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October 8, 2021

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

Re: Case No. 21-1031-EL-BGA, Fox Squirrel Solar, LLC Application for a Boundary Change Amendment

Dear Ms. Troupe:

Accompanying this letter is an application by Fox Squirrel Solar, LLC ("Applicant"), for an amendment to its Certificate of Environmental Compatibility and Public Need issued in Case No. 20-931-EL-BGN ("Boundary Amendment"). This Amendment seeks to expand the boundary of the project area. This Boundary Amendment is being electronically filed.

In accordance with Ohio Administrative Code Rule 4906-2-04, we make the following declarations:

Name of the Applicant:

Fox Squirrel Solar, LLC, a wholly-owned subsidiary of EDF Renewables Development, Inc. 15445 Innovation Drive San Diego, CA 92128

Name and location of the Boundary Change Area:

Fox Squirrel Solar, LLC Oak Run and Range Townships Madison County, Ohio

Name of authorized representative:

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Dickinson Wright PLLC
150 East Gay Street
Columbus, Ohio, 43215
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CPirik@dickinsonwright.com

Ms. Tanowa Troupe Fox Squirrel Solar, LLC Boundary Amendment Application Page 2

#### Notarized Statement:

See attached Affidavit of Kathryn O'Hair Vice President, Fox Squirrel Solar, LLC

Very truly yours,

Christine M.T. Pirik

Cc: Jim O'Dell Theresa White Randall Schumacher Jon Pawley

4828-4161-2798 v2 [95732-2]

#### BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of Fox Squirrel Solar LLC for a Boundary Amendment to its Certificate in Case No. 20-931-EL-BGN	)	Case No: 21-1031-EL-BGA
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# AFFIDAVIT OF VICE PRESIDENT OF FOX SQUIRREL SOLAR LLC

STATE OF MINNESOTA

SS

COUNTY OF HENNEPIN

I, Kathryn O'Hair, being duly sworn and cautioned, state that I am over 18 years of age and competent to testify to the matters stated in this affidavit and further state the following based on my personal knowledge:

- I am the Vice President of Fox Squirrel Solar LLC, which is a wholly-owned subsidiary of EDF Renewables Development, Inc.
- 2. I have reviewed Fox Squirrel Solar LLC's Application for a Boundary Amendment to its Certificate of Environmental Compatibility and Public Need for the Fox Squirrel Project that was issued in Case No. 20-931-EL-BGN.
- 3. To the best of my knowledge, information, and belief the information and materials contained in the above-referenced Application are true and accurate.
- 4. To the best of my knowledge, information, and belief the above-referenced Application is complete.

Kathryn O'Hair Vice President

Sworn to before and signed in my presence this 2

day of October 2021.

WAYNE PEACOCK JR Notary Public-Minnesota

Notary Public

4824-2921-7221 v2 [39579-24]

#### **BEFORE**

#### THE OHIO POWER SITING BOARD

In the Matter of the Application of Fox Squirrel	)	
Solar, LLC for a Boundary Amendment to its	)	<b>Case No: 21-1031-EL-BGA</b>
Certificate in Case No. 20-931-EL-BGN.	)	

# BOUNDARY CHANGE AMENDMENT APPLICATION

Submitted by Fox Squirrel Solar, LLC
October 2021

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Exhibit A Preliminary Site Plan

Exhibit B Open House Notification

Exhibit C Interim Interconnection Service Agreement between PJM Interconnection,

LLC, Fox Squirrel, and AEP Ohio Transmission Company, Inc.

Exhibit D Transportation Effect and Route Evaluation Study

Exhibit E Culvert/Bridge Report

Exhibit F FAA Determination

Exhibit G Noise Evaluation

Exhibit H Hydrology and Hydraulics Preliminary Report

Exhibit I Geotechnical Engineering Report

Exhibit J Ecological Resource Analysis Report

Exhibit K United States Fish and Wildlife Correspondence

Exhibit L Ohio Department of Natural Resources Natural Heritage Database

Correspondence

Exhibit M Land Use Report

Exhibit N Cultural Resources Records Review

Exhibit O State Historic Preservation Office Approval of Work Plan

Exhibit P Phase I Archaeological Survey

Exhibit Q Architectural Survey & SHPO Concurrence

Exhibit R Vegetation Management Plan

Exhibit S Viewshed Analysis & Visual Impact Mitigation

Exhibit T Glare Analysis

Exhibit U Agricultural Field Drainage Inventory

#### **List of Abbreviations and Acronyms**

AC alternating current

Applicant Fox Squirrel Solar, LLC

CAUV Current Agricultural Use Value

CFR Code of Federal Regulations

CL lean clay

CPT Cone Penetration Testing

CR County Road

dB decibel

dBA A-weighted decibel

EDF Renewables, Inc.

ERA Ecological Resource Analysis

FAA Federal Aviation Administration

FEMA Federal Emergency Management Administration

Fisher Fisher Associates

IPac Information for Planning and Construction

Leq average sound level

LiDAR light detection and ranging

MH elastic silt
MW megawatts

NRCS Natural Resources Conservation Service

NRHP National Register of Historic Places

OAC Ohio Administrative Code

OAI Ohio Archaeological Inventory

ODNR Ohio Department of Natural Resources

OGS Ohio Genealogical Society

OHI Ohio Historic Inventory

OPSB Ohio Power Siting Board

POI point of interconnection

PV photovoltaic

R.C. Ohio Revised Code

SHPO State Historical Preservation Office

SR State Route

Terracon Consultants, Inc.

USACE United Stated Army Corps of Engineers
USDA United States Department of Agricultural
USFWS United States Fish and Wildlife Service

USGS United States Geological Survey

WOTUS Waters of the United States

#### **EXECUTIVE SUMMARY**

Fox Squirrel Solar, LLC (Applicant or Fox Squirrel) is proposing to add land to the Initial Project Area that the Ohio Power Siting Board (OPSB) approved for the Fox Squirrel Solar Project in Case No. 20-931-EL-BGN on July 15, 2021 (Initial Certificate Case). The additional land (Boundary Change Area) for the Project is located in rural, unincorporated Madison County, Ohio, partially in Range Township and Oak Run Township, and approximately 4.25 miles southeast of London, Ohio and 7.25 miles northwest of Mt. Sterling, Ohio. The Boundary Change Area comprises approximately 1,424 acres of private land located on the northeast side of Yankeetown-Chenoweth Road. The proposed types of infrastructure that will be located within the Boundary Change Area are identical to the types of infrastructure previously approved for the Initial Project Area and includes the development of photovoltaic (PV) panels and supporting racking infrastructure, as well as some access roads and fencing.

On behalf of Fox Squirrel, in support of this Application, the following studies have been completed for the Boundary Change Area: Terracon Consultants, Inc. (Terracon) completed a Sound Evaluation Report, Ecological Resource Analysis Report, Land Use Report, Cultural Records Review, Phase I Archaeological Survey, Architectural Survey, Vegetation Management Plan, and Viewshed Analysis and Visual Impact Mitigation Plan; Olsson completed a Geotechnical Report; Fisher Associates (Fisher) completed a Transportation Effect and Route Evaluation Study and a Culvert/Bridge Report; NV5 prepared a Preliminary Hydrologic and Hydraulic Assessment; Colliers Engineering & Design prepared a Glare Analysis; and GPD Group prepared an Agricultural Field Drainage Inventory.

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See In re Application of Fox Squirrel Solar, LLC, Case No. 20-931-EL-BGN, Order (July 15, 2021) (hereinafter referred to as the Certificate Order).

The Applicant notes that the Boundary Change Area comprises approximately 1,424 acres; however, references in some of the Exhibits contain references to slightly different acreages when describing the Boundary Change Area. Deviations from this amount of acreage are attributable to differences in the study area referenced in those reports and studies at the time they were compiled. In particular, many of the studies document a Boundary Change Area of 1,494 acres but that represents a larger study area, rather than the amount of acreage contemplated by the Boundary Change Area. Accordingly, the Boundary Change Area comprises approximately 1,424 acres.

Except as updated in this Application to cover the Boundary Change Area, the information and reports reviewed and approved in the Initial Certificate Case remain the same. In addition, Fox Squirrel commits to comply with the certificate conditions approved by Board in the Initial Certificate Case.

# 4906-4-01 Purpose and Scope

#### (A) General

The materials contained herein and attached hereto constitute Fox Squirrel's submittal of an application requesting authority to amend and modify the boundary wherein the Facility will be located (Application or Boundary Amendment). The OPSB issued a Certificate of Environmental Compatibility and Public Need (Certificate) to Fox Squirrel on July 15, 2021, in the Initial Certificate Case. This Boundary Amendment has been prepared by the Applicant.

#### (B) Waivers

Although this Application is being filed in accordance with Ohio Administrative Code (O.A.C.) Chapter 4906-4, the Applicant seeks a waiver from O.A.C. Rules 4906-4-08(D)(2)-(4) to allow for a reduced study area regarding the review of cultural resources, landmarks, and visual impacts. Accordingly, the Applicant has filed a Motion for Waiver and Memorandum in Support of the Motion.

# 4906-4-02 Boundary Amendment Summary and Applicant Information

#### (A) Summary of the proposed Boundary Amendment

On July 15, 2021, the OPSB issued a Certificate to the Fox Squirrel, for the construction, operation, and maintenance of a solar-powered electric generation facility (the Facility or Project) of up to 577 megawatts alternating current (MWac, hereinafter referred to as MW), located in Madison County, Ohio. Throughout this Application, when referring to the "Facility" or "Project" the Applicant is referring to the proposed development and improvements in both the Initial Project Area and the Boundary Change Area.

The Applicant is a wholly-owned subsidiary of EDF Renewables Development, Inc., which is a subsidiary of EDF Renewables, Inc. (EDF).<sup>3</sup> EDF is a global market leader in green electricity production, as well as a leading independent power producer and service provider.

In this case, the Applicant proposes a modification to the boundary within which Fox Squirrel's 577-MW solar-powered generation Facility will be located. The Applicant notes that, while the boundary of the Fox Squirrel Project is being modified, ultimately, the quantities of the generation components and the overall generation capacity of the Facility remain the same as was originally permitted. Through this Boundary Amendment, consistent with the OPSB's Certificate Order, the Applicant continues to commit to comply with all conditions approved by the OPSB in the Initial Certificate Case.

#### (1) General Purpose of the Facility

The general purpose of the Facility remains as presented in the Initial Certificate Case. The purpose of this Boundary Amendment is to extend the boundary of the Initial Project Area.

# (2) General Location, Size, and Operating Characteristics of the Facility, including the proposed Boundary Change Area

Fox Squirrel Solar, LLC Case Number 21-1031-EL-BGA

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In the Initial Certificate Case, ownership of the Applicant was changed from Geenex Solar, LLC to EDF. The Applicant subsequently updated this ownership information. *See In re Application of Fox Squirrel Solar, LLC,* Case No. 20-931-EL-BGN, Supplement to Application (Nov. 3, 2020). As a result, some of the Exhibits contained in this Application reference Geenex Solar.

The general location, size, and operating characteristics of the Facility remain the same as presented in the Initial Certificate Case. The proposed Boundary Change Area will be located on approximately 1,424 acres of leased land in Madison County, Ohio in the townships of Range and Oak Run. Land use within the Boundary Change Area is predominantly agricultural. Figure 3-1 depicts the Boundary Change Area.

#### (3) Description of the Suitability of the Boundary Change Area for the Facility

The Applicant has determined the Boundary Change Area, coupled with the Initial Project Area approved in the Initial Certificate Case, is an ideal location based on the characteristics of the land, proximity to the transmission grid, landowner and community interest, and the evaluation of site suitability. As explained further below, support for the suitability of the Boundary Change Area for the Project is detailed in the Exhibits to this Application, including Exhibit I the Geotechnical Engineering Report (Geotechnical Report), and Exhibit H the Hydrology and Hydraulics Preliminary Report (Hydrology Report).

#### (4) Boundary Amendment Schedule

Acquisition of land rights for the Boundary Change Area was completed in October 2021, with three effective lease agreements and one lease agreement where execution is imminent. While a public information meeting is not required under either the statute or the OPSB rules for amendment applications, the Applicant hosted a virtual open-house on October 6, 2021, that gave the public an opportunity to obtain information and ask questions about the modification. The Applicant will be submitting the Boundary Amendment to the OPSB on October 8, 2021, and anticipates the OPSB will issue its decision on the Boundary Amendment in the 1st Quarter of 2022.

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

The information in this Section (B)(1) and (2) remains the same as presented in the Initial Certificate Case.

- (1) Description of Any Plans for Future Additions of Electric Power Generation Units
- (2) Description of Applicant's History, Affiliate Relationships, and Current Operations

#### 4906-4-03 Boundary Change Area Description and Schedule in Detail

# (A) Boundary Change Area's Geography, Topography, Population Centers, Major Industries, and Landmarks

#### (1) Boundary Change Area Map

Figure 3-1 depicts the geography and topography of the Boundary Change Area and the surrounding area within a 2-mile radius. Among other information, Figure 3-1 shows the following for the proposed Boundary Change Area:

- (a) The proposed Boundary Change Area
- (b) Population centers and administrative boundaries
- (c) Transportation routes, and gas and electric transmission corridors
- (d) Named rivers, streams, lakes, and reservoirs
- (e) Major institutions, parks, and recreation areas

No gas transmission lines occur within a 2-mile radius of the Boundary Change Area.

The Project Area shown in Figure 3-1 and all subsequent figures, depicts:

- the Boundary Change Area that is the subject of this Application and the Initial Project Area approved in the Initial Certificate Case; and
- the current design of the Facility Footprint.

However, as stated and approved in the Initial Certificate Case, the exact placement of the components within the Project Area is subject to change before construction and will depend on various considerations, including the exact equipment models chosen for the Project. The Project Area represents the maximum area where the Facility will be located. The final layout will remain within the Project Area that has been studied for environmental, cultural, engineering, and visual impacts as approved in the Initial Certificate Case and proposed in this Boundary Amendment case. Any final adjustments to the layout as a result of final engineering will not cause additional impacts beyond what is approved in the Initial Certificate Case and in this Boundary Amendment. The final layout will be provided to OPSB staff no later than 30 days prior to construction.

#### (2) Boundary Change Area in Acres and Owned and Leased Properties

The Boundary Change Area consists of 1,424 acres of agricultural land. The Applicant has secured this land under long-term leases with 4 landowners.

#### **(B)** Description of the Generation Facility

While the Facility description remains as presented in the Initial Certificate Case, this Boundary Amendment calls for a modification of the Initial Project Area. As part of the Project, the facilities located in the Boundary Change Area will generate electricity in the same manner described in the Initial Certificate Case and will include the same components as described in the Initial Certificate Case.

#### (1) Generation Equipment

The information in Sections (1)(a) through (e) remains the same as presented in the Initial Certificate Case.

- (a) Type and number of units
- (b) For wind farms, description of turbine
- (c) Fuel quantity and quality
- (d) Pollutant emissions
- (e) Water volume requirement, source, discharge information

#### (2) Description of Generation Facility Components and Construction

The information in Sections (2)(a) through (h), and (j) through (l), below, remains the same as presented in the Initial Certificate Case.

- (a) Generation facility components/plant
- (b) Fuel, waste, water, other storage facilities
- (c) Fuel, waste, water, other processing facilities
- (d) Water supply, effluent, sewage lines
- (e) Associated electric transmission and distribution lines, and gas pipelines

(f) Electric collection lines

(g) Substations, switching substations, transformers

(h) Temporary and permanent meteorological towers

(i) Transportation facilities, access roads, crane paths

Equipment deliveries and workers will have easy access to the Boundary Change Area.

The primary access roads to be used are Madison County –Van Wagener Road (County

Road [CR] 84), Madden Higgins Road (CR 82), and Ohio State – London-Circleville Road

(State Route [SR] 56). However, additional site access roads may be listed in Exhibit D,

the Transportation Effect and Route Evaluation Study (Transportation Study).

New service roads will facilitate access within the Boundary Change Area (See Figure 3-

1). The roads will be no more than 20 feet wide and have aggregate as cover, adequate to

support the size and weight of construction, maintenance, and rescue vehicles.

During the construction phase of the Project, several types of light and medium

construction vehicles will travel to and from the site. Private vehicles will also be used by

the construction personnel. At this time, truck sizes anticipated to be used during

construction are WB-50's (8.5 feet wide x 42.5 feet long x 10 feet high) for equipment

delivery and standard dump trucks for gravel delivery. An estimated 6,092 truckloads will

be needed for the Project. Construction traffic volumes do not appear to exceed capacities.

The highest traffic volume will occur during the peak construction periods when the

tracking post installation, trackers, and module assembly is taking place concurrently.

Oversize and overweight loads are not expected within the Boundary Change Area.

Routine maintenance will require 2 to 4 light-duty trucks.

With regard to the question of crane pads, the Applicant notes that the use of crane pads is

not anticipated within the Boundary Change Area.

(j) Construction laydown areas

Fox Squirrel Solar, LLC

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

#### (l) Other pertinent installations

#### (3) New Electric Transmission Line

The information in Section (3) remains the same as presented in the Initial Certificate Case.

#### (4) Boundary Change Area Map

Figure 3-1 depicts the layout of the Boundary Change Area and Figure 3-2 depicts the aerial view of the Boundary Change Area. These figures include the following information:

- (a) An aerial photograph
- (b) The proposed Boundary Change Area, along with all components listed in (B)(2)
- (c) Road names
- (d) Property lines

#### (C) Project Schedule for Boundary Change Area

The information in Sections (2) and (3) below remains the same as presented in the Initial Certificate Case.

#### (1) Schedule in Gantt format

The Project schedule for the Boundary Change Area, to the extent that it is different than the schedule approved in the Initial Certificate Case, is discussed below and presented in Table 3-1 that includes the following information:

#### (a) Land acquisitions and land rights

The Boundary Change Area will be built on private land under lease and easement to the Applicant. Acquisition of the land was completed in October 2021, with three effective lease agreements and one lease agreement where execution is imminent.

#### (b) Wildlife and environmental studies/surveys

The information in this section remains the same as presented in the Initial Certificate Case.

#### (c) Grid interconnection studies and other critical path milestones

The information in this section remains the same as presented in the Initial Certificate Case.

#### (d) Preparation of OPSB Amendment

Preparation of the Boundary Amendment to be submitted to the OPSB has been ongoing since the 4th Quarter of 2020.

#### (e) Submittal of Boundary Amendment to OPSB

This Boundary Amendment will be submitted in October 2021.

#### (f) Certificate issuance by OPSB

The Applicant anticipates that OPSB will approve the Boundary Amendment by 1st Quarter of 2022.

#### (g) Preparation of the final design

The final design will be begin in the  $4^{th}$  Quarter of 2021 and conclude as early as the 2nd Quarter of 2022.

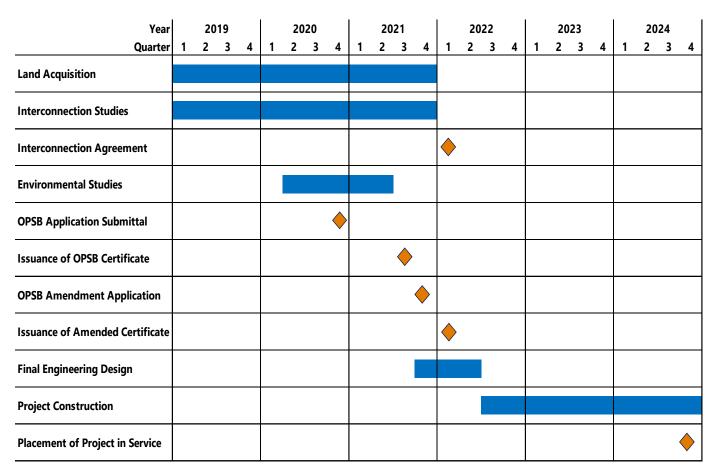
#### (h) Construction of the Facility

Construction of the Facility is scheduled to begin as early as the 3rd Quarter of 2022.

#### (i) Placement of Facility in Service

The Facility is scheduled to begin commercial operation as early as the 4th Quarter of 2023. Table 3-2 sets forth the Project schedule.

Table 3-2. Project Schedule



# Key: Milestone Task

(2) Construction Sequence

(3) Impact of critical delays on in-service date

#### 4906-4-04 Boundary Change Area Selection and Site Design

#### (A) Description of Boundary Change Area Selection

The information in Sections (3) and (4) below remains the same as presented in the Initial Certificate Case.

# (1) Description and Rationale for Selecting Study Area or Geographic Boundaries for the Boundary Change Area

The study area considered for the Project encompasses southern sections of Madison County in Range and Oak Run townships. This area was identified based on the location in relation to the project area approved in the Initial Certificate Case, the interconnection studies, proximity to transmission lines that supply large load centers, lack of existing solar energy facilities located in the area, and because the area is removed from environmentally sensitive areas and high population concentrations. In addition, Madison County is currently designated as an Alternative Energy Zone in accordance with Ohio Revised Code (R.C.) Section 5727.75.

A preliminary site plan of the Boundary Change Area is provided in Exhibit A of this application.

The Boundary Change Amendment is being proposed to include land in the Project boundary that was not under agreement at the time of the Initial Certificate Case. Since filing the Initial Certificate Case, additional landowners have expressed interest in participating in the Project and have entered into lease agreements. This community interest, along with the proximity to the point of interconnection (POI), and the high site suitability of the Boundary Change Area have led Fox Squirrel to pursue an amendment to add this land to the Initial Project Area.

The addition of the Boundary Change Area will allow the Project to optimize energy production through a more efficient layout while providing greater flexibility to minimize impacts. Such efficiencies may be achieved through lower ground cover ratio that will increase production while reducing ground coverage impacts. Efficiencies will also be achieved through siting optimizations that reduce materials quantities and construction costs, allowing the Project to deliver the lowest cost of energy. Improved flexibility in module siting will also help

mitigate the increasing uncertainty surrounding module supplies brought on by global supply chain disruptions.

#### (2) Boundary Change Area Study Area Map

Figure 4-1 shows a map of the study area for the Boundary Change Area.

#### (3) Qualitative and Quantitative Siting Criteria Utilized

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

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

The Applicant selected the Boundary Change Area for further development because of interest and positive feedback from landowners and local officials and the close proximity of the Boundary Change Area to the POI. In addition, due to the nature of the Boundary Change Area site (i.e., previously disturbed cultivated cropland), the subject site was selected because it had minimal natural resources of concern due to the previously-disturbed nature of the site.

#### (B) Process for designing the Updated Facility Footprint Layout

The information in Section (2) below remains the same as presented in the Initial Certificate Case.

#### (1) Constraints Map

Figure 4-2 shows a map of the updated Facility Footprint including setbacks from residences, property lines, utility corridors, and public rights-of-way, and other constraints of the site design.

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

# (3) Description of the Number and Type of Comments Received at Voluntary Open-House Meeting

The Applicant voluntarily held a virtual open house on October 6, 2021. Prior to the date of the open house, the Applicant published notice of the open house in *The Madison Messenger* (proof of publication is included in Exhibit B, Open House Notification), a newspaper of

general circulation in the Madison County. The Applicant additionally sent mailings to all

landowners within and immediately adjacent to the Boundary Change Area, as well as the local

government officials and libraries, notifying them of the open house. A list of the landowners,

government officials, and libraries that were mailed this notification is also provided in Exhibit

В.

The virtual meeting was held from 5:00 to 7:00 pm. The Applicant retained KAOH Media to

facilitate the virtual meeting. During the virtual meeting, representatives of Fox Squirrel gave

a presentation about the proposed Boundary Amendment, then remained available to answer

questions.

Approximately 30 participants or community members attended the virtual open house on line

or via telephone. Questions and comments included, but were not limited to: are there health

risks associated with solar facilities; are there emissions of noise, heat, or radiation; are there

impacts to real estate values; will the Applicant pursue a tax abatement; and how to participate

in construction and related contracting.

Representatives of Fox Squirrel addressed all concerns and answered all questions. Contact

information for the Applicant and OPSB was provided in the event that community members

wished to follow up with further questions.

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#### 4906-4-05 Electric Grid Interconnection

#### (A) Connection to the Regional Electric Grid

The information in this section remains the same as presented in the Initial Certificate Case.

#### (B) Interconnection Information

The information in this section remains the same as presented in the Initial Certificate Case, with the addition that the Interim Interconnection Service Agreement was executed between PJM Interconnection, LLC, Fox Squirrel, and AEP Ohio Transmission Company, Inc. for the Applicant's PJM queue position AE2-148, which is a 577 MW queue position. The executed agreement is attached to this Application as Exhibit C.

- (1) Generation Interconnection Request Information
- (2) System Studies on Generation Interconnection Request

# 4906-4-06 Economic Impact and Public Interaction

#### (A) Ownership

The ownership of the Facility remains the same as approved by the OPSB in the Initial Certificate Case.

The Boundary Change Area consists of land owned by 4 different landowners. The Applicant holds landowner agreements including ground lease agreements and purchase options which are summarized in Table 6-1 below.

Table 6-1 Landowner Agreements for Boundary Change Area

		Total	
Agreement Type	Parcel Number(s)	Acres	Agreement Status
Ground Lease	13-00013.000	260.8	Executed
	13-00047.000		
	13-00067.000		
	13-00067.002		
	13-00069.001		
	13-00069.002		
	13-00069.003		
	13-00069.004		
	13-00070.000		
	13-00070.001		
Ground Lease	13-00071.000	703.47	Executed
Ground Lease	21-00276.000	187.138	Executed
	13-00026.000		Execution
Ground Lease	13-00027.000	272.17	Imminent

#### (B) Capital and Intangible Costs

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Estimates of Capital and Intangible Costs for the Various Alternatives
- (2) Cost Comparison of Similar Facilities
- (3) Present Value and Annualized Cost for Capital Costs

#### (C) Operation and Maintenance Expenses

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Estimated Annual Operation and Maintenance Expenses
- (2) Operation and Maintenance Cost Comparison
- (3) Present Value and Annualized Expenditures for Operating and Maintenance Costs

#### (D) Estimated Cost for a Delay

The information in this section remains the same as presented in the Initial Certificate Case.

#### (E) Economic Impact of the Project

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Annual Total and Present Value of Construction and Operation Payroll
- (2) Construction and Operation Employment and Estimates
- (3) Estimated County, Township and Municipal Tax Revenue
- (4) Estimated Economic Impact of the Proposed Facility on Local Commercial and Industrial Activities

#### (F) Public Responsibility

The information in Sections (2), (4), and (5) below remains the same as presented in the Initial Certificate Case.

#### (1) Public Interaction

The Applicant voluntarily held a virtual open house on October 6, 2021. Prior to the date of the open house, the Applicant published notice of the open house in *The Madison Messenger* (proof of publication is included as Exhibit B, Open House Notification), a newspaper of general circulation in Madison County. The Applicant additionally sent mailings to all landowners within and immediately adjacent to the Boundary Change Area, as well as the local government officials and libraries, notifying them of the open house. A list of the landowners, government officials, and libraries that were mailed this notification is also included in Exhibit B.

The Applicant will continue its commitments regarding public interaction throughout the siting, construction, and operation of the Project as extensively outlined in the Initial Certificate Case. The Applicant has been actively meeting, educating, and negotiating with landowners in the Madison County community since early 2019. Final negotiations of land agreements for the proposed Boundary Change Area were completed in October 2021 with three effective lease agreements and one lease agreement where execution is imminent.

#### (2) Insurance

#### (3) Road and Bridge Impacts

The Applicant retained Fisher to review local roads and bridges within the Initial Project Area. Fisher conducted a Transportation Effect and Route Evaluation Study for the Boundary Change Area, which is included in Exhibit D of the Application, along with a Culvert and Bridge Inventory Report (Culvert/Bridge Report) which is included in Exhibit E of this Application for the proposed Boundary Change Area.

All construction equipment is and general construction traffic is anticipated to approach the Boundary Change Area from the east of State Route 56.

A total of 2 county highways and 1 state route were inventoried and evaluated near the Boundary Change Area. The name, width, and condition of each road are summarized in Table 6-2 below.

Table 6-2 Summary of Road Conditions for Boundary Change Area

Road Name	Total Road Widths	Road Condition
Van Wagener Road (CR 84)	17 feet	Moderate edge cracking
Madden Higgins Road (CR)	15 feet	Moderate to severe edge and alligator cracking
London-Circleville Road (SR 56)	23 feet	Not Evaluated

Table 6-3 Summary of Bridge Conditions for Boundary Change Area

ID	Road	ODOT Structure Number	Туре	Bridge Material	Surface Width (feet)	Span (feet)	Sufficiency Rating
B-	Van	4930577	Continuous	Concrete	24	47	89.9
10	Wagener		Span				
	Rd (CR 84)						

- (4) Transportation Permits
- (5) Decommissioning

#### 4906-4-07 Compliance with Air, Water, Solid Waste, and Aviation Regulations

#### (A) Regulation Context

The information in this section remains the same as presented in the Initial Certificate Case.

#### (B) Air Quality Regulations

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Pre-Construction Air Quality and Permits
  - (a) Ambient air quality
  - (b) Air pollution control equipment for the proposed facility
  - (c) Applicable federal and/or Ohio air quality standards and limitations
  - (d) Required permits to install and operate air pollution sources
  - (e) Air monitoring station locations and major pollution point sources
  - (f) Compliance with permits and standards
- (2) Plan for Emissions and Fugitive Dust Control During Construction
- (3) Air Quality for the Operation of the Proposed Facility
  - (a) Ambient air quality monitoring plans
  - (b) Map of estimated concentrations in excess of significant emission rate
  - (c) Air pollution control equipment failure

#### (C) Water Quality

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Pre-Construction Water Quality and Permits
  - (a) Water quality permits
  - (b) Map of water monitoring and gauging stations
  - (c) Monitoring and gauging station information
  - (d) Existing water quality of the receiving stream

- (e) Water discharge permit application data
- (2) Water Quality During Construction
  - (a) Map of water monitoring and gauging stations
  - (b) Estimated quality and quantity of aquatic discharges
  - (c) Mitigation plans
  - (d) Changes in flow patterns and erosion
  - (e) Equipment proposed for control of effluents
- (3) Water Quality During Operation of the Facility
  - (a) Map of water monitoring and gauging stations
  - (b) Water pollution control equipment and treatment processes
  - (c) Schedule for receipt of NPDES permit
  - (d) Flow diagram for water and water-borne wastes
  - (e) Water conservation practices

#### (D) Solid Waste

The information in this section remains the same as presented in the Initial Certificate Case.

- (1) Pre-Construction Solid Waste
  - (a) Nature and amount of debris and solid waste pre-construction
  - (b) Plans to deal with waste preconstruction
- (2) Solid Waste During Construction
  - (a) Nature and amount of debris and solid waste during construction
  - (b) Storage and disposal of wastes during construction
- (3) Solid Waste During Operation
  - (a) Amount, nature, and composition of solid waste generated during operation
  - (b) Storage, treatment, transport, and disposal of solid wastes during operation

#### (4) Waste Permits

#### (E) Compliance with Aviation Regulations for Boundary Change Area

#### (1) Aviation Facilities

Figure 7-1 shows a map of public use airports, helicopter pads, or landing strips within 5 miles of the Boundary Change Area. The Applicant notes that aviation facilities are not present within 5 miles of the Boundary Change Area.

#### (2) Federal Aviation Administration

The Federal Aviation Administration (FAA) has developed an online tool (the FAA Notice Criteria Tool) to determine whether a proposed structure meets the criteria requiring FAA filing. The Applicant entered five representative data points from the proposed Boundary Change Area into the tool. Based on the input of these five data points into the Notice Criteria Tool, FAA filing was determined to be required. The Applicant completed additional filings for the five data points under Title 14 of the Code of Federal Regulations (CFR) Part 77 Safe, Efficient User, and Preservation of the Navigable airspace. Based on the FAA's review, a Determination of No Hazard to Air Navigation was issued for each data point, which are included in Exhibit F of this Application. Based on the above, the Project does not pose a hazard to air navigation.

# 4906-4-08 Health and Safety, Land Use and Ecological Information

# (A) Health and Safety

The information in Sections (A)(1), (2), and (6) through (13) below remains the same as presented in the Initial Certificate Case.

# (1) Equipment Safety and Reliability

- (a) Major public safety equipment
- (b) Equipment reliability
- (c) Generation equipment manufacturer's safety standards
- (d) Measures to restrict access
- (e) Fire protection, safety, and medical emergency plans(s)
- (2) Air Pollution Control
- (3) Sound

# (a) Construction sound levels at the nearest property boundary

For its Initial Certificate Case, the Applicant engaged Terracon to prepare a sound study addressing construction sound levels at the nearest property boundary. The Applicant again engaged Terracon to supplement the original study with an analysis of construction sound levels at the property boundary nearest the Boundary Change Area. Terracon completed a Sound Evaluation for the Boundary Change Area included as Exhibit G of this Application. After reviewing the construction activities associated with the Project, Terracon expects that the offsite sound influence from the solar farm will be minimal, and not exceed the established the OPSB thresholds of 5 A-weighted decibels (dBA) above ambient background levels at any off-site sensitive receptors. Sound levels resulting from construction of the Project are generally anticipated to be consistent with or below sound levels associated with common farm equipment.

The information in Section (3)(d)(i) through (vi) below remains the same as presented in the Initial Certificate Case.

# (i) Blasting activities

# (ii) Operation of earth moving activities

# (iii) <u>Driving of piles, rock breaking or hammering, and horizontal directional</u> <u>drilling</u>

# (iv) Erection of structures

# (v) <u>Truck traffic</u>

### (vi) <u>Installation of equipment</u>

# (b) Operational sound levels at the nearest property boundary.

### (i) Operation sound from generation equipment

For its Initial Certificate Case, the Applicant engaged Terracon to prepare a Sound Evaluation study addressing operational sound levels at the nearest property boundary. The Applicant has again engaged Terracon to supplement the original study with an analysis of operational sound levels at the property boundary nearest the Boundary Change Area. After reviewing the operation and maintenance activities associated with the proposed solar farm, Terracon expects that the offsite sound influence from the solar farm will be minimal, and not exceed the established OPSB thresholds of 5 dBA above ambient background levels at any off-site sensitive receptors.

Terracon performed sound modelling of operation of the proposed Project Sound PLAN v.4.1 software. SoundPLAN implements ISO-9613-2 1996 (Attenuation of sound during propagation outdoors – Part 2: General method of calculation), which is an international standard method for calculating sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. A three-dimensional topographical model was created to assess the sound propagation of the proposed facility. Sound level projections were calculated for all sensitive receptor locations (59 receptors) within 1-mile radius of the Boundary Change Area.

The sensitive sound modeling locations, source locations and calculation area are located on Figure 1 of Exhibit G. The sound level projections for each of the sensitive receptors outlined on Figure 1a and 1b appear in Table 5 of Exhibit G. The visual results

of the SoundPLAN sound dispersion model are depicted on Figure 2a and 2b of Exhibit G. Sound level contributions associated with the Boundary Change Area at the sensitive receptor locations ranged from 19 to 37 dBA, significantly below the established 49 dBA threshold.

Excess of ambient sound levels are not anticipated beyond the Project boundary. Based on the results of the SoundPLAN analysis, the Project is not anticipated to have a significant impact on surrounding community noise levels or sensitive receptors, and will not exceed the established OPSB threshold of 5 dBA above L90 ambient background levels at any off-site sensitive receptors.

# (ii) Processing equipment

The information in this section remains the same as presented in the Initial Certificate Case.

# (iii) Associated road traffic

The information in this section remains the same as presented in the Initial Certificate Case.

# (c) Sound sensitive areas within one mile of Boundary Change Area

For its initial Certificate application, the Applicant engaged Terracon to prepare a sound study addressing the location of noise-sensitive areas within one mile of the Facility. The Applicant again engaged Terracon to supplement the original study with an analysis of noise-sensitive areas within one mile of the Boundary Change Area. Sound level contributions associated with the Boundary Change Area at the sensitive receptor locations ranged from 19 to 37 dBA, significantly below the established 49 dBA threshold. Figure 8-1 shows a map of the location of noise-sensitive areas or sensitive receptors (i.e. occupied buildings) within 1 mile of the Boundary Change Area. Sound levels of construction activities are found to be generally consistent with typical agricultural activities already occurring in the area. Sound levels from construction are anticipated to be temporary and minimal, occurring only when construction is in the vicinity of the property boundary. To minimize construction noise, construction schedules are currently expected to mostly occur during typical construction hours (Monday through Friday between 7 a.m. to 7 p.m.).

Operational sound levels have been modelled to show levels consistent with or below ambient background levels and sound from on-going solar farm operations will not impact sensitive receptors (see Exhibit G for additional detail).

# (d) Mitigation of sound emissions during construction and operation

The information in this section remains the same as presented in the Initial Certificate Case.

### (e) Pre-construction background sound study

A 24-hr noise survey was conducted at a residential property near the property boundary. This location is indicative of the ambient sound levels along Yankeetown-Chenoweth Road, where the majority of the residential land use is located. Based on the survey results as summarized in, the average sound level (Leq) measured during the duration of the study at the nearest residences was 58.1 dB and the L90 was 46.0. Additional details regarding this survey are provided in the Pre-Construction Noise Survey Data Collection Section of Exhibit G.

### (4) Water Impacts

The information in Sections (4)(a) through (d) below remains the same as presented in the Initial Certificate Case.

- (a) Impacts to public and private water supplies from construction and operation
- (b) Impacts to public and private water supplies due to pollution control equipment
- (c) Aquifers, water wells, and drinking water source protection areas
- (d) Compliance with drinking water source protection plans

### (e) Flood analysis

The Applicant had NV5 conduct Hydrological and Hydraulics Preliminary analyses to supplement the original study with regard to the Boundary Change Area (see Exhibit H). In addition, Olsson's Geotechnical Report, which is included as Exhibit I, for the Project included a review of mapped flooding potential from the Federal Emergency Management Administration (FEMA) flood mapping website. Both of these analyses indicated the flowing creeks through the central and southern portion of the site are considered to be within a Zone A floodplain, and are subject to inundation by the 1-percent annual chance

flood event. Based on NV5 and Olsson's understanding of the Project, areas mapped as Zone A are not planned to be developed. The majority of the site is mapped as Zone X. Figure 8 of Exhibit I indicates the areas mapped as Zone A floodplain. Additional detail is provided in Exhibits H and I.

### (5) Geological Features

Figure 8-3 sets forth the geological features of the proposed Boundary Change Area, including: the topographic contours; the existing gas and oil wells; and injection wells.

The Applicant retained Olsson to prepare a design phase Geotechnical Report for the Initial Project Area and the Boundary Change Area. The report is included as Exhibit I. As part of the final geotechnical evaluation, 40 test borings were completed within the Project Area. The main findings of these studies are summarized below, which generally indicate the Boundary Change Area is suitable for the Project. To guide foundation design, Olsson explored locations of the Boundary Change Area. The geotechnical explorations consisted of Cone Penetration Testing (CPT), geotechnical borings, general soil laboratory testing, electrical resistivity testing, thermal resistivity testing, and axial tensile, axial compression, and lateral pile load testing. This program of geotechnical exploration was selected to accurately and efficiently evaluate the strength, compressibility, stiffness, and density characteristics of the soil at the project site, as well as to evaluate the general suitability of the solar array systems.

### (a) Site geology suitability

As explained further in Exhibit I, the Project is located in the Darby Plain Province of Ohio. The Darby Plain Province has moderately low relief and consists of broadly hummocky ground moraines with several broad, indistinct recessional moraines.

The surficial geology consists of Wisconsinan-aged glacial till with a large outwash deposit in the center of the region. Thicknesses of the glacial till are mapped as at least 20 to 80 feet deep, with some deposits on the order of over 250 feet thick where incised bedrock valleys are present (Ohio Department of Natural Resources [ODNR] shaded drift thickness map, Figure 4 in Exhibit I). The surficial glacial deposits overlie deep Devonian and Silurian-aged sedimentary bedrock.

Surficial geology at the site consists primarily of Quaternary surficial deposits consisting of ground moraine deposits comprised primarily of a clay matrix with interlayered sand, silt, and some gravel. The soils are mapped primarily as loess, glacial till, glaciofluvial deposits, or glacial outwash, described as predominantly Wisconsinan till. The United States Department of Agricultural (USDA) surficial soil mapping indicates that most of the soils are lean clay (CL) and elastic silt (MH). Based on Olsson's experience and actual soil conditions encountered, the site is primarily covered with CL type materials. It is anticipated that occasional cobbles and boulders may also be encountered within the glacial soil types.

Moraine features have also been identified surrounding the general Project Area. Glacial till and moraine sediments are composed mostly of clayey soil with isolated interlayered areas of silt, sand, gravel, and potentially cobble and boulder sized erratics. End moraine deposits form hummocky ridges surrounding flat areas of ground moraine and glacial lake deposits.

The state of Ohio maintains a database of oil and gas drilling and exploration activity. The ODNR map indicates no oil and gas fields or wells are present in Madison County. Subsidence risk due to oil and gas development is considered low. Similarly, state mapping of underground mines indicates no known underground mines in the Project Area.

There are no active folds or faulting in the vicinity of the Project Area (United States Geological Survey [USGS] Quaternary Fault Database, 2021).

Dolomite and limestone are the principle rock types that contain karst features. Karst features such as dissolution cavities, caves, and sinkholes can cause subsidence of the ground surface. Although the site appears to be within a mapped karst zone, noted as karstic features at depths greater than 50 feet, specific karst features were not mapped in the vicinity of the site based on the ODNR interactive mapping tool. Therefore, the risk of karst features or formation impacting the development appears relatively low.

These geological characteristics of the Project Area are generally considered suitable for the proposed Project.

# (b) Site soil suitability.

As explained further in Exhibit I, Olsson concludes that the soil at the site is suitable for support of a shallow driven pile solar array foundation system based on its exploration of subsurface conditions. Olsson's geotechnical explorations consisted of CPT, geotechnical borings, general soil laboratory testing, electrical resistivity testing, thermal resistivity testing, and axial tensile, axial compression, and lateral pile load testing. This program of geotechnical exploration was selected to accurately and efficiently evaluate the strength, compressibility, stiffness, and density characteristics of the soil at the Project site, as well as to evaluate the general suitability of the solar array systems.

The completed soil borings and CPT testing indicated that three typical subgrade profiles comprise the majority of the Project site. Results of the exploration indicated that thinner sand zones are anticipated to be present in all three strata, but typically did not have a significant impact on pile load test results. Based on these results, Olsson concludes that that the private access roads and structures can be designed using typical best practices.

### (c) Site geology, suitability, and test boring

Borings were performed within the Boundary Change Area and the Initial Project Area. Boring logs can be found in the Geotechnical Report, included as Exhibit I. The Geotechnical Report addresses the below (i) through (iv) points.

# (i) Subsurface soil properties

- (ii) Static water level
- (iii) Rock quality description
- (iv) Percent recovery

# (v) Depth and description of bedrock contact

As explained further in Exhibit I, bedrock formations were generally not encountered within the explored depths ranging from 20 to 35 feet, are anticipated to be deeper than the proposed pile installation/foundation depths, and are not

anticipated to be encountered during construction of solar pile foundations based on the available data.

- (6) Wind Velocity
- (7) Blade Shear
- (8) Ice Throw
- (9) Shadow Flicker
- (10) Radio and Television Reception
- (11) Radar Interference
- (12) Navigable Airspace Interference
- (13) Communication Interference

# (B) Ecological Resources

The Applicant retained Terracon to complete an Ecological Resource Analysis (ERA) Report for the Boundary Change Area. Terracon completed an ERA to evaluate the Boundary Change Area's impacts on ecological resources through environmental studies and coordination with state and federal natural resources agencies. The ERA Report includes a desktop review of available data for the area, a plant and animal literature review, a plant and animal field survey, a Waters of the United States (WOTUS) field survey, a review of potential impacts to the aforementioned resources, and short-term and long-term mitigation measures. The ERA Report for the Boundary Change Area is included as Exhibit J.

# (1) Ecological Information in the Boundary Change Area

### (a) Map

The Applicant has provided a map at 1:24,000 scale containing a one-half mile radius from the Boundary Change Area and showing the Boundary Change Area, undeveloped or abandoned land, and recreational areas. See Figures 8-2, 8-3 and 8-4. The maps include:

### (i) The proposed facility and Project Area boundary

- (ii) <u>Undeveloped or abandoned land such as wood lots or vacant tracts of land subject to past or present surface mining activities, not used as a registered game preserve or in agricultural production</u>
- (iii) Wildlife areas, nature preserves, and other conservation areas
- (iv) <u>Surface bodies of water, including wetlands, ditches, streams, lakes, reservoirs, and ponds</u>
- (v) Highly-erodible soils and slopes of 12% or greater

# (b) Field survey map of vegetation and surface waters

Figure 8-5 shows a field survey map of vegetation and surface waters within the Boundary Change Area and within 100 feet of the Boundary Change Area. Terracon conducted a field survey to identify vegetative communities within the Boundary Change Area. Both surveys are described in more detail in Exhibit J. Table 8-2 below shows land use and habitat categories identified within the Boundary Change Area.

Table 8-2 Land Use and Habitat Types Identified in the Boundary Change Area

Land Use/Habitat Category	Acres	Land Use (%)
Row Crop Agriculture	1,428	96%
Herbaceous Vegetation	35	2%
Deciduous Forest Land	18	1%
Developed (Farmsteads and Roads)	17	1%
Woodland (Sparse Tree Cover)	6	<1%

The Boundary Change Area landcover is dominated by agricultural row cropland with remnants of corn. Row crop agricultural land use comprises approximately 96% of the land use, with another 2% made up of herbaceous vegetation typically found around the edges of agricultural fields and in riparian corridors on the Boundary Change Area. Deciduous forest and farmsteads and roads each make up approximately 1% of the landcover. Finally, sparsely wooded land found in the southeastern portion of the south Boundary Change Area made up less than 1% of land use.

In addition, Terracon also conducted a wetland delineation identify potential wetlands and jurisdictional waters. The background, methods and field results of the wetland delineation are summarized in the Wetland Delineation Report included as Appendix C to Exhibit J.

Based on the wetland delineation, two wetlands totaling 0.97 acres and three streams totaling 16,770 linear feet were observed on the Boundary Change Area and within the 100-foot buffer. United Stated Army Corps of Engineers (USACE) issued a preliminary jurisdictional determination on March 23, 2021, concurring with the results of the field wetland delineation.

Based on the outcomes of the wetland delineation and the preliminary jurisdictional determination, the Boundary Change Area has been designed to avoid impacts to jurisdictional wetlands and streams resulting from construction of access roads or placement of solar modules as further described in Section 4906-4-08(B)(2)(a) of this Application.

# (c) Literature survey of plant and animal life within Boundary Change Area

Terracon conducted an extensive desktop review of aquatic and terrestrial plant and animal species that are either of commercial or recreational value or designated as endangered or threatened. The area reviewed included the Boundary Change Area and a 0.25-mile buffer surrounding the Boundary Change Area. The following information sources were consulted:

- (i) Applicable federal species source lists for Madison County
- (ii) United States Fish and Wildlife Service (USFWS) Information for Planning and Construction ("IPaC") screening tool
- (iii) Early coordination letters submitted to the USFWS and ODNR

ODNR provided a letter dated May 17, 2021, to report its findings from its review of the ODNR National Heritage Database. ODNR reviewed the Natural Heritage Database for the Boundary Change Area, including a one-mile radius, in Oak Run and Range townships, Madison County, Ohio. ODNR reported that there were no records of threatened or endangered species in the Boundary Change Area. Two fish species, the Western Creek Chubsucker and the Least Darter, identified in the Ohio as occurring in Bradford Creek near the Boundary Change Area, are not anticipated to be impacted due to proposed avoidance of impacts to the on-site waters (See Exhibit L). ODNR reported that is unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state

nature preserves, wildlife areas, parks or forests, national wildlife refuges, parks or forests, or other protected natural areas within a one mile radius of the Project Area. Correspondence from ODNR is included as Exhibit L.

Additionally, Terracon consulted with USFWS to update them on the Boundary Change Area to determine if further action would be required related to the additional acres related to the Boundary Change Area. USFWS confirmed that after reviewing the Boundary Change Area, USFWS's recommendation that applied to the Initial Project Area are still applicable. (See Exhibit K, USFWS Correspondence).

A total of 15 threatened or endangered animal species were identified through the literature survey process as having potential to occur within the Boundary Change Area and 0.25-mile buffer. These species are summarized in Table 8-3 below. No threatened or endangered plant species were identified.

Terracon also reviewed multiple bird species conservation platforms to determine the likelihood of utilization of the Boundary Change Area by these species. Terracon utilized the USFWS IPaC, which provides an online list of threatened and endangered species as well as migratory birds. Six migratory bird species were identified on the IPaC list as being of special concern based on the Boundary Change Area location. There are no records for known bald eagle nests within the Boundary Change Area boundaries or within the 0.25-mile buffer. Based on the Boundary Change Area's proposed avoidance of impacts to forested and wooded areas, Terracon concludes that the Boundary Change Area is not expected to result in impacts to bald eagles due to lack of observed nests on the Boundary Change Area. Migratory birds are not anticipated to be impacted due to lack of suitable habitat for some species, avoidance of habitat impacts during nesting seasons, no proposed impacts for present suitable habitat, and/or adequate presence of habitat proximal to the Boundary Change Area.

Due to the predominant current use for row crop agriculture, commercial and recreational plant and animal species are not anticipated to be present on the Boundary Change Area.

 Table 8-3
 Federal and State Listed Threatened and Endangered Species

Common Name	Scientific Name	Status <sup>1</sup>	Habitat			
Mammals						
Indiana Bat	Myotis sodalis	FE, SE	Caves or mines in winter. Wooded areas in summer.			
Northern long- eared bat	Myotis septentrionalis	FT, ST	Caves or mines in winter. Wooded areas in summer.			
Fish						
Scioto madtom	Noturus trautmani	FE, ST	High quality water in stream riffles of moderate currents on gravel bottoms.			
Spotted darter	Etheostoma maculatum	SE	Medium sized rivers and streams near riffles in the upstream edge of boulders or flat slabs of rock.			
Tippecanoe darter	Etheostoma tippecanoe	ST	Medium to large streams, in riffles of moderate current with small cobble and/or gravel substrate.			
Birds						
Upland sandpiper	Bartramia longicauda	SE	Grasslands and in mosaics of unkempt agricultural land, old fields, and crop lands.			
Northern harrier	Circus hudsonius	SE	Grasslands and, sometimes, large marshy areas for breeding.			
King rail	Rallus elegans	SE	Large wetlands with cattails and sedges, marshy fields, and other wet areas.			
	Mollusks					
Clubshell	Pleurobema clava	FE, SE	Small to medium rivers and streams with clean, loose sand and/or gravel substrate.			
Northern riffleshell	Epioblasma torulosa rangiana	FE, SE	Wide variety of stream sizes with sand and/or gravel substrate.			
Rabbitsfoot	Theliderma cylindrica	FC, ST	Wide variety of stream sizes with shallow areas of reduced stream velocity along banks and other stream features and typically consisting of sand and/or gravel.			
Rayed bean	Villosa fabalis	FE, SE	Larger and headwater streams with moderate to swift currents.			

Common Name	Scientific Name	Status <sup>1</sup>	Habitat
Snuffbox mussel	Epioblama triquetra	FE, SE	Larger and headwater streams with moderate to swift currents.
Elephant-ear	Elliptio crassindens	SE	Medium to large rivers and streams with mud, sand, and/or fine gravel substrate.
Wavy-rayed lampmussel	Lampsilis fasciola	SC	Small to medium shallow streams, near riffles, and in areas of good current.

Key: FE = Federally Endangered, SE = State Endangered, FT = Federally Threatened, ST = State Threatened, FC = Federal Candidate, SC = State Species of Concern

Due to the predominant current use of the Project Area for row crop agriculture, commercial and recreational plant and animal species are not anticipated to be present within the Project Area.

### (d) Plant and animal field survey results

Terracon conducted a species habitat survey within the Boundary Change Area in an effort to identify potential suitable habitat for the species listed in Table 8-3 that were deemed likely to be present. Critical habitat for 0 species was identified within the Boundary Change Area. Potential habitat for 11 of the 15 species listed in Table 8-3 was identified within the Boundary Change Area. Field surveys identified potential habitat for 9 of the 11 species in the Boundary Change Area.

Suitable habitat (mature forests) for the federally-listed Indiana and Northern long-eared bats was observed within the forested areas on the Boundary Change Area. Accordingly, impacts to forested areas will be avoided. All other federal and state-listed species are not anticipated to be impacted by the Project. Based on the proposed avoidance of impacts to forested areas on the Boundary Change Area, impacts to avian species are not anticipated as a result of the Boundary Change Amendment.

In-stream work is not proposed as part of the Boundary Amendment; therefore, impacts are not anticipated for listed aquatic species as a result of the Boundary Change Amendment.

### (e) Additional ecological studies

No additional ecological studies were performed apart from those described above.

# (2) Potential Impacts to Ecological Resources in the Boundary Change Area During Construction

The information in Sections (2)(a), (b)(i) through (b)(vii) below remains the same as presented in the Initial Certificate Case.

- (a) Construction impacts on ecological resources
- (b) Mitigation procedures for construction impacts
  - (i) Restoration and stabilization of disturbed soils
  - (ii) Frac out contingency plan
  - (iii) Demarcation of surface waters and wetlands
  - (iv) Procedures for inspection and repair of erosion control measures
  - (v) Methods to protect vegetation
  - (vi) Disposing of downed trees, brush, and other vegetation
  - (vii) Avoidance measures for state and federally listed and protected species and habitat

# (3) Potential Impact to Ecological Resources within Boundary Change Area During Operation and Maintenance

The information in Sections (3)(a) through (c) below remains the same as presented in the Initial Certificate Case.

(a) Evaluation of impact of operation and maintenance of undeveloped areas and animals

- (b) Procedures to avoid, minimize, and mitigate impacts of operation and maintenance
- (c) Post-construction monitoring of wildlife impacts

# (C) Land Use and Community Development

The information in Sections (C)(1)(c) and (d), (2), (3), and (4) below remains the same as presented in the Initial Certificate Case.

# (1) Existing Land Use

Terracon completed a Land Use and Demographics Report evaluating land use and community development aspects of the Boundary Change Area. The report is included as Exhibit M of this Application.

# (a) Land use map

Figure 8-6 and Exhibits 1-5 of Exhibit M shows maps of existing land use within 1 mile of the Boundary Change Area and includes the following features:

- (i) The proposed Boundary Change Area
- (ii) Land use
- (iii) **Structures**
- (iv) Incorporated areas and population centers

# (b) Structures table

Tables 2-1.1 and 2-1.2 of Exhibit M delineate the following:

- (i) For all structures and property lines within 1,500 feet of the generation equipment, the distance between both the structure or property line and the equipment
- (ii) For all structures and property lines within 250 feet of a collection line, access road, or other associated facility, the distance between both the structure or property line and the associated facility

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

- (c) Evaluation of the land use impacts
- (d) Structures to be removed or relocated
- (2) Wind Farm Maps
- (3) Setback Waivers
- (4) Land Use Plans
  - (a) Formally adopted plans for future use of the Project Area and surrounding lands
  - (b) Applicant's plans for concurrent or secondary uses of the site
  - (c) Impact on regional development
  - (d) Compatibility with current regional plans
  - (e) Current population counts and 10-year population projections

### (D) Cultural and Archaeological Resources for Boundary Change Area

The Applicant engaged Terracon completed a Cultural Resources Records Review, included in Exhibit N of this Application, for the Boundary Change Area. The review provides consideration for previously recorded cultural resources within a 5-mile radius of the Boundary Change Area.

Terracon conducted a file review using resources available from State Historical Preservation Office's (SHPO) online mapping system. The database review included records available through the Ohio Archaeological Inventory (OAI), the Ohio Historic Inventory (OHI), the National Register of Historic Places (NRHP), the Ohio Historic Bridge Inventory, previous cultural resource surveys, and information on cemeteries maintained by the Ohio Genealogical Society (OGS). No resources were identified within the Boundary Change Area. Within a 5-mile radius of the Project boundaries, 1 NRHP-listed historic district, no NRHP-eligible properties, 1 historic period bridge, 63 previously surveyed OHI architectural resources, 98 OAI archaeological sites, and 21 OGS cemeteries were recorded.

With the exception of the Buckeye Bridge (MAD009911), impacts are not anticipated to these resources based on the topography, vegetation, existing development, and distance. Viewshed impacts are anticipated for Buckeye Bridge (MAD009911) property; however, the Applicant will implement vegetative screening in order to mitigate the impacts to the Buckeye Bridge. Due to the implementation of the vegetative screening, no adverse impacts to the Buckeye Bridge are anticipated.

Terracon and the Applicant consulted with SHPO to determine an approved work plan for the architecture, history, and archaeology field surveys to be completed for the Boundary Change Area. Terracon requested approval from SHPO of the archaeological predictive model and field methodology for this Project based on the model and methods used recently. A final consultation letter was provided to SHPO on October 29, 2020 and approved by SHPO on November 27, 2020. Correspondence from SHPO is included as Exhibit O of this Application documenting SHPO's approval of the proposed predictive model, Phase I Archaeological Survey Plan, and Phase I History/Architecture Plan for the Boundary Change Area (SHPO Approved Work Plan).

In conformity with that the SHPO Approved Work Plan, Terracon completed archaeological investigations resulting in a Phase I Archaeological Survey of the Boundary Change Area, which is included as Exhibit P of this Application. The purpose of the investigation is to identify and evaluate archaeological resources that could be eligible for inclusion in the NRHP for the Boundary Change Area. Fieldwork for the Project was conducted from November 9, 2020 to January 29, 2021, and from March 10 through 21, 2021. The investigations included a pedestrian survey of the entire Project Area, which contained agricultural fields having surface visibility greater than 50%. To supplement the pedestrian survey, shovel testing was conducted at each archaeological site that was found. In addition, as per the Project consultation letter dated October 29, 2020 (approved on November 27, 2020) referenced above, Terracon tested the results of a predictive model by reexamining a 7.5% random sample (93 acres) of all moderate and low probability areas.

As a result of the investigations, 12 new archaeological sites, 33MA667–33MA678, and 21 isolated finds (33MA679–33MA694 and 33MA697–33MA701) were recorded. Prehistoric sites include 1 Early Archaic isolated find, one Early Archaic lithic scatter, 1 Early or Middle Archaic

lithic scatter, 2 temporally non-diagnostic prehistoric camp sites, 5 temporally non-diagnostic prehistoric lithic scatters, and 13 temporally non-diagnostic prehistoric isolated finds.

Of the 33 identified archaeological resources recorded, Terracon recommended 2 sites, 33MA667 and 33MA668, as being potentially eligible for inclusion in the NRHP. Site 33MA667 is an Early and Late Archaic habitation site and nineteenth to early twentieth century farmstead, while 33MA668 is a prehistoric campsite that is probably associated with site 33MA667. The remaining sites and isolated finds were recommended as being ineligible for the NRHP are not likely to yield additional information about Ohio prehistory or history. Based on these results, Terracon recommended that sites 33MA667 and 33MA668 be avoided by any ground disturbing activities.

Based on this survey, the Applicant intends to avoid the 2 sites, including a 50-foot buffer around each site. If the sites cannot be avoided, then additional testing could be required to determine whether the sites are eligible or ineligible for the NRHP.

On July 30, 2021, Terracon shared the Phase I Archaeological Report with SHPO. In response to the Phase I Archaeological Survey, SHPO provided a concurrence letter dated August 26, 2021, stating it concurs with the opinion that sites 33MA667 and 33MA668 are potentially eligible for inclusion to the NRHP. In the same letter, SHPO recommended that site 33MA669 is potentially eligible for inclusion to the NRHP, and recommended additional testing or avoidance. To comply with this recommendation, the Applicant intends to avoid site 33MA669. The Applicant is in the process of drafting and negotiating a Memorandum of Understanding (MOU) with SHPO to memorialize its plans to avoid these three sites. The Applicant will provide the agreement to OPSB Staff after it is executed.

Terracon also conducted an Architectural Survey in accordance with the SHPO Approved Work Plan. Based on the findings of the survey, there are no historic properties impacted by the Project. SHPO provided a letter on August 25, 2020 concurring with the findings of the survey. A copy of the Architectural Survey is included as Exhibit Q of this Application.

As a result of the Architectural Survey, 14 historic resources were identified. Two of these resources, MAD0009911 and MAD0047511, are recommended as being eligible for inclusion in

the NRHP. As the Project will be visible from these resources, Terracon recommends that vegetative screening be put in place to shield the two historic properties from view of the Project. The remaining 12 resources are recommended as being ineligible for inclusion in the NRHP. If vegetative screening is put in place, then it is Terracon's opinion that no aboveground historic properties will be affected by the proposed undertaking. These results and recommendations are presented in the Architectural Resources Survey report (See Exhibit Q). On July 28, 2021, Terracon submitted this report to SHPO. On August 27, 2021, SHPO responded indicating that it agrees with Terracon's recommendation for NRHP eligibility (See Exhibit Q).

As there are historic properties within the viewshed of the Boundary Change Area, the Applicant will implement vegetative screening in accordance with a Vegetative Management Plan set forth in Exhibit R. The report also recommends a vegetative screening plan be developed to minimize any adverse visual effects. SHPO recommends that this vegetative screening plan be memorialized in a MOU. The Applicant is in the process of drafting and negotiating this agreement with SHPO and will provide the agreement to OPSB Staff after it is executed.

# (1) Map of landmarks of cultural significance and recreational areas in Boundary Change Area

Figure 8-7 shows a map of landmarks within 10 miles of the Boundary Change Area and includes, as applicable, the following:

- (i) Any formally adopted land and water recreation areas
- (ii) Recreational trails
- (iii)Scenic rivers
- (iv) Scenic routes or byways
- (v) <u>Registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance</u>

Landmarks included are only those districts, sites, buildings, structures, and objects that are recognized by, registered with, or identified as eligible for registration by NRHP, SHPO, or ODNR.

# (2) Impacts on Landmarks within Boundary Change Area

A Cultural Resources Records Review (Exhibit N) and Viewshed Analysis Report and Visual Impact Mitigation Plan (Exhibit S) were completed for the Applicant by Terracon, which provides review and consideration for previously recorded cultural resources within the Boundary Change Area and within a 5-mile radius. Based on Terracon's review, no previously recorded cultural resources were identified in the Boundary Change Area. A number of recorded cultural resources were identified within the 5-mile radius. Due to their locations outside of the Project Area, the potential impact to these resources would be considered visual.

To determine the potential for impact, Terracon utilized Light Detection and Ranging (LiDAR) technology to evaluate the potential for visibility within both a 2-mile and 5-mile radius of the Project assuming a 15-foot panel height at maximum tilt. Based on the review, almost no visibility was identified beyond 2-miles from the Boundary Change Area, except for some small areas. Terracon completed a review of cultural resources within 2-mile and within the 5-mile areas denoted by LiDAR as having limited visibility. It was determined through the review that no significant visual impacts are anticipated for any of the designated scenic resources evaluated within 5-miles of the project, with the exception of the Buckeye Bridge (MAD0009911), located approximately 140 feet to the east of the Project and the Johnston-Old Johnston Cemetery (OGS 7134) located approximately 140 feet south of the Boundary Change Area. As described above, to offset visual impacts for the off-site Buckeye Bridge and Johnston-Old Johnston Cemetery, a vegetative screening will be implemented in accordance with a Vegetation Management Plan, which is included as Exhibit R.

If a previously unidentified scenic resource were to be identified within the viewshed during any point of the development process, consultation will occur with the landowner/managing entity of the parcel and/or the SHPO, as determined appropriate, to ensure minimization and mitigation of impacts to the resource during project design.

# (3) Recreation and Scenic Areas within Boundary Change Area

To determine the potential for impact, Terracon utilized LiDAR technology to evaluate the potential for visibility within both a 2-mile and 5-mile radius of the Project. Based on the review, almost no visibility was identified beyond 2-mile from the Project, except for some small areas. Terracon completed a review of recreational resources within 2-mile and within

the 5-mile areas denoted by LiDAR as having limited visibility. Based on the results of the Visual Resource Survey, no recreational areas were identified with the potential for visibility for the Project.

# (4) Visual Impacts

The Boundary Change Area comprises approximately 1,424 acres of land across 14 separate parcels of land. Most the Project Area consists of agricultural land. The Boundary Change Area and surrounding area primarily consists of agricultural fields, forested areas, and sparse residential development. Terracon reviewed a 5-mile radius for resources that include any formally adopted land and water recreation areas, recreational trails, scenic rivers, scenic routes or byways, and registered landmarks of historic, religious, archaeological, scenic, natural, or other cultural significance. Based on an evaluation of the mapped locations of these resources and an evaluation of LiDAR data for 5-miles of the Project Area no significant visual impacts are anticipated for any of the designated scenic resources evaluated within 5-miles of the project that cannot be addressed by vegetative screening. The Boundary Change Area will mostly be visible from the adjacent properties and roads that bisect the Boundary Change Area, and most visible from small residential routes with limited traffic. Due to the sparsely populated and rural setting of the Project, visual impact to adjacent properties is limited. The properties that will be most visually impacted will be adjacent roads and properties without existing vegetative screening.

### (a) Visibility and viewshed analysis

The Applicant has evaluated the potential visual impact of the Project for all of the conditions set forth by the OPSB included above. The results of the Viewshed Analysis Report and Visual Impact Mitigation Plan are included in Exhibit S of this Application.

The viewshed analysis included a review of potential visibility within a 5-mile radius from the Project Area. LiDAR data was used to develop a visibility map within the 5-mile radius (Figure 16 of Exhibit S) using panel heights of 15 feet at maximum tilt. To offset visual impacts, a vegetative screening will be implemented in accordance with a Vegetation Management Plan.

### (b) Existing landscape and scenic quality

The Project Area and surrounding area primarily consists of agricultural fields, forested areas, and sparse residential development. The area is relatively flat with areas of gently undulating topography. The nearest communities are London located approximately 5 miles to the north, Midway located approximately 5 miles to the southwest, and Mt. Sterling located approximately 5 miles southeast of the Boundary Change Area. The Project and vicinity are typical of rural Ohio with predominately agricultural land and rural residential development. No scenic viewsheds, recreational areas, or parks are mapped within 2 miles of the Boundary Change Area. Additionally, vegetative screening will be implemented strategically to reduce the visual impact of the Project.

# (c) Landscape alterations and impacts

It is not anticipated that these effects will be substantial enough to warrant mitigation to the general landscape, however, consideration will be given to adjacent residents as discussed in Section 4906-4-08(D)(4)(f). Setbacks established for the Project will be combined with vegetative screening and implemented strategically to reduce the visual impact of the project. The Boundary Change Area will not significantly alter the landscape of the Boundary Change Area and surrounding area. Due to its low profile, the Facility will generally only be visible from the immediately adjacent properties. Therefore, the Project will have a minimal impact on the scenic quality of the surrounding area. The Viewshed Analysis Report concludes that the visibility of the Project will be limited to within a 2-mile radius from the Boundary Change Area. Even within the 2-mile radius the Boundary Change Area's visibility will be slight. The Boundary Change Area will predominately be visible from the adjacent properties and from the roads that bisect the Boundary Change Area.

# (d) Visual impacts to cultural and archaeological resources

A sparse scattering of historic properties and archeological sites are mapped within 2 miles of the Project Area. Based on distance, orientation, and results of the LiDAR model, the Project is not anticipated to adversely impact the scenic viewshed of these resources with proper vegetative screening.

Photographic simulations were created to simulate the potential visual impact of the Project from public vantage points that cover a range of landscapes, viewer groups, and types of

scenic resources found within the Project Area. These photographic simulations are provided as part of Exhibit S. No scenic resources were found to be impacted by the Project. As such, the simulations depict a representation of the Project from immediately surrounding properties. The Project, as anticipated, has the most significant impact from non-vegetated areas along adjacent/bisecting roadways. However, none of the areas of visibility were from designated scenic resources and, therefore, the aesthetic impact is minimal.

The solar modules proposed to be used in the construction of the Project include an antireflective coating designed to absorb as much sunlight as possible and minimize glare. Due to the tilt angle of the solar modules, some potential for low levels of glare exists near ground level, primarily in the hours closest to sunrise and sunset during non-winter months.

To supplement the Viewshed Analysis Report, Colliers Engineering & Design completed a Ground-Level Glare Analysis included in Exhibit T of this Application, which accounts for the areas most susceptible to any potential ground-level glare on adjacent properties and roadways in the Boundary Change Area. The Applicant has taken these areas into account in the preliminary vegetative buffer design to ensure areas with the highest potential for glare are mitigated through vegetative buffering.

### (f) Visual impact minimization

The Applicant will continue making reasonable efforts to coordinate with landowners of nearby nonparticipating properties regarding viewshed impacts or concerns, in order to minimize visual impacts on neighboring properties in the line of sight. Minimization strategies are anticipated to include strategic placement of vegetative buffering and use of components designed to minimize glare in the Boundary Change Area.

# (E) Agricultural Districts and Impacts to Agricultural Land in the Boundary Change Area

# (1) Mapping of Agricultural Land

Figure 8-8 shows a map of a map of agricultural land, and separately classifies all land enrolled in the Current Agricultural Use Value (CAUV) program. The map categorizes agricultural land as one of the following agricultural uses: i) Agricultural Vacant Land; ii) Agricultural Vacant

Land CAUV; iii) Cash-Grain Agricultural Land CAUV; and iv) Other Agricultural Use CAUV.

According to the Natural Resources Conservation Service (NRCS) and the Madison County Auditor's website, 1,268 acres of the 1,424 acre Boundary Change Area are located within a CAUV.

# (2) Agricultural Information

### (a) Acreage impacted in the Boundary Change Area

Approximately 1,268 acres of agricultural land within the Boundary Change Area are typically used for production of soybeans and corn will be impacted. After the Facility is decommissioned, the impacted land can be returned to agriculture.

# (b) Evaluation of the impact of construction, operation, and maintenance of the proposed facility

The information in Section (2)(b)(i)-(ii), and (2)(b)(iv)-(v) remains the same as presented in the Initial Certificate Case.

### (i) Field operations

### (ii) Irrigation

#### (iii) Field drainage system

The Applicant retained GPD Group to compile an Agricultural Field Drainage Inventory for the Initial Project Area. The Applicant again retained the GPD Group to compile Agricultural Field Drainage Inventory for the Boundary Change Area (included as Exhibit U).<sup>4</sup>

In compliance with the Certificate Order, the Applicant will 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.

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The Applicant notes that, in compiling Exhibit U, the GPD Group refers to 15 parcels; however, the Boundary Change Area only consists of 14 parcels.

However, if the affected landowner agrees to not having the damaged field tile system repaired, they may do so only if the field tile systems of adjacent landowners remain unaffected by the non-repair of the landowner's field tile system.

Coordination with landowners will serve to minimize impacts to the existing drainage system by avoiding tile mains and repairing damaged tiles in compliance with the Certificate Order. Existing drainage ditches will also be avoided. As noted above, a Hydrologic and Hydraulic Preliminary Report is included as Exhibit H of this Application.

# (iv) Structures used for agricultural operations

# (v) Viability as agricultural district land

(c) Avoidance and mitigation procedures during construction, operation, and maintenance to reduce impacts to agricultural land, structures, and practices.

# (i) Avoidance or minimization of damage to field tile drainage systems and soils

As stated above, Applicant retained to GPD Group to compile Agricultural Field Drainage Inventory for the Boundary Change Area (included as Exhibit U). In compliance with the Certificate Order, the Applicant will 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 damaged field tile system repaired, they may do so only if the field tile systems of adjacent landowners remain unaffected by the non-repair of the landowner's field tile system.

### (ii) Timely repair of damaged field tile systems

In compliance with the Certificate Order, the Applicant will 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 damaged field tile system repaired, they may do so only if the field tile systems of adjacent landowners remain unaffected by the non-repair of the landowner's field tile system.

# (iii) Segregation of excavated topsoil decompaction and restoration of topsoil

The information in this section remains the same as presented in the Initial Certificate Case.

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Summary: Application - 1 of 24 (Cover, Affidavit, Narrative) electronically filed by Christine M. T. Pirik on behalf of Fox Squirrel Solar, LLC