

Staff Report of Investigation

Pleasant Prairie Solar Project
Pleasant Prairie Solar Energy LLC

Case No. 20-1679-EL-BGN

July 1, 2021



Power Siting
Board

Mike DeWine, Governor | Jenifer French, Chair

In the Matter of the Application of)
Pleasant Prairie Solar Energy LLC for a Certificate) **Case No. 20-1679-EL-BGN**
of Environmental Compatibility and Public Need)

Staff Report of Investigation

Submitted to the
OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application of)
Pleasant Prairie Solar Energy LLC for a Certificate) **Case No. 20-1679-EL-BGN**
of Environmental Compatibility and Public Need)

Chair, Public Utilities Commission	Director, Department of Natural Resources
Director, Department of Agriculture	Public Member
Director, Development Services Agency	Ohio House of Representatives
Director, Environmental Protection Agency	Ohio Senate
Director, Department of Health	

To the Honorable Power Siting Board:

In accordance with the Ohio Revised Code (R.C.) 4906.07(C) and rules of the Ohio Power Siting Board (Board), the staff of the Public Utilities Commission of Ohio (Staff) has completed its investigation in the above matter and submits its findings and recommendations in this Staff Report for consideration by the Board.

The findings and recommendations contained in this report are the result of Staff coordination with the following agencies that are members of the Board: Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers.

In accordance with R.C. 4906.07(C) and 4906.12, copies of this Staff Report have been filed with the Docketing Division of the Public Utilities Commission of Ohio to be served upon the Applicant or its authorized representative, the parties of record, and pursuant to Ohio Administrative Code 4906-3-06, the main public libraries of the political subdivisions in the project area.

The Staff Report presents the results of Staff's investigation conducted in accordance with R.C. Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,



Theresa White
Executive Director
Ohio Power Siting Board

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I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The authority of the Ohio Power Siting Board (Board or OPSB) is prescribed by Ohio Revised Code (R.C.) Chapter 4906. R.C. 4906.03 authorizes the Board to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities defined in R.C. 4906.01. Included within this definition of major utility facilities are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity of 100 kilovolts (kV) or more; and gas pipelines greater than 500 feet in length and more than nine inches in outside diameter, and associated facilities, designed for transporting gas at a maximum allowable operating pressure in excess of 125 pounds per square inch. In addition, pursuant to R.C. 4906.20, the Board authority applies to economically significant wind farms, defined in R.C. 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of five MW or greater but less than 50 MW. R.C. 4906.13 excludes from economically significant wind farms, one or more wind turbines and associated facilities that are primarily dedicated to providing electricity to a single customer at a single location and that are designed for, or capable of, operational at an aggregate capacity of less than 20 MW, measured at the customer's point of interconnection (POI) to the electrical grid.

Membership of the Board is specified in R.C. 4906.02(A). The voting members include: the Chairman of the Public Utilities Commission of Ohio (PUCO or Commission) who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health (ODH), the Ohio Development Services Agency (ODSA), the Ohio Department of Agriculture (ODA), and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Exofficio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The Board has promulgated rules and regulations, found in Ohio Administrative Code (Ohio Adm.Code) 4906:1-01 et seq., which establish application procedures for major utility facilities and economically significant wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the Board an application for a certificate of environmental compatibility and public need.¹ The application must include a description of the facility and its location, a summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the Applicant or Board may consider relevant.²

1. R.C. 4906.04 and 4906.20.

2. R.C. 4906.06(A) and 4906.20(B)(1).

Within 60 days of receiving an application, the Chairman must determine whether the application is sufficiently complete to begin an investigation.³ If an application is considered complete, the Board or an administrative law judge will cause a public hearing to be held 60 to 90 days after the official filing date of the completed application.⁴ At the public hearing, any person may provide written or oral testimony and may be examined by the parties.⁵

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published by the Board's Staff not less than 15 days prior to the public hearing.⁶ The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff.⁷ The Board's Staff, which consists of career professionals drawn from the staff of the PUCO and other member agencies of the Board, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio Historic Preservation Office (OHPO), and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted pursuant to Ohio Adm.Code 4906-1-01 et seq. The recommended findings resulting from Staff's investigation are described in the Staff Report pursuant to R.C. 4906.07(C). The report does not represent the views or opinions of the Board and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record, is served upon all parties to the proceeding and is made available to any person upon request.⁸ A record of the public hearings and all evidence, including the Staff Report, may be examined by the public at any time.⁹

Board Decision

The Board may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need.¹⁰ If the Board approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with applicable standards and rules adopted under the Ohio Revised Code.¹¹

Upon rendering its decision, the Board must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need.¹² A copy of the Board's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding.¹³ Any party to the proceeding that believes its issues were not adequately addressed by the Board may submit within

3. Ohio Adm.Code 4906-3-06(A).

4. R.C. 4906.07(A) and Ohio Adm.Code 4906-3-08.

5. R.C. 4906.08(C).

6. R.C. 4906.07.

7. Ohio Adm.Code 4906-3-06(C).

8. R.C. 4906.07(C) and 4906.10.

9. R.C. 4906.09 and 4906.12.

10. R.C. 4906.10(A).

11. R.C. 4906.10.

12. R.C. 4906.11.

13. R.C. 4906.10(C).

30 days an application for rehearing.¹⁴ An entry on rehearing would then be issued by the Board within 30 days and may be appealed within 60 days to the Supreme Court of Ohio.¹⁵

CRITERIA

Staff developed the recommendations and conditions in this *Staff Report of Investigation* pursuant to the criteria set forth in R.C. 4906.10(A), which reads, in part:

The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under section 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multimodal planning and programs of the department of transportation under section 4561.341 of the Revised Code;
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

14. R.C. 4903.10 and 4906.12.

15. R.C. 4903.11, 4903.12, and 4906.12.

II. APPLICATION

APPLICANT

Pleasant Prairie Solar Energy, LLC (Applicant) is a subsidiary of Invenergy Solar Project Development, LLC (Invenergy). Invenergy owns and operates approximately 176 solar, wind, storage and natural gas projects with a nameplate capacity of approximately 28.3 gigawatts. The Applicant would construct, own, operate, and maintain the facility, except for the direct connection to the American Electric Power (AEP) substation and upgrades to the transmission system identified in the system impact study.

HISTORY OF THE APPLICATION

On November 12, 2020, the Applicant filed a motion for waiver and request for approval to hold an alternative public information meeting. The motion was granted.

On November 25, 2020, the Applicant filed a pre-application notification letter regarding the project.

On December 14, 2020, the Applicant held public informational meetings for the project.

On February 19, 2021, the Applicant filed the Pleasant Prairie Solar Project application as well as a motion for protective order and a motion for waiver of certain Board rules.

On March 18, 2021, the Applicant filed a response to the first set of data requests received from Staff.

On April 7, 2021, the Applicant filed a supplement to the application – Phase 1 Archaeological Reconnaissance.

On April 13, 2021 the Administrative Law Judge granted the uncontested motions for waiver and protective order filed by the Applicant on February 19, 2021.

On April 16, 2021, the Applicant filed a response to the second and third sets of data requests received from Staff.

On April 20, 2021, the Executive Director of the OPSB issued a letter of compliance regarding the application to the Applicant.

On April 20, 2021, the Applicant filed a response to the fourth set of data requests received from Staff.

On April 21, 2021, the Applicant filed a supplement to the application – FAA Determination of No Hazard.

On May 3, 2021, the Board of Park Commissioners of the Columbus and Franklin County Metropolitan Park District requested to intervene in this proceeding.

On May 7, 2021, Prairie Township, Franklin County, Ohio filed a notice to intervene in this proceeding and a Memorandum in Support.

On May 12, 2021, the applicant filed a supplemental response to second and third data requests from Staff of the Ohio Power Siting Board.

On May 12, 2021, Pleasant Township, Franklin County, Ohio filed a notice to intervene in this proceeding and a Memorandum in Support.

On June 2, 2021, the Applicant filed a second supplemental response to the third data requests from Staff of the Ohio Power Siting Board.

On June 9, 2021, the Applicant filed a response to fifth data request from Staff of the Ohio Power Siting Board.

On June 9, 2021, the Applicant filed a response to sixth data request from Staff of the Ohio Power Siting Board.

On June 22, 2021, the Ohio Farm Bureau Federation filed a motion to intervene in this proceeding.

On June 25, 2021, No Prairie Solar, LLC filed a motion to intervene in this proceeding.

A local public hearing has been scheduled for July 19, 2021, at 6:00 p.m. The evidentiary hearing is scheduled to commence on August 16, 2021, at 10:00 a.m.

This summary of the history of the application does not include every filing in case number 20-1679-EL-BGN. The docketing record for this case, which lists all documents filed to date, can be found online at <http://dis.puc.state.oh.us>.

PROJECT DESCRIPTION

The Applicant intends to construct the Pleasant Prairie Solar Project, a 250 MW solar-powered generating facility in Pleasant and Prairie Townships in Franklin County. The project would consist of large arrays of photovoltaic (PV) modules, commonly referred to as solar panels, ground-mounted on a tracking rack system. The project would be located within an approximate 2,400-acre project area comprised of private land secured by the Applicant through agreements with the landowners. The project would include associated facilities such as access roads, an operations and maintenance (O&M) building, underground electric collection lines, pyranometers, inverters and transformers, and a collection substation. The project would be secured by perimeter fencing which would be at least seven-foot tall and accessed through gated entrances. The Applicant would ensure that solar modules are setback a minimum of 300 feet from adjacent non-participating residences, and at least 100 feet from both non-participating property lines and public roads.

Solar Panels and Racking

The solar panels would be attached to metal racking. The racking would include steel piles driven approximately six to 15 feet into the ground. The facility would be composed of LONGi solar modules or comparable Tier- 1 solar panels. The solar panel arrays would be grouped in large clusters that would be fenced in with gated entrances. The highest point of each module would not exceed 15 feet, and the fence would be at least seven feet. The project's arrays would be mounted

on a single-axis tracking system that would rotate east to west to track the sun as it moves through the sky each day.

Collection System

The Applicant would install an underground collector system made up of a network of electric and communication lines that would transmit the electric power from the solar arrays to a central location. The Applicant proposes to install up to 38.4 miles of buried electric cable lines.

The underground lines would be installed by direct burial method or horizontal directional drilling (HDD). The below grade portion of the collector system would be buried at a depth of at least three feet.

The electricity from the solar panels would be generated in direct current (DC). DC power from the solar panels would be delivered to circuits, which would be routed through cable trays, then to combiner boxes. Power from the combiner boxes would be transmitted to groups of components, collectively called an inverter, which would include a DC-to-alternating current (AC) inverter, a step-up transformer that would increase the voltage to 34.5 kV, and a cabinet containing power control electronics. This would be housed in a power conversion station mounted on a concrete foundation. The facility would include up to 70 inverters.

Collection Substation and Switchyard

The facility collection substation would occupy approximately two acres of land. The collection substation would be located southwest of the intersection of US Route 40 and Murnan Road. This would connect the project to the switchyard via an approximately 1.5 mile long transmission line, which would be subject to a separate filing with the OPSB. The switchyard is an existing AEP Ohio Transmission Company, Inc. facility located off of Cole Road approximately 0.5 miles north of US Route 40.

Roads

The Applicant proposes to construct approximately 22.1 miles of new access roads for construction, operation, and maintenance of the solar facility. The access roads would be approximately 20 feet in width.

Construction Laydown Area

Throughout the construction period, the Applicant's contractor would provide temporary construction facilities. These facilities would be comprised of contractor construction trailer(s), space for subcontractor trailers and parking, and a graveled construction laydown area to meet contractor requirements complying with best management practices (BMPs). These trailers would be placed in the proximity of the substation or inside of the project properties. The laydown area would be approximately five to 10 acres or less and would be reclaimed at the end of construction.

Meteorological Towers

The project would include up to 13 meteorological towers. Each tower would be approximately 10 feet tall, and would include sensors such as an anemometer, a wind vane, a pyranometer, a pressure sensor, and a thermometer. The meteorological towers typically have a concrete foundation and are located next to the inverters.

O&M Building

The Applicant may choose to purchase or rent an existing building to utilize as an O&M facility. However, construction of an O&M building has been proposed in the event that rental or purchase is not feasible. The building would be single story and approximately 1,500 square feet. The O&M building would serve as a workspace for operations personnel.

Lighting

The project would utilize some safety and security lighting at commonly occupied areas. Where used, this lighting would meet residential zone code levels and would be motion activated and down-shielded to reduce any impacts.

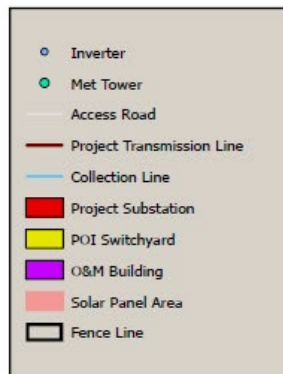
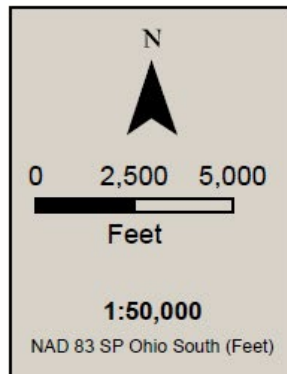
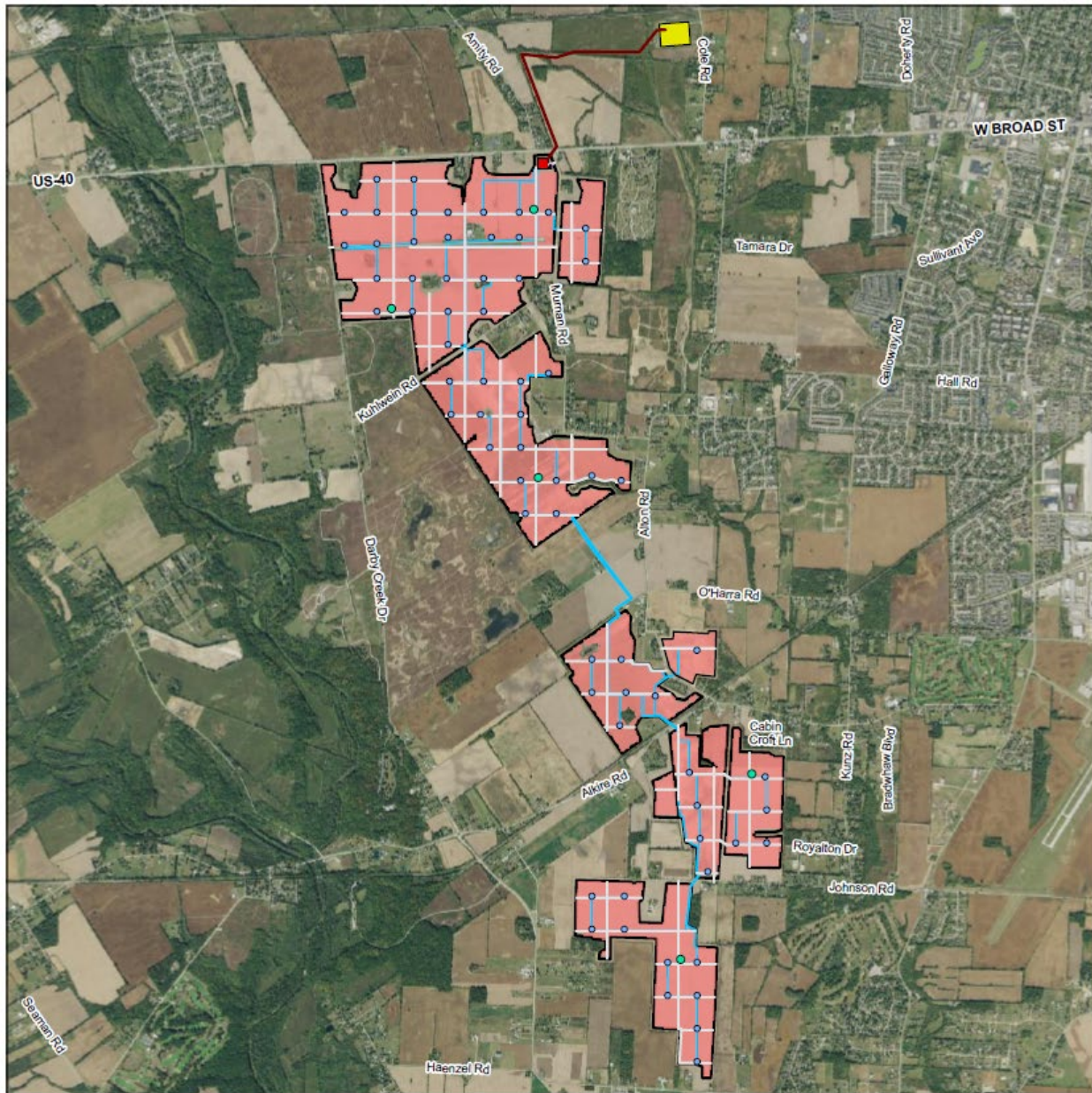
Fencing

The project would be secured by perimeter fencing which would be at least seven-foot tall and accessed through gated entrances. In areas surrounding panels, the Applicant has committed to utilizing ‘Deer Fencing’ which would be a configuration of woven metal attached to wood posts. The openings in such a woven metal fencing can be potentially bigger than traditional chain link and would incorporate various ground tunnel attachments to aid in small animal crossings. The project substation would have six-foot tall chain link fence with one foot of barbed wire.

Project Schedule

The Applicant expects to finalize design of the project in the fourth quarter of 2021. Construction would start in the first quarter of 2022 and would last approximately 16-20 months. The facility is expected to complete construction and place the facility in service in the fourth quarter of 2023. The Applicant stated that delays to this timeline could impact project financing, including the Applicant’s ability to procure PV modules and facility components. Further, delays may push the in-service date back, causing significant financial burden, according to the Applicant.

PROJECT MAP



Overview Map

20-1679-EL-BGN

Pleasant Prairie Solar

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.

III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the Matter of the Application of Pleasant Prairie Solar Energy LLC for a Certificate of Environmental Compatibility and Public Need, Staff submits the following considerations and recommended findings pursuant to R.C. 4906.07(C) and 4906.10(A).

Considerations for R.C. 4906.10(A)(1)

BASIS OF NEED

Pursuant to R.C. 4906.10(A)(1), the Board must determine the basis of the need for the facility only if the facility is an electric transmission line or gas pipeline. Therefore, Staff has found an analysis of R.C. 4906.10(A)(1) to be inapplicable to the facility in question.

Recommended Findings

Staff recommends that the Board find that the basis of need as specified under R.C. 4906.10(A)(1) is not applicable to this facility, as the facility is neither an electric transmission line nor a gas pipeline.

Considerations for R.C. 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility. Staff has found the following with regard to the nature of the probable environmental impact.

Overview

As described above, membership of the Board is specified in R.C. 4906.02(A) and its voting membership is comprised of leadership from the PUCO, Ohio EPA, ODH, ODSA, ODA, ODNR, and a member of the public specified as an engineer. Also as described above, the Board's Staff consists of career professionals from member agencies of the Board and their areas of expertise. Therefore, consideration of the nature of the probable environmental impact of a proposed facility incorporates such areas of expertise, as described below.

Community Impacts¹⁶

Regional Planning¹⁷

As part of its land use impact analysis, the Applicant studied the Big Darby Accord Watershed Master Plan, the Big Darby Town Center Master Plan, and the Pleasant Township Comprehensive Plan. The central concept of these plans is a strong focus on ecological conservation and managed low-density development along and surrounding the Big Darby watershed. The planned solar facility would be consistent with these master plans, in that conservation land use buffers would remain. Once constructed, the solar facility requires few employees for operation and maintenance. In a similar manner and consistent with low-density development, the solar facility's demands on local infrastructure, public services and institutions are minimized.

In Staff's opinion, the proposed solar facility is not expected to conflict with existing land use plans. The solar facility would be expected to support a net-positive effect on regional development by increasing local tax revenues and providing additional school funding. The project is consistent with agricultural industry support, in that the facility would provide supplemental income to farmers and the land could be returned to agricultural production upon decommissioning. Adjacent

16. "It is the mission of the Ohio Development Services Agency to help create jobs and build strong communities in Ohio, while ensuring accountability and transparency of taxpayer money exceptional customer service." (Ohio.gov, *Development Services Agency*, <https://ohio.gov/wps/portal/gov/site/government/state-agencies/development-services-agency>). See e.g., RC 122.011(A) states, in part, that the development services agency shall develop and promote plans and programs designed to assure that state resources are efficiently used, economic growth is properly balanced, community growth is developed in an orderly manner, and local governments are coordinated with each other and the state, and for such purposes may, among other things, cooperate with and provide technical assistance to state departments, regional and local planning commissions, and other appropriate organizations for the solution of community problems. According to R.C. 122.01(B)(1), "'community problems' includes, but is not limited to, taxation, fiscal administration, governmental structure and organization, intergovernmental cooperation, education and training, employment needs, community planning and development, air and water pollution, public safety and the administration of justice, mass transportation, community facilities and services, health, welfare, recreation, open space, and the development of human resources."

17. R.C. 713.23(A) states, in part: "[t]he regional or county planning commission may make studies, maps, plans, recommendations and reports concerning the physical, environmental, social, economic, and governmental characteristics, functions, services, and other aspects of the region or county, respectively."

farming activities would require only minor modifications, aside from temporary disruptions that would occur during construction.

Land Use

The predominant land use surrounding the project area is agriculture. Low density residential land use is scattered throughout the project area. The Applicant has leased approximately 2,400 acres of agricultural land for the project, of which approximately 1,880 acres would be converted to solar and ancillary uses. The remaining 22 percent of leased land would provide additional buffers.

The Applicant expects to confine impacts from construction and operation of the facility to leased agricultural land. The Applicant states that “after Project construction, all areas outside the project perimeter fence impacted by construction and not needed for on-going operations will be reclaimed to the state prior to construction.”¹⁸ Staff generally concurs with this analysis; however, there are indirect impacts such as viewshed impacts to sensitive receptors like adjacent residential properties that can be significant. These indirect impacts are discussed more fully in the Aesthetics section of this report.

The Applicant does not intend to remove any structures to construct and operate the planned facility. Significant overall impacts to commercial, industrial, residential, recreational, and institutional land uses are not anticipated, as these uses are either not present, or they would continue with minimal disruption.

Recreation

Construction and operation of the facility would not physically impact any recreational areas. Most significantly, the Big and Little Darby scenic rivers are more than 1.3 miles from any proposed solar array. The Applicant’s analysis indicates that there are no national parks, state parks, nature preserves, wildlife areas or trails within five miles of the project area. The project’s infrastructure would be partially visible from three local parks and three conservation areas. However, Staff expects the Applicant’s landscape mitigation plan to provide aesthetic buffering for these areas. Staff’s review of the Applicant’s viewshed analysis determined that significant adverse aesthetic impacts to recreational land uses are not likely.

Aesthetics

Aesthetic impacts and considerations are always measured against the surrounding land use features and potential viewers’ subjective opinions. The rural nature of the project vicinity limits the number of potential viewers. Transportation corridors typically are smaller and much more lightly traveled, which reduces the number of viewing impacts. Existing woodlots are also able to offer additional natural screening. The project area predominantly consists of agricultural land. Traffic volume on roads throughout the project area is typically light, thus abating the potential number of viewers.

The solar panels maximum height (at full tilt) would be 15 feet above ground level. Anti-glare coating is applied to the solar panels to maximize the capture of solar energy, and minimizes aesthetic impact as well. Based on the results of the Applicant’s five-mile visual resources report, viewshed impacts are generally condensed within a half-mile distance from the panels.

18. Application, page 17.

Staff reviewed the Applicant's visual impact analysis, which includes proposed mitigation in the form of vegetative screening at selected areas around the project site. Based upon the Applicant's viewshed analysis of existing land features and vegetation, 89.9 percent of the panels would be screened from view within the five-mile radius study area.¹⁹

The Applicant's landscape mitigation plan proposes the installation of three planting modules along the facility fence line to soften viewshed impacts and to blend the facility into the existing vegetation. The Applicant's landscape mitigation plan would provide for the installation of numerous plant species that would vary in height and variety, as determined by the current location of sensitive receptors such as residential properties and parks that are adjacent to the proposed facility.

In response to a Staff data request, the Applicant provided a map that depicts all inhabited residential dwellings adjacent to the project area that have a direct, unobstructed line-of-sight view to the project boundaries. Additionally, the Applicant identified which receptors are participating and non-participating.

Staff recommends that the Applicant incorporate a landscape and lighting plan to reduce impacts in areas where an adjacent non-participating parcel contains a residence with a direct line of sight to the project's infrastructure. Staff recommends that aesthetic impact mitigation include native vegetative plantings, alternate fencing, good neighbor agreements, or other methods in consultation with affected landowners and subject to Staff review.

In addition to vegetative screening mitigation measures, Staff is concerned about aesthetic impacts related to the project's perimeter fencing. In general, chain-link fences are more aesthetically intrusive, out-of-character in rural settings, and less wildlife friendly than fencing options such as deer fences and wooden fences. The Applicant had initially proposed a chain-link design that has previously elicited many negative public comments and concerns from adjacent residents living near proposed solar facilities. After consulting with affected landowners and members of the Darby Creek Association, the Applicant adopted stakeholder input supporting a rural fencing design.

Specifically, in response to Staff's second set of data requests, the Applicant "is committing to incorporating a 'Deer Fence' configuration... that aids in resolving wildlife access/crossing and viewshed concerns for the Project." Staff recommends that the Applicant install agricultural perimeter fencing that is both small-wildlife permeable and aesthetically fitting for a rural location. With implementation of Staff's aesthetic/lighting and fencing conditions, the overall expected aesthetic impact would be minimal.

Cultural Resources²⁰

The Applicant enlisted a consultant to gather background information and complete a cultural resources literature review for the project. This review consisted of a Phase 1 cultural resources

19. Application Appendix J, 3.1, Viewshed Analysis.

20. According to RC 149.53, "[a]ll departments, agencies, units, instrumentalities, and political subdivisions of the state shall cooperate with the Ohio history connection and the Ohio historic site preservation advisory board in the preservation of archaeological and historic sites and in recovery of scientific information from such sites, and for such purposes shall, whenever practical, by contract or otherwise provide for archaeological and

records review which included historic data provided by Ohio Historic Preservation Office (OHPO), Ohio Historic Inventory, the Ohio Archaeological Inventory, and National Register of Historic Places (NRHP) files. The Applicant also obtained information on historic cemeteries from the Ohio Genealogical Society. This review was completed in the Fall/Winter of 2020.

The Applicant determined, and OHPO agreed, that in order to fully assess the potential for impacts to cultural resources, the project undergo further field work surveys. These additional studies were outlined in a work plan which was approved by the OHPO in the winter of 2020. Further findings from field work performed by the Applicant were submitted to the OHPO in January 2020. A Programmatic Agreement (PA) was agreed upon and executed between the Applicant and OHPO in January 2021. This PA outlined survey parameters and research methodologies to be implemented for further field studies of the project area that were not completed in the winter of 2020. In April 2021, the Applicant filed a supplement for the record in this case, which included the results and summary of additional archaeological field work, and included sites located within the project area that were determined to be potentially eligible for National Register of Historic Places (NRHP) listing.

On June 9, 2021, as a reply for Staff's fifth data request, the Applicant filed a Memorandum of Understanding (MOU) between the Applicant and OHPO. The MOU commits the Applicant to avoid certain sites identified in the field summary results as potentially eligible for NRHP listing and to also minimize visual impacts to identified historic resources through the landscape plan for this project. The MOU also details the steps to be taken if unanticipated archaeological discoveries are made. With the implementation of the commitments for protecting and avoiding cultural resources as detailed in the PA and MOU, Staff has determined that minimal adverse impacts to cultural resources would be achieved.

Economic Impact

The Applicant states that it would be responsible for the ownership, construction, operation, and maintenance of the proposed project. The Applicant has obtained the necessary landowner agreements for the project. All other components of the facility would be located entirely on privately-owned land, and voluntary lease agreements between the Applicant and private landowners would accommodate the facility.

The Applicant chose to file its estimated capital and intangible costs, estimated O&M expenses, and estimated delay costs, under seal, and filed a motion for protective order to keep the information confidential. Similar requests have been common practice in many, but not all, solar facility applications.

Total cost comparisons between the proposed facility and other comparable facilities are to be provided in the application. The Applicant states that the capital costs for this project and others it has completed are similar. Staff verified the Applicant's assertion that the reported average cost of

historic survey and salvage work during the planning phases, before work on a public improvement begins or at other appropriate times." In Ohio, the Ohio Historic Preservation Office (OHPO) is part of the Ohio History Connection. (See, Ohio History Connection, *About Section 106 Review*, <<https://www.ohiohistory.org/preserve/state-historic-preservation-office/hpreviews/about-section-106-review>>).

its similar facilities is not substantially different from Applicant's estimated costs for the proposed facility.

O&M expense comparisons between the proposed facility and other comparable facilities are to be provided in the application. The Applicant states that the O&M costs for this project and others it has completed are similar. Staff verified the Applicant's assertion that the reported average O&M costs of its similar facilities is not substantially different from Applicant's estimated costs for the proposed facility.

The Applicant provided its estimates of the cost of delays in permitting and construction of the proposed facility, although the estimated costs were filed under seal. The Applicant stated that delays could prevent the project from meeting federal Investment Tax Credit deadlines which could result in the loss of those benefits to the Applicant. Additionally, delays could result in penalties to the extent that they would prevent the Applicant from meeting delivery deadlines under a potential power purchase agreement. The Applicant's characterization of its estimated costs of delays appears reasonable to Staff.

Pleasant Prairie Solar retained the services of Strategic Economic Research, LLC (SER)²¹ to report on the economic impact of the Pleasant Prairie Solar project. SER used the National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impact (JEDI) model, the IMPLAN regional economic modeling system, as well as data from the Ohio Department of Taxation, to estimate the economic impact of the construction and operation of the solar facility. Staff verified that the methodology of the JEDI and IMPLAN models were appropriate for this study and that the estimated impacts reported by the Applicant are reasonable.

In this model, "earnings" are comprised of direct (on-site) wages, indirect (supply-chain labor) wages, and induced (through spending by persons in first two categories). "Output" in this model refers to the value of goods and services produced by direct, indirect, and induced labor. Based on the results of the JEDI model analysis conducted by SER, the Pleasant Prairie Solar project is expected to have the following impacts:

Jobs

- 1,067 construction related jobs for the state of Ohio
- 31 long-term operational jobs for the state of Ohio

Earnings

- \$87.6 million in annual earnings during construction for the state of Ohio
- \$1.8 million in annual earnings during facility operations for the state of Ohio

Output

- \$140 million in local output during construction for the state of Ohio
- \$5.3 million in local annual output during facility operation for the state of Ohio.

The Pleasant Prairie Solar project would generate an estimated \$1.75 million annually for the Franklin County taxing districts. This estimate is based on a potential Payment in Lieu of Taxes

21. Strategic Economic Research, LLC is an economic consulting firm located in Bloomington, Illinois.

(PILOT) plan in which Pleasant Prairie Solar would pay \$7,000/MW annually for a 250 MW facility. At this time, the Applicant has not entered into a PILOT agreement with Franklin County.

Glare

Glare is the phenomenon where sunlight reflects from a surface to create a duration of bright light. Glare also encompasses glint, which is a momentary flash of bright light. Potential impacts of this reflection from solar panel(s) could be a brief reduction in visibility, afterimage, a safety risk to pilots, or a perceived nuisance to neighbors. The Applicant considered the potential effects of glint and glare in the design of solar array layout and how the panels would be operated.

Solar panels are designed to absorb as much sunlight as possible with minimal reflectivity. The Applicant conducted a glint and glare analysis to identify any potential impacts along local roads and to nearby residences.²² To perform the analysis of glare, the Applicant used the ForgeSolar GlareGauge solar glare tool, formerly known as the Solar Glare Hazard Analysis Tool (SGHAT) which was developed by Sandia National Laboratories to analyze potential glare at sensitive receptor locations around the proposed solar facility, along US 40, along the flight paths to the Bolton Field Airport runways, and at the Bolton Field Airport (KTZR) air traffic control tower. This software is commonly used by solar facility developers to determine the effect of solar glare. The Applicant found that glare from the project is not predicted to impact nearby residences or impact drivers along US 40.

Glare is classified in the GlareGauge tool in three categories: (1) the green type, which is associated with a low potential for temporary after-image; (2) the yellow type, which is associated with a potential for temporary after-image; and (3) the red type, which is associated with the permanent retinal damage. The Applicant found that there is “green” glare predicted from the project at a flight path into Bolton Field. The Applicant also found that there is “yellow” glare predicted from the project at the air traffic control tower for Bolton Field.

Staff notes a concern with the study analysis, specifically, the Applicant chose as inputs to its ForgeSolar GlareGauge model of an “observer view angle” of 50 degrees for glare analysis along US 40 whereas this may result in the observer overlooking the panels. Staff recommends the Applicant provide the reasoning and justification for the selected “observer view angle” or a more appropriate value as an input. Staff notes another concern with the study analysis, specifically, the Applicant chose as inputs to its ForgeSolar GlareGauge model of an “azimuthal view” angle of 50 degrees for glare analysis along the flight paths whereas this may result in the observer avoiding looking the panels. Staff recommends the Applicant provide the reasoning and justification for the selected “azimuthal view” angle or a more appropriate value as an input. The Applicant indicated that as the solar facility project design progresses it would conduct additional studies on potential glare.²³

The FAA has published a guideline solar facilities and airports entitled “Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports” (78 FR 63276). Staff used this as a guide for its evaluation of the impact of glare on Bolton Field. The FAA recommends for solar facilities on airport property that the developer demonstrate the solar facility would have no potential for glint or glare in the airport traffic control tower and that there is no potential or

22. Application at Exhibit J (Appendix B).

23. *Ibid.*

low potential for after-image (i.e. “green”) glare along the final approach flight path. Using this FAA policy as a guide, Staff recommends that the Applicant provide to Staff and Bolton Field airport an updated and revised glare analysis report, based on a revised solar facility layout, that demonstrates no potential for glint or glare in the airport traffic control tower for Bolton Field. The updated glare analysis report shall also demonstrate no potential or low potential for after-image (i.e. “green”) glare along the final approach flight path(s) to Bolton Field. The Applicant has been in discussions with Bolton Field and its personnel. Staff further recommends that the Applicant obtain written concurrence from the Bolton Field Airport Authority in the form of either a board resolution or signed letter/e-mail stating that the board is willing to accept the impact from glare on the approach flight path(s) and airport traffic control tower.

Decommissioning

The Applicant holds land rights to and estimates that the solar facility can operate for 25 years or more. The Applicant has prepared a decommissioning plan and total decommissioning cost estimate of \$11,625,923.²⁴ Staff has reviewed that decommissioning plan.

According to the Applicant’s plan, at the end of the useful life of the facility, the solar facility would be decommissioned, and the land be returned to its current use as agricultural land. Prior to the start of any decommissioning activities, the Applicant would apply for and obtain applicable federal, state, and local permits. At this time, the Applicant has identified that during decommissioning, it may need to obtain at the least an Ohio EPA Construction Storm Water General Permit and Clean Water Act Sections 401 and 404 permits. At the time of decommissioning, panels would be reused, recycled, or properly disposed in accord with regulations in effect at that time.

The decommissioning sequence consists of, but is not limited to, reinforcing access roads, installing temporary construction fencing and BMPs to protect sensitive environmental resources, de-energizing solar arrays, dismantling panels and racking, removing inverters, removing electrical cables to a depth of at least 36 inches, removing access and internal roads, grading the site, removing the substation, removing overhead transmission lines and poles, de-compacting subsoils and revegetating disturbed land to pre-construction conditions, to the extent practicable. The Applicant may abandon in place any electrical lines that would not impact the restored use and are at least 36 inches below-grade unless required by easement or lease agreement. At the request of the landowner, the Applicant may leave access roads in place, provided that does not violate any permits or legal requirements. The Applicant would also coordinate with the appropriate local agency to coordinate repair of any public roads if damaged or modified during decommissioning. The Applicant may leave in place any electrical infrastructure improvements (e.g. collection substation) pending approval by the Board, the transmission owner (which is currently AEP Ohio Transmission Company, Inc.), and the independent system operator, PJM Interconnection, LLC (PJM). The Applicant would restore the land significantly to its original topography to allow for resumption of the pre-construction agricultural land use. The Applicant stated that it anticipates decommissioning activities and restoration to occur over and be completed in a 12 to 18-month period. Based on the weather dependent nature of site restoration, Staff recommends that the updated decommissioning plan include a requirement to monitor the site to

24. Application at Exhibit Q, Table 3.

ensure successful revegetation and rehabilitation. Also, Staff recommends a timeframe be included in the draft decommissioning plan where the majority of equipment is removed within a year.

The Applicant states it would repurpose, salvage, recycle or haul offsite to a licensed solid waste disposal facility all solar components. Some of those solar components are anticipated to have a resale or salvage value and would be sold to offset the decommissioning cost. Those salvageable items typically are solar modules, tracking system, steel piles, inverters, and transformers. If solar modules are to be disposed, the Applicant intends to conduct the disposal in compliance with federal, state, and local laws and regulations. The Applicant is considering panels that have been certified to comply with the US EPA's toxicity characteristics leachate procedure (TCLP) test and meet U.S. EPA definition of non-hazardous waste.

The Applicant would also provide for financial security to ensure that funds are available for decommissioning/land-restoration. Specifically, the Applicant states that it would employ a surety bond active during the life of the project and renewed annually. The Applicant states that it would periodically review the decommissioning plan and costs and provide an updated report to the Board every five years after the commercial operations date. These reports would be prepared by an independent, registered professional engineer, licensed to practice engineering in the state of Ohio to estimate the total cost of decommissioning facility, salvage value, and appropriateness of any contingency amount or percentage.

The Applicant has considered a scenario where the decommissioning plan may be activated prior to the end of the useful life of the solar facility. In the event the owner of the solar facility becomes insolvent, the Applicant surmised sufficient funds would be in place to remove the facility as a condition of OPSB approval.²⁵

To further address these concerns that were partially addressed by the website FAQs, Staff recommends that at least 30 days prior to the preconstruction conference, the Applicant submit an updated decommissioning plan and total decommissioning cost estimate without regard to salvage value, on the public docket that includes: (a) a provision that the decommissioning financial assurance mechanism include a performance bond where the company is the principal, the insurance company is the surety, and the Ohio Power Siting Board is the obligee; (b) a provision to monitor the site for at least one additional year to ensure successful revegetation and rehabilitation; (c) a timeline of up to one year for removal of the majority of equipment; (d) a provision where the performance bond is posted prior to the commencement of construction; and (e) a provision that the performance bond is for the total decommissioning cost and excludes salvage value.

Wind Velocity

The Applicant has monitored historical wind speeds in the area and included them in Table 5 of the Application. The Applicant has indicated that the facility would be designed and installed to withstand and minimize potential damage from high-wind occurrences. Staff has found that components of the proposed facility are generally not susceptible to damage from high winds except for tornado-force winds, because generally solar panels and racking systems have wind speed design load ratings inherent in their design. For instance, the racking and tracking systems currently under consideration by the Applicant are rated to withstand wind speeds from 135 to 145

25. Application at Exhibit G (Website FAQ).

miles per hour.²⁶ The racking systems under consideration include a stowing feature activated at certain wind speeds.²⁷ Stow features also can tilt panels to a certain angle to reduce wind loading on the solar panels during high wind speeds events. The final facility would be designed to withstand wind speeds for the area, because the tracker manufacturer would include a wind loading study with the structural design package associated with the final engineering.²⁸

*Roads and Bridges*²⁹

The Applicant has yet to finalize its delivery route, although it is expected that deliveries to the project site would be by way of US Route 40. Access points to the project site would potentially be situated along Darby Creek Drive (CR 140), Alkire Road (CR 11), Murnan Road (CR 12), Alton Road (CR 35), and Kropp Road (CR 135). Though alternative township and residential roads could be utilized, the Applicant's consultant recommends that US Route 40 and county roads 140, 11, and 135 be utilized to the maximum extent.

The Applicant conducted a traffic and road impact and analysis report to identify viable means of accessing the project area. Traffic patterns, bridge conditions, road surface conditions, and potential obstructions were identified and analyzed. According to the Applicant's Conceptual Traffic and Road Impact and Analysis Report,³⁰ all bridges are in good condition along the proposed transportation routes. Road surface quality has been determined by the Applicant to be predominantly in good condition. No overhead obstructions were identified along the proposed delivery routes.

Conventional heavy equipment which does not require special permitting would make up most of the construction traffic. The electrical transformer is likely to be overweight and would require special permitting and route coordination for delivery. The Applicant stated that an increase in truck traffic would be anticipated during construction for the purpose of project area equipment access and equipment and material deliveries but does not anticipate significant changes to traffic patterns. Post construction and operation of the solar facility, the Applicant does not anticipate any additional traffic for the project beyond routine maintenance. No road closures are expected. The Applicant expects to enter into a Road Use Maintenance Agreement as required by Franklin County.

Once the transportation permitting process has been completed, Staff recommends that the Applicant develop a final transportation management plan which would include any county-required road use maintenance agreements. Mitigating damages to roadways caused by the project would be detailed in agreements and permits with the appropriate regulatory authorities. Any temporary improvements would be removed unless the appropriate regulatory authority requests that they remain in place.

26. Application at Exhibit A.

27. Application at Exhibit A and Pleasant Prairie Solar Energy, LLC's Response to the Fourth Data Request from Staff of the OPSB, Data Request #12.

28. Pleasant Prairie Solar Energy, LLC's Response to the Fourth Data Request from Staff of the OPSB, Data Request #11.

29. The entity responsible for maintaining roads and bridges within Ohio depends on many factors. See, e.g., ODOT, *Roadway Infrastructure Maintenance Responsibility Manual*, <https://www.transportation.ohio.gov/wps/portal/gov/odot/programs/maintenance-operations/rimr/rimr>).

30. Application at Exhibit M.

Noise

Noise impacts from construction activities would include site clearing, installation of mechanical and electrical equipment, and commissioning and testing of equipment. Many of the construction activities would generate significant noise levels during the 16-20 months of construction. However, the adverse impact of construction noise would be temporary and intermittent, would occur away from most residential structures, and would be limited to daytime working hours. The Applicant would use mitigation practices such as limiting construction activities to daylight hours, keeping equipment in good working condition and establishing a complaint resolution process.

Operational noise impacts for a solar generation facility would be relatively minor and occur only during the day. Operational noise sources include inverters and tracking motors. The step-up transformer at the new substation may operate at night but the noise impact would also be relatively minor.

The Applicant conducted an ambient noise level study in order to understand the existing noise levels near the proposed facility. Noise impacts to non-participating receptors were modeled using the proposed inverter and transformer models. The model showed that operational noise impacts would be less than ambient noise levels during both daytime and nighttime. No non-participating receptors were modeled to receive noise impacts greater than the ambient noise level plus five dBA. Therefore, the project would be expected to have minimal adverse noise impacts on the adjacent community. If an inverter or transformer model different than the proposed inverter or transformer model is chosen, the Applicant would submit a noise report confirming that no non-participating receptors were modeled to receive noise impacts greater than the daytime ambient noise level plus five dBA.

Geology³¹

*Surficial/Glacial*³²

The project area lies within the glaciated margin of the state and includes several Wisconsin-age glacial features. These features include hummocky ground moraine and several indistinct

31. According, in part, to R.C. 1505.01, the ODNR's division of geological survey "[s]hall advise, consult, or collaborate with representatives of agencies of the state...on problems or issues of a geological nature when requested by such an agency...." One of the missions of the ODNR Division Geological Survey is "to provide geologic information and services needed for responsible management of Ohio's natural resources." (ODNR, Division of Geological Survey, *About the Division*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/geologic-survey/division-of-geologic-survey/division-of-geologic-survey>>). This includes studying and investigating, among other things, glacial and surficial geology, bedrock geology, and geological hazards. According to ODNR a "geologic hazard or 'geohazard' is a geologic condition, either manmade or natural, that poses a potential danger to life and property. Ohio is home to a number of potential geohazards, including karst, mine subsidence, earthquakes, landslides, and shore erosion." (ODNR, *Geologic Hazards*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/geologic-survey/geologic-hazards>>).

32. "Since its inception in 1837, the ODNR Division of Geological Survey has researched and mapped the state's glacial and surficial geology. Today, highly detailed mapping and meticulous studies continue to inform and broaden our knowledge of Ohio's glacial past." (ODNR, *Glacial Geology in Ohio* <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/geologic-survey/glacial-geology>>).

"Since collaborating with the U.S. Geological Survey to release the first statewide *Glacial Map of Ohio* in 1961, the ODNR Division of Geological Survey has mapped the unconsolidated geologic materials found at Ohio's surface

recessional moraines. The project area consists of relatively flat to gently undulating topography. Glacial drift within the project area ranges from approximately 50 feet to 250 feet in thickness. The southern portion of the project area has a high concentration of surface boulders.³³

*Bedrock/Karst*³⁴

The uppermost bedrock unit within the project area is the carbonate Columbus Limestone.³⁵ This unit makes up a large portion of the northern section of the project area. Underlying the Columbus Limestone is the Salina Undifferentiated which is the primary uppermost bedrock in the southern portion of the project area. These carbonate rocks are prone to produce karst features.³⁶ ODNr records indicate approximately 20 known or probable karst features (sinkholes) exist within two miles of the project area.³⁷ These features are found to the west of the project area. One probable karst feature is documented within one-half mile of the project area. Due to the drift thickness cited above, the development of karst features at the proposed construction site is unlikely.

*Oil/Gas and Mining*³⁸

The ODNr records indicate two plugged and abandoned wells are located within the project area.³⁹ No oil and gas wells occur within the footprint of the project. No Class II injection well activity occurs within several miles of the project area.

with increasing detail.” (ODNR, *Glacial & Surficial Geologic Maps*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/geologic-survey/glacial-geology/glacial-surficial-geologic-maps>>).

33. ODNr Geological Survey Review at Application Exhibit R - Part II – Appendix B.

34. “The ODNr Division of Geological Survey has had a long history of generating bedrock geologic maps for the state of Ohio since its inception in 1839. The most recent iteration of the geologic map of Ohio was created by seamlessly piecing together 788 individual 7.5-minute bedrock geologic quadrangles.” (ODNR, *Bedrock Geology*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/geologic-survey/bedrock-geology/bedrock-geology>>).

35. Carbonate – A rock containing primarily carbonate minerals. Most commonly, Limestones and Dolomites contain the mineral calcite which is soluble in water. The majority of western Ohio has carbonate bedrock.

36. Karst – A geologic feature formed within carbonate rocks through mineral dissolution caused by movement of water. Most common features include the formation of caves or the formation of sinkholes at the surface. Generally, karst features, and the likelihood of karst development are most prevalent in areas where the carbonate bedrock is overlain by 20 feet or less of glacial till material. Limestone and dolomite are the most common carbonate bedrock. Generally, Limestone is more prone to dissolution than dolomite.

37. ODNr, Karst Geology Interactive map, https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/.

“Karst is a little-known but unique and important landform that can be found throughout the state of Ohio. Sinkholes are the main hazard associated with karst landforms in Ohio and there are thousands of them in the state. Regions that contain sinkholes and other solutional features, such as caves, springs, disappearing streams, and enlarged fractures, are known as karst terrains.... The ODNr Division of Geological Survey has been mapping karst in Ohio since 2011. Released in 2019, the Karst Interactive Map is a record of karst features found throughout Ohio that is updated regularly as mapping continues.” <(ODNR, *Sinkholes & Karst Geology*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/geologic-hazards/karst>>).

38. ODNr Division of Oil & Gas states: “[t]he Division is responsible for regulating Ohio’s oil and natural gas industry and for the protection of all Ohioans and our environment while ensuring the state’s abundant natural resources are managed properly.” (ODNR, *Division of Oil & Gas*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/oil-gas/division-of-oil-and-gas/division-of-oil-and-gas>>).

39. ODNr, *Oil and Gas Well Viewer Interactive map*, <https://gis.ohiodnr.gov/MapView/?config=OilGasWells>.

No active mining occurs within the project area.⁴⁰ The nearest mine is over two miles to the west. No known abandoned underground mines are located within several miles of the project area.

*Seismic Activity*⁴¹

The ODNR records indicate no known seismic activity has occurred within 15 miles of the project area.⁴² No known fault features typically affiliated with seismic activity have been identified by the ODNR. United States Geological Survey (USGS) resources show Franklin County to be considered a low-risk earthquake hazard area.⁴³ The Applicant's geotechnical report by Terracon indicates a Seismic Site Class D is appropriate for this site in accordance with the International Building Code.⁴⁴

The Applicant has indicated blasting is not anticipated for this project.⁴⁵

*Soils*⁴⁶

According to the USDA NRCS Web Soil Survey, the project area consists primarily of soils derived from glacial till, outwash, and alluvium.⁴⁷ Several soil series are found throughout the project area including Kokomo, Lewisburg, and Crosby which make up over 91 percent of the soils. Slope is relatively flat throughout the project area, rarely exceeding six percent. There is a low to moderate risk of shrink-swell potential in these soils.

Geotechnical Report

A Preliminary Geotechnical Report prepared by Terracon discusses the geotechnical work performed to date. To further evaluate soil and bedrock properties, 24 borings were advanced to 20 feet below ground level (BGL) and one boring near the substation location was advanced to 50 feet BGL. Soils were evaluated for both thermal and electrical resistivity. Full scale pile load testing was conducted at 12 driven pile locations.

40. ODNR, *Mines Viewer Interactive Map*, <https://gis.ohiodnr.gov/MapView/?config=OhioMines>.

41. The ODNR Division of Geological Survey coordinates a 21-station network of seismograph stations throughout the state in order to continuously record earthquake activity. The Ohio Seismic Network (OhioSeis) went online in January 1999 to ensure Ohio has monitoring and coverage 24 hours a day, seven days a week by seismic stations with automatic detection, location and magnitude determination. (ODNR, *The Ohio Seismic Network*, <<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/geologic-survey/division-of-geologic-survey/ohio-seis>>).

42. ODNR, *Earthquake Epicenter Viewer*, <https://gis.ohiodnr.gov/MapView/?config=Earthquakes>.

43. USGS, *Long-term national seismic hazard map*, <https://www.usgs.gov/media/images/2018-long-term-national-seismic-hazard-map>.

44. Seismic Classification is based on the upper 100 feet of the site profile in accordance with Section 20.4 of American Society of Civil Engineers Standard 7 and the International Building Code.

45. Application at Page 54.

46. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) conducts soil surveys and provides technical assistance to private landowners. (USDA NRCS, *Ohio NRCS Soils*, <<https://www.nrcs.usda.gov/wps/portal/nrcs/oh/soils/>>).

"Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information. Soil surveys can be used for general farm, local, and wider area planning." (USDA NRCS, *USDA Web Soil Survey*, <<https://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>>).

47. USDA NRCS, *Web Soil Survey*, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

Conclusion

Staff recommends that the final detailed engineering drawings of the final project design shall account for geological features and include the identity of the registered professional engineer(s), structural engineer(s), or engineering firm(s), licensed to practice engineering in the state of Ohio who reviewed and approved the designs. Staff also recommends that the Applicant provide a final geotechnical engineering report to Staff at least 30 days prior to the preconstruction conference.

Based on the data and considerations provided within the application submittal to date, and based on Staff assessment (with consideration and input from the ODNR), and implementation of the recommended conditions, there appears to be no particular geological features within the project area that are incompatible with construction and operation of the proposed solar facility.

Ecological Impacts

*Public and Private Water Supply*⁴⁸

There are 22 wells within the project area. The Applicant has identified that 16 of these are water wells, five are monitoring wells, and one is a livestock water well.⁴⁹ The nearest private water well (Well ID #962816) and monitoring wells (Well IDs 2033569 – 2033573) are within the area for proposed solar components.

The Applicant does not anticipate adverse impacts to water wells because the structural support pile driving would occur at depths of 15 feet or less, while the expected well depths are greater than that. Further, the Applicant would adhere to a setback to homes where the water wells are generally located. Staff conferred with ODH which regulates private water wells. ODH indicated that the nearest solar components should be further than the minimum isolation distances outlined in Ohio Adm.Code 3701-28-07 between potential contamination sources and private water wells. Specifically, ODH highlighted that Ohio Adm.Code 3701-28-07(F) requires a sanitary isolation radius of fifty feet from any known or possible source of contamination. Staff recommends that the Applicant indicate whether the nearest solar components to each water well within the project

48. “The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.” (US EPA, *Summary of Clean Water Act*, <<https://www.epa.gov/laws-regulations/summary-clean-water-act>>). The Ohio EPA Division of Surface Water “ensures compliance with the federal Clean Water Act and works to restore and enhance the integrity of Ohio’s waters.” (Ohio EPA, *Division of Surface Water*, <<https://www.epa.ohio.gov/dsw/Surface-Water/LiveTabId/113292#:~:text=Ensures%20compliance%20with%20the%20federal,the%20integrity%20of%20Ohio's%20waters.&text=We%20issue%20permits%20to%20regulate,aimed%20at%20improving%20polluted%20streams>>). In carrying out this mission, among other things, the Revised Code generally provides for the Ohio EPA to administer and enforce most laws and regulations regarding water pollution control and safe drinking water. See R.C. Chs. 6111 and 6109. The Ohio EPA states: “Division of Drinking and Ground Waters ensures compliance with the federal Safe Drinking Water Act and evaluates potential threats to source waters that supply Ohio’s more than 4,800 public drinking water systems. The division has a lead role for statewide ground water protection in cooperation with other state and federal agencies, implements a ground water quality monitoring program and provides technical assistance to the Agency’s waste management divisions.” (Ohio EPA, *Division of Drinking and Ground Waters*, <<https://www.epa.state.oh.us/ddagw/>>). “The Division of Drinking and Ground Water’s (DDAGW) Drinking Water Program manages the federally delegated drinking water program and implements both state and federal Safe Drinking Water statutes and rules adopted under these laws.” (Ohio EPA, *Division of Drinking and Ground Waters*, <<https://www.epa.ohio.gov/ddagw/#116665774-about-the-drinking-water-program>>); Private water systems are regulated by the Ohio Department of Health under R.C. 3701.344 to 3701.347 and Ohio Adm.Code Ch. 3701-28.

49. Application at Exhibit R (Figure A-8) and Pleasant Prairie Solar Energy, LLC’s Response to Second Data Request from Staff of the OPSB, Data Request #13.

area meets or exceeds any applicable minimum isolation distances outlined in Ohio Adm.Code 3701-28-07. Specifically, Staff also recommends that for the water well (Well ID #962816) which is within the proposed area for solar equipment, that the Applicant either relocate the solar equipment at least 50 feet from that water well or seal and abandon that well per ODH regulations if it is used as a potable water source. For the monitoring wells, specifically Well IDs 2033569 through 2033573, Staff recommends that the Applicant revise its layout so that access is maintained to these wells so that monitoring can continue to occur. If the well is for nonpotable use, such as the monitoring wells, Staff recommends that the Applicant relocate the solar equipment at least 10 feet from that well or seal and abandon the water well in accordance with Ohio EPA guidelines.⁵⁰

There are two public drinking water source protection areas (SWPA) located within the project area. A portion of the SWPA for Hope Baptist Church is within the project area, but outside the fenceline of the solar facility. Second, a part of the SWPA for Ten Mile Inn is within the project area only the collection substation but no solar panels are proposed for that SWPA. The Applicant does not anticipate any impacts to the Ten Mile Inn SWPA, because the well for Ten Mile Inn is setback from the project area. To further address and prevent potential groundwater contamination from the project, the Applicant would develop and implement a Stormwater Pollution Prevention Plan (SWPPP), a spill prevention control and counter measure (SPCC) plan, and an HDD inadvertent release of drilling fluid contingency plan (an example plan was provided in the application at Appendix F in Exhibit R), during construction to minimize and prevent potential discharges to surface waters in the project area and surrounding area. Staff recommends that at least 30 days prior to the preconstruction conference, that the Applicant submit its final emergency response plan and that plan include provision(s) to keep the affected source water protection area designees informed of the status of any spills, significant panel damage, and repair/clean-up schedule. Staff also recommends that at least 30 days prior to the preconstruction conference, that the Applicant submit the SPCC plan to Staff and the Applicant demonstrate that its solar and substation equipment is outside the protection zone(s) for the Hope Baptist Church and Ten Mile Inn.

Surface Waters

The Applicant delineated one intermittent stream segment and one pond within the project area. The Applicant has designed the project to avoid all streams and ponds during and after construction. The Applicant states that if it should become necessary to cross a stream with an underground collection line prior to the end of construction, the Applicant would utilize HDD for any stream crossing. HDD is typically preferred to open-cut trenching when crossing surface water resources as impacts can be avoided in most cases. However, the HDD process includes the risk of a frac-out. A frac-out occurs when the drilling lubricant, typically water or a non-toxic, fine clay bentonite slurry, is forced through cracks in bedrock and/or surface soils. The Applicant included a frac-out contingency plan as part of the application. No impacts to streams are anticipated.

50. Ohio EPA, *Nonpotable Well Standard Guidance*, , https://www.epa.ohio.gov/Portals/28/documents/rules/draft/WELL-xx-001_NonpotableWell-08.03.15.pdf (accessed June 7, 2021).

The Applicant delineated 15 wetlands in the project area, including one Category 2 wetland, and 14 Category 1 wetlands.⁵¹ The Applicant has designed the project to avoid all wetlands during and after construction. The Applicant states that if it should become necessary to cross a wetland area with an underground collection line prior to the end of construction, the Applicant would utilize HDD for any wetland crossing. No impacts to wetlands would occur.

The Applicant states that the boundaries of streams and wetlands within and immediately adjacent to the construction limits of disturbance would be flagged, staked, or fenced prior to construction. These sensitive areas would also be depicted on construction drawings. All contractors and subcontractors would be provided with training to understand the significance of the types of flagging used and the importance of staying within defined limits of work areas, especially in and adjacent to marked sensitive resource areas such as wetlands.

The project is located within the watershed of the Big Darby Creek State and National Scenic River. The Big Darby Creek provides habitat to the greatest diversity of freshwater mussels of any river of its size in the Midwest, including federally endangered species. The Ohio Scenic Rivers Program (OSRP), along with a coalition of private and public partners, including the ODNR, have invested approximately \$120 million to date in habitat protection, land use planning, restoration and ongoing resource management for this watershed.

In the ODNR Division of Wildlife (DOW) coordination letter submitted with the application, dated December 7, 2020, the OSRP provided recommendations on how the project can be designed and built to protect the Big Darby Creek Watershed. In summary, the OSRP provided recommendations on project siting, native prairie flower and grass plantings, the SWPPP, and a request to be notified by the project during each phase of the project. In a data request response to Staff on April 20, 2021, the Applicant committed to coordinating with the OSRP regarding the project and any further design input. The Applicant has committed to implementing nearly all of the recommendations the OSRP requested, including using Deer Fencing instead of chain-link fencing to allow wildlife to move in and out of the project area more freely, and to leave a portion of the project boundary open in the central portion of the project to allow the Metro Parks access to utilize the opening as a trail. The Applicant also committed to coordinating with the Metro Parks, including on buffer vegetation, and the Darby Creek Association, including providing them and other local stakeholders with planning information and the construction schedule for the project.

Specifics about how surface waters would be further protected from indirect construction stormwater impacts using erosion and sedimentation controls would be outlined in the Applicant's SWPPP. The Applicant would obtain an Ohio National Pollutant Discharge Elimination System (NPDES) construction stormwater general permit through the Ohio EPA prior to the start of construction. The Applicant would implement Ohio EPA published Guidance on Post-Construction Storm Water Control for Solar Panel Arrays to project construction and operation. Additionally, the Applicant has committed to complying with the Big Darby Creek Watershed total maximum daily loads to ensure surface waters in the vicinity of the project are not impacted.

The project would not impact a 100-year floodplain.

51. Wetlands falling within the purview of the Clean Water Act are regulated within Ohio by R.C. 6111, et seq. and Ohio Adm.Code 3745-1-50, et seq. Ohio Adm.Code 3745-1-54 establishes wetland categories.

Threatened and Endangered Species⁵²

The Applicant requested information from the ODNR and the USFWS regarding state and federal listed threatened or endangered plant and animal species. Staff gathered additional information through field assessments and review of published ecological information. The following table provides the results of the information requests, field assessments, and document review.

MAMMALS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Known range, presence established in project area.
northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Endangered	Known range, presence established in project area.
Little brown bat	<i>Myotis lucifugus</i>	N/A	Endangered	Known range, presence established in project area.
Tricolored bat	<i>Perimyotis subflavus</i>	N/A	Endangered	Historical range includes the project area.
FRESH WATER MUSSELS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Purple cat's paw	<i>Epioblasma o. obliquata</i>	Endangered	Endangered	Known Range. No in-water work proposed.
Black sandshell	<i>Ligumia recta</i>	N/A	Threatened	Known Range. No in-water work proposed.
elephant-ear	<i>Elliptio crassidens crassidens</i>	N/A	Endangered	Known Range. No in-water work proposed.
Pondhorn	<i>Unio merus tetralasmus</i>	N/A	Threatened	Known Range. No in-water work proposed.

52. Based on agency coordination with the USFWS and ODNR, identified species of concern are, in general, defined as those species that are protected under the federal Endangered Species Act of 1973, as amended (16 U.S.C. §§ 1531-1544) and/or according to the Conservation of Natural Resources within R.C. 1518.01-1518.99; 1531.25; and 1531.99. *See also e.g.*, R.C. 1531.08 states, in part: "In conformity with Section 36 of Article II, Ohio Constitution, providing for the passage of laws for the conservation of the natural resources of the state, including streams, lakes, submerged lands, and swamplands, and in conformity with this chapter and Chapter 1533. of the Revised Code, the chief of the division of wildlife has authority and control in all matters pertaining to the protection, preservation, propagation, possession, and management of wild animals and may adopt rules under section 1531.10 of the Revised Code for the management of wild animals."

One of the missions of the ODNR is to "conserve and improve the fish and wildlife resources and their habitats and promote their use and appreciation by the public so that these resources continue to enhance the quality of life for all Ohioans." In carrying out this mission, the ODNR considers the "status of native wildlife species [to be] very important" and therefore lists wildlife species needing protection. (ODNR, *State Listed Species*, <https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-ODNR/wildlife/state-listed-species>).

In addition to endangered species, those species classified as "threatened" are considered during OPSB project planning and approval because these species are those "whose survival in Ohio is not in immediate jeopardy, but to which a threat exists. Continued or increased stress will result in its becoming endangered." *Id.*

Ohio pigtoe	<i>Pleurobema cordatum</i>	N/A	Endangered	Known Range. No in-water work proposed.
rayed bean	<i>Villosa fabalis</i>	Endangered	Endangered	Known Range. No in-water work proposed.
washboard	<i>Megaloniais nervosa</i>	N/A	Endangered	Known Range. No in-water work proposed.
snuffbox	<i>Epioblasma triquetra</i>	Endangered	Endangered	Known Range. No in-water work proposed.
Clubshell	<i>Pleurobema clava</i>	Endangered	Endangered	Known Range. No in-water work proposed.
Northern riffleshell	<i>Epioblasma torulosa tangiana</i>	Endangered	Endangered	Known Range. No in-water work proposed.
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Threatened	Endangered	Known Range. No in-water work proposed.
Long solid	<i>Fusconaia maculate maculate</i>	N/A	Endangered	Known Range. No in-water work proposed.
Pocketbook	<i>Lampsilis ovata</i>	N/A	Endangered	Known Range. No in-water work proposed.
fawnsfoot	<i>Truncilla donaciformis</i>	N/A	Threatened	Known Range. No in-water work proposed.
threehorn wartyback	<i>Obliquaria reflexa</i>	N/A	Threatened	Known Range. No in-water work proposed.

FISH

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Scioto madtom	<i>Noturus trautmani</i>	Endangered	Endangered	Known Range. No in-water work proposed.
goldeye	<i>Hiodon alosoides</i>	N/A	Endangered	Known Range. No in-water work proposed.
Iowa darter	<i>Etheostoma exile</i>	N/A	Endangered	Known Range. No in-water work proposed.
Popeye shiner	<i>Notropis ariommus</i>	N/A	Endangered	Known Range. No in-water work proposed.
shortnose gar	<i>Lepisosteus platostomus</i>	N/A	Endangered	Known Range. No in-water work proposed.
Northern brook lamprey	<i>Ichthyomyzon fossor</i>	N/A	Endangered	Known Range. No in-water work proposed.
Spotted darter	<i>Etheostoma maculatum</i>	N/A	Threatened	Known Range. No in-water work proposed.
Tonguetied minnow	<i>Exoglossum laurae</i>	N/A	Threatened	Known Range. No in-water work proposed.

Lake chubsucker	<i>Erimyzon sucetta</i>	N/A	Threatened	Known Range. No in-water work proposed.
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	N/A	Threatened	Known Range. No in-water work proposed.
paddlefish	<i>Polyodon spathula</i>	N/A	Threatened	Known Range. No in-water work proposed.

BIRDS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
northern harrier	<i>Circus cyaneus</i>	N/A	Endangered	Known range. Breeding documented in project area.
black-crowned night-heron	<i>Nycticorax nycticorax</i>	N/A	Threatened	Known range. No potentially suitable habitat in project area.
American bittern	<i>Botaurus lentiginosus</i>	N/A	Endangered	Known range. Breeding documented in project area. Potential suitable habitat will be avoided by the project.
Cattle egret	<i>Bubulcus ibis</i>	N/A	Endangered	Known range. No potentially suitable habitat in project area.
Upland sandpiper	<i>Bartramia longicauda</i>	N/A	Endangered	Known range. Breeding documented in project area.
Lark sparrow	<i>Chondestes grammacus</i>	N/A	Endangered	Known range. No potentially suitable habitat in project area.
Least bittern	<i>Ixobrychus exilis</i>	N/A	Threatened	Known range. Breeding documented in project area. Potential suitable habitat will be avoided by the project.
Sandhill crane	<i>Grus canadensis</i>	N/A	Threatened	Known range. No potentially suitable habitat in project area.

The Applicant did not identify any listed plant species during field surveys; however, two northern harriers were observed in the project area. In the event that the Applicant encounters listed plant or animal species during construction, Staff recommends that the Applicant contact Staff, the ODNR, and the USFWS, as applicable. Staff also recommends that if the Applicant encounters any listed plant or animal species prior to construction, the Applicant include the location and how impacts would be avoided in the ecologically sensitive resource impact avoidance/minimization plan.

The project area is within the range of state and federal endangered Indiana bat (*Myotis sodalis*), and the state and federal threatened northern long-eared bat (*Myotis septentrionalis*), the state endangered little brown bat (*Myotis lucifugus*), and the state endangered tricolored bat (*Perimyotis subflavus*). Presence of the Indiana bat, northern long-eared bat, and little brown bat has already been established in the project area. In order to avoid impacts to listed bat species, Staff recommends the Applicant adhere to seasonal tree cutting dates of October 1 through March 31 for all trees three inches or greater in diameter, unless coordination efforts with the ODNR and the USFWS reflects a different course of action. The Applicant states seven acres of tree clearing would be required for this project. The Applicant has committed to limiting tree-clearing activities to the seasonal tree clearing window in order to avoid impacts to these species. During the winter months, bats hibernate in caves and abandoned mines, also known as hibernacula. The project would not impact any hibernacula.

The project area is within the range of state endangered upland sandpiper (*Bartramia longicauda*). Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program. The ODNR DOW recommends construction in upland sandpiper preferred nesting habitat types be avoided during the species' nesting period of April 15 through July 31. The Applicant's consultant, West, identified and mapped suitable habitat for this species in the project area. The Applicant has committed to mowing and conducting site preparation in pasture and grasslands outside of the species' nesting period.

The project is within the range of the state endangered northern harrier (*Circus cyaneus*). Northern harriers breed and hunt in large wet meadows and dry grasslands. Staff recommends that construction in northern harrier preferred nesting habitat types be avoided during their nesting period of May 15 through August 1, unless coordination with the ODNR allows a different course of action. Further, mapping of any habitat areas should be provided to construction personnel with instructions to avoid these areas during the restricted dates. The Applicant has committed to mowing and conducting site preparation in pasture and grasslands outside of the species' nesting period.

Impacts to other listed species would be avoided due to a lack of proposed impacts to suitable habitats.

Vegetation

The following table reflects the different vegetative communities present in the project area and associated impact for the facility.

VEGETATIVE COMMUNITIES WITHIN PROJECT AREA	
Vegetation Community Type	Total (Acres)
Forestland	23.73
Grassland	4.05
Open Space	45.79
Barren Land	0.22
Shrub/Scrub	1.11
Pasture	118.78

Wetlands	3.64
Agricultural Lands	2,209.86

Permanent vegetative impacts would occur primarily within agricultural lands. Forestland impact is estimated to be approximately seven acres and would be limited to isolated woodlots and narrow tree-lines between fields.

The Applicant has developed a vegetation management plan in which it would incorporate pollinator-friendly habitat in accordance with the recommendations of the Ohio Pollinator Habitat Initiative. This habitat would enhance the visual appeal of the project, enrich local wildlife habitat, benefit the local farming community, increase plant diversity, and discourage invasive species. This vegetation would be incorporated under and between the panels and in the open areas of the project. This project would be expected to represent a reduced environmental impact when compared to the current land use of agricultural plant production. This is due to the reduction of frequent tilling leading to erosion and sedimentation, and reduced fertilizer and pesticide application. To further assure that these benefits would be realized, the Applicant has committed to take steps to prevent establishment and/or further propagation of noxious weeds identified in Ohio Adm.Code 901:5-37 et seq. during implementation of any pollinator-friendly plantings.

Furthermore, Staff and the ODNR DOW recommend the Applicant utilize the low-growing grass and forbs species the Applicant proposed in Appendices B or C of the application for permanent ground cover. The ODNR DOW recommends utilizing these species as they are native to Ohio, would maximize infiltration, and provide benefits to native wildlife. Additionally, the ODNR DOW recommends routine mowing for the project site not occur until after July 15th during the growing season three years after construction on the project is completed. This recommendation would allow the vegetation to be established and reduce risks to ground-nesting birds. As the project lies within the Big Darby Creek Watershed, Staff agrees with these recommendations and believes they would assure minimal impacts to the watershed.

Recommended Findings

Staff recommends that the Board find that the Applicant has determined the nature of the probable environmental impact for the proposed facility, and therefore complies with the requirements specified in R.C. 4906.10(A)(2), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Site Selection

The Applicant's site selection process focused on the following criteria: access to the electric transmission system, competitive analysis, compatible land use, landowner interest, and impacts to ecological and cultural resources and geotechnical conditions. In preparation of the application, the Applicant engaged local officials and the public. Local governmental guidance and public input have been incorporated into the project design where feasible.

Minimizing Impacts

An MOU between the Applicant and OHPO has been signed and filed in the case docket. The MOU commits the Applicant to avoid certain sites identified in the field summary results as potentially eligible for NRHP listing and to also minimize visual impacts to identified historic resources through the landscape plan for this project. The MOU also details the steps to be taken if unanticipated archaeological discoveries are made. With the implementation of the commitments for protecting and avoiding cultural resources as detailed in the MOU, Staff has determined that minimal adverse impacts to cultural resources would be achieved.

The proposed facility would have an overall positive impact on the state and local economy due to the increase in construction spending, wages, purchasing of goods and services, annual lease payments to the local landowners, increased tax revenues and potential PILOT revenue.

The geology of the project site in Franklin County does not present conditions that would limit or negatively impact the construction and future operation of the proposed facility. Staff recommends that the final detailed engineering drawings of the final project design shall account for geological features.

No impacts are proposed to wetlands and significant impacts to surface waters are not anticipated. Impacts to any state or federal listed species can be avoided by following seasonal restrictions for construction in certain habitat types, as detailed by the USFWS and the ODNR. The Applicant did not identify any listed plant or animal species during field surveys. While the project is within the range of several threatened and endangered species, impacts would be avoided on suitable habitats.

Noise impacts are expected to be limited to construction activities. The adverse impact of construction noise would be temporary and intermittent and would occur away from most residential structures. Staff recommends that the Applicant limit the hours of construction to address potential construction and operational related concerns from any nearby residents. No non-participating receptors were modeled to receive noise impacts greater than the daytime ambient noise level during facility operation. If the Applicant chooses an inverter or transformer model with a higher sound output, Staff recommends that the Applicant submit an updated noise study. This would confirm that sound levels would not exceed the daytime ambient level plus five dBA at any non-participating sensitive receptor, assuring that operation noise impacts are minimal.

Further, the Applicant has developed a complaint resolution plan which would be implemented throughout construction and operation.

During the construction period, local, state, and county roads would experience a temporary increase in truck traffic due to deliveries of equipment and materials. Due to the location of the project, the Applicant anticipates that most components for the entire project would be delivered by using flatbed or tractor-trailer vehicles and multi-axle dump trucks. The transportation management plan would be finalized once the engineering layout is determined. A final delivery route plan would be developed through discussions with local officials. The Applicant intends to enter into a road use agreement with the county engineer.

Due to the low profile of the project, combined with existing vegetation in the area, the visual impacts would be most prominent to landowners in the immediate vicinity of the infrastructure itself. In order to reduce impacts in areas where an adjacent, non-participating parcel contains a residence with a direct line of sight to the project, Staff has recommended a condition requiring a final landscape and lighting plan that addresses the potential impacts of the facility. Staff also recommends that the Applicant adjust its landscape and lighting plan to address potential impacts to the traveling public, nearby communities, and recreationalists. In addition, Staff recommends a perimeter fencing condition to further minimize overall aesthetic concerns and to provide more wildlife friendly access for small animals.

The Applicant has committed to take steps to address such potential impacts to farmland, including repairing all drainage tiles damaged during construction and restoring temporarily impacted land to its original use. The Applicant has consulted landowners and county records to determine the locations of drain tile mains. To avoid impacts to drain tiles, the Applicant stated that it would locate drain tiles as accurately as possible prior to construction. The Applicant has committed to promptly repair any drain tile found to be damaged by the project during the operational life of the project. Following decommissioning of the facility, land can be restored for agricultural use.

The Applicant has prepared a decommissioning plan to decommission the solar facility. The Applicant would provide for financial security to ensure that funds are available for decommissioning and land-restoration. The Applicant would restore the land significantly to its original topography to allow for resumption of agricultural use. Staff has recommended a condition requiring that the draft decommissioning plan be updated to include improved financial assurance and a decommissioning cost estimate, among other things.

Conclusion

Staff concludes that the proposed project would result in both temporary and permanent impacts to the project and surrounding areas. The project is unlikely to pose a significant adverse impact to existing land use, cultural resources, recreational resources, or wildlife. With Staff's recommended conditions to further mitigate potential impacts, Staff concludes that the project represents the minimum adverse environmental impact.

Recommended Findings

Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact, and therefore complies with the requirements specified in R.C. 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include

the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

CONSIDERATIONS FOR R.C. 4906.10(A)(4)

ELECTRIC GRID

Pursuant to R.C. 4906.10(A)(4), the Board must determine that the proposed electric facilities are consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facilities will serve the interests of electric system economy and reliability. The purpose of this section of the report is to evaluate the impact of integrating the proposed facility into the bulk power system (BPS).

The Applicant proposed to construct a solar-powered electric generation facility, capable of producing 250 MW. The proposed facility would interconnect from the collection substation to the regional transmission grid through the existing AEP Ohio Transco 345 kV Cole Road Substation. The solar generation facility is located slightly less than two miles from the Cole Road Substation.

NERC Planning Criteria

The North American Electric Reliability Corporation (NERC) is responsible for the development and enforcement of the federal government's approved reliability standards, which are applicable to all owners, operators, and users of the BPS. As an owner, operator, and/or user of the BPS, the Applicant is subject to compliance with various NERC reliability standards. The NERC reliability standards are included as part of the system evaluations conducted by PJM Interconnection, LLC (PJM).⁵³

PJM Interconnection

The Applicant submitted two generation interconnection requests for the proposed facility to PJM. For the initial request of March 2019, PJM has assigned the queue ID AE2-214 under the name "Cole 345 kV," which requested an injection of 200 MW. The second request of September 2019 was assigned queue ID AF1-275 also under the name of "Cole 345 kV" and requested an increase of 50 MW. PJM has completed and issued the feasibility study reports for AE2-206 and AF1-078 in October 2019 and January 2020, respectively.⁵⁴ PJM has completed and issued the System Impact Study (SIS) reports for AE2-214 and AF1-275 in January 2020 and August 2020, respectively.⁵⁵

The Table below shows the queue positions assigned to the Applicant by PJM.

53. PJM Interconnection, LLC is the regional transmission organization charged with planning for upgrades and administering the generation queue for the regional transmission system in Ohio. Generators wanting to interconnect to the bulk electric transmission system located in the PJM control area are required to submit an interconnection application for review of system impacts. The interconnection process provides for the construction of expansions and upgrades of the PJM transmission system, as needed to maintain compliance with reliability standards with the addition of generation in its footprint.

54. PJM Interconnection, "Feasibility Study Report for Queue Project AE2-214" and "Feasibility Study Report for Queue Project AF1-275", <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx> (Accessed February 24, 2021).

55. PJM Interconnection, "System Impact Study for Queue Project AE2-214" and "System Impact Study Report for Queue Project AF1-275", <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx> (Accessed February 24, 2020).

PJM QUEUES: PLEASANT PRAIRIE SOLAR FACILITY PROJECT			
Queue ID	Queue Date	Power Output (MW)	Capacity (MW)
AE2-214	3/21/2019	200	120
AF1-275	9/30/2019	50	50
Totals		250	170

PJM studied the interconnection as an injection into the BPS via the AEP Cole Road 345 kV Substation. The Applicant requested a total injection of 250 MW, of which 170 MW could be available in the PJM capacity market. The capacity market ensures that there is an adequate availability of generation resources that can meet current and future demand.

PJM Network Impacts

PJM analyzed the proposed facility interconnected to the BPS. The 2022 summer peak power flow model was used by PJM to evaluate regional reliability impacts for AE2-214 as a 200 MW injection into the AEP Cole Road 345 kV Substation. Additionally, queue AF1-275 as a 50 MW injection into the Cole Road Substation using a 2023 summer peak flow model with a commercial probability of 100 percent. The studies did not reveal any reliability criteria violations. The chart below displays the results of the PJM SIS for the regional footprint.

PJM REGIONAL SYSTEM IMPACTS (2022 Summer Peak)	
Generation Deliverability – System Normal & Single Contingency Outage	
Plant Output: Capacity Level – 170 MW	No Problems Identified.
Category C and D – Multiple Contingency Outages	
Plant Output: Power Level – 250 MW	Three Breakers may Overload. ⁵⁶

New System Reinforcements

No system reinforcements were identified for queue position AE2-214. The system reinforcements for queue position AF1-275 included upgrading or replacing three 345 kV, 1600 ampere (amp) switches at Beatty Station on the Beatty-Cole 345 kV line. Additionally, the position requires upgrading or replacing three 345 kV 1600 amp switches at Beatty Station on the Beatty-Bixby 345 kV line.⁵⁷

Contribution to Previously Identified Overloads – Network Impacts

PJM studied the project for possible overloading where the proposed facility may affect earlier generation or transmission projects in the PJM queue. None were identified for queue position

56. Breaker AEP_B4_#10715_05Cole 345_C, AEP_P4_#3195_05Beatty 345_304E, and AEP_P4_#8094_05Bixby 345_C under Summer Peak Load Flow, page 10/29 of the PJM System Impact Study Report for Queue position AF1-275.

57. PJM Generation Interconnection System Impact Study Report for Queue Project AF1-275 Cole 345 kV, page 12 of 29, August 2020.

AE2-214. However, the position AF1-275 identified three breakers, identified above, that may overload.

Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Problems identified here would likely result in operational restrictions for the project. Network upgrades under this section would allow for the delivery of energy with operational restrictions. The results identified no congestion issues for the queue position AE2-214. There was one operation line that may overload for the queue position AF1-275.⁵⁸

Short Circuit Analysis

The short circuit analysis, which is part of the SIS, evaluates the interrupting capabilities of circuit breakers that would be impacted by the proposed generation addition. PJM performed a short circuit analysis and the results identified no circuit breaker problems for either queue position.

Recommended Findings

Staff recommends that the Board find that the proposed facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facility would serve the interests of electric system economy and reliability. Therefore, Staff recommends that the Board find that the facility complies with the requirements specified in R.C. 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

⁵⁸. PJM Generation Interconnection System Impact Study Report for Queue Project AF1-275 Cole 345 kV, pages 10 and 11 of 29, August 2020.

Considerations for R.C. 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air⁵⁹

Air quality permits are not required for construction or operation of the proposed facility. However, fugitive dust rules adopted under R.C. Chapter 3704 may be applicable to the construction of the proposed facility. The Applicant would control temporary and localized fugitive dust by using BMPs such as using water to wet soil to minimize dust during periods of high heat as outlined in the ODNR's *Ohio Rainwater and Land Development Manual*. This method of dust control is typically used to comply with fugitive dust rules.

This project would not include any stationary sources of air emissions and, therefore, would not require air pollution control equipment.

Water⁶⁰

The Applicant anticipates obtaining environmental permits, if necessary. The Applicant would mitigate potential water quality impacts associated with aquatic discharges by obtaining NPDES construction storm water general permits from the Ohio EPA with submittal of a notice of intent and development and implementation of a SWPPP. The SWPPP would describe and outline BMPs to control soil erosion, minimize sedimentation, and outline placement of silt fence and compost filter sock where appropriate to minimize runoff.

The Applicant would develop an SPCC plan to manage the storage and mitigate the unlikely release of hazardous substances. Specifically, the Applicant indicates that its engineering procurement contractor would implement and follow all measures indicated in the SPCC plan and

59. The Revised Code provides for the Ohio EPA to administer and enforce the provisions of R.C. Ch. 3704 with regards to air pollution control. See e.g., RC 3704.03, 3704.161. The Ohio EPA Division of Air Pollution Control ensures compliance with the federal Clean Air Act and the Emergency Planning and Community Right-to-Know Act as part of its mission to attain and maintain air quality at a level that protects the environment and public health. (Ohio EPA, *Division of Air Pollution Control*, <https://www.epa.ohio.gov/dapc/#188913097-featured-topics>). The Division of Air Pollution Control develops and enforces rules in the Ohio Administrative Code, which assist the state of Ohio to: attain and maintain the National Ambient Air Quality Standards (NAAQS) contained in the Clean Air Act; fulfill the requirements set forth by the Ohio General Assembly in R.C. 3704; and protect and maintain healthy air quality for the citizens of the state of Ohio. (See, Ohio EPA, *Division of Air Pollution Control Rules and Laws*, <<https://www.epa.ohio.gov/dapc/DAPCrules>>).

60. The Revised Code provides for the Ohio EPA to be the lead agency in administering the provisions of Ch. 6111 with regards to water quality. See e.g., RC 6111.041. For example, the Ohio EPA, among other things, “ensures compliance with the federal Clean Water Act and works to restore and enhance the integrity of Ohio’s waters.” (Ohio EPA Website, *Division of Surface Water*, <https://www.epa.ohio.gov/dsw/Surface-Water/LiveTabId/113292#:~:text=Ensures%20compliance%20with%20the%20federal,the%20integrity%20of%20Ohio's%20waters.&text=We%20issue%20permits%20to%20regulate,aimed%20at%20improving%20polluted%20streams>). The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. (US EPA, *Summary of Clean Water Act*, <https://www.epa.gov/laws-regulations/summary-clean-water-act>)

monitor for aquatic discharges draining from the site, such as an oily sheen on storm water, etc. to ensure that the water resources are not at-risk during construction.

With these measures, construction and operation of this facility would comply with requirements of R.C. Chapter 6111, and the rules and laws adopted under that chapter.

Solid Waste⁶¹

Debris generated from construction activities would consist of non-hazardous solid waste including primarily plastic, wood, cardboard, metal packing/packaging materials, construction scrap, and general refuse. The Applicant stated that all construction-related debris would be disposed of at an authorized solid waste disposal facility.

Operation of the facility would not require acquisition of waste generation, storage, treatment, transportation, and/or disposal licenses or permits. Minimal non-hazardous waste generated would be accumulated in small amounts in appropriate trash receptacles and disposed of at an authorized solid waste disposal facility. No hazardous waste would be generated as part of project operations.

The Applicant's solid waste disposal plans would comply with solid waste disposal requirements set forth in R.C. Chapter 3734.

Aviation⁶²

The height of the tallest above ground structures would be the lightning protection structures at the collection substation which would be approximately 100 feet tall.⁶³ That height is under the height requirement from the Federal Aviation Administration (FAA), pursuant to 14 CFR Part 77.9(a), for filing a Form 7460-1. However, the FAA performed an aeronautical study for various points around the solar facility. The FAA provided the results of that aeronautical study to the Applicant as a determination of no hazard to air navigation for those various points of the solar facility.⁶⁴ These determinations of no hazard letters resulting from the aeronautical studies are contingent upon closure of Columbus Southwest (04I) and Darby Dan (75OA) airports.

The abandoned Columbus Southwest (04I) airport is currently being decommissioned and has solar panels proposed on it as part of the proposed development of this solar facility. The landowner currently uses the property for agricultural activities and is participating in the solar facility project with the Applicant. Solar equipment is proposed to be located on this former airstrip. The landowner has begun the process with the FAA to deactivate the property as an airport,

61. The Revised Code generally provides for Ohio EPA to administer and enforce the provisions of Chapters 3714. and 3734., in particular with regard to solid waste facilities, infectious waste treatment facilities and construction and demolition debris facilities.

62. The FAA is the authority in the U.S. government responsible for regulating all aspects of civil aviation, including issuing determinations on petitions for objects that penetrate the nation's airspace. The FAA conducts aeronautical studies for new structures that will exceed 200 feet in height under the provisions of 49 U.S.C. 44718, and applicable 14 CFR Part 77. Pursuant to R.C. 4561.32, ODOT regulates the height and location of structures and objects within any airport's clear zone surface, horizontal surface, conical surface, primary surface, approach surface, or transitional surface.

63. Pleasant Prairie Solar Energy, LLC's Response to the Second Data Request from Staff of the OPSB, Data Request #10.

64. Second Supplement to Application – FAA Determination of No Hazard, filed 4/21/2021.

by submitting to the FAA its Form 7480-1 “Notice for Construction, Alteration and Deactivation of Airports.”.

The proposed solar facility also encompasses the former privately owned private use Darby Dan airfield (750A). The Darby Dan landowner is also participating in the project with the Applicant and solar equipment is proposed to be located on this airstrip. The Darby Dan Airport would no longer receive air traffic, as it would be decommissioned as part of the development of the solar facility.⁶⁵

According to the FAA, the closest public-use airports are the Bolton Field (TZR), and Ohio State University (OSU) airports which are between two and ten miles from the proposed solar facility collector substation. The nearest heliport is the ODOT (2A7) heliport which is approximately seven miles from the proposed solar facility collector substation.

Staff contacted the FAA and learned that the glare analysis was not provided to the FAA for review and that it was outside the scope of its review. However, the Applicant has coordinated with Bolton Field airport staff and the Columbus Regional Airport Authority, which is responsible for planning at Bolton Field. Because of this coordination and since the project is not on airport property, the Applicant does not anticipate any airspace navigation issues. However, Staff contacted the FAA and learned that the glare analysis was not considered and is outside its scope of review. To address this potential issue, Staff recommends that the Applicant obtain written concurrence from the Bolton Field Airport Authority in the form of either a board resolution or signed letter/e-mail stating that the board is willing to accept the impact from glare on the approach flight path(s) and airport traffic control tower.

In accordance with R.C. 4906.10(A)(5), Staff contacted the ODOT Office of Aviation and the Columbus Regional Airport Authority during the review of this application in order to coordinate review of potential impacts of the facility on local airports.⁶⁶ As of the date of this filing, no such concerns have been identified.

Recommended Findings

Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

65. Application at Exhibit J, Section 3.3.

66. R.C. 4906.10(A)(5) states, in part: “[i]n determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under section 4561.341 of the Revised Code.” R.C. 4561.341 states, in part: “[p]ursuant to any consultation with the power siting board regarding an application for certification under section 4906.03 or 4906.10 of the Revised Code, the office of aviation of the division of multi-modal planning and programs of the department of transportation shall review the application to determine whether the facility constitutes or will constitute an obstruction to air navigation based upon the rules adopted under section 4561.32 of the Revised Code. Upon review of the application, if the office determines that the facility constitutes or will constitute an obstruction to air navigation, it shall provide, in writing, this determination and either the terms, conditions, and modifications that are necessary for the applicant to eliminate the obstruction or a statement that compliance with the obstruction standards may be waived, to the power siting board under section 4906.03 or 4906.10 of the Revised Code, as appropriate.”

Considerations for R.C. 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Safety

The Applicant stated that it would use reliable and certified equipment compliant with applicable Underwriters Laboratories, Institute of Electrical and Electronics Engineers, National Electrical Code, National Electrical Safety Code (NESC), and American National Standards Institute standards.

The Applicant intends to use warning signs, fencing, and gates to restrict access to the potential hazards within the solar project area. Additionally, the Applicant intends to design its facility with setbacks to non-participating sensitive receptors, non-participating properties, and public roads. Specifically, the Applicant would implement the following setbacks the greater of 100 feet from the fence-line to a property line of any non-participating parcel or 300 feet from the fence-line to a non-participating home. Additionally, the Applicant would implement a 100-foot setback along the Kuhlwein and Murnan Road corridors.

The Applicant stated that it intends to restrict public access to the facility by enclosing the project area with fencing that complies with NESC requirements. The Applicant initially proposed fencing that would be a six feet tall chain link fence topped with one foot of barbed wire strand, with access through gates.⁶⁷ The Applicant now proposes installation of a seven-foot tall woven wire and wooden posts fence that is aesthetically fitting for a rural area and incorporates small animal crossings.⁶⁸ Staff has recommended that, except for the substation fencing, the solar panel perimeter fence type be both wildlife permeable and aesthetically fitting for a rural location.

Prior to construction, the Applicant also intends to develop and implement an emergency response plan and further consultation with potentially affected local and regional emergency response personnel. The Applicant has provided an example emergency response plan, which Staff has reviewed.⁶⁹

Public Interaction and Participation

The Applicant hosted a virtual public informational meeting for the project. Attendees were provided the opportunity to listen to a presentation about the project, ask questions, and provide comments. According to the Applicant, attendees provided feedback on topics including impacts to the local economy, taxes, the appearance of the project, and interconnection to the power grid. Further, the Applicant stated that the primary concern expressed by attendees was that the facility would have negative impacts on area property values.⁷⁰ The Applicant commissioned a property

67. Pleasant Prairie Solar Energy, LLC's Response to the Second Data Request from Staff of the OPSB, Data Request #1.

68. Pleasant Prairie Solar Energy, LLC's Response to the Second Data Request from Staff of the OPSB, Data Request #1.

69. Pleasant Prairie Solar Energy, LLC's Response to the Fourth Data Request from Staff of the OPSB, Data Request #14.

70. Application at pages 26.

value impact study, which concluded the proposed solar facility would have no negative impact on the value of adjoining or abutting property.⁷¹

The Applicant has drafted a complaint resolution plan to handle complaints during the construction and operation of the facility. Staff recommends that a final version of this plan be filed on the docket no later than 30 days prior to the start of construction. The Applicant has committed to notify, by mail, affected property owners and tenants, including those individuals who were provided notice of the public information meeting, residents located within one mile of the project area, parties to this case, county commissioners, township trustees, emergency responders, airports, schools, and libraries, as well as anyone who as requested updates regarding the project, at least seven days prior to the start of construction and again at least seven days prior to the start of facility operation.⁷² The Applicant has also committed to provide the OPSB with a quarterly complaint summary report during construction and the first five years of operation of the facility. Staff recommends that these reports be filed on the public docket.

As of June 30, 2021, 19 documents have been filed in the public comments for this case. All public comments are available for Board members and the public to view online in the case record at <http://dis.puc.state.oh.us>. Commenters who expressed concerns about the project provided input on topics including public health, wildlife, property value, agriculture, aesthetics, setbacks, fencing, streams and wetlands, hydrology, and parks and recreation. Those supportive of the project stressed the potential benefits to the environment and the economy. Many of these topics, are addressed in sections of this report.

The Administrative Law Judge has scheduled a public hearing and an evidentiary hearing for this proceeding. The public hearing will be held on July 19, 2021, beginning at 6 p.m. The evidentiary hearing is scheduled for August 16, 2021, at 10:00 a.m.

Pleasant and Prairie townships have filed notices of intervention in this proceeding. The Board of Park Commissioners of the Columbus and Franklin County Metropolitan Park District, the Ohio Farm Bureau Federation, and No Prairie Solar, LLC have filed petitions for leave to intervene in this proceeding.

Recommended Findings

Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity, and therefore complies with the requirements specified in R.C. 4906.10(A)(6), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

71. Application at Exhibit P.

72. Applicant's response to Staff's first set of data requests.

Considerations for R.C. 4906.10(A)(7)

AGRICULTURAL DISTRICTS AND AGRICULTURAL LAND

Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility. The agricultural district program was established under R.C. Chapter 929. Agricultural district land is exempt from sewer, water, or electrical service tax assessments.

Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres in size or produce a minimum average gross annual income of \$2,500.

Approximately 1,626 acres of agricultural land would be disturbed by the proposed project.

However, the repurposed land could be restored for agricultural use when the project is decommissioned. No land with Agricultural District designation would be impacted.

The construction and operation of the proposed facility would disturb the existing soil and could lead to broken drainage tiles. A drain tile system consists of laterals, which are branches off a main, and main lines. Main lines can allow water to flow into or out of one parcel to another. The locating and avoiding of damaging drain tile mains can help prevent the pooling of water on project parcels and adjacent parcels.

When landowners lay down or repair drain tiles, they often keep records of the location of the drain tiles. The Applicant has consulted landowners and county officials to collect data on existing drain tiles within the project area. The Applicant has supplied a Drain Tile Mitigation Plan with its OPSB application.⁷³ This report discusses repair and mitigation details and provides a map of all known drain tile locations. The Applicant has committed to promptly repair any drain tile found to be damaged by the project during the operational life of the project.

No agricultural structures are expected to be impacted by the proposed project.

The Applicant has committed to take steps to address potential impacts to farmland, including repairing all drainage tiles damaged during construction and restoring temporarily impacted land to its original use. Excavated topsoil would be separated during construction and returned as topsoil after construction. Restored topsoil would be de-compacted and seeded after construction.

Recommended Findings

Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined, and therefore complies with the requirements specified in R.C. 4906.10(A)(7), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

73. See Application, Exhibit K.

Considerations for R.C. 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Construction of the proposed facility would not require the use of significant amounts of water. Water may be utilized for dust suppression and control on open soil surfaces such as construction access roads or unpaved transportation routes as needed during periods of high heat.

Operation of the proposed facility would not require the use of significant amounts of water. The O&M building would have water use and wastewater discharge comparable to a small business office and would install and maintain modern, efficient water fixtures.⁷⁴ The Applicant does not anticipate the need to clean the solar panels with water and would be depending on rainfall in the project area.⁷⁵

Recommended Findings

The Staff recommends that the Board find that the proposed facility would incorporate maximum feasible water conservation practices, and therefore complies with the requirements specified in R.C. 4906.10(A)(8), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

74. Pleasant Prairie Solar Energy, LLC's Response to the Fourth Data Request from Staff of the OPSB, Data Request #15.

75. Pleasant Prairie Solar Energy, LLC's Response to the Fourth Data Request from Staff of the OPSB, Data Requests #16 and #17.

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application filed by the Pleasant Prairie Solar Energy LLC, and the record compiled to date in this proceeding, Staff recommends that a number of conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of public or other input received subsequent to the issuance of this report. At this time, Staff recommends the following conditions to ensure conformance with the proposed plans and procedures as outlined in the case record to date, and to ensure compliance with all conditions listed in this Staff Report:

- (1) The Applicant shall install the facility, utilize equipment and construction practices, and implement mitigation measures as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (2) The Applicant shall conduct a preconstruction conference prior to the commencement of any construction activities. Staff, the Applicant, and representatives of the primary contractor and all subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate, and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review and shall file a copy of the agenda on the case docket. The Applicant may conduct separate preconstruction conferences for each stage of construction.
- (3) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility. If the Applicant demonstrates that good cause prevents it from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request an extension of time for the filing of such as-built specifications. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically referenced electronic data.
- (4) Separate preconstruction conferences may be held for the different phases of civil construction and equipment installation. At least 30 days prior to each preconstruction conference, the Applicant shall submit to Staff, for review and acceptance, one set of detailed engineering drawings of the final project design for that phase of construction and mapping in the form of PDF, which the Applicant shall also file on the docket of this case, and geographically referenced data (such as shapefiles or KMZ files) based on final engineering drawings to confirm that the final design is in conformance with the certificate. Mapping shall include the limits of disturbance, permanent and temporary infrastructure locations, areas of vegetation removal and vegetative restoration as applicable, and specifically denote any adjustments made from the siting detailed in the application. The detailed engineering drawings of the final project design for each phase of construction shall account for geological features and include the identity of the registered professional engineer(s), structural engineer(s), or engineering firm(s), licensed to practice engineering in the state of Ohio who reviewed and approved the designs. All applicable geotechnical study results shall be included in the submission of the final project design to Staff.

- (5) At least 30 days prior to the preconstruction conference, the Applicant shall provide Staff, for review and acceptance, the final geotechnical engineering report. This shall include a summary statement addressing both the geologic and soil suitability.
- (6) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of journalization of the certificate unless the Board grants a waiver or extension of time.
- (7) As the information becomes known, the Applicant shall file on the public docket the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.
- (8) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations. The Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant and shall file such permits or authorizations on the public docket. The Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (9) The certificate authority provided in this case shall not exempt the facility from any other applicable and lawful local, state, or federal rules or regulations nor be used to affect the exercise of discretion of any other local, state, or federal permitting or licensing authority with regard to areas subject to their supervision or control.
- (10) At least 30 days prior to the start of construction, the Applicant shall file a copy of the final complaint resolution plan on the public docket. At least seven days prior to the start of construction and at least seven days prior to the start of facility operations, the Applicant shall notify via mail affected property owners and tenants including those individuals who were provided notice of the public informational meeting, residences located within one mile of the project area, parties to this case, county commissioners, township trustees, emergency responders, airports, schools, and libraries, as well as anyone who has requested updates regarding the project. These notices shall provide information about the project, including contact information and a copy of the complaint resolution plan. The start of construction notice shall include written confirmation that the Applicant has complied with all preconstruction-related conditions of the certificate, as well as a timeline for construction and restoration activities. The start of facility operations notice shall include written confirmation that the Applicant has complied with all construction-related conditions of the certificate, as well as a timeline for the start of operations. The Applicant shall file a copy of these notices on the public docket. During the construction and operation of the facility, the Applicant shall submit to Staff a complaint summary report by the fifteenth day of April, July, October, and January of each year through the first five years of operation. The report shall include a list of all complaints received through the Applicant's complaint resolution process, a description of the actions taken toward the resolution of each complaint, and a status update if the complaint has yet to be resolved.
- (11) At least 30 days prior to the preconstruction conference, the Applicant shall submit its emergency response plan to Staff for review and acceptance and shall file it on the public docket. That plan shall include a provision(s) to keep the affected source water protection

area designees informed of the status of any spills, significant panel damage, and repair/clean-up schedule.

- (12) The facility shall be operated in such a way as to assure that no more than 250 megawatts would be injected into the Bulk Power System at any time.
- (13) The Applicant shall not commence any construction of the facility until it has executed an Interconnection Service Agreement and Interconnection Construction Service Agreement with PJM Interconnection, which includes construction, operation, and maintenance of system upgrades necessary to integrate the proposed generating facility into the regional transmission system reliably and safely. The Applicant shall docket in the case record a letter stating that the Agreement has been signed or a copy of the executed Interconnection Service Agreement and Interconnection Construction Service Agreement.
- (14) Prior to commencement of construction, the Applicant shall prepare a landscape and lighting plan in consultation with a landscape architect licensed by the Ohio Landscape Architects Board that addresses the aesthetic and lighting impacts of the facility with an emphasis on any locations where an adjacent non-participating parcel contains a residence with a direct line of sight to the project area. The plan shall also address potential aesthetic impacts to nearby communities, the travelling public, and recreationalists by incorporating appropriate landscaping measures such as shrub plantings or enhanced pollinator plantings. The plan shall include measures such as fencing, vegetative screening or good neighbor agreements. Unless alternative mitigation is agreed upon with the owner of any such adjacent, non-participating parcel containing a residence with a direct line of sight to the fence of the facility, the plan shall provide for the planting of vegetative screening designed by the landscape architect to enhance the view from the residence and be in harmony with the existing vegetation and viewshed in the area. The Applicant shall maintain vegetative screening for the life of the facility and the Applicant shall replace any failed plantings so that, after five years, at least 90 percent of the vegetation has survived. The Applicant shall maintain all fencing along the perimeter of the project in good repair for the term of the project and shall promptly repair any damage as needed. Lights shall be motion-activated and designed to narrowly focus light inward toward the facility, such as being downward-facing and/or fitted with side shields. The Applicant shall provide the plan to Staff for review and confirmation that it complies with this condition and shall also file it on the public docket.
 - a. This plan shall also address glare impacts through planting of vegetative screening along US 40.
- (15) Prior to commencement of construction, the Applicant shall submit to Staff for approval a solar panel perimeter fence type that is both small-wildlife permeable and aesthetically fitting for a rural location. Following Staff approval, the Applicant shall file details of this solar panel perimeter fence on the public docket. This condition shall not apply to substation fencing.
- (16) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving shall be limited to the hours between 9:00 a.m. and 7:00 p.m. or until dusk when sunset occurs after 7:00 p.m. Impact pile driving may occur between 7:00 a.m. and 9:00 a.m. if the noise impact at non-

participating receptors is not greater than daytime ambient Leq plus 10 dBA. If impact pile driving is required between 7:00 a.m. and 9:00 a.m., the Applicant shall install a noise monitor in a representative location to catalog that this threshold is not being exceeded. Hoe ram operations, if required, shall be limited to the hours between 10:00 a.m. and 4:00 p.m., Monday through Friday. HDD operations if started during general construction activities hours may continue until the completion of the HDD activity. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Ohio Adm.Code 4906-3-03(B)(2) of upcoming construction activities including potential for nighttime construction.

- (17) If the inverters or substation transformer chosen for the project have a higher sound power output than the models used in the noise model, the Applicant shall show that sound levels will not exceed the daytime ambient level plus five dBA at any non-participating sensitive receptor and will be submitted at least 30 days prior to construction. If noise data is not available from the inverter or transformer manufacturer, an operational noise test may be performed to comply with this condition. The test must be performed during the on a sunny day between 10 a.m. and 2 p.m. in the months of May-August, at a distance equal to the minimum distance from an inverter to a non-participating residence. If the test shows the operational noise level is greater than project area ambient Leq level plus five dBA additional noise mitigation will be required. This condition is complied with if the test shows the operational noise level is equal or less than project area ambient Leq level plus five dBA.
- (18) At least 60 days prior to the preconstruction conference, the Applicant shall provide to Staff and the Bolton Field airport authority, and shall file on the public docket, an updated glare analysis that (a) accounts for glare along roads, nearby residences in the project area, approach flight paths at Bolton Field, and the airport traffic control tower at Bolton Field, (b) provides an executive summary of the results, (c) updates provides reasoning and/or corrects “azimuthal view” and/or “observer view angle” inputs to the GlareGauge (or other) model and (d) includes a recommendation to minimize and address all predicted glare impacts.
- (19) At least 30 days prior to the preconstruction conference, the Applicant shall submit written concurrence from the Bolton Field Airport Authority in the form of either a board resolution or signed letter/e-mail stating that the board is willing to accept the impact from glare on its approach flight path(s) and airport traffic control tower.
- (20) The Applicant shall avoid, where possible, or minimize to the extent practicable, any damage to functioning field tile drainage systems and soils resulting from the construction, operation, and/or maintenance of the facility in agricultural areas. Damaged field tile systems shall be promptly repaired to at least original conditions or modern equivalent at the Applicant’s expense. However, if the affected landowner agrees to not having the field tile system repaired, they may do so only if the field tile systems of adjacent landowners are unaffected by the non-repair of the landowner’s field tile system.
- (21) The Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for the removal of trees three inches or greater in diameter to avoid impacts to Indiana bats,

northern long-eared bats, little brown bat, and the tricolored bat unless coordination with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) allows a different course of action. If coordination with these agencies allows clearing between April 1 and September 30, the Applicant shall docket proof of completed coordination on the case docket prior to clearing trees.

- (22) The Applicant shall have a Staff-approved environmental specialist on site during construction activities that may affect sensitive areas. Sensitive areas which would be impacted during construction shall be identified on a map provided to Staff, and shall include, but are not limited to, wetlands and streams, and locations of threatened or endangered species. The environmental specialist shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction. The environmental specialist shall have authority to stop construction to assure that unforeseen environmental impacts do not progress and recommend procedures to resolve the impact. A map shall be provided to Staff showing sensitive areas which would be impacted during construction with information on when the environmental specialist would be present.
- (23) The Applicant shall contact Staff, the ODNR, and the USFWS within 24 hours if state or federal listed species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals shall be immediately halted until an appropriate course of action has been agreed upon by the Applicant, Staff and the appropriate agencies. The Applicant shall also notify OPSB Staff and ODNR DOW if any wildlife mortality or entrapment is discovered in the facility during operation.
- (24) Construction in upland sandpiper preferred nesting habitat types shall be avoided during the species' nesting period of April 15 through July 31, unless coordination with the Ohio Department of Natural Resources allows a different course of action. If present, mapping of these habitat areas shall be provided to the construction contractor along with instructions to avoid these areas during the restricted dates. If coordination with ODNR allows construction between April 15 and July 31, the Applicant shall docket proof of completed coordination on the case docket prior to construction activities.
- (25) Construction in northern harrier preferred nesting habitat types shall be avoided during the species' nesting period of May 15 through August 1, unless coordination by the Applicant with the ODNR allows a different course of action during that period. If coordination with ODNR allows clearing between May 15 and August 1, the Applicant shall file proof of such coordination on the docket. Absent coordination with the ODNR that allows a different course of action, mapping of these habitat areas shall be provided to the construction contractor along with instructions to avoid these areas during the restricted dates.
- (26) If the Applicant encounters any new listed plant or animal species or suitable habitat of these species prior to construction, the Applicant shall include the location in the final engineering drawings and associated mapping, as required in Condition 4. The Applicant shall avoid impacts to these species and explain how impacts would be avoided during construction.

- (27) The Applicant shall utilize the low-growing grass and forbs species the Applicant proposed in Appendices B or C of the application for permanent ground cover. Additionally, routine mowing for the project site shall not occur until after July 15th during the growing season three years after construction on the project is completed.
- (28) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority regarding any temporary road closures, road use agreements, driveway permits, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility. Coordination shall include, but not be limited to, the county engineer, the Ohio Department of Transportation, local law enforcement, and health and safety officials. The Applicant shall detail this coordination as part of a final transportation management plan submitted to Staff prior to the preconstruction conference for review and confirmation by Staff that it complies with this condition and then file the plan on the public docket. This final transportation management plan would include any county required road use maintenance agreements. Any damaged public roads, culverts and bridges would be repaired promptly to their previous or better condition by the Applicant under the guidance of the appropriate regulatory authority. Any temporary improvements would be removed unless the appropriate regulatory authority requests that they remain in place.
- (29) At least 30 days prior to the preconstruction conference, the Applicant shall provide the status (i.e. avoidance, mitigation measures, or capping) of each water well within the project area. The Applicant shall indicate to Staff whether the nearest solar components to each uncapped well within the project area meets or exceeds any applicable minimum isolation distances outlined in Ohio Adm.Code 3701-28-7. For that water well (Well ID #962816) which is approximately 0 feet from solar equipment, the Applicant shall relocate the solar equipment at least 50 feet from that water well, demonstrate that the well is for nonpotable use and relocate solar equipment at least 10 feet from that well, or seal and abandon the water well. For monitoring wells (Well IDs #2033569 through 2033573) which are approximately 0 feet from solar equipment, the Applicant shall relocate the solar equipment at least 10 feet from those wells or seal and abandon the monitoring wells.
- (30) At least 30 days prior to the preconstruction conference, the Applicant shall submit an updated decommissioning plan, and total decommissioning cost estimate without regard to salvage value on the public docket that includes: (a) a provision that the decommissioning financial assurance mechanism include a performance bond where the company is the principal, the insurance company is the surety, and the Ohio Power Siting Board is the obligee; (b) a provision to monitor the site for at least one additional year to ensure successful revegetation and rehabilitation; (c) a timeline of up to one year for removal of the majority of equipment; (d) a provision where the performance bond is posted prior to the commencement of construction; and (e) a provision that the performance bond is for the total decommissioning cost and excludes salvage value.
- (31) At least 30 days prior to the preconstruction conference, that the Applicant shall submit its emergency response plan to Staff for review and acceptance. That plan shall include a provision(s) to keep the Hope Baptist Church and Ten Mile Inn informed of the status of any spills, significant panel damage, and repair/clean-up/decommission schedule.

- (32) At least 30 days prior to the preconstruction conference, the Applicant shall demonstrate that its solar and substation equipment is outside the protection zone(s) for the Hope Baptist Church and Ten Mile Inn.



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Summary: Staff Report of Investigation electronically filed by Mr. Jason Cross on behalf of Staff of OPSB