream bed. If the final site design changes and avoidance of stream and wetland impacts cannot be accommodated, then the Applicant will work to obtain the following permits, as applicable:

- A U.S. Army Corps of Engineers (USACE) permit under Section 404 of the Clean Water Act (CWA) for disturbances to jurisdictional waters of the United States (as necessary for ephemeral, 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 Permit under Section 6111.021 of the Ohio Revised Code (as necessary for disturbance to wetlands, although not required based on the current preliminary design and construction methodologies).

(b) Map of Water Monitoring and Gauging Stations

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

(c) Monitoring and Gauging Station Information

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

(d) Existing Water Quality of the Receiving Stream

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

(e) Water Discharge Permit Application Data

No point source water discharge will occur from the Facility; therefore, no data for a water discharge permit is provided.

(2) Water Quality During Construction

(a) Map of Water Monitoring and Gauging Stations

No point source water discharge will occur from the site; therefore, no mapping of monitoring and gauging stations are provided.

(b) Estimated Quality and Quantity of Aquatic Discharges

Point source aquatic discharges to streams or wetlands will not occur during construction of the Project. To minimize the potential for accidental spills during construction, a SPCC plan will be developed to manage the storage of hazardous materials on site, which consists solely of diesel fuel for construction trucks and equipment. The SPCC plan will be developed and in place prior to construction. The SPCC plan will describe 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 implement the measures described in the SPCC plan and monitor for aquatic discharges during construction.

The Applicant will implement a Storm Water Pollution Prevention Plan (SWPPP) during construction of the Project that adheres to the specifications of ODNR's Rainwater and Land Development Manual and the supplemental requirements of Appendix A of the storm water general permit pertaining to the Darby Creek Watershed. The SWPPP will be developed and in place prior to construction. Through this process the Applicant will implement BMPs to reduce erosion and sedimentation. By implementing the SWPPP, which includes required monitoring and maintenance of the BMPs to ensure their effectiveness over the construction period, it prevents Project related construction activities from negatively impacting water resources, including surface and groundwater. If there is runoff to neighboring properties created by the Project that causes any negative impacts, the Applicant would need to correct any issues and could be subject to fines. In addition, residents could utilize the Complaint Resolution Process (see Exhibit J) implemented by the Applicant to report any runoff or flooding issues potentially caused by the Project.

(c) Mitigation Plans

To protect water quality during construction, the Applicant designed the Facility to avoid placement of all Project infrastructure within streams and wetlands identified within the Project Area. In addition to avoiding direct impacts to streams and wetlands, there are no point source aquatic discharges anticipated during the Project's construction, and any non-point source storm water impacts would only be temporary. While storm water 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, SPCC Plan, and an HDD Inadvertent Release Contingency Plan (Frac Out Plan; Exhibit M). The SWPPP, SPCC, and final Frac Out Plan will be developed and in place prior to construction.

The SPCC plan is required by the USEPA and details methods to prevent the potential release of hazardous substances during construction of the Project. The only hazardous materials expected to be stored onsite during construction are fuel for construction trucks and equipment. The SPCC plan will also describe the proper methods to address a spill and agencies to notify should any inadvertent spills occur during construction. Hazardous materials stored onsite during construction will be stored in accordance with the SPCC plan to prevent spills. In the unlikely

event that a spill does occur during construction and inadvertently reaches a waterway, it is expected to be of minimal quantity and duration as large volumes of hazardous materials will not be stored onsite during construction.

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 BMPs during construction to implement storm water pollution prevention measures, including those required for compliance with Appendix A pertaining to the Big Darby Creek Watershed, where the Project is located. Section A.4 of Appendix A in the NPDES Construction Storm Water General Permit requires establishment of a boundary for required riparian setbacks from each identified stream in the Project Area, according to three different calculation methods with the greatest setback required. The Applicant has evaluated the three riparian setbacks based on wetland and stream delineation surveys conducted throughout the Project Area and has excluded Project infrastructure from all riparian setbacks. Based on the Project design and the creation of impervious surfaces associated with the access roads, inverters, substations, BESS structures, gen-tie poles, and O&M buildings. Section A.6 under Appendix A of the NPDES General Permit would need to be addressed for the Project and requires post-development groundwater recharge to equal or exceed the pre-development groundwater recharge or to mitigate for the reduction in groundwater recharge. The SWPPP will include the calculations of pre- and post-construction groundwater recharge, based on the final Project design. Based on preliminary design information and initial calculations, there is likely to be net increase in groundwater recharge from construction of the Project due to the conversion of the majority of the Project Area from row-crop agriculture to perennial vegetation (grasses and forbs) under the PV modules and incorporation of other vegetation within portions of the Project Area where no infrastructure is planned.

BMPs that will be used during construction to prevent excess stormwater runoff from the construction areas will be defined in the SWPPP, but could include silt fences, straw bale dikes, detention basins, drainage swales or other storm water control measures. 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 associated with the operation of the Project do not create any additional storm water runoff than was generated during pre-construction conditions. The Applicant will implement OEPA Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays (OEPA 2022a) to further ensure that stormwater runoff is minimized at the site.

In addition to controlling surface water runoff, the SWPPP BMPs will also minimize groundwater impacts from the Project. In the preliminary geotechnical investigation conducted by G2 Consulting Group (G2) and The Mannik & Smith Group, Inc. (Mannik & Smith), groundwater was observed to exist at 14 boring or test pit locations between depths of 3 to 19 feet below grade, while at the remaining locations no groundwater was encountered. Across the Project Area, groundwater elevation was approximately 8.5 feet below grade (see Exhibit N). The BMPs implemented as part of the SWPPP and SPCC Plan will also protect groundwater resources within the Project Area by limiting the potential for spills and if they do occur, limiting flow and infiltration across the site.

The piles installed for the Project are anticipated to be driven approximately 10 feet (3.0 meters) below grade. If shallow groundwater is encountered during excavation, it may be pumped out and discharged into a designated upland area to temporarily retain the water until it can infiltrate back into the ground. The SWPPP will include specific details relating to the pumping of groundwater from an excavation area. The Applicant will use temporary sediment traps or the controlled release of water over vegetated upland areas during construction to intercept and manage runoff from any dewatering activities that are necessary. This method will allow sediment to settle out of the water.

Direct impacts to streams and wetlands have been avoided in the preliminary Project design; however, if it becomes necessary to impact a stream or wetland to construct the Project infrastructure, the crossing(s) will be coordinated and permitted with USACE and the OEPA. Additionally, appropriate erosion and sediment control measures (e.g., silt fences or straw bale dikes or other storm water control measures) will be used to limit the direct and indirect impact

of storm water flow to surface waters. Further, the construction corridors and any clearing of vegetation in or near these features will be minimized to reduce potential impacts. The SWPPP, once it is developed, will outline these measures in more detail.

Currently impacts to streams and wetlands from Project infrastructure have been avoided with the exception of collection cables and perimeter fencing. Collection cables will be installed via HDD under the identified streams and fences will span the streams so no bank disturbance is anticipated for these features. The HDDs will be conducted per local codes, OEPA guidelines, and a 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. In order to mitigate any potential impacts from HDD inadvertent drilling 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 nearby wetlands or streams. 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 waterbody.

Post-construction runoff control will be implemented with BMPs, as required, in order to ensure that the Project does not generate more storm water runoff than existed during pre-construction conditions. The vegetation planted under the solar panels, coupled with the spacing of the trackers and gaps between the solar modules reduces the impervious surface and allows storm water to infiltrate back into the ground, rather than creating sheet flow as can occur from impervious surfaces like paved roads or parking lots. The Applicant has also incorporated detention basins into the Project design to be utilized during construction as well as operation of the Project to mitigate for the impervious surface created as part of the Project. These storm water features are depicted in Figure 3-1.

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

The current Project design limits impacts to streams and wetlands and minimizes the potential for flow pattern changes 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 pre-construction conditions. Further, areas within the Project Area identified as having inundation depths greater than two feet within the Hydrology and Scour Study completed by Mannick & Smith Group (Exhibit O) were avoided.

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. A phased approach to construction will also help limit erosion as disturbance will occur in smaller areas as construction proceeds rather than disturbance of the entire Project footprint at the same time. There is potential for impacts to flow patterns as the drain tile system existing

onsite could be temporarily impacted by the steel piles and transmission line poles driven into the ground and cutting trenches to install underground collection systems. The Applicant has attempted to identify drain tiles through landowner coordination and aerial imagery review within the Project Area so that the site design can include avoidance and onsite drainage is not affected by construction of the Project. If agricultural drain tiles are damaged during construction of the Project, the Applicant will fix the drain tile and implement measures so that any offsite water flow to adjacent landowners' properties is avoided. Any drain tile damaged as a result of the Project would be repaired promptly including anything affecting adjacent landowners. 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 should a drain tile be damaged during construction. During operations, Project 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 retained to perform any necessary repairs.

(e) Equipment Proposed for Control of Effluents

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

(b) Water Pollution Control Equipment and Treatment Processes

There is no point source water discharge associated with operation of the Project; therefore, there is no water pollution control equipment or treatment processes needed for operation of the Project.

(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.

While there is no NPDES permit needed for operation of the Project, the Applicant will still implement OEPA Guidance on Post-Construction Storm Water Controls for Solar Panel Arrays (OEPA 2022a) to minimize storm water runoff during operation of the Project, as described above for the construction phase.

(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

The only water used during operation of the Project will be for limited cleaning of the solar modules. Due to the temperate climate of the Project, it is anticipated that rain is sufficient to keep the solar modules clean. However, if cleaning of the modules is necessary, the Applicant will work with O&M staff to arrange for a water truck or use of onsite water wells to provide water for the cleaning effort, which will require approximately 1 liter per module.

Two onsite O&M buildings are planned for the Project. Water storage tanks and septic tanks will be used for water supply and disposal. The Applicant will install modern, water efficient fixtures for all water usage and regularly maintain them to ensure they are in proper working order.

(D) SOLID WASTE

(1) Preconstruction Solid Waste

(a) Nature and Amount of Debris and Solid Waste

Three barns, six grain silos, and two residences on the property owned by the Applicant, may require demolition. Material from the demolition of these structures will be hauled offsite and disposed of at a properly licensed facility. Limited amounts of vegetation debris may be

generated during the pre-construction site clearing and grubbing activities described in Section 3(B)(2) of the application.

(b) Plans to Deal with Waste

Material from the demolition of structures will be hauled offsite and disposed of at a properly licensed facility. 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.

(3) Solid Waste During Construction

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

The Project will generate minimal non-hazardous solid waste during construction activities. This waste will consist primarily of plastic, wood, cardboard, metal packing/packaging materials, conductor scrap, conductor reels, wire scraps, construction scrap, and general refuse. Based on other solar and transmission line construction experience, the Applicant estimates that one or more 30 cubic yard roll-off dumpster may be required for regular waste collection during the construction period. Much of the construction waste consists of recyclable materials which the Applicant will collect and divert from the waste stream. This may be accomplished by using one or more30 cubic yard recycling dumpster which will be regularly collected during the construction period.

(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

Operation of the Project will generate small amounts of non-hazardous waste such as cardboard, plastic packaging, etc. as part of standard O&M efforts. As much of the material will be recycled as possible.

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

Solid waste during operation of the Project will be stored on-site and will be collected by a private contractor and disposed of at an authorized solid waste disposal facility. The Applicant will only utilize Tier 1 equipment suppliers and expects solar panels to pass Toxicity Characteristic Leaching Procedure (TCLP) testing regulated by the USEPA to ensure they are not hazardous to people or the environment. However, the Applicant will make every effort to recycle or salvage solar panels from the Project, which includes any panels damaged during construction, operations, and panels at the end of life/decommissioning.

(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

Figure 7-1 provides the location of all public and private use airports, helicopter pads, and landing strips within 5 miles of the Project Area on a map of at least 1:24,000 scale. Madison County Airport is the closest aviation facility, located approximately 2.5 miles south of the Project Area (Figure 7-1). The only other aviation facility within 5 miles of the Project Area is the Madison Health Center helipad, which is located approximately 5 miles south of the Project Area. There are no glare impacts predicted to either the airport nor the helipad based on the Glare Hazard Analysis prepared by Stantec for the Project that is provided as Exhibit P. The Applicant has notified the managers at each facility regarding the Project.

(2) FAA Filing Status

Stantec completed a glare analysis study to evaluate potential Project impacts to residents, drivers, pilots and airport operators in the vicinity of the Project. The analysis predicted no impacts of glare from the Project to aviation operations, drivers, and nearby residents. The Federal Aviation Administration (FAA) Notice Criteria Tool indicated that the Project did not exceed a height that required it to be filed with the FAA. The parameters used for the Notice Criteria Tool included a height of 12 feet at the north, west, and south, corners of the Generation Facility to reflect the maximum height of the solar modules and a height of 120 feet at the Project substations, step-up substation, and at the start and end locations for the gen-tie lines to reflect the maximum transformer and/or gen-tie line pole height for those components. The glare analysis report and FAA Notice Criteria Tool reports are provided in Exhibits P and Q, respectively.

8. 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

Solar energy and electric transmission facilities do not pose safety or health risks to the community. However, to prevent unauthorized site entry and unsafe activities, the Applicant will implement measures to ensure the Project is secure and does not pose a public safety risk to the public during construction and operation, as outlined in subsequent sections.

As stated, all equipment procured for the Project will be compliant with applicable UL, IEEE, NEC, NESC, and ANSI listings. The Project will be constructed in compliance with all North

American Electric Reliability Corporation and NESC requirements, Occupational Health and Safety Administration (OSHA) standards, as well as the applicable laws and regulations for the state of Ohio.

There are no point-source air emissions from the Project and no point-source water discharge from the Project to affect public safety.

Electromagnetic fields (EMFs) are invisible areas of electric and magnetic fields that result from electrical power and different forms of natural and man-made lighting. EMFs can be broken into two types, based on their frequency: non-ionizing and ionizing. Non-ionizing EMFs are low to mid-frequency EMFs and include sources like microwaves, computers, cell phones, wireless networks, and power lines. The Project inverters, substation transformers, and gen-tie lines would generate non-ionizing EMFs. Ionizing EMFs are high frequency and result from sources like sunlight and X-rays. EMFs, particularly from transmission lines, have been studied extensively worldwide since the 1970's, especially relative to the concern regarding the potential for exposure to non-ionizing EMFs and risk of cancer in children. Conclusions from a number of public health studies led by entities like the World Health Organization (WHO), National Academy of Science, and National Institute of Health (NIH), have concluded that there is no consistent evidence between non-ionizing EMF exposure and cancer. Although the studies cannot conclusively say that EMFs are 100% risk free, there are no known health risks directly attributable to living near high voltage power lines, (NIH 2002, NAS 1999, and WHO 2007).

The minimal amount of non-ionizing EMFs generated by the Generation Facility is comparable to the amount generated by home appliances, cell phones and computers. The average individual in the U.S. is exposed to approximately 1 milligauss (mG; measurement of magnetic field strength) daily, with exposure within approximately three feet of a household refrigerator registering approximately 6 mG or 50 mG from a microwave oven. A study completed in Massachusetts at a solar PV facility found that EMFs were highest near the inverters and were measured at 0.5 mG or less and generally were less than the background levels of 0.2 mG at distances of 150 feet from the inverters (MDER, MDEP, and MCEC 2015).

EMFs from gen-tie lines can vary based on the voltage of the power line, but the WHO measured that the magnetic field from a 230 kV transmission line, like the Project gen-tie lines, would measure approximately 57.5 mG immediately under the transmission line but just 7.1 mG at a distance of 100 feet, and 1.8 mG at 200 feet (NIH 2002).

It is important to remember that the strength of a magnetic field decreases dramatically with increasing distance from the source. This means that the strength of the field reaching a house or structure will be significantly weaker than it was at its point of origin. As part of the final site layout, the nearest non-participating residence will be more than 500 feet from the preferred gen-tie line (approximately 300 feet for alternate gen-tie route), more than 300 feet from the nearest solar module or inverter, negating any EMF exposure to residents. Similarly, operations and maintenance staff would not be exposed to significant levels of EMF as they will not be continuously working under the gen-tie line during O&M efforts.

The Applicant will only utilize Tier 1 equipment suppliers and expects solar panels to pass TCLP testing regulated by the USEPA to ensure they are not hazardous to people or the environment. To pass the TCLP test a solar panel, when broken into pieces, must not leach harmful amounts of any hazardous materials at levels defined by the USEPA to ensure it is safe for people and the environment. Solar panels that pass the TCLP and can be used for the Project are therefore non-hazardous under federal law and could be disposed of in regular landfills just like household garbage. A recent review by the Ohio Department of Health (ODH) found that the information to date does not indicate a public health burden from the use of crystalline silicone (c-Si) or cadmium telluride (CdTe) in solar facilities which are operating under normal conditions. While there may be some hazardous chemicals used in the construction of a PV panel, there is not likely to be a completed exposure pathway to the general public given the fact that these substances would be fully encapsulated by non-toxic, non-porous substances like glass and, therefore, are not likely to enter the environment (ODH 2022a).

The ODH recently reviewed information on lithium-ion battery facilities such as is proposed for the Project. The ODH concluded that when operating under normal conditions, there isn't

expected to be a public health burden from the batteries as there is unlikely to be an exposure pathway from the lithium ion chemistries (ODH 2022b).

During the construction phase, the Applicant will coordinate with local emergency responders to discuss proper response procedures and other items specific to on-site equipment safety. The Applicant will ensure all local emergency responders will be trained to address Project specific emergencies should they arise. A third-party consultant who specializes in this type of training was available at the second public information meeting. They will coordinate with the local emergency responders, on behalf of the Applicant, to develop an emergency response plan that will provide extensive education and training prior to and during construction and operation of the Project. The plan is discussed in more detail in Section 8(A)(1)(E). On-site construction workers will adhere to industrial safety standards to avoid injury. Regulations set forth by the national OSHA 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 performance lifespan of 30 to 35 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

The glass that encases the solar arrays is tempered glass that is designed and tested to withstand hail, the effects of panel aging, and are resistant to breakage. Solar panels are mostly glass, aluminum, silicon, and semi-conducting material, with more than 80% of the panel composed of glass and aluminum. Many suppliers of solar panels have demonstrated that the solar panels pass toxicity testing, they are determined to be non-hazardous by the USEPA and can be recycled or disposed of in regular landfills just like household garbage. All Project equipment is expected to meet all UL, IEEE, NEC, NESC and ANSI listings.

Once the EPC contractor is selected, engineering plans are finalized based on procured equipment, the Applicant will provide the manufacturer's safety manuals for the modules, BESS containers, and other Project equipment to the OPSB 30 days prior to the start of construction.

(d) Measures to Restrict Public Access

The exterior perimeter of the Project will be secured with up to seven-foot tall, agricultural, wildlife-friendly fencing. Gates will be placed at entrance points to control access for operation and maintenance workers. Safety signs will be placed on fencing. The Project substations and step-up substation will be enclosed with perimeter fencing that complies with the NEC and NESC. Access will be controlled by gates.

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 security measures or potential dangers, and providing 24-hour emergency numbers, operator contact information, and instructions for emergency personnel.

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

An Emergency Services and Response Plan (ESRP) 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 Project Facility. In addition, the Applicant is committed to working with the Madison County community and local first responders as the Project progresses.

Solar energy systems are monitored remotely and can be controlled and even shut down if warranted. The Project SCADA control scheme is designed to allow the arrays to be isolated from the grid and shut down remotely in case of fires or other incidences.

The Applicant has partnered with Energy Safety Response Group and will develop a site-specific ESRP for the Project. A key component of the ESRP will include routine training and

coordination with local emergency responders to ensure that first responders are familiar with the site facilities. Other key components of the ESRP include but are not limited to, the following:

- Site Overview including Site Map, Access Road Locations, Types of Equipment;
- Facility Specific Fire Protection and Safety Protocols;
- BESS Fire Suppression, Equipment and Safety Protocols;
- Contact Information for the Project Facility Operations Team;
- Potential Hazards during both Construction and Operations;
- Detailed Provisions for Site Security and Site Access; and
- Emergency Response Recommendations

Additional details regarding the ESRP and its components will be developed during consultation with Energy Safety Response Group, Madison County personnel, and local first responders. The final ESRP will be provided to OPSB no later than 30 days prior to the pre-construction conference with OPSB staff.

(2) Impact of Air Pollution Control Equipment Failure

As described previously, 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 nearby residences and other sensitive receptors. Epsilon's Sound Level Assessment Report is included in Exhibit R. Epsilon utilized the Federal Highway Administration's Roadway Construction Noise Model software to predict the sound levels associated with construction of the Project. Epsilon categorized construction of the Project in three principal phases: site clearing and grading, pile driving, and solar panel array installation. Site clearing and grading is anticipated to include the use of excavators, graders, and dump trucks. Impact pile drivers will be

the primary equipment during the second phase while the array installation will mainly include cranes and flatbed trucks. Sound levels during each phase of construction were predicted assuming that the equipment was located at the closest solar array to a property line and at the closest receptor, which were 170 feet and 360 feet, respectively. The sound level modeling for the different aspects of Project construction is 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 is anticipated to be used during the first phase of construction, site clearing and grading. The operation of this equipment is expected to have an equivalent sound level (Leq), the time average of fluctuating sound pressure, of 69 A-weighted decibels (dBA) with an anticipated maximum sound level (Lmax) of 71 dBA at a distance of 170 feet (51.8 meters; closest property line). At a distance of 360 feet (109.7 meters; closest monitoring receptor), the Leq is estimated to be 63 dBA with an Lmax of 65 dBA. 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 10pm), 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 second phase of construction will be pile driving in order to install the racks that the solar modules are mounted on. The racks are supported by posts that are expected to be embedded to a depth of approximately 10 feet below grade, depending on soil conditions. Piles will be installed using either a hydraulic hammer or a hydraulic impact pile driver. For the purposes of the sound study, the hydraulic hammer was modeled as a worst case for sound from the Project. The operation of an impact pile driver used to drive the posts could result in Leq sound levels of 84 dBA with an Lmax of 91 dBA at a distance of 170 feet (51.8 meters). At a distance of 360 feet

(109.7 meters), the Leq is modeled to be 77 dBA with an Lmax of 84 dBA. 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 third phase of construction includes the erection of solar PV modules. The predicted sound levels for installation of the solar arrays has an Leq of 64 dBA and Lmax of 70 dBA at a distance of 170 feet (51.8 meters). The predicted Leq sound level at this stage is estimated to be 57 dBA with an Lmax of 63 dBA at a distance of 360 feet (109.7 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 to transport materials and equipment throughout the Project Area. Predicted sound levels for truck traffic are 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 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 CadnaA modeling software to predict the sound levels that will result from operation of the Project at nearby residences. Operational sound at the Project will result from the Project inverters, BESS, and substations.

Epsilon conducted field sampling surveys at six different sound monitoring locations throughout the Project Area (see locations in Figure 5-1 in Exhibit R) in order to establish the ambient sound levels within the Project Area. Table 8.1 summarizes the overall, daytime, and nighttime sound levels at each location as measured by both the Leq and the ambient median sound levels (L50).

Table 8-1 Averaged Ambient Sound Levels for the Project Area

Location	Overall (dBA)		Daytime (dBA)		Nighttime (dBA)	
	L_{eq}	L_{50}	L_{eq}	L_{50}	L_{eq}	L_{50}
ML1	42	40	43	40	40	39
ML2	43	37	45	39	40	34
ML3	38	33	41	36	34	29
ML4	40	33	43	36	37	30
ML5	39	35	41	36	35	33
ML6	48	43	50	44	46	41

(i) Operational Sound from Generation Equipment

While there are no existing federal, state, or local regulations applicable to the Project, operational sound predicted for the Project was conservatively evaluated against the 5 dBA increase over the L50 proposed in draft OPSB rules for renewable energy facilities. The sound limits of 5 dBA over existing daytime ambient L50 sound levels for daytime only sources and 5 dBA over the existing nighttime ambient L50 levels for nighttime sources or 40 dBA Leq, whichever is greater were applied at all receptors. Average daytime ambient L50 sound levels in

the Project Area range from 36 to 44 dBA, resulting in daytime limits of 41 to 49 dBA. Average nighttime ambient L50 sound levels in the Project Area range from 29 to 41 dBA, resulting in nighttime limits of 40 (greater of 34 dBA L50 or 40 Leq) to 46 dBA. Measured ambient data were assigned to each modeling receptor based on proximity between the measurement points and the modeling receptor, and similar land use. Receptors near two measurement locations were grouped with the location with the lower ambient sound level to be conservative.

Sound from operation of the Project during the daytime was modeled to represent the worst-case future sound levels produced by the PV inverters, the BESSs, and the transformers at the Project substations all operating together. During the nighttime, the inverters were excluded from the model as they don't operate at night when there is no sun to produce electricity by the modules.

At all modeled receptor locations, sound levels are below the OPSB draft rule limits with incorporation of a sound barrier constructed at the Project step-up substation to reduce sound levels for that feature. The daytime predicted operational Project sound levels at the nearest residence was estimated to be 43 dBA, which is below the 45 dBA ambient L50 threshold when ambient daytime L50 sound levels at this location are 40 dBA. The worst-case nighttime scenario has a predicted sound level of 43 dBA, which meets the sound threshold for this receptor as the ambient daytime L50 sound level at this location is 39 dBA resulting in a threshold of 44 dBA.

(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 Section 6(F)(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 476 residences, one school, two places of worship, and three cemeteries within a 1-mile radius of the Project Area. Of the identified sensitive receptors, 31 residences are within 1,500 feet of Project Facilities but none are within 250 feet.

Based on the ambient sound levels documented within the Project Area and the modeled worst-case predicted sound levels, none of the sensitive receptors are expected to experience sound impacts during operation of the Project at sound levels above the 5 dBA increase over the average daytime L50 (45 dBA).

(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:

- 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 Procedure Plan to address how

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

- In order to ensure compliance with the OPSB proposed sound standards, the Applicant has incorporated a noise barrier at the Project step-up substation that extends along the west and north side of the four transformers to the design and that has been reflected when modeling operational sound for the Project. The barrier as modeled is 22 feet (6.7 meters) tall and 210-feet (64 meters) long.

(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 residences and other sensitive receptors. Epsilon's Sound Level Assessment Report is included in Exhibit R.

(4) Water Impacts

Given the non-toxic nature of solar energy facilities and the low impact construction has on soil and groundwater features, there are no anticipated impacts to public or private water supplies.

(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 is depicted in Figure 8-2 (OEPA 2020b). There are 177 water wells within a 1-mile radius of the Project Area, including 11 that occur within the Project Area and will be owned by the Applicant. The average depth of these 11 wells is between 101 and 280 feet; therefore, given that minimal excavation is associated with the Project and pile driving will only occur to depths of approximately 10 feet (3.0 meters) below grade, the Applicant does not anticipate impacts to the water supply. The locations of these wells have not been field verified but will be surveyed prior to final design of the Facility. If necessary, the Applicant will proceed with capping and closing the wells in accordance with Madison County and OEPA requirements to ensure that groundwater resources are not affected by the Project.

There are no corridor management zones or source water area watersheds located within 1-mile of the Project area. There are five source water protection areas that overlap with a 1-mile radius of the Project Area, including Choctaw Utilities, Inc., Green Meadows Mobile Home Park, Jehovah Witness Assembly Hall, Monroe Elementary School, and Jehovah Witness Kingdom, all of which are depicted on Figure 8-2. The Jehovah Witness Assembly Hall and Jehovah Witness Kingdom source water protection areas are within the Project Area but do not overlap with any proposed Project infrastructure.

Choctaw Utilities, Inc., Jehovah Witness Assembly Hall and Jehovah Witness Kingdom are all listed by the OEPA as "Public Water Systems with Drinking Water Source Protection Checklists" (OEPA 2022b). No publicly available water source protection plans were found for the Green Meadows Mobile Home Park or the Monroe Elementary School source protection area. Given that minimal excavation is associated with the Project, it is not expected that construction of the Project would affect groundwater at these locations. Given the distance and location to Choctaw Utilities, Inc., Green Meadows Mobile Home Park, and Monroe Elementary School water source protection areas, it is not expected that construction of the Project would affect groundwater at these locations. Upon final Facility design, the Applicant will coordinate with OEPA's Division of Drinking and Groundwater to identify any potential notification requirements and additional measures that might need to be implemented during construction.

In addition, to provide protection for water resources within the Project Area and the surrounding area, a SWPPP and SPCC Plan will be implemented during construction to minimize and prevent the potential for discharges to surface waters, which can also protect groundwater resources through the implementation of BMPs to limit the extent of any spills.

In addition, the Applicant will obtain all necessary permits and coordinate with the OEPA Division of Drinking and Groundwater to ensure that any groundwater withdrawals will not impact existing water wells. Given the limited amount of excavation and the planned controls on discharges, no adverse impacts to public and private water supplies due to construction and operation of the proposed Project are anticipated.

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

Because the Project will not discharge any contaminated water, there will be no need or requirement to install and operate pollution control equipment. Therefore, there will be no adverse impacts to public and private water supplies due to pollution control equipment failures.

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

The Project Area is underlain by the Prairie Ground Moraine Aquifer, Prairie Complex Aquifer, Little Darby Complex Aquifer, and Prairie Buried Valley Aquifer all of which are unconsolidated aquifers. Three other aquifers occur within 1-mile of the Project Area, including Little Darby Alluvial Aquifer, London Complex Aquifer, and Deer Creek Alluvial Aquifer, all of which are unconsolidated aquifers, and are depicted on Figure 8-2 (ODNR 2000). There are 177 water wells and five drinking water source protection areas located within 1-mile of the Project Area as depicted in Figure 8-2. Only 11 water wells are located within the Project Area, which the Applicant will own. If necessary, the Applicant will cap wells in accordance with county and state requirements. However, no impacts to these water sources are anticipated as described above due to the limited depth of Project infrastructure below the ground surface.

(d) Compliance with Drinking Water Source Protection Plans

The Project does not pose any compliance issues since there are no source water protection areas or corridor management zones found within the Project Area, as described above. The Jehovah Witness Assembly Hall and Jehovah Witness Kingdom source water protection areas overlap with the Project Area but are located more than 0.5 miles from the nearest Project infrastructure component. Upon final Project design, the Applicant will coordinate with OEPA's Division of Drinking and Groundwater to identify any potential notification requirements and additional measures that might need to be implemented during construction beyond what is standard with the SPCC and SWPPP documents that will be prepared.

(e) Flood Potential and Mitigation

A small portion of the Project Area, approximately 48 acres, falls within a FEMA-designated 100-year floodplain associated with Spring Fork, as depicted in Figure 8-2. Project Facility siting and design have avoided all impacts to the FEMA-designated 100-year floodplain. In addition, all facilities and construction has been sited outside of the riparian setbacks as required under the OEPA NPDES General Stormwater Permit in accordance with Appendix A, Big Darby Creek Watershed. Therefore, a Madison County Floodplain permit would not be required for this Project and no mitigation is proposed for flooding.

The Applicant completed a desktop hydrology study of the Project area, conducted by Mannik & Smith, to determine potential drainage and scour characteristics of the Project Area. The study determines the watercourses within the Project Area and the amount of peak flow runoff that occurs during a 100-year storm event. In addition, utilizing publicly available soil surveys, the study also determined potential inundation depths, flow velocity and preliminary scour potential for the existing conditions. The study identified three main drainage basins within the Project Area: Bales Ditch, Chenoweth Ditch, and Dun Ditch Number 2. All three of the associated streams within the main drainage basins are being avoided by Project infrastructure. The preliminary scour analysis identified recommendations to prevent channel scour and bank erosion, by allowing vegetation to grow within the drainage-ways and on the banks of the channels, and the areas located outside the main channels should have adequate ground cover and should be well maintained and inspected following storm events. The Applicant has developed a Vegetation Management Plan (Exhibit F), which allows vegetation to grow within the drainage-ways and provide ground cover throughout the Project Area which should address potential scour occurrences within the Project Area.

It is not expected that construction of the Project will result in any change to drainage within the Project Facility that would result in an increase in flood elevations upstream or increases in impervious surface that result in additional runoff downstream of the Project.

(5) Geological Features, Topographic Contours, and Wells

Figure 8-3 depicts the proposed Project, geological features within the proposed Project Area, and topographic contours. There are no permitted oil and gas wells within the Project Area based on the ONDR Oil and Gas Well Database (ODNR 2022b). The Project Area is relatively flat, with the steep areas occurring along the stream banks, which the Project Facility has been sited to avoid. No other geological features of concern were identified within or near the Project Area. Based on these records, the Applicant does not anticipate that construction or operation of the Project will affect these resources.

(a) Site Geology Suitability

The Applicant hired G2 to conduct a geotechnical investigation for the portion of the Project Area to be used for the Generation Facility and Mannik & Smith to complete a geotechnical investigation for the Transmission Facility portion of the Project Area. The findings of both geotechnical investigations are provided in Exhibit N and briefly summarized below.

The geotechnical investigation completed by G2 for the Generation Facility consisted of 16 exploratory test pits which included two test piles at each test pit, 16 soil borings, in-situ soil electrical resistivity testing, and laboratory thermal resistivity testing. Laboratory soil chemical corrosivity testing was conducted and laboratory geotechnical testing was completed from all the soil borings and test pit excavations. The geotechnical assessment completed by Mannik & Smith for the Transmission Facility included performing two soil borings and one test pit. The laboratory testing for samples collected by Mannik & Smith was similar to what was analyzed for the Generation Facility study, with the exception of pile load testing which was not completed for this study. These geotechnical investigations support 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 investigations results indicated the Project Area soils are suitable for support of the proposed Project infrastructure, however, due to the high plasticity soils located onsite, the soils are not recommended to be used as engineered fill. The undisturbed native clay soils will generally provide suitable support for embedded shallow driven piles to depths

between 6 and 10 feet for the racks that support solar array panels. The soils onsite will also provide support for embedded shallow driven pile or drilled pier foundations that support structure foundations like the inverters, BESS, substations, and O&M facilities; however, some minor loss of capacity should be expected if the surrounding native clay is allowed to shrink or swell during moisture fluctuations. Access roads within and around the Project Area can be designed with aggregate surface and engineered to support the vehicle loads anticipated during construction and operation by performing a soil-lime mix design with subgrade soils to achieve optimal moisture content.

(b) Site Soil Suitability

The geotechnical investigation found that the predominate soil types are lean to fat clay, and sandy fat clay, with smaller areas of clayey sand, sand, gravelly sand, and sandy gravel within the Generation Facility. Within the Transmission Facility, east of SR 38, the soils are more sandy/silty clay soils and clayey sands. In general, the results of G2 and Mannik & Smith's geotechnical engineering study indicate that Project Area soils are suitable for support of the proposed Project infrastructure.

(c) Test Borings

As indicated above, 16 test borings were conducted by G2 and an additional two were completed by Mannik & Smith, within the Project Area. 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 within the two respective reports included in Exhibit N.

(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 8-2 summarizes daily average wind speeds recorded in 2021 at the closest weather station to the Project Area, located in Columbus, Ohio (OSU 2022). Table 8-2 data indicates winds speeds on

average are between 2 to 4.5 mph consisting of 60% of the daily average wind speed within the Project Area. The Beaufort scale describes 2 to 4.5 mph wind speed to be a light air to light breeze (NOAA 2022). The maximum average daily windspeed during this period was 10.5 mph and maximum wind speed at any time was 21.8 mph.

Final Project design will account for potential high wind velocity occurring within the Project Area. The solar panels are designed and tested to withstand high wind velocity and hail and are constructed with tempered glass to resist breakage. The racking systems will be driven to a depth of approximately 6 to 10 feet below grade to ensure the solar arrays are stable during high wind events. The final Project design will identify the necessary pile type and pile depth across the Project Area to account for site specific structural loading requirements and inputs, including wind. The site will be designed to meet American Society of Civil Engineers (ASCE) standards for Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ASCE/SEI 7-16 and will factor in wind speeds based on building code wind speed maps for the area. The Generation Facility will be designed using basic wind speeds for risk category I buildings with exposure Category C, as provided in ASCE 7. All racking vendors being considered for the Project perform extensive wind loading testing on their systems and have third parties review and test their systems before bringing them to market. A structural engineer, licensed in the state of Ohio, will seal all structural drawings pertaining to the racking system. Wind equipment ratings for the Project will be provided to the OPSB as part of final design. In addition, the solar arrays have the ability to adjust their tilt to reduce wind loading on the panels during high wind events. If wind is detected to reach a certain speed by the anemometers placed throughout the site, the panels will be adjusted to a safe angle or "stow mode". The panels will return to the optimal angle for collection of solar rays once wind speeds have decreased to acceptable speeds.

Table 8-2 Daily Average Wind Speeds in Columbus, Ohio in 2021

Average Daily Wind Speed (mph)	Number of Days	Percent of Total Days
0 to 0.5	0	0.0%
0.6 to 1	0	0.0%
1.1 to 1.5	4	1.1%

Table 8-2 Daily Average Wind Speeds in Columbus, Ohio in 2021

Average Daily Wind Speed (mph)	Number of Days	Percent of Total Days
1.6 to 2	19	5.2%
2.1 to 2.5	34	9.3%
2.6 to 3	50	13.7%
3.1 to 3.5	50	13.7%
3.6 to 4	50	13.7%
4.1 to 4.5	34	9.3%
4.6 to 5	25	6.8%
5.1 to 5.5	37	10.1%
5.6 to 6	14	3.8%
6.1 to 6.5	18	4.9%
6.6 to 7	11	3.0%
7.1 to 7.5	7	1.9%
7.6 to 8	4	1.1%
8.1 to 8.5	3	0.8%
8.6 to 9	4	1.1%
9.1 to 9.5	0	0.0%
9.6 to 10	0	0.0%
10.1 to 10.5	1	0.3%
10.6 to 11	0	0.0%
11.1+	0	0.0%
Total	**365**	**100.0%**

Source: OSU 2022
mph = miles per hour

(7) Blade Shear

The Project is a solar facility; therefore, there is no potential impact from blade shear for the Project.

(8) Ice Throw

The Project is a solar facility; therefore, there is no potential impact from ice throw for the Project.

(9) Shadow Flicker

The Project is a solar 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 12 feet (3.7 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 EMFs that dissipate rapidly over short distances.

(11) Radar Interference

The maximum height of solar modules will be 12 feet (3.7 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 is one public airport and one private heliport within five miles of the Project Area (see Figure 7-1) as discussed in Section 7(E). The closest public airport, Madison County Airport, is approximately 2.5 miles from the Project Area and the heliport, Madison Health Center helipad, is approximately 5.0 miles from the Project Area. 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 complete glare analysis report is contained in Exhibit P.

The FAA Notice Criteria Tool indicated that the Project did not exceed a height that required it to be filed with the FAA. The parameters used for the Notice Criteria Tool included a height of 12 feet at the north, west, and south corners of the Project Area and a height of 120 feet at the

east corner of the Project Area to reflect the maximum substation, step-up substation and/or gen-tie line pole heights. Copies of the FAA Notice Criteria Tool reports are provided in Exhibit Q.

(13) Communication Interference

The maximum height of solar modules will be 12 feet (3.7 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.

(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 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 surveys were used to inform the Project design and minimize impacts to wetlands, streams, and native vegetative communities. Stantec

conducted field surveys on October 12-15, and 20, November 9-10, 2021, and March 28, April 6, and June 2, 2022, and the results are provided in the Wetland and Waterbody Delineation report included in Exhibit S, and the Threatened and Endangered Species Habitat Survey Report included in Exhibit T.

Habitat within the Project Area is predominately composed of cultivated agricultural cropland totaling approximately 5,624 acres and approximately 93.0% of the Project Area. The agricultural cropland consists of soybean (*Glycine max*) and corn (*Zea mays*). Areas of upland forest including second growth deciduous forest, fence rows, and early successional forest are present, totaling approximately 154 acres and representing approximately 2.5% of the Project Area. The upland forest areas consist of large tree species, e.g., black locust (*Robinia pseudoacacia*), and shagbark hickory (*Carya ovata*), saplings e.g, amur honeysuckle (*Lonicera maackii*) and a sparse herbaceous understory e.g., poison ivy (*Toxicodendron radicans*) and clearweed (*Pilea pumila*). Grassland areas, including grassed swales and maintained lawn, are dispersed throughout the Project Area totaling approximately 191 acres and represent approximately 3.2% of the Project Area. Kentucky bluegrass (*Poa pratensis*) red clover (*Trifolium pratense*) and yellow foxtail (*Setaria pumila*) are some examples of vegetation found within the grassland areas. Scrub shrub areas also occur within the Project Area totaling approximately 37 acres and represent less than approximately 0.6% of the Project Area and consists of white mulberry (*Morus alba*), Canadian goldenrod (*Solidago canadensis*), and Queen Anne's Lace (*Daucus carota*). Open water and wetland areas, including palustrine forested, palustrine scrub shrub, and palustrine emergent are dispersed around the Project Area totaling approximately 6.2 acres and represent approximately 0.1% of the Project Area. A wide range of hydrophytic vegetation is found within the wetlands. The remaining approximately 37 acres (0.6%) of the Project Area consists of industrial land and existing roadway. Table 8-3 provides a summary of the acreages of vegetative communities delineated within the Project Area.

Table 8-3 Habitat Types Identified within the Project Area

Habitat Category	Acres	Land Use
Agriculture	5,624	93.0%
Grassland / Maintained lawn	191	3.2%
Upland Forest	154	2.5%

Table 8-3 Habitat Types Identified within the Project Area

Habitat Category	Acres	Land Use
Scrub shrub	37	0.6%
Developed, Existing Roadway	33	0.5%
Wetlands	6	<0.1%
Industrial	4	<0.1%
Total	**6,050***	**100.0%**

* Note: Total acreage does not reflect the Project Area acreage due to the stream acreage that is not included as a habitat type

The wetland and stream delineation surveys identified 16 wetlands within the Project Area, totaling approximately 6.2 acres. Twelve of the wetlands are potentially under the jurisdiction of the USACE, while the remaining four are potentially under the jurisdiction of the OEPA. Table 8-4 lists the details of the delineated wetlands within the Project Area and 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.

Table 8-4 List of Wetlands Identified within the Project Area

Wetland Name	Cowardin Classification[1]	ORAM Score	ORAM Regulatory Category	Potential Jurisdiction[2]	Total Acres in Project Area
Wetland 1	PEM	44	2	USACE	0.86
Wetland 2	PEM	27.5	1	USACE	2.04
Wetland 3	PFO	42	2	USACE	0.23
Wetland 4	PFO	41	2	USACE	0.14
Wetland 5	PEM	40	2	OEPA	0.41
Wetland 6	PEM	12	1	OEPA	0.05
Wetland 7	PEM	13	1	OEPA	0.25
Wetland 8	PSS	37.5	2	OEPA	0.04
Wetland 9	PEM	44	2	USACE	0.02
Wetland 10	PEM	47	2	USACE	0.17
Wetland 11	PEM	35	2	USACE	0.29
Wetland 12	PEM	48	2	USACE	0.45
Wetland 13	PEM	48	2	USACE	0.62

Table 8-4 List of Wetlands Identified within the Project Area

Wetland Name	Cowardin Classification[1]	ORAM Score	ORAM Regulatory Category	Potential Jurisdiction[2]	Total Acres in Project Area
Wetland 14	PEM	50	2	USACE	0.14
Wetland 15	PEM	58	2	USACE	0.42
Wetland 16	PFO	58	2	USACE	0.08
Total Acres within Project Area					**6.21**

[1] PFO = palustrine forested wetland; PSS = palustrine scrub shrub wetland; PEM = palustrine emergent wetland
[2] USACE = U.S. Army Corps of Engineers; OEPA = Ohio Environmental Protection Agency

Ten streams were delineated during the field survey, totaling 53,926 linear feet within the Project Area. Table 8-5 details the streams delineated within the Project Area and Figure 8-5 depicts the location of the delineated streams and wetlands within the Project Area. The functional assessment of the streams was completed using the OEPA Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI). 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).

Table 8-5 List of Streams Identified within the Project Area

Stream Name	Classification	Evaluation Method	Score	Total Linear feet in Project Area
Stream 1 (Bales Ditch)	Perennial	QHEI	47.25	9,132
	Perennial	QHEI	36	9,145
Stream 2	Intermittent	HHEI	54	6,570
Stream 3	Ephemeral	HHEI	38	2,449
	Intermittent	HHEI	49	235
	Perennial	QHEI	41	4,698
Stream 4	Intermittent	HHEI	31	3,381
Stream 5	Ephemeral	HHEI	17	928
Stream 6	Perennial	HHEI	41	767
Stream 7 (Dun Ditch Number 2)	Intermittent	HHEI	57	6,548
Stream 8 (Spring Fork)	Perennial	QHEI	84	4,009
Stream 9 (Chenowerth Ditch)	Perennial	QHEI	75	5,637
Stream 10	Ephemeral	HHEI	16	427
Total Linear Feet within Project Area				**53,926**

A Jurisdictional Determination request has been submitted to the USACE Huntington District in order to gain confirmation on the jurisdictional status of the delineated streams and wetlands.

(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 Madison County to assess their potential occurrence within the Project Area (Exhibit U). The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) screening tool was used to evaluate federal T/E species that might be potentially present in the Project Area (USFWS 2022). Two federally endangered species, one federally threatened species, and one candidate species were identified during the IPaC review to be potentially present in the Project Area. Further correspondence with USFWS on February 23, 2022 (Exhibit U) 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 either of the federally listed T/E species that overlaps with the Project Area.

The ODNR 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 Madison County (ODNR 2020). The ODNR list for Madison County reports 11 state-listed endangered species and four state-listed threatened species. To refine the potential state-listed T/E species within the Project Area, ODNR was consulted and in their response received April 1, 2022, a list of 25 state-listed T/E or special concern bird, mammal, fish, and mussel species were provided, as listed in Table 8-6. Federally listed T/E species were also included within the ODNR correspondence. Table 8-6 includes an assessment of whether potential habitat for the species was identified within the Project Area.

Table 8-6 List of Potential State Threatened and Endangered Species Within or Near the Project Area

Common Name	Scientific Name	Status	Habitat	Potential Habitat within the Project Area
Birds				
Black-crowned Night-heron	*Nycticorax nycticorax*	ST	Thick vegetation along streams, lakes, and wetlands.	No suitable habitat.
King Rail	*Rallus elegans*	SE	Freshwater marshes, upland-wetland marsh edges, rice fields, or similar flooded farmlands, and shrub swamps.	No suitable habitat.
Loggerhead Shrike	*Lanius ludovicianus*	SE	Open landscape with scattered trees, shrubs and shortgrass pastures.	No suitable habitat.
Northern Harrier	*Circus hudsonius*	SE	Grasslands, lightly grazed meadows, old fields, dry, upland prairies, shrub-steppe, and marshes with low, thick vegetation.	No suitable breeding habitat. Suitable winter habitat, croplands, was observed.
Sandhill Crane	*Grus canadensis*	ST	Wetlands including shallow marshes, bogs, or wet meadows and agricultural fields during the winter.	No suitable nesting habitat. Suitable wintering grounds, croplands, was observed.

Common Name	Scientific Name	Status	Habitat	Potential Habitat within the Project Area
Upland Sandpiper	*Bartramia longicauda*	SE	Native prairie, cropland, pastureland, mountain meadows, dry tundra, and other grassy environments.	No suitable habitat.
Fish				
Spotted Darter	*Etheostoma maculatum*	SE	Medium sized rivers with swift current with large boulders or flat slabs of rock.	No suitable habitat.
Tippecanoe Darter	*Etheostoma tippecanoe*	ST	Medium to large streams with riffles of moderate current with substrate of gravel or cobble sized rocks.	No suitable habitat
Western Creek Chubsucker	*Erimyzon clayiformis*	SC	Headwater streams with silt, sand, and gavel bottomed pools.	Suitable habitat within Spring Fork (perennial stream) was observed.
Least Darter	*Etheostoma microperca*	SC	Small quite rivers or vegetated lakes with mud or sand substrates.	Suitable habitat within Spring Fork (perennial stream) was observed.
Mammals				
Indiana Bat	*Myotis sodalis*	FE, SE	Forests, riparian corridors, and wetlands for summer roosting and foraging. Caves or abandoned underground mines for hibernacula.	No suitable winter hibernacula habitat. Foraging and roosting habitat was observed.
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.	No suitable winter hibernacula habitat. Foraging and roosting habitat was observed.
Easter Tri-colored Bat	*Perimyotis subflavus*	SE	Forests, riparian corridors, caves, mines and rock crevices for foraging and roosting.	No suitable winter hibernacula habitat. Foraging and roosting habitat was observed.
Little Brown Bat	*Myotis lucifugus*	SE	Man-made structures, hollow trees for roosting. Forging over open water. Caves, tunnels, and abandoned mines for hibernacula.	No suitable winter hibernacula habitat. Foraging and roosting habitat was observed.
Mussels				
Clubshell	*Pleurobema clava*	FE, SE	Small to medium rivers with coarse sand and gravel in runs.	No suitable habitat.

Common Name	Scientific Name	Status	Habitat	Potential Habitat within the Project Area
Northern Riffleshell	*Epioblasma torulosa rangiana*	FE, SE	Small to large streams with riffles that have firmly packed substrates of firm to coarse gravel.	No suitable habitat.
Rayed Bean	*Villosa fabalis*	FE, SE	Smaller, headwater creeks with gravely or sandy substrates.	No suitable habitat.
Snuffbox	*Epioblasma triquetra*	FE, SE	Streams with swift shallow riffles with sand and gravel.	No suitable habitat.
Rabbitsfoot	*Quadrula cylindrica cylindrica*	FT, SE	Small to medium rivers with swift currents and gravel and cobble. Medium to large rivers in sand and gravel.	No suitable habitat.
Elephant-ear	*Epliptio crassidens crassidens*	SE	Streams with muddy sand, sand, and rocky substrates with moderate current.	Suitable habitat within Spring Fork (perennial stream) was observed.
Purple Wartyback	*Cyclonaias tuberculata*	SC	Streams with gravel and mud bottoms usually in areas of current at depths of 2 to 20-feet.	Suitable habitat within Spring Fork (perennial stream) was observed.
Wavy-rayed Lampmussel	*Lampsimis fasciola*	SC	Small to medium sized rivers with riffles of clean gravel and sand substrates stabilized with cobble and boulders.	Suitable habitat within Spring Fork (perennial stream) was observed.
Round Pigtoe	*Pleurobema sintoxia*	SC	Medium to large rivers in mixed mud, sand and gravel substrates.	Suitable habitat within Spring Fork (perennial stream) was observed.
Kidneyshell	*Ptychobranchus fasciolaris*	SC	Small to medium sized rivers in riffles of firmly packed coarse gravel and sand substrates with moderate to swift currents.	Suitable habitat within Spring Fork (perennial stream) was observed.
Salamander Mussel	*Simpsonaias ambigua*	SC	Medium to large rivers with sand or silt substrates under large flat stones in with swift current.	Suitable habitat within Spring Fork (perennial stream) was observed.

(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 the field surveys, detailed in Exhibit T. During the field surveys, the vast majority of the Project Area was delineated as agriculture land (93.0%), with minimal areas of higher-quality natural habitat that could provide potentially suitable habitat for T/E species. The habitat assessment concluded that upland forest, including

second growth deciduous forest and fence row habitat may provide potential suitable habitat for federal and state-listed T/E species including: Indiana bat, northern long-eared bat, eastern tri-colored bat, and little brown bat. Cropland habitat was also determined to potentially provide suitable habitat for state-listed T/E species including: northern harrier and sandhill crane. In addition, Spring Fork (Stream 8) may provide potentially suitable habitat for the state-listed fish and freshwater mussel T/E species within the Project Area.

(e) Additional Ecological Studies

Early during the development process, the Applicant completed a site screening assessment for the Project to identify, via a desktop assessment, potential biological, environmental, and permitting constraints for development of a solar energy facility. Based on the results of that critical issues analysis, the Project development effort continued.

The ODNR Division of Wildlife, within their letter dated April 1, 2022, recommended a desktop analysis for caves and mines that could serve as winter hibernacula for the federal and state-listed bat species. Stantec reviewed topography and aerial imagery of the Project area for these features. No steep topography or any obvious exposed rock was evident in reviewing the topographic map and aerial imagery. A review was also conducted for mines and areas of potential cave locations, using interactive tools available on the ODNR website to search for abandoned or active mines and locations of karst geology. The desktop assessment revealed no known karst features or mines within three miles of the Project Area. In addition, The USFWS and ODNR did not mention any known bat hibernacula near the Project in their environmental response letters. The full desktop assessment is provided within Stantec's Ecological Assessment report provided in Exhibit T.

The USFWS, within their letter dated March 3, 2022, recommended a summer survey be conducted to determine presence or absence of Indiana bats within the Project Area given the amount of potentially suitable habitat and clearing potentially needed for the Project. The Applicant has committed to USFWS recommendations and conducted a summer acoustic survey during the 2022 summer survey period to determine the presence or probable absence of federally and state-listed bats within the Project Area. The summer acoustic survey work plan

was approved by ODNR and USFWS and the survey was conducted August 2-4, 2022, in compliance with all applicable USFWS and ODNR Division of Wildlife regulations. The acoustic data is still in the process of being analyzed, but the Applicant will provide USFWS, ODNR, and OPSB Staff with the findings of the survey once they are complete. The Applicant will continue to coordinate with USFWS and ODNR to minimize any adverse effects to listed bat species.

(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 minimize and if possible, avoid impacts to potentially suitable habitat or construction outside of critical periods.

Impacts to state-listed T/E loggerhead shrike, northern harrier and upland sandpiper are not anticipated because no suitable breeding or nesting habitat for these species were observed within the Project Area.

No impacts to federal and state-listed T/E mussel species, state-listed T/E fish species, black-crowned night-heron, king rail, or sandhill crane, will occur within the Project Area as infrastructure has been sited to avoid streams and wetlands so no instream work or wetland disturbance will occur.

Upland forest, including second growth deciduous forest, has been avoided when siting Project infrastructure to the extent practical. Of the approximately 154 acres of upland forest, clearing for the Project, including the preferred gen-tie line will total approximately 41.9 acres. If the alternate gen-tie corridor is selected, an additional approximately 2.5 acres of upland forest would be cleared for construction of the Project (totaling approximately 44.4 acres). The Applicant is following USFWS recommendations and conducted a summer acoustic presence or probable absence survey to determine if any federal or state-listed T/E bat species occur within

the Project Area. Based on the results of the summer acoustic survey, the Applicant will coordinate with USFWS and ODNR to determine whether the Applicant's current commitment to complete any tree clearing activities outside of the active bat season, October 1 - March 31 is sufficient to avoid impacts to the species or whether additional avoidance and minimization measures are warranted. In addition, to further minimize removal of woody vegetation, whenever possible, trees, and brush will be manually pruned or trimmed rather than removed entirely.

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 avoid impacts to wetlands and streams. All modules, roads, substations, BESS buildings and other infrastructure have been sited outside all wetlands and streams. There are five streams that will be crossed by either underground collector cables or spanned with fencing or gen-tie lines as outlined in Table 8-7. The collector cables will be installed via HDD boring methods under the streams and fence posts and the gen-tie lines will span the streams to avoid any potential impacts to the streams being crossed. The current Project design, considering either the preferred or alternate gen-tie route, both include 10 crossings of five streams. Therefore, the Applicant anticipates that no CWA 404 or 401 permits will be required from the OEPA or USACE. Avoidance of wetland and stream habitat during the Project construction will avoid potential impacts to fish and mussel species identified during the desktop or field-based T/E habitat review.

Table 8-7 Stream Crossings by Project Infrastructure

Stream Name	Approximate Location	Infrastructure Component	Construction Crossing Method
Stream 1	Immediately east of northern Project substation	Collection cables	HDD
Stream 1	Immediately west of northern Project substation	Collection cables,	HDD
Stream 1	Approximately 130 ft southwest of SR 29	Collection cables	HDD
Stream 1	Approximately 920 ft southwest of SR 29	Collection cables	HDD
Stream 2	Approximately 990 ft northeast of SR 29	Collection cables	HDD
Stream 2	Approximately 230 ft northeast of SR 29	Gen-tie line	Span
Stream 2	Approximately 1,140 ft southwest of SR 29	Fence	Span
Stream 3	Approximately 1,810 ft northwest northern Project substation	Collection cables	HDD
Stream 4	Approximately 560 ft southwest of SR 29	Fence	Span
Stream 7	Approximately 1,400 ft west of SR 38	Fence	Span

(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 avoided surface waters and wetlands, prepare 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 disturbed areas 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. It is anticipated that drainage swales and detention basins will be needed onsite near the Project

substations and BESS buildings, and step-up substation to mitigate for the impervious surface created from those features.

Permanent stabilization seeding will be completed immediately following the completion of construction. The Applicant will revegetate the area and implement the pollinator habitat recommendations provided by ODNR Division of Wildlife pertaining to the Ohio Pollinator Habitat Initiative (OPHI) and anticipates achieving a score of 80 on the Ohio Solar Site Pollinator Habitat Planning and Assessment Form to the extent possible as agrivoltaics are also under consideration at the site as discussed further in Section 8(C)(4)(b). Implementation of the OPHI 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. The Applicant is engaging with the Darby Creek Association to ascertain what vegetation native to the Darby Creek watershed could be planted onsite. The Applicant may also utilize a temporary cover crop during construction. Agrivoltaics implemented onsite could include but are not limited to forage crop production between rows of solar panels or in managed perimeter areas. The Applicant expects to incorporate these best practices in portions of the Project Area, possibly in rotation with other ground cover plantings and land management practices, as appropriate.

The Project is considered to be permanently stabilized when all soil disturbing 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 (OEPA 2021b).

(ii) Frac Out Contingency Plan

Where necessary, the Project will employ HDD techniques to install cables underneath roads and the identified streams. The Frac Out Plan has been prepared for the Project by the Timmons Group and is included in Exhibit M. If the final site design requires HDD methods, 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 waterbody. If the release occurs in a waterbody, 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 waterbody.

(iii) Demarcation of Surface Waters and Wetlands

Wetlands and streams 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. In addition, the riparian setbacks required under the OEPA's NPDES General Permit for Construction activities due to the Project being located within the Big Darby Watershed will also be flagged in advance of the start of construction. 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 and stream riparian setbacks, in accordance with the SWPPP. The Applicant has also committed to placing an environmental supervisor at the locations near streams and wetlands when construction is occurring in that portion of the Project Facility to monitor and limit the potential for inadvertent impacts to these sensitive resources. The supervisor will have stop-work authority if they determine that construction activities are likely to directly or indirectly impact streams or wetlands in the Project Area. 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 for Construction Activities 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 before 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).

Standard stormwater BMPs should be sufficient to control stormwater flow during construction. There is a minor increase in impervious surface from the Project; however, the land use change from agricultural land with row crop production to pasture or meadow conditions when herbaceous vegetation is reestablished will result in an overall decrease in peak stormwater flows.

(v) Methods to Protect Vegetation

The Project has been sited and designed to limit the disturbance area and minimize impacts to natural vegetative communities like forests, streams, and wetlands. Project infrastructure was

sited to avoid the need for clearing of woodlots to the extent practical. The limited tree clearing necessary for the Project will be completed outside of the active foraging and roosting period of the federal and state-listed bat species, which is April 1 through September 30. Direct impacts to all streams and wetlands have been avoided through Project Facility siting, with the exception of collector cables which will be installed via HDD under streams and the gen-tie lines and fencing where poles and fence posts will be designed to span the streams. Additional details regarding vegetative management during construction are presented in the vegetation management plan (Exhibit F).

(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 limited amount of tree clearing needed for the Project will be completed outside of the active foraging and roosting period for the Indiana bat, northern long-eared bat, little brown bat, and tri-colored bat, minimizing impacts to those species. Summer bat surveys were conducted to further determine the potential for T/E bat species to be present in the Project Area and the Applicant will work with USFWS and ODNR to identify any additional avoidance or minimization strategies needed to avoid impacts to T/E bat species.

Finally, there are no proposed impacts to streams or wetlands, avoiding impacts to federal and state-listed aquatic species.

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

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

Operation and maintenance activities for the Project include site visits for equipment monitoring, fixing faulty equipment, cleaning solar modules, standard test procedures, vegetative maintenance, fencing maintenance, and security patrol. Transportation throughout the Project will be on foot or light duty vehicle traveling along the pathways and gravel access roads.

Common wildlife concerns related to operating solar energy facilities include potential negative effects to migrating waterfowl and birds and limiting movement of wildlife and obstruction of natural wildlife corridors.

Studies have shown waterfowl can mistake solar facilities as potential water bodies and approach and land on or near the panels causing injuries, termed as the "lake effect". The majority of these instances occur in the southwestern U.S., where solar facilities are developed in open deserts where other waterbodies are not as prevalent. Limited research has been completed for solar facilities located in the Midwest near agriculture, prairies, forested habitat, or when other waterbody resources are nearby. However, some research had observed less injuries due to "lake effect" occurring in areas where other waterbody resources are available for waterfowl (Audubon 2017; Wildlife 2021).

Where possible, the Applicant proposes to develop wildlife corridors that will allow wildlife to move through the Project Facility to key natural landscape features in the vicinity of the Project Area. The wildlife corridors will be created by designing the perimeter fencing so that fencing is located on both sides of stream rather than spanning the stream so that the stream corridors remain open and unobstructed. Further, the riparian area on either side of the stream will be planted with native vegetation so that wildlife can follow these natural features across the Project Area to access Spring Fork and the forested habitat located east of the Project Area. In addition, the Applicant will utilize agricultural, wildlife friendly fencing, which provides openings large enough near the ground to be passable by small mammals and mammalian predators, such as red

foxes and coyotes, while excluding larger animals like deer. The vegetation within the Project Area, including pollinator friendly plants or cover crops, provides cover for small mammals, rodents, and birds, attracting them to the Project Area rather than excluding.

(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, no additional impacts to wetlands or streams, trees, or natural habitats, are expected. 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. Where possible, the Applicant proposes to develop wildlife corridors that will allow travel of wildlife from the west to east through the Project Area so that they can continue to access the Spring Fork riparian corridor, minimizing adverse effects to the wildlife species like white-tailed deer that use this area. Additionally, during the operational phase of the Project, the Applicant will utilize the pollinator habitat planting recommendations by ODNR Division of Wildlife pertaining to the Ohio Pollinator Habitat Initiative which will provide an ecological benefit to pollinator species. 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 F.

(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.

(b) Structures Near the Facility

Table 8-8 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 (participating – 'Leased' or 'Purchase Option' and non-participating – 'Not Leased' or 'No Documentation Executed').

There are no structures within 250 feet of Project infrastructure. There are 29 residences between 250 feet and 1,500 feet of Project Facility equipment (e.g., solar modules, inverters, gen-tie line, or substations) as listed in Table 8-8.

Table 8-8 Structures Between 250 and 1,500 Feet of Project Facilities

Structure Type	Facility Equipment Type	Distance (Feet)	Ownership Status
Residence – Home	Solar Array	355	Non-participating
Residence – Home	Solar Array	405	Non-participating
Residence – Home	Solar Array	417	Non-participating
Residence – Home	Solar Array	432	Non-participating
Residence – Home	Solar Array	490	Non-participating
Residence – Home	Solar Array	492	Non-participating
Residence – Home	Switchyard	493	Non-participating
Residence – Home	Solar Array	506	Non-participating
Residence – Home	Solar Array	508	Non-participating

Structure Type	Facility Equipment Type	Distance (Feet)	Ownership Status
Residence – Home	Solar Array	510	Non-participating
Residence – Home	Solar Array	516	Non-participating
Residence – Home	Solar Array	525	Non-participating
Residence – Home	Solar Array	533	Non-participating
Residence – Home	Solar Array	580	Non-participating
Residence – Home	Solar Array	594	Non-participating
Residence – Home	Solar Array	646	Non-participating
Residence – Home	Solar Array	647	Non-participating
Residence – Home	Solar Array	650	Non-participating
Residence – Home	Solar Array	706	Non-participating
Residence – Home	Solar Array	749	Non-participating
Residence – Home	Solar Array	766	Non-participating
Residence – Home	Solar Array	834	Non-participating
Residence – Home	Solar Array	908	Non-participating
Residence – Home	Solar Array	931	Non-participating
Residence – Home	Solar Array	1,071	Non-participating
Residence – Home	Solar Array	1,196	Non-participating
Residence – Home	Solar Array	1,310	Non-participating
Residence – Home	Solar Array	1,411	Non-participating
Residence – Home	Solar Array	1,411	Non-participating

While the 29 residences listed in Table 8-6 are currently non-participating, the Applicant is actively working with neighboring residents to discuss options for Good Neighbor Agreements that could ultimately result in the residents being considered "Participating" landowners for the Project.

(c) Evaluation of the Land Use Impacts

Agricultural land comprises approximately 93% of the land use within the Project Area. Upland forest, grassed swales/lawns, scrub shrub, wetlands and industrial and existing roadways land uses comprise the remaining 7% of the Project Area (see Table 8-3).

The final Project design impacts approximately 4,400 acres of land. In calculating land use impacts, the Applicant assumed a conservative estimate and considered all disturbance as part of

construction to be permanent impacts. Permanent impacts include all areas inside the perimeter fence of the Generation Facility, gen-tie ROW width, Project step-up substation fenceline, stormwater BMPs, and access roads outside the perimeter fence to the public roadway. The one exception in assuming all area within the security fence without infrastructure is disturbed are the areas delineated as wetlands, and streams as the Applicant has sited all Project infrastructure to avoid disturbance to these features and they will not be disturbed as part of construction or operation of the Project. If the final site design changes and avoidance of these land uses are not possible, the Applicant will obtain applicable permits for impacts to streams and wetlands. Because of the exclusion of these features, the total acreage in Table 8-9 does not total the estimated 4,400 acres of impact.

Areas used for row-crop agriculture represent the largest land use impact from the Project, totaling approximately 4,293 acres. As described in Section 8(C)(4)(b), it is possible that based on agrivoltaic programs to be potentially implemented at the site, a portion of this row-crop agriculture could continue onsite during Project operations. Upland Forest represents the other largest land use impact and totals approximately 42 acres. Table 8-9 presents the permanent land use impacts anticipated for the Project by habitat type and infrastructure type and Table 8-10 provides total permanent land use impacts by habitat type.

Table 8-9 Project Land Use Impacts by Project Component

Project Component	Permanent Disturbance (Acres)
Access Road	**105.7**
Row Crop	103.8
Grassed swale/Lawn	0.9
Scrub Shrub	0.1
Upland Forest	0.5
Industrial	0.3
Existing Roadway	0.1
BESS Building	**21.9**
Row Crop	21.4
Upland Forest	0.5
Inverters	**0.9**
Row Crop	0.9
Grassed swale/Lawn	<0.1
Upland forest	<0.1

Project Component	Permanent Disturbance (Acres)
Existing Roadway	<0.1
Laydown Yards	**24.9**
Row Crop	21.5
Grassland/Lawn	0.4
Existing Roadway	0.1
Industrial	2.9
O&M Facilities	**7.1**
Row Crop	7.1
Stormwater BMPs/Retention Basins	**10.8**
Row Crop	10.8
Solar Array	**3,532.1**
Row Crop	3,479.0
Grassed swale/Lawn	29.6
Scrub Shrub	0.3
Upland Forest	21.3
Step Up Substation	**17.6**
Row Crop	17.6
Project Substations	**30.1**
Row Crop	18.5
Upland Forest	11.6
Other Solar Field[1]	**576.7**
Row Crop	546.9
Grassed swale/Lawn	21.6
Scrub Shrub	<0.1
Upland Forest[2]	7.2
Existing Roadway	0.7
Industrial	0.3
Gen-tie ROW – Preferred[3]	**98.2**
Row Crop	92.3
Grassed Swale/Lawn	4.2
Scrub shrub	0.5
Upland Forest	0.8
Existing Roadway	0.3
Industrial	0.1
Gen-tie ROW – Alternate[3]	**96.3**
Row Crop	87.9
Grassed Swale/Lawn	4.2
Scrub Shrub	0.6
Upland Forest	3.2

Project Component	Permanent Disturbance (Acres)
Existing Roadway	0.3
Industrial	0.1

[1]Other Solar Field includes all area within the fence line but without infrastructure present
[2]Upland forest within the fenceline but without infrastructure present will not be cleared as part of construction
[3]Gen-tie ROW acreage represents the corridor in its entirety and includes portions that are co-located with other Project Facilities

Table 8-10 Project Land Use Impacts by Habitat Type

Habitat Type	Permanent Disturbance (Acres)
Row Crop	4,293.3
Grassed Swale/Lawn	56.6
Scrub shrub	0.9
Upland Forest	41.7
Existing Roadway	3.1
Industrial	3.5

(d) Structures to be Removed or Relocated

Three barns, six grain silos, and two residences on the property owned by the Applicant may require demolition.

(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

The Madison County 2014 Land Use Plan does not propose changes to future land use of the Project Area or the vicinity, which is currently zoned for agricultural (Madison County 2014; Madison County 2022). Development of the Project would not hinder development in adjacent areas if changes in land use are proposed in the future. The Applicant has incorporated setbacks from adjacent non-participating parcels and roadways and will not significantly increase traffic

or the use of other public resources that would potentially hinder future land use of the Project Area or vicinity.

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

The Applicant is evaluating the potential to use the Project Area for agrivoltaics. Between the Rows, LLC (btr), a wholly owned subsidiary of Savion, was established in 2021 to collaborate with The Ohio State University College of Food, Agricultural, and Environmental Sciences to research the best practices to cultivate crops in conjunction with utility-scale solar production. Phase I of research began in early 2021 by planting forage crops between the rows of solar panels on an operating mock fixed site in northwest Ohio. Phase I of research of which is planned to continue to early 2023, is aimed at establishing a proven yield and solving solutions to logistics and operations to unlock opportunity for dual-use by planting crops between the rows of solar panels and evaluating their nutritional value. The initial 18 months of research has determined the crop will grow with acceptable yield. Btr looks to introduce concepts of consideration for utility scale owner/operators and is now investigating how to proceed into subsequent phases of implementation on a full scale, operational single axis tracker site in central Ohio that will begin construction in late 2022. Savion is currently structuring btr into a separate division of Savion that will work with local landowners and resources to operate across the portfolio and integrate farming practices throughout a project's life cycle.

As industry research and research from btr on dual-use land management and agrivoltaics continues to inform solar industry best practices, the Applicant expects to implement a variety of dual-use practices into the land use and vegetation management of the Project Area. These could include but are not limited to forage crop production between rows of solar panels or in managed perimeter areas, apiculture (bee keeping) in conjunction with perimeter plantings of native pollinator grasses and forbs, incorporation of sheep grazing, and other agrivoltaic practices under evaluation throughout the industry. Implementation of agrivoltaics is also responsive to the feedback received from the community where the emphasis on the loss of prime farmland and agricultural use was cited as a concern. The Applicant expects to incorporate these best practices in portions of the Project Area, possibly in rotation with other ground cover plantings and land management practices, as appropriate.

(c) Impact on Regional Development

The Project is expected to directly benefit the local community through the Applicant's PILOT program or tax revenue and aid regional development by increasing local tax revenues and contributing to the local economy, as discussed in Section 6.5 of this application. The funds from the tax payments will benefit the local school districts, Somerford, Monroe, and Deercreek Townships, as well as the Madison County millage recipients pertaining to the location of the site. In addition to the tax payments, construction and operation of the Project will provide direct, indirect, and induced economic benefits to the community as discussed in Section 6(E) of this application. Aside from these benefits, including a significant increase in funding to schools, the Project is not expected to significantly impact housing, transportation system development, or other public services and facilities.

(d) Compatibility with Current Regional Plans

As proposed, the Project is consistent with the overall goals of the Madison County 2014 Comprehensive Plan. Specifically, the Project will support the Plan's goal to "achieve a high-quality living environment through a wise distribution of compatible land use patterns." The proposed Project will not significantly impact schools, housing, and transportation, while increasing local tax revenues and contributing to the local economy.

As proposed, construction of the Project will also limit development of the land for industrial or residential developments which could negatively impact community resources like schools, transportation, water quality. and other public infrastructure and also change the availability to resume agricultural production in the future. The Project Area can return to cultivated cropland upon decommissioning of the Project.

Solar-powered generation projects can spur economic development and investment from private commercial entities and regional investor-owned utilities. This investment creates an economic cycle bringing jobs to the area and even greater investment into the local community. The combination of additional tax revenue and construction and operation jobs increases the economic opportunities for the local community.

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

The Project is located in Madison County, and more specifically within portions of Somerford, Deercreek, and Monroe townships. The population of Madison County from the 2010 Census was 43,435. The most recent population counts from the U.S. Census estimate that the population for Madison County in 2021 was 44,386, an annualized percentage change of 1.0%. The projected population for Madison County is 47,420 in 2030 (Ohio Office of Research 2021a). The population of Somerford Township from the 2010 Census was 2,892 and was estimated to be 3,121 in 2021. The population of Deek Creek Township from the 2010 Census was 946 and was estimated to be 945 in 2021. The population of Monroe Township from the 2010 Census was 1,715 and was estimated to be 1,700 in 2021 (Ohio Office of Research 2021b).

Populated places within five miles of the Project Area include the City of London and the villages of Rosedale, Plumwood, Gillivan, Lafayette, Summerford, and Choctaw Lake. The current and projected 10-year populations for the City of London and the Village of Choctaw Lake are provided in Table 8-10 (Ohio Office of Research 2021b). Data for the remaining five villages was not available. The 2022 data has not been published and there are no 2030 projections, so the growth rate from 2010 to 2021 was used to estimate populations for 2030.

Table 8-11 Current Population Counts and 10-year Projections of Surrounding Populated Places within a 5-mile Radius of the Project Area

Populated Place	2010 Population	2021 Estimate	2030 Estimate	Annual Percent Change	2010 Population Density (People per Square Mile)
Madison County	43,435	44,386	47,420	1.0	94.1
Somerford Township	2,892	3,121	3,294	0.6	97.0
Deercreek Township	946	945	1,006	0.7	30.5
Monroe Township	1,715	1,700	1,859	1.0	74.6
London City	9,904	10,384	11,256	0.9	1,234
Choctaw Lake Village	1,546	2,147	2,639	2.3	2,070

Source: Ohio Office of Research 2021b

(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

Commonwealth Heritage Group (CHG) conducted a Literature Review within the Project Area and a 5-mile buffer of the Project Area (see Exhibit V) to identify any previously known historic resources that could be impacted by the Project. To identify these known resources, CHG reviewed GIS data obtained from the National Parks Service's website for National Register of Historic places (NRHP) and National Historic Landmarks 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 Ohio State Historic Preservation Office (SHPO). Based on the review there are four known archaeological sites, one cemetery, and no history/architecture resources located within the Project Area.

The Applicant and CHG worked with SHPO to develop work plans to complete archaeology and historic/architectural field surveys and define the area of potential effect (APE) for both sets of resources. To identify additional information about cultural resources in proximity to the Project that may not be reflected in the existing databases, CHG completed a history/architecture reconnaissance survey in March 2022 and an archaeology field survey was completed between March and May 2022. A total of 5,850 acres of the 6,050 acre Project Area (approximately 96.5%) was surveyed between these dates. A small, approximately 214-acre portion of the Project Area (approximately 3.5%) could not be surveyed for archaeological resources during the summer of 2022 due to access limitations and crop plantings but will be surveyed in Fall 2022 following harvest.

The history/architecture reconnaissance survey for the Project was completed by CHG in March 2022 to identify above-ground cultural resources more than 50 years old, within an APE that extends approximately 2 miles beyond the Project Facility, where a viewshed model indicated that there may be visibility of the Project. A work plan was submitted to SHPO documenting this survey approach and they concurred in a letter dated March 11, 2022. The report providing the methodology and survey results for the history/architecture survey is provided in Exhibit V. During the field investigations, 221 new architectural locations were identified within the APE and four previously recorded resources over 50-years of age were re-examined. The Phase I History/Architecture Reconnaissance Survey report was submitted to SHPO for concurrence on July 28, 2022 and concurrence was received on August 26, 2022. Below is a summary of the findings of the history/architecture survey:

- Three previously recorded properties require additional research to determine their NRHP eligibility;
- One previously recorded property is recommended as eligible for listing in the NRHP;
- Five newly surveyed properties are recommended individually eligible for listing in the NRHP;
- Three newly surveyed properties are recommended for additional research before an NRHP eligibility recommendation can be made; and
- Two hundred and thirteen newly surveyed, individually documented properties are recommended not eligible for listing in the NRHP.

A Phase I Archaeological survey commenced in March 2022 and was completed in May 2022. CHG proposed a Phase I survey that included surface collection of disced agricultural fields with surface visibility of 50 percent or greater and shovel test excavations in areas that could not be disced, with all field methods completed in accordance with the 1994 OHPO Archaeological Guidelines. The SHPO concurred with the survey methodology in a letter dated March 30, 2022. Copies of this concurrence are provided in Exhibit W.

To achieve ground surface visibility greater than 50 percent, the agricultural fields were disced or tilled prior to the survey effort. Pedestrian survey transects were spaced approximately 32.8

feet (10 meters) apart. When excavation of shovel test units (STUs) were necessary, as in the Transmission Facility area east of SR 38, STUs were excavated as 19.7-inch by 19.7-inch (50-cm x 50-cm) square excavations, arranged at no greater than 49.2-foot (15-m) intervals along transects running either parallel to grid north or parallel to the long axis of the survey area. If archaeological remains were recovered from undisturbed contexts, additional radial STUs were excavated at 24.6-foot (7.5-m) intervals near the periphery of the site to refine the site boundary. Wooded portions of the Project Area where infrastructure is not planned for were also subjected to walkover and visual inspection to look for surficial ruins of historic period structures and any obvious signs of prehistoric utilization. The Applicant will provide the OPSB Staff with a copy of the archaeology report as soon as it has been submitted to the SHPO for review. Preliminary survey results indicate a total of 492 previously unrecorded sites.

(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. The analysis of impacts to recreational areas focused on those within five miles of the Project Area as that is more realistic as to the distance where impacts could potentially occur given the height of the equipment for the Project and its visibility on the landscape. Nine recreational areas were identified within the five-mile radius using the U.S. Geological Survey Protected Areas Database of the United States. These recreational areas include six conservation easements related to U.S. Department of Agriculture, National Resource Conservation Services (NRCS) wetland reserve program parcels, two Clean Ohio Farmland parcels, and one recreational area managed jointly by the city of Columbus and Franklin County Metro Parks. In addition to those protected areas identified in PADUS, there are three additional recreation features that are depicted in Figure 8-7. Those are the Little Darby Creek and its tributary Spring Fork, which are designated as scenic rivers by the Ohio Department of Natural Resources (ODNR 2022c). Spring Fork flows through the eastern edge of the Project Area and Little Darby Creek is about 0.5 mile east of the Project Area. The second recreation feature, Choctaw Lake is a recreational lake, associated with a private community, approximately 1.2 miles southwest of the Project Area. The third recreation feature, the W. Pearl King Prairie Savannah State Nature Preserve is located about 1.3 miles to the northwest of the Project Area. Approximately 2.1 miles south of the Project Area is U.S 40, which is identified as

a Historic National Road Scenic Byway. There are no national forests, national wildlife refuges, or national natural landmarks located within the five-mile radius of the Project Area. The recreational resources and the Project's potential impact are summarized in Table 8-12. Based on the distance from the Project Area and/or the presence of existing vegetation that will screen the Project, coupled with the type of recreational use, it is not expected that the Project will have any effects on recreational areas. The Applicant is also engaging with the Darby Creek Association and ODNR Scenic Rivers to consider Project plans to avoid effects on recreational resources.

Table 8-12 Recreational Areas Within a 5-mile Radius of the Project Area

Recreational Area	Distance from Project Area (Miles)	Impact
NRCS Wetland Reserve Program	0.0	No Impact
NRCS Wetland Reserve Program	0.1	No Impact
NRCS Wetland Reserve Program	0.3	No Impact
Little Darby Creek/Spring Fork Scenic Rivers	0 to 0.5 miles	No Impact
Choctaw Lake	1.2	No Impact
W. Pearl King Prairie Savannah State Nature Preserve	1.3	No Impact
Columbus and Franklin County Metro Parks – Little Darby Creek	1.6	No Impact
Little Darby Creek Scenic River Preserve	1.6	No Impact
Madison County Commissioners Clean Ohio Farmland	2.0	No Impact
U.S. 40 Historic National Road Scenic Byway	2.1	No Impact
NRCS Wetland Reserve Program	2.6	No Impact
Madison County Commissioners Wetlands Reserve Program/Clean Ohio Farmland	4.3	No Impact
NRCS Wetland Reserve Program	4.3	No Impact
Tecumseh Land Trust Agricultural Easement Clean Ohio Farmland	4.9	No Impact

(4) Visual Impact

(a) Visibility and Viewshed Analysis

A viewshed analysis was conducted by Stantec using GIS software to determine locations within 5 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 12 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 5-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 12-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.

(b) Existing Landscape and Scenic Quality

The Project Area is located within the plains of west-central Ohio, near the western border of Madison County and Clark County. The community of Plumwood is about 0.5 mile east of the Project Area. It is a small, unincorporated community in Monroe Township that consists of mostly single-family residences, churches, and the Monroe Elementary School. The Village of West Jefferson is about 3 miles southeast of the Project Area, and Choctaw Lake, an unincorporated community in Somerford Township, is about 1.5 mile southwest of the Project Area.

Agricultural activity is the dominant landscape type in this part of Madison County. The area is visually characterized by the predominantly flat farmland that is segmented by clusters of vegetation and the surrounding roadways. Beyond the communities of Plumwood and Choctaw Lake, residences and accessory farm structures are dispersed, appearing at a relatively low-density and generally aligned with the roadways.

The Madison County Comprehensive Plan (Madison County 2014) makes multiple references to the scenic qualities of its rural landscape, mainly within the context of limiting growth. It also mentions its scenic rivers. No specific scenic resources or protected views are identified but both Little Darby Creek and Spring Fork are designated as scenic rivers by ODNR. Among the open space / recreation / preservation areas identified, Choctaw Lake is the only area in the vicinity of the Project Area. There is one scenic byway within five miles of the Project Area – the U.S. 40 Historic National Road Scenic Byway is located approximately 2.1 miles south of the Project Area (ODOT 2022). Additionally, the Big Darby Plains Scenic Byway is located about 6 miles north of the Project Area.

(c) Landscape Alterations and Impacts

As discussed, the Project components would be visible throughout the Project Area and experienced by viewers in four general types of views: first encounter views, residential views, gen-tie views, and distant views. As shown in the first encounter views, the solar modules would be set back from the adjacent roadways and visible to viewers from about 0.1 to 0.4 miles away. The solar modules would also be visible in sustained views near residences as shown in the views from the residential view type. Within the first encounter and residential view types, the solar modules would occupy most of the farmlands within foreground views. Placement of the solar modules on portions of the undeveloped farmland would replicate the horizontal form of row-crops; however, these structures would appear mechanized and alter the Project Area's rural agricultural character. The Applicant is committed to implementing vegetative screening and/or agrivoltaic programs (e.g., the btr program) within the Project Area that would have the objective of minimizing the viewshed impacts as described in Section 8(C)(4)(b) and 8(D)(4)(f). Additionally, the proposed gen-tie lines would be visible throughout the four view types and primarily within the gen-tie views located in the central and eastern portions of the Project Area. The proposed gen-tie lines would be located along SR 29 and SR 38, which are both currently lined with existing overhead utility infrastructure. The addition of the proposed gen-tie lines would increase the presence and observable intensity of overhead utility infrastructure within the central and eastern portions of the Project Area. In areas where there is currently no overhead utility infrastructure, the addition of the proposed gen-tie lines would presumably modify the

view of the Project Area as the steel monopole structures would be dominant features within view.

As shown in the first encounter view type, visibility of the Project decreases over relatively short distances. As shown in the simulated views from Key Observation Point (KOP) 8 and KOP 10 in Exhibit X, the Project would become less noticeable in views from about a mile away. At this distance, the individual modules would not be distinguishable and appear contained within the existing agricultural setting. The solar modules would be set back from these viewpoints and both foreground and middleground features would be retained. This decrease in visibility defines the outer extent of the Project's actual viewshed. As such, its effects to sensitive receptors greater than a mile away in Figure 3 in Exhibit X would likely be minimal, such as the Choctaw Lake community. Views of the Project from these locations would be further limited by the flat topography of the Project area, surrounding vegetation, and crops on adjacent lands during the growing season.

(d) Visual Impacts to Cultural and Archaeological Resources

The Phase I History/Architecture Reconnaissance Survey report was submitted to SHPO for concurrence on July 28, 2022 and their response was received on August 26, 2022 and included within Exhibit W. CHG concluded that the Project will not have any direct or indirect effects on the four previously recorded resources that were resurveyed and the eight newly recorded historic resources that were recommended as eligible for the NRHP or require additional research for listing in the NRHP because they have a limited or non-existent view of the Project due to existing structures and vegetation and their proximity to the Project. The SHPO agreed with CHG's recommendations and requested that solar modules be kept as far back from the Project Area boundary closest to the historic structure to further reduce any unforeseen adverse effect. As currently proposed the nearest solar module is more than 0.4 miles from the property and there is intervening vegetation that is anticipated to further limit Project visibility.

The archaeological sites documented as a result of the investigation are currently undergoing NRHP eligibility assessments as part of the reporting efforts. Preliminary analysis suggests that few if any of these sites are NRHP eligible although analysis is on-going. With results still

pending, the Applicant will commit to work with the SHPO to revise the site layout should the final NRHP-eligibility assessment of any site result in a recommendation that the site is eligible or requires additional testing to determine NRHP-eligibility, and it is demonstrated that the Project will impact the site.

(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 June 2022. The view from each viewpoint was photographed at eye level using a 35-millimeter (mm), 26-megapixel, full-frame, single lens reflex camera, equipped with a 24-105 mm lens set to 50 mm. This configuration is the industry-accepted standard for approximating the field of vision in a static view of the human eye. The camera positioning was determined with a sub-meter, differentially-corrected GPS. 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 selected a representative subset of photographed viewpoints for use as KOPs. This selection reflected results of the viewshed analysis and was done in coordination with the Applicant. Assessments of existing visual conditions were made based on professional judgment that took into consideration sensitive receptors and sensitive viewing areas in the vicinity of the Project Area. The locations of the 11 KOPs in relation to the Project are presented on Figure 1 in Exhibit X.

The photographs from the KOPs were used to generate photo-realistic simulations of the Project as proposed. Visual simulations provide clear before-and-after images of the location, scale, and visual appearance of the features affected by and associated with the Project. The simulations were developed through an objective analytical and computer-modeling process and are accurate within the constraints of the available site and alternative data (a 3-dimensional [3D] computer model was created using a combination of AutoCAD files and GIS layers and exported to Autodesk's 3Ds Max for production). Design data—consisting of site engineering data, assumed

elevations based on module and inverter specifications, site and topographical contour plans, concept diagrams, and reference pictures were used as a platform from which digital models were created.

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 0.4 mile the photosimulations show that Project visibility decreases and is mostly absorbed into the agricultural landscape.

(f) Visual Impact Minimization

Photographic simulations were completed to provide representative views from the locations surrounding the Project Area with the greatest potential for visibility. As can be seen from these simulations, the Project is likely to be visible in the immediate vicinity from locations where vegetation does not screen the views, however, the Applicant has sited the perimeter fencing at least 150 feet from the edge of adjacent roads in order to minimize the visibility of the Project with the solar modules being set back an additional distance. Additionally, the Applicant has established 300-foot setbacks from non-participating residences from all Project infrastructure, thereby further reducing the visual impacts of the Project to residents.

As a visual impact minimization measure, the Applicant has committed to the use of agricultural, wildlife friendly fencing rather than using chain-link fencing along the perimeter of the Project Facility. The agricultural fencing style is more consistent with the agricultural landscape surrounding the Project Area and is less industrial looking than chain-link fencing with barbed wire on top which is commonly used for facilities like this.

The Applicant has also committed to retaining existing trees within the Project Area, to the extent practicable, to help screen the Project and reduce visual impacts. Supplemental mitigation measures, in the form of vegetative screening, have been discussed with adjacent residents in order to obstruct or soften views of the Project, where appropriate. The Applicant has engaged with local residents to seek feedback on the visual impact of the Project and is committed to working with those residents to develop and implement a vegetative screening plan for the

Project. Additionally, as described in Section 8(C)(4)(b), the Applicant is evaluating the potential to implement agrivoltaics within the Project Area which would further minimize the landscape impacts from the Project by maintaining the agricultural character of the Project Area. For example, implementation of the btr program at the site would allow for row-crops to be grown within the Project Area, maintaining the productivity of the land for agricultural and creating continuity with the surrounding area. Implementation of agrivoltaics in the Project Area is also responsive to the community feedback which identified a concern for the loss of farmland within the County. A summary of the Applicant's efforts to minimize the visual impact of the Project is provided in the Visual Impact Mitigation Plan provided as Exhibit Y.

(E) AGRICULTURAL DISTRICTS AND IMPACTS TO AGRICULTURAL LAND

(1) Mapping of Agricultural Land

Figure 8-8 depicts all agricultural land within the Project Area. None of the 44 parcels that comprise the Project Area are enrolled in the Agricultural District Program based on information provided by Madison County Auditor's Office (via email correspondence received on July 22, 2022).

The closest Concentrated Animal Feeding Operations is approximately 9 miles southwest of the Project Area, none are found within the Project Area (OEPA 2022c).

(2) Agricultural Information

(a) Acreage Impacted

Land use in the Project Area is primarily agricultural with approximately 5,624 acres, or 93% of the total Project Area, dedicated to corn and soybean cultivation. For the life of the Project, approximately 4,320 acres of agricultural land will be converted to accommodate the Project Facility with the preferred gen-tie route and 4,316 acres with the alternate gen-tie route. Of the agricultural land utilized for the Project Facility, no parcels are currently enrolled in the Agricultural District Program.

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

(i) Field Operations

Agricultural field operations related to cultivated row crops will largely stop once construction of the Project begins; however, Savion, the parent company of the Applicant, is currently conducting research and development with The Ohio State University to investigate the possibility of including portions of the Project Area into agricultural operations where the site will experience dual-land use and agrivoltaic practices may be accommodated. This program is described in more detail in Section 8(C)(4)(b).

After the Project is decommissioned, the Project can be returned to cultivated land. Construction of the Project on cultivated land with vegetated ground cover planted under the solar modules and in other portions of the Project Facility without infrastructure allows the soil to "rest" during the life of the Project. In addition, depending on the species planted under and around the modules, the plants could provide an increase in nutrients to the soils.

The change in land use practices due to the operation of the Project could result in reduced soil erosion and fewer chemicals and fertilizers that need to be utilized as compared to the current farming practices.

(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 and 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 during or after construction.

(iv) Structures used for Agricultural Operations

It is possible that at least one barn will be demolished during Project construction, however the Applicant is evaluating the potential to retain several other barns and grain silos for use during the operational lifetime of the Project.

(v) Viability as Agricultural District Land

There are no Project parcels that are enrolled in an Agricultural District 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, Savion is currently conducting R &D with The Ohio State University to investigate the possibility of including portions of the Project Area into agricultural operations where the site will experience dual-land use and agrivoltaic practices may be accommodated.

(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 landowner, 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 and 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.

(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 construction of the Project. 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.

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