FINAL Environmental Impact Statement
for the
Easton Solar Farm
proposed in
Washington County, New York

November 2023

PREPARED FOR

Boralex, Inc.
39 Hudson Falls Road
South Glen Falls, New York 12803

PREPARED BY

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I.

DEIS Incorporation

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ACRONYMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
AC	alternating current
bu	bushel
Cd	cadmium
CES	Clean Energy Standards
CFR	Code of Federal Regulations
CRIS	Cultural Resources Information System
CO	carbon monoxide
CO_2	carbon dioxide
ESA	Endangered Species Act
Project	Easton Solar Farm, a 20-MW AC PV solar energy generation facility
GPS	Global Positioning System
K	potassium
kV	kilovolt
MW	megawatt
MWh	megawatt-hour
N	nitrogen
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NYCRR	New York Codes, Rules, and Regulations
NYNHP	New York Natural Heritage Program
NYS	New York State
NYSERDA	New York State Energy Research and Development Authority
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDHP	New York State Division for Historic Preservation
OPRHP	Office of Parks, Recreation and Historic Preservation
Pb	lead
PV	photovoltaic
ROW	right-of-way

Acronym/Abbreviation	Definition
SEQR	State Environmental Quality Review
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control and Countermeasure
SPDES	State Pollutant Discharge Elimination System
Study Area	2-mile radius from all facility components
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VIA	Visual Impact Assessment

1. EXECUTIVE SUMMARY

Easton Solar, LLC (Easton Solar or the Applicant), a wholly owned subsidiary of Boralex, Inc. (Boralex), has been working to secure discretionary permits for the Easton Solar Farm (the Easton Solar Project or the Project), a proposed 20 megawatt (MW) alternating current (AC) electric generating facility located in the Town of Easton, Washington County. During a Planning Board (PB) meeting held on July 26, 2022, the Town of Easton (the Town), the 'Lead Agency' under the New York State Environmental Quality Review Act (SEQRA), determined that the Project may have significant adverse impacts on the environment and issued a Positive Declaration.

The Town of Easton posted the SEQR Determination on the New York State Department of Environmental Conservation (NYSDEC) Environmental Notice Bulletin (ENB) on August 10, 2022. Pursuant to 6 NYCRR 617.9, the Applicant has prepared this Environmental Impact Statement (EIS) to provide additional information about the Project and assess potential adverse environmental impacts identified by the PB.

The Easton PB is primarily concerned with how the proposed Project may affect the Town's agricultural community and farmland protection initiatives as well as community character, visual impact, potential soil contamination from materials used to construct solar panels, and proximity to a Critical Environmental Area (CEA) identified by the NYSDEC.

A baseline for analysis of environmental impacts is provided in Section 3. ***Existing Conditions of the Project Site*** describes current and former uses of land within the proposed Project area and adjacent properties in the neighborhood. The existing conditions represent a mixed patchwork of land use and land cover. Findings indicate that a solar energy generating facility is not inconsistent with either the historical use of the Project area or with the blend of utilities, commercial entities, public entities, and residential properties currently residing in the neighborhood.

Section 4 discusses findings related to environmental concerns identified by the Town in the SEQR review process. Historical and existing conditions of the larger area are important factors in assessing the suitability of the site for a solar energy facility. Although the Project will alter the current farming use of the property, it will have long-term beneficial effects on soil quality and provide continuous agricultural value with the implementation of an agricultural co-utilization plan.

The character of the neighborhood will not be altered, except in terms of visual aesthetic from a minimal number of vantage points. Design of the facility includes robust landscape screening to camouflage the solar arrays to the maximum extent practicable. Forested areas and hedgerows that encircle the Project area (particularly along adjacent roadways) already provide substantial visual screening, especially along the north and west sides of the Project. Existing vegetation will be left in place and augmented with additional plantings where needed.

Solar facilities cause no major environmental issues when properly designed and maintained. Boralex has a strong reputation for operational excellence, as evidenced by its 20-year history of operating and maintaining renewable power facilities in New York state and over 30 years of operational history worldwide. The Project will be a well-maintained facility with 24-hour monitoring for the functionality of all electrical components and panels. In addition, Boralex will provide a decommissioning bond to the Town to cover the cost of decommissioning if unforeseen events occur and Boralex is not able to do this themselves.

Section 4.5 addresses concerns about potential impact on the CEA located at the north end of the Project and explains that the Applicant will effectively avoid impacting any part of the designated area. The remainder of the document (sections 4.6 to 7) discusses the Project's contribution to New York State short- and long-term goals for expanding renewable energy generation and cutting fossil fuel emissions dramatically by 2030 and beyond, as well as how the Project will not adversely impact socioeconomic conditions in the Town of Easton but will in fact provide benefits to the community.

2. PROJECT DESCRIPTION

2.1. DESCRIPTION OF APPLICANT, OWNERSHIP RIGHTS AND INTERESTS

Easton Solar is a limited liability company that will develop, own, operate and maintain the Project. Easton Solar's parent company, Boralex, is headquartered in Quebec, Canada and is firmly established in Canada, the United States, the United Kingdom and France as a developer and operator of renewable energy power facilities including solar, hydroelectric, storage, and wind. Founded in 1990 by a team of industry veterans, Boralex's team members developed and/or operate thousands of MWs of solar, wind and hydroelectric facilities.

Boralex owns and operates approximately 2,484 MW of renewable power plants globally, including seven hydroelectric facilities in New York State (NYS) and more than a hundred in Canada and France. Boralex's NYS hydroelectric projects have previously been awarded 62 MW of Power Purchase Agreements by the Niagara Mohawk Power Corporation. Additionally, Boralex's operational center is located approximately 17 miles from the Project site, allowing for quick response to any issues that may arise with the operation of the Project.

Boralex has worked closely with the landowners of the parcels that comprise the Easton Solar Farm's Project area. Ground Lease and Electrical Easement agreements were entered into between Boralex and the landowners in 2020. The Memorandum of Lease is provided as ***Appendix A***.

2.2. PROJECT SITE

The lands that are being evaluated for potential solar development are located in the Town of Easton, Washington County, New York and are identified on the Site Location Map in ***Appendix B***. The Project is sited on seven contiguous parcels totaling 196 acres, with a Project area of approximately 136 acres.

The Project is located about two miles west of the Town of Easton, in an area of mixed land uses. The Town of Easton does not have a zoning ordinance. In the Town's Comprehensive Plan Land Use Map, the parcels hosting the Project are designated as Low Density Residential (LDR) and Medium Density Residential (MDR).

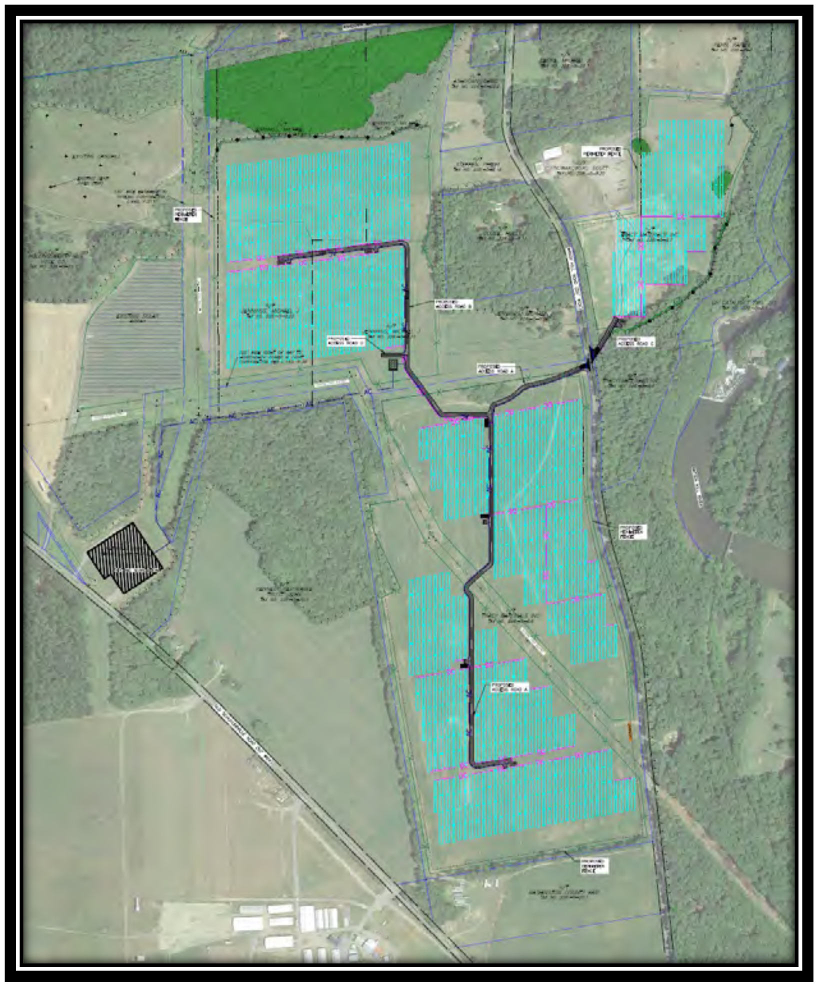
Land use for properties surrounding the Project include an independent ground mounted solar project, an inactive solid waste landfill, a few residential properties, the Windy Hills Golf Course, a trucking company, the Washington County Fair Grounds, agricultural fields, and the National Grid Batten Kill substation with connection to 115kV transmission lines.

2.3. PROPOSED ACTION

The Applicant proposes to build ground-mounted solar arrays with the capacity to generate a total of 20 MW AC. It is anticipated that the photovoltaic (PV) panels used will be comprised of mono-crystalline cells within an anodized aluminum frame similar to those installed on over one million homes in the United States. The PV panels for the proposed Project will be ground-mounted on a racking system that will have a small post footprint, typically consisting of small I-beam posts driven into the ground. All collector cabling for the Project will be buried. The Project will consist of the following components:

- The PV panels will produce direct current (DC) electricity and will be mounted on single-axis tracking structures that will follow the sun throughout the day. The panels will be placed in arrays orientated north-south; Inverters placed throughout the Project area to convert DC electricity to AC electricity;
- A medium voltage underground cable collection system that will aggregate the AC output from the inverters;
- An on-site interconnection facility where the Project's electrical output will be combined and connected to the National Grid Batten Kill Substation via a buried 34.5 kV direct feeder line;
- Internal infrastructure including access roads and fencing; and
- Temporary laydown areas for equipment staging during construction.

Figure 1. Easton Solar Farm Site Layout



The Project's point of interconnection (POI) to the regional utility will be at the National Grid Batten Kill substation located on Old Schuylerville Road, west of the Project area. Easton Solar will install 34.5kV underground collector lines to transmit the energy output of the distributed arrays to a switching station within the Project area and from there to the National Grid substation POI via a new underground 34.5kV transmission line approximately 2,300 feet in length. Public roads will be used for construction access and general access during Project operation. It is not anticipated that any improvements to public road intersections or the addition of turnarounds will be required. The Project is intended to be developed with limited tree clearing, as most of the Project area was previously cleared while in use as a sand and gravel resource. More recently, it has been actively maintained for corn production.

Solar energy facilities have no direct air or wastewater emissions, are very quiet, and generate no vibration. The PV panels proposed to be used for the Project will be approximately 15 feet in height. Setbacks, fencing, existing vegetation, additional vegetative screening, and landscape buffering will allow the Project to have minimal ground-level visual impacts on the community and natural setting of the area.

3. EXISTING CONDITIONS & LAND USE HISTORY OF THE PROJECT SITE

The following description of current conditions and historical context of the Project site and surrounding area presents a baseline against which impacts of the proposed action can be evaluated.

The Project is located within a sparsely populated neighborhood that contains a mix of land uses interspersed with patches of forest. The area has low ambient levels of noise and nighttime artificial illumination. Per data provided by the New York State Department of Transportation (DOT), annual average daily traffic (AADT) for State Route 29, just south of the Project area, is estimated to be 8,782 vehicles, with trucks comprising six percent of that total (NYSDOT, 2023). DOT statistics are not available for Old Schuylerville Road or Windy Hill Road; however, the AADT for those local roads is likely less than 300 vehicles per day. There are no public transportation stations in the vicinity of the Project. The Dionondahowa Falls hiking trail is located on the east side of Windy Hill Road on the property of Gravity Renewables in a forested tract of land bordering the Batten Kill River.

When choosing the location for a solar energy facility, it is important to ensure that there are sufficient support services to respond to unforeseen emergencies. The Project area is located within two miles of the Middle Falls Fire Department and within three miles of the Schuylerville and Victory Mills Fire Departments. Another key consideration for siting of the Project is access to utility infrastructure. A National Grid substation with available hosting capacity is located within a short distance from the Project area, which enables the Applicant to avoid constructing a separate substation as part of the Project.

In terms of visual setting, the Project site is located on relatively flat tracts of land in a larger thumb-shaped area approximately two miles in diameter that is encircled by the Hudson River and the Batten Kill River. The Project area lies between Windy Hill Road and Old Schuylerville Road, neither of which are designated as scenic highways. The Project parcels range in elevation from approximately 320 to 330 feet above sea level. Surrounding parcels are about 10 to 20 feet higher in elevation. This is evident in the USGS National Map National Boundaries Dataset hillshade elevation image shown in Figure 2. It is assumed that the geometrically shaped areas of lower elevation for the Project parcels are due to extensive extraction of sand and gravel, which was the primary use of the land for about 20-25 years starting in 1984.

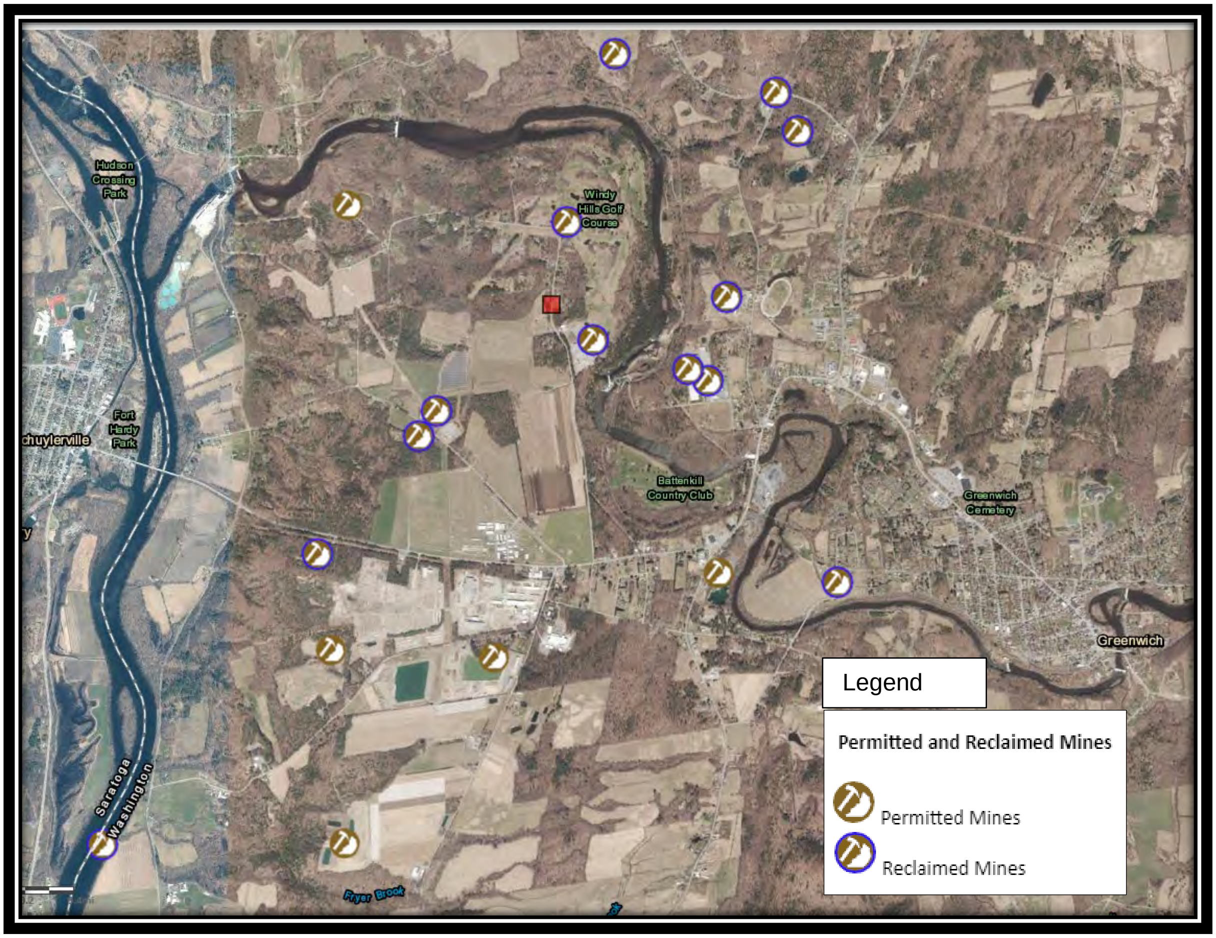
Figure 2. Hillshade Map Showing Sunken Elevation of Project Area

(USGS, The National Map National Boundaries Dataset, 2023)

3.1. SAND AND GRAVEL MINING

The Project parcels are currently used for corn production. Most of the Project area (up to 136.9 acres) was utilized for sand and gravel extraction over the course of mining operations performed by Tracy Materials Inc. at various locations across the parcels between 1984 and 2013 (NYSDEC, DECinfo Locator, 2033). Land next to major river systems is known to have a generally higher concentration of sand. Figure 3 shows the many locations in the surrounding area east of the Hudson River in Easton and Greenwich that have been used as sand and gravel mines over the last 30-40 years. The prevalence of sandy soils is reflected in the soil mapping for the area, which indicates no soils belonging to Mineral Soil Groups 1 to 4 within the Project area except for one narrow strip near the forested wetland at its northern end (see section 4.1.2 and ***Appendix C – USDA NRCS Soil Mapping***).

Figure 3. Cluster of Permitted Sand & Gravel Mines in Easton and Greenwich



(Map of mining sites courtesy of NYS DECinfo Locator, 2023)

3.2. NEIGHBORHOOD CHARACTER AND SETTING

The character of the neighborhood in which the Project area is situated is best described as a mix of industry, rural residential properties, forested land and public land. Industrial and commercial elements include:

- Hollingsworth & Vose (H&V) Company, producers of paper pulp, mechanical pulp, paper and board; This is an adjacent property, tax parcel 128.-5-21.1, located along the northwestern border of the Project. It contains these uses:
  - H&V Broke Landfill is an Inactive Solid Waste Landfill. As of May 2022, the NYSDEC Inactive Landfill Initiative (ILI) identified this landfill as a Priority Group 1 landfill with respect to chemical contaminants perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and/or 1,4-dioxane. Priority Group 1 is assigned to landfills with an exceedance of state maximum contaminant levels (MCL) for both on-site groundwater and downgradient

drinking water sampling. The Project area and the Critical Environmental Area at its north end are both downgradient from the landfill.

  - An approximately 10.5-acre solar energy generating facility that did not undergo review by the Town of Easton Planning Board.

- SRN Trucking company, a freight hauling business located at 301 Windy Hill Road, Greenwich, NY 12834 at the northeast corner of the Project area.
- Tracy Materials, Inc., operator of the former sand and gravel mine that covered the Project area and was permitted to operate across 136.9 acres between 1984 and 2014.
- Windy Hills Golf Club located to the northeast of the Project area.
- Batten Kill Country Club located to the southeast of the Project area.
- Gravity Renewables, owner of the Dahowa Hydroelectric Project and Dionondahowa Falls Trail located east of the Project area on the east side of Windy Hill Road.
- Multiple commercial properties located in an Industrial District less than a mile from the Project on the south side of State Route 29 at the southern end of the Project area.

Publicly owned land in the area includes the Washington County Fairgrounds to the south/southwest of the Project area. Residential properties are found on the east side of Old Schuylerville Road and at the north end of the Project area, off Windy Hill Road and Ashdown Way. There are two residences that are directly adjacent to the Project solar arrays. The first property is located at 338 Windy Hill Road and is the home of a participating landowner. The second property is located at 300 Windy Hill Road and is the home of a non-participating landowner. Boralex has met with this non-participating landowner and is in conversation with them regarding how best to address potential impacts of the Project on their viewshed.

3.3. PREVIOUS APPROVAL OF SOLAR SITE BY EASTON PLANNING BOARD

Five years before Boralex submitted a site plan application to the Easton Planning Board for the proposed Easton Solar Farm, the portion of the Project area identified as tax parcel #228.-5-8.19 was approved by the PB for four solar farms, each with an energy generating capacity of 5 MW AC, for a total output of 20 MW AC. The conditions of approval (COA) issued by the PB on March 28, 2017 included the following statements (see ***Appendix D – Jennings/Borrego COA***):

- *on SEQR Part 2, Impact on land, it was noted that the land was a former mine pit, and the pit, will now be constructed with solar panels, and*
- *there are some visual impacts upon the scenic rural character of the area, they are off-set by the planting of trees and,*

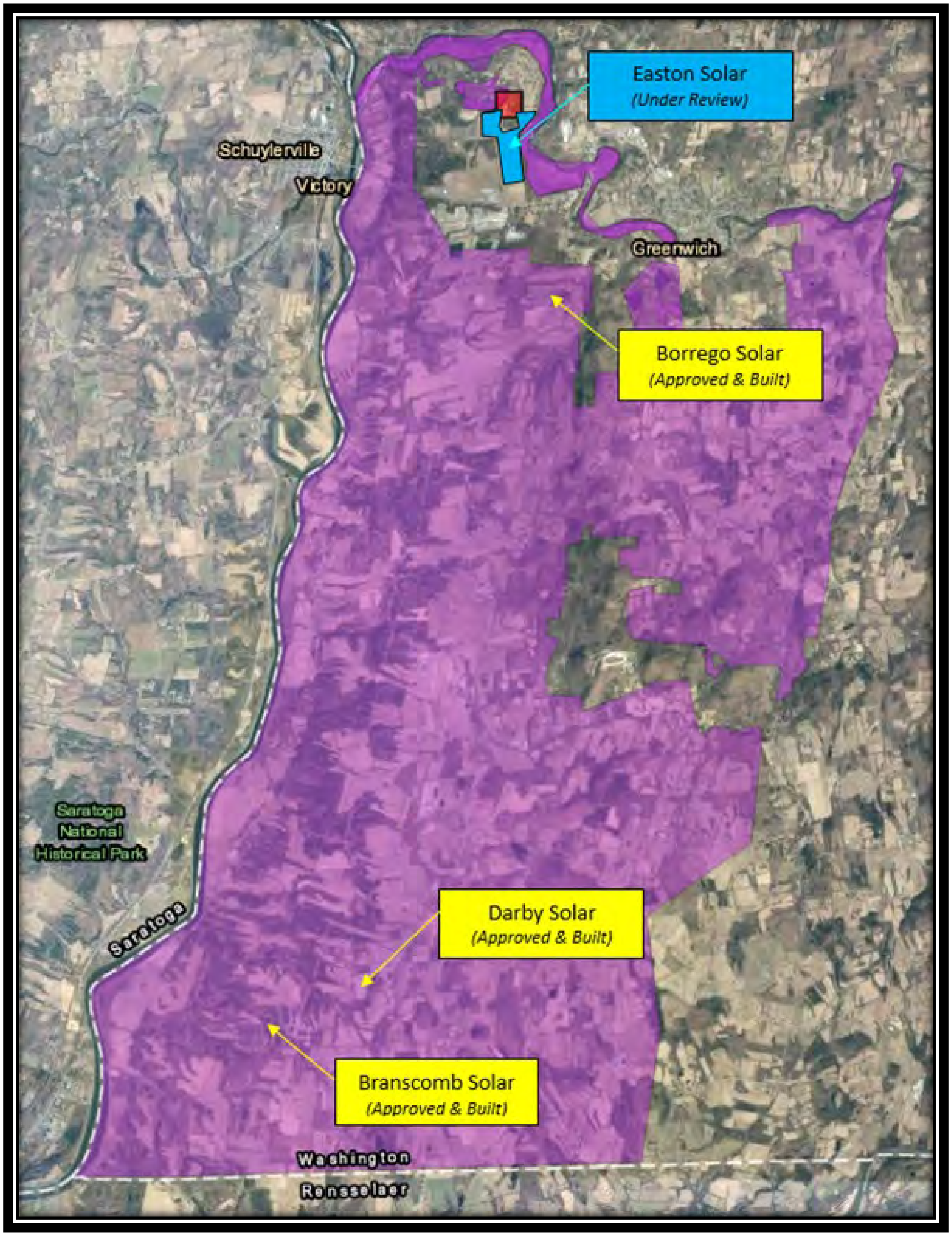
- *the impacts on the water table and water quality have been considered, and are determined to be of no potential for impact, due to no building, and*
- *therefore, the approval of this subdivision will not result in the creation of a material conflict with the Town Comprehensive Plan or goals, nor impair aesthetic resources or existing community or neighborhood character, and*
- *the Easton Town Planning Board has determined that there are no other thresholds that will be exceeded, and*
- *therefore, be it resolved that the Easton Town Planning Board determines that this proposed action will not have a significant impact on the environment, and*
- *the Easton Town Planning Board therefore grants this proposed action a NEGATIVE DECLARATION [for SEQR]*

The above statements show that the Easton PB carefully considered prior land use history of tax parcel #228.-5-8.19, potential visual impacts of a 20 MW solar installation, degree of environmental impact, and alignment with the Town's Comprehensive Plan and existing neighborhood character. The PB found that the aggregate solar facility would not have a significant impact on the environment or the community. Between 2017 and 2022, three additional solar projects were approved by the Easton PB:

1. Branscomb, LLC – Located off of State Route 54 and Wagner Lane; Approved July 23, 2019
2. Borrego Solar, LLC – Located at 2131 State Route 40; Approved September 10, 2019
3. Darby Solar, LLC – Located between State Route 40 and McGowan Road; Approved November 26, 2019

Boralex's proposed Easton Solar Farm does not overlap with a certified agricultural district or a state-designated critical environmental area, including the wetland area at the north end of the Project site. The three previously approved and constructed solar facilities are located within **New York State Certified Agricultural District No. 3** and **Critical Environmental Areas** designated by the NYSDEC, as shown in Figure 4 and Figure 5. A review of satellite imagery available in Google Earth from 1985 to 2022 indicates that all of the land now occupied by the solar facilities was actively farmed land since at least 1985. The Branscomb Solar site also involved construction of access roads across federally mapped wetlands, which required a Nationwide Permit 14 review by the U.S. Army Corps of Engineers. In each case, the Easton PB granted a negative declaration for SEQR. As the lead agency under SEQRA, the PB determined that these large-scale solar facilities would not result in significant adverse environmental impacts. In comparison to the previously approved solar facilities of similar size, Boralex's proposed Easton Solar Farm will have less environmental impact and is better situated to comply with the Town's Comprehensive Plan.

Figure 4. Approved Solar Projects in Town of Easton Critical Environmental Areas



(CEA mapping courtesy of NYS DECinfo Locator, 2023)

4. ASSESSMENT OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

The set of potentially significant adverse environmental impacts that are considered in this section are based upon comments made by members of the Town of Easton PB at their monthly meeting on July 26, 2022. Additional input was provided by the PB after the Board's review of the Scoping Document submitted by the Applicant to identify requirements for the EIS. Meeting minutes from the meeting on July 26th stated that planning board member Michelle Skiff visited the Project area and made the following observations regarding SEQR Part 2:

> *Impact on plants and animals was marked as no or small impact. A bird study may be required, per NYS DEC. Impact on agricultural resources was marked moderate to severe, the proposed action may result, directly or indirectly, in increased development potential or pressure on farmland, and the proposed project is not consistent with the adopted municipal farmland protection plan. Consistency with community plan was marked as moderate to severe proposed land use components may be different from, or in sharp contrast to, current surrounding land use patterns was marked as moderate to large impact, the proposed action is inconsistent with local land use plans or zoning regulations was marked as moderate, consistency with community character, proposed action is inconsistent with the character of the existing natural landscape was marked as moderate to large impact.*

The above comments highlight concerns for impact to available farmland, general land use patterns and community character. Upon review of the EIS Scoping Document, the PB also emphasized a need to consider impacts on local businesses that support the agricultural community and to analyze the potential for environmental contamination from the Project's solar panels.

4.1. IMPACT ON AGRICULTURAL PRODUCTION

The Easton Solar Project proposes to convert active agricultural lands to a solar electric generation facility. This section will discuss impacts the Project will have on agricultural lands within and adjacent to the Project area, as well as any agricultural districts pursuant to subdivision (4) of section 305 of article 25-AA of the Agriculture and Markets Law, as applicable.

4.1.1. Site Characteristics: Topography, Geology & Hydrology

The Project sits atop a series of gently rolling hills ranging in elevation from approximately 330 feet along the eastern boundary (Windy Hill Road) to approximately 300 ft along the northwestern boundary. The Project area has one river system, Batten Kill, which lies east of the of the Project boundary. Most of the

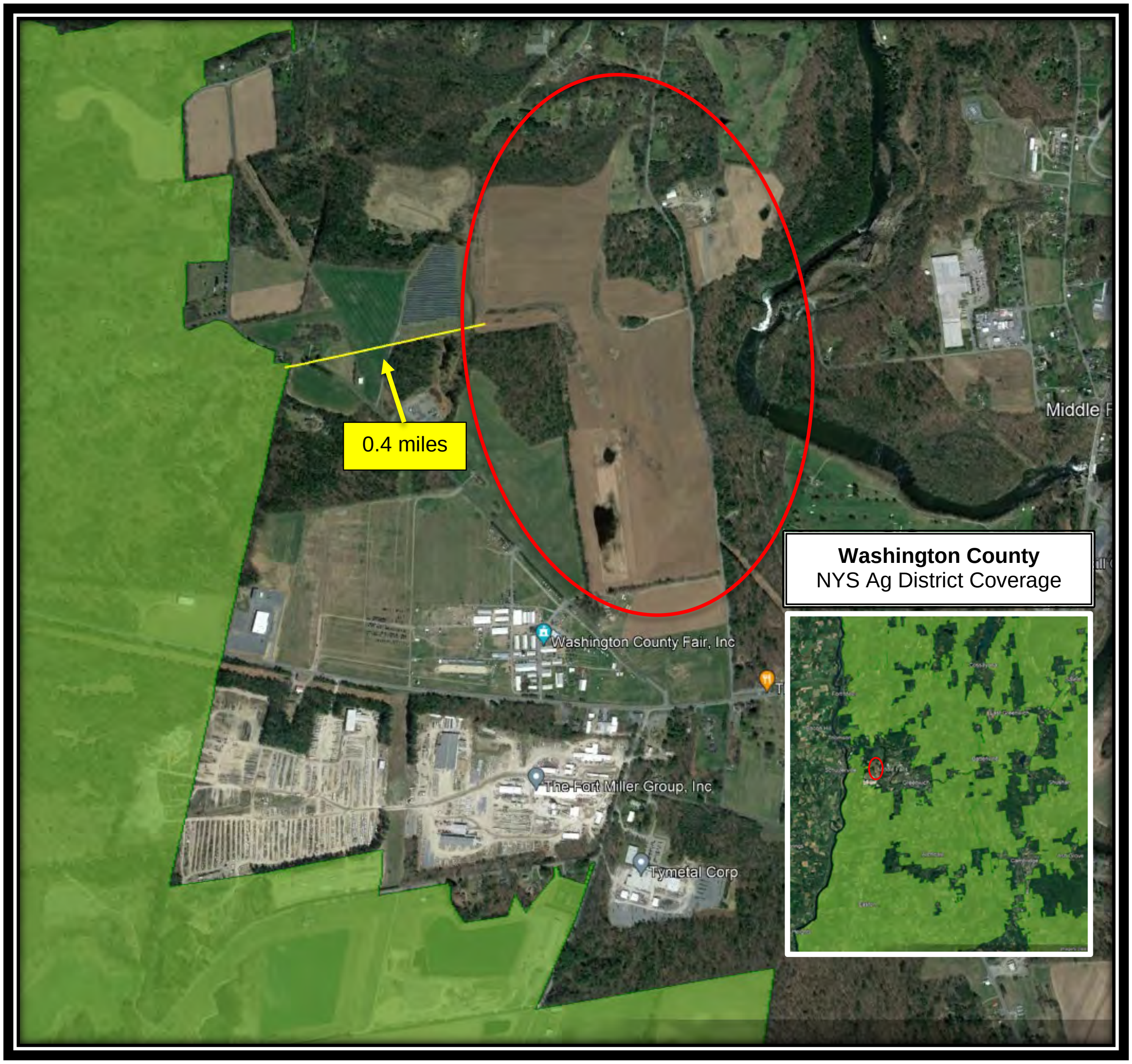
Project area falls within the Batten Kill subwatershed (hydrologic unit code 12-020200030303) and drains to the north or east eventually into the Batten Kill River. According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, the entirety of the Project area is located within *Zone X (unshaded): areas of minimal flooding.* The topsoil surface layer, which is best described as till of various textures, is underlain by Poultney Formation and Canajoharie Shales (USGS 2021). The depth to bedrock is less than 100 feet in the general region. Depth to groundwater is between five and nine feet below grade. Groundwater levels will fluctuate seasonally. As stated in section 5.2 below, wetland surveys conducted in April and September 2021 identified one palustrine forested (PFO) New York State Class 2 regulated wetland at the north end of the Project area. This wetland is contained within the portion of the property which is also designated as a CEA by the NYSDEC and will not be used as part of the Project.

The parcel (Tax ID 228.-5-8.7) on the east side of Windy Hill Road at the northeast tip of the Project includes two manmade ponds that were created as industrial wash ponds in the 1980's when the area became a sand and gravel mine. They will be filled in during the construction phase. Minimal other removal or displacement of vegetation or topsoil is proposed, except as needed to construct access roads and prepare the ground for electrical equipment pads. For limited areas where topsoil stripping is deemed necessary during construction, the soil will remain on site and be re-applied around the area from which it originated. Topsoil will not be removed from the Project site. These practices will help to maintain soil quality for agricultural use after Project decommissioning and thus will not degrade soil quality or agricultural viability.

4.1.2. Agricultural Districts and Easton's Comprehensive Plan

In total, the Project will convert approximately 123 acres of farmed land to solar electric generation during the 30-year life of the solar project. The primary row crop currently being grown on the parcels is corn (*Zea mays*). During discussion of SEQR considerations, the PB expressed concerns that the Project is not consistent with the municipal farmland protection plan, as outlined in the Town's Comprehensive Plan and the *Washington County Agricultural and Farmland Protection Plan (2017)*. It is important to note that the proposed action is not located within one of the nine New York State certified agricultural districts that blanket a majority of Washington County. As shown in Figure 5, the nearest agricultural district land is located approximately 0.4 mile east of the Project site on the opposite side of Old Schuylerville Road (Cornell IRIS and NYSDAM, 2021). The smaller inset in Figure 5 shows how a vast majority of the land in Washington County lies in a NYS certified agricultural district, while the Project area does not.

Figure 5. Easton Solar Project (circled in red) - Proximity to NYS Agricultural Districts (2021)



(Cornell IRIS and NYSDAM, 2021)

The Zoning Map included in the Town of Easton Comprehensive Plan of 1970 (stamped in 1972) shows the land in and around the Project area as residing in a Medium Density Residential (MDR) district. See Figure 6 below. The area immediately south of the project is designated as Industrial (I) with additional MDR and Community Commercial (CC) districts to the southeast. It should be noted that MDR, I and CC districts are designated only at the north end of the Town. The other 85% of lands in the Town are designated as Agricultural, Forestry or Rural Residential. The Town's Comprehensive Plan reveals that the parcels comprising the Project area have never been part of a NYS certified agricultural district. The following passage is an excerpt from the comprehensive plan that refers to an “existing land use map” that was published by the Commission on Preservation of Agricultural Land in New York State:

> *The first area, in white, indicates lands which are not currently in farming, have never been in farming or which are obsolete for farming and from which most farming has disappeared. About 15 percent of the town's area falls in this classification. The major areas include the prime farm land bought by Niagara Mohawk, Willard Mountain and the area to the immediate north, and* ***the area just south of the Batten Kill.*** (Section II. Land Use (p. II-2) in the Town of Easton Comprehensive Plan)

The New York State Legislature passed the Agricultural Districts Law in 1971, and the Project area has not been included in an agricultural district since then. This evidence of land use status for land comprising the Project area supports the assertion that it is not, and historically has not been, considered a premium candidate for the municipal farmland protection plan.

Figure 6. Town of Easton Zoning Map (Comprehensive Plan)

4.1.3. Suitability of the Project Area for Agricultural Production

United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey maps indicate that about 50% of the development area is classified as having "prime" agricultural soils (USDA NRCS, 2022). However, notation on the survey maps include a disclaimer for the specified area of interest (AOI):

> *The soil surveys that comprise your AOI were mapped at 1:20,000.*
> *Warning: Soil Map may not be valid at this scale.*

Unless soil is sandy/gravelly or poorly drained – both of which are conditions that are less desirable for agriculture – the USDA NRCS Soil Survey determination of prime farmland depends more on whether the land has a slope of less than 5% than it does with assessing soil quality. According to USDA classification, Mineral Soil Groups 1-4 represent productive agricultural soils with the greatest ability to support crop production. The USDA soil mapping for the Project area indicates that 95% of the land does not contain Mineral Soil Groups 1-4 (see ***Appendix C***). Oakville loamy fine sand and Otisville gravelly sandy loam are shown covering approximately 89% of the parcels. These soil types belong to Soil Groups 5, 7 and 8. Wallington silt loam with a sandy substrate also belongs to Soil Group 5 and covers the approximately six percent within the forested and protected wetland at the north end. Five percent is shown as Belgrade silt loam, which is in Mineral Soil Group 2. While the USDA soil mapping provides high level indicators, it is important to note that the mapping was not derived from empirical on-the-ground soil sampling at the Project site. A geotechnical survey completed for the Applicant by Foundation Design, P.C. in July 2021 procured and analyzed soil borings from 10 locations spread evenly across all parcels within the Project area. The final geotechnical report described soil composition as follows:

> *We encountered a subsurface profile consisting of topsoil then glacial outwash. The surface topsoil ranges from zero to three inches thick at the sampled locations, averaging one inch thick. The upper glacial outwash consists of silty sand/sandy silt with gravel, classifying as SP-SM or SM.*

The SM soil classification is assigned to sandy, coarse-grained soil, where nutrients and water tend to leach away more easily than soils containing a higher percentage of silt and clay. To adequately support agricultural production, topsoil should maintain an average thickness of 4+ inches. An average of one inch thick is considered too shallow. Given these findings and the history of sand and gravel mining at the site, it is likely that nutrients and microbial communities in the topsoil of the Project area remain greatly depleted and cannot sustain continuous farming without significant investments in soil amendment (Liddicoat et al, 2022).

A field investigation of soils and landscape at the Project site was conducted by Soil Hub, LLC on June 14-16, 2023 for the purpose of field checking the USDA NRCS farmland classification for the Project area and updating it with a site-specific evaluation. The resulting soil analysis report is included in ***Appendix N***. Samples were obtained from twenty-five (25) augur borings and seven (7) soil pits, as mapped and labeled in Figure 7.

Figure 7. Soil Sampling Points at the Project Site

Soil Hub's soil analysis report provides an overview of the methodology used by the NRCS for high-level mapping of soil series, such as Oakville, Otisville, Wallington, and Belgrade, across the Project area. The

NRCS Soil Survey mapping is primarily based on topography, landforms and knowledge of dominant soils in the region. The soil survey for Washington County was published in 1975, several years prior to operation of the Tracy Materials, Inc. sand and gravel mine at the Project site. Soil Hub's report also explains properties of the New York Agricultural Soil Groups as defined in the New York State Department of Agriculture and Markets (NYSDAM) Manual Land Classification. The report notes that of the ten New York Agricultural Groups for mineral soils, Groups 1 through 4 are more productive while Groups 5 through 10 have severe limitations to, or are unsuitable for, agriculture. (See ***Appendix N***.)

Soils analysis of the samples collected in June 2023 was performed by Michael P. Callahan, M.S., CPSS and John S. Wah, Ph.D., CPSS and produced the following findings:

- At a landscape level, most of the site consists of fill material added as part of the sand and gravel mining reclamation effort. The result is a landscape with highly variable soils and indications of poor or no structure development.
- Since most of the Project area has been significantly disturbed, it was not possible to map soils to a particular soil series, other than one that would be classified as human-disturbed. Significantly disturbed soil would not fall under the prime farmland classification.
- The past quarry activity that occurred on the Project site has resulted in most of the soils having a more sandy-skeletal control section, similar to the Otisville series (Soil Group 5). To be sandy skeletal, a soil needs to have at least 35% (by volume) coarse fragments (rocks, >2mm) and less than 8% clay-sized particles. It is a very sandy soil with a lot of rocks and is prone to drought.
- Due to the severe disturbance of the Project area and the near ubiquitous existence of moved/fill material, it would be more appropriate to place the soils into *NYSDAM Soil Group 9 – Soils which are generally not suited for pasture or other cultivated uses*.
- Depth of topsoil across the Project area varied greatly in magnitude, with a minimum of 4 cm to a maximum of 49 cm. The median depth was 10 cm (~3.9 inches).
- Properties of the "Ap horizon" (i.e., topsoil) layer across the Project area are indicative of less stable soil with low accumulation of organic matter.
- The ubiquitously sandy soils at the Project site cannot adequately hold or buffer changes in nutrient content to sustain field productivity without intensive seasonal soil amendment.

In summary, the soil scientists at Soil Hub determined that the soils throughout the Project area are best classified as Not Prime Farmland. Given the sandy-skeletal composition of on-site soils and the lack of naturally developed structure, it would be impossible to maintain adequate levels of nitrogen, phosphorus, and potassium needed for plant growth without extensive and repeated applications of fertilizer.

Corn, which is currently grown on a majority of the Project area, is a resource-intensive crop: it consumes one pound of nitrogen for every bushel of grain produced. This means that achieving an average productivity of 170 bushels of corn harvested per acre would require application of approximately 170 to 215 pounds of nitrogen fertilizer per acre. In a typical growing season, about 10 pounds per acre of nitrogen are emitted as nitrous oxide, which is the number one ozone depleting gas emitted by humans. Moreover, corn production contributes to ongoing depletion of soil nutrients even with annual treatments of fertilizer. In general, the combination of conventional tilling and nutrient-depleting corn production will steadily degrade farmland by destroying soil structure and microbial communities, reducing porosity of the soil, and drawing down valuable mineral/nutrient content beyond just the big three (nitrogen, phosphorus, and potassium).

> *While producers can supply needed crop nutrients to offset the loss of inherent fertility, the productivity of eroded soils can be restored by adding inputs only when favorable subsoil material is present. Where unfavorable subsoils exist (limited rooting depth, coarse sand and gravel, or high soil densities), there is little or no ability to recover yield losses – the impact on soil quality and productivity is devastating and final.* (Al-Kaisi *et al.*, 2004)

Depending on the type of corn grown, robust growth may require significant applications of pesticide (e.g., glyphosate is typically used on genetically modified corn) and fungicide. These chemical applications create adverse environmental effects because they are toxic to more than just the targeted species.

4.1.4. Protecting the Batten Kill Watershed

The Batten Kill is recognized as a prime brown trout fishing stream in Vermont, where it originates, and New York, where it empties into the Upper Hudson. Both states have implemented stream management plans to monitor and protect the Batten Kill’s stream habitat for salmonid fish and other aquatic species. Every April, May and June the NYSDEC stocks upper reaches of the river with trout of varying maturity (depending on the month). There is also a documented population of wild trout that propagates in the river. The Town of Easton has identified the Batten Kill as a valuable natural resource. The comprehensive plan designates land bordering the river as a protected Forestry district reserved for passive or active recreation. A 1978 addendum to the comprehensive plan recommends establishing a Batten Kill Special Corridor to formalize its importance to the community. This indicates that the Town has long been committed to protecting the Batten Kill River system.

Each application of agricultural chemicals to the fields at the Project site introduces pollutants within the Batten Kill subwatershed. Although the Project area may not be prone to erosion due to its relative flatness and sunken elevation, conventional farming such as disc-plowing or tillage encourages erosion and is a primary culprit of soil loss. Since the parcels of the Project drain toward the Batten Kill River, it may be assumed that runoff of excess nutrients, pesticides and sediment affects the water quality of the river and downstream watersheds as well. Nutrient and sediment loading within waterways is known to cause algal blooms that may release toxins or that are dense enough to pull all available oxygen from the water, thus creating hypoxic zones that result in fish die-offs. As described above, continuous row corn farming requires repeated applications of chemicals throughout the growing season. These chemicals are also likely to be transported to the Batten Kill River where they will affect habitat for fish and other aquatic species. There is evidence that pesticides, such as glyphosate-based herbicides, adversely affect aquatic invertebrate ecology, including amphibian larvae (tadpoles) and earthworms, species that are beneficial to the larger ecosystem. The Easton Solar Farm will reduce the use of chemicals on the land and enhance soil and moisture retention with native ground cover, thus reducing the volume of contaminants that flow into the Batten Kill from the Project area.

4.1.5. Soil Improvement Benefits of the Easton Solar Project

The current Project schedule estimates construction to begin Q4 2024. The construction phase will include site prep, access road construction and other civil activities. Major construction, including racking, panel and inverter installation, will begin in Q2 2025 and continue through the end of 2025. Commercial operation is expected to begin in Q4 2025. Stormwater management best practices will be used throughout the construction phase to prevent erosion and control transfer of sediment. Based on topography and sandy soil composition, the site is anticipated to drain effectively without the need for additional channeling or catchments. Given that surface or subsurface drainage is unlikely to be affected by the installation of solar infrastructure based on current site conditions, impacts to existing stormwater drainage patterns for either the Project area or adjacent agricultural land are not anticipated to be significant.

Upon completion of Project installation, the construction area of disturbance will be promptly re-seeded for vegetative cover. Revegetation will benefit the land by providing soil enrichment with a heterogeneous mix of native and/or naturalized, nitrogen-fixing plants over the 30-year life of the solar energy facility. Native and/or naturalized plants typically have deeper root systems that will increase the aggregate stability and water holding capacity of the soil, thus minimizing erosion, aiding infiltration during the wet season and improving drought-resistance during the dry season. The soil will not be tilled during Project operation, which coupled with the deep-rooted vegetation and minimization of chemical application, will improve the soil quality over the life of the Project.

In recognition of the Town's overarching land use objectives, the Applicant has also proposed instituting an agricultural co-utilization plan with one or more local farmers. The co-utilization plan is in development and will be designed to serve both energy generation and agricultural interests at the same time. After facility operation begins in Q4 2025, it is hoped that shade-tolerant and/or hand-harvested crops which grow well in marginal sandy soils and require minimal inputs could be grown concurrently in a portion of the Project area with operation of the solar panels. Additionally, land within the development areas can potentially be used for grazing by midsized livestock such as sheep. It is estimated that grazing by one (1) farmer would be feasible given the land area to be converted. The co-utilization plan will include creation of a local Working Group, which will meet prior to the start of construction in order to finalize the co-utilization plan and determine exactly where within the facility area each agricultural activity will occur. The Working Group is anticipated to continue to meet during operation, no more than every five years, to review the results of the co-utilization activities and determine if and/or when agricultural activities should be adjusted. The co-utilization plan will be designed to provide natural soil amendment where possible, minimize the loss of organic material, maintain the agricultural potential of the land, and support the local community to the greatest extent practicable.

After decommissioning, soil quality will be restored to the same or better productivity potential than it is currently, and the land could be reverted to a wholly agricultural use at the discretion of the landowner.

4.2. IMPACT ON COMMUNITY CHARACTER

The Town of Easton raised a concern that the Project may have an adverse impact on the character of the community. This section will review existing conditions in the neighborhood and evaluate how the Project fits into the context of the surrounding area.

Due to the footprint of the Project, approximately 123 acres of currently farmed land, 11 acres of additional cleared land, and two acres of treed land will be converted to a solar energy generating facility. Based on aerial imagery (Google 2023), the largest section of the proposed Project area directly east of the National Grid substation has been farmed for about 20 years. The northwestern section shows mining activity until about 2010. The northeastern parcel (tax parcel 228.-5-8.7) appears to have been a materials stockpile for gravel or other aggregate until about 2013. Although the proposed shift in land use change will result in a visual impact, it is not anticipated to result in significant changes to the neighborhood or community at large (see section 4.3. Visual Impacts). In addition, while the Project area is not in an agricultural district and contains primarily sandy, lower productivity soils, Boralex is developing an agricultural co-utilization plan (see Section 4.1.5. Soil Improvement Benefits of the Easton Solar Project) to facilitate ongoing agricultural activities at the facility during operation in order to contribute to the agricultural character and economy of the region.

The area surrounding the proposed Project site is sparsely populated, with relatively little residential development. The nearest structures are residences located along Windy Hill Road, Old Schuylerville Road and buildings associated with the Washington County Fairgrounds. Additionally, based on aerial imagery, the Project is adjacent to an existing approximately 10.5-acre solar energy facility, suggesting that additional solar energy development would not significantly alter the character of the area. As noted in Sections 3.2 and 3.3 above, a similarly sized group of solar arrays was approved for the land of the Project area after a finding from the Easton PB in 2017 that the facilities would not impact community character.

The development of the solar energy facility will require the construction of two private access roads and temporary staging areas for materials needed during construction and for the routine maintenance of the facility. In addition, equipment pads will be constructed as well as a perimeter fence to provide security for the facility. These features will remain in place for the duration of the Project's service life, until the Project is decommissioned. Both access roads will originate at Windy Hill Road. The shorter of the two roads will provide access to the northeastern parcel and will utilize an existing asphalt access road that will be reinforced with a construction entrance as needed. This existing road will terminate at an equipment pad adjacent to the planned solar arrays. In the western parcel, the access road will be newly constructed and branch to access both northern and southern portions of the Project site. Six (6) small equipment pads will be spaced along the extent of the road where the road traverses solar energy generation equipment. The development will result in minimal other infrastructure, except for underground conduit that will connect the development to the existing substation along Old Schuylerville Road. During construction of the Project, over a period of approximately one year, these roadways will be utilized frequently to bring in materials and equipment that will be used to install the racking, arrays, and other structures. This process is likely to generate a temporary and limited increase in the level of noise and visual disturbance above the area's baseline during daylight hours. However, upon the completion of the Project, access to the site will be limited to maintenance visits by a small number of permanent staff. During its operational life, the Project will be a quiet neighbor to area residents and will not require monitoring or servicing (e.g., water or sewer) by the Town.

In addition to indirect economic benefits resulting from purchase of local goods and services by temporary and permanent staff (see discussion of socioeconomic impact in section 4.7), the proposed solar project is anticipated to generate revenue for the community through both tax revenue and payment in lieu of taxes (PILOT) agreed upon by the developer and the Town of Easton. In the first twenty years the Project is anticipated to provide combined tax revenues in excess of $1 Million to the Town of Easton, Washington County, the Greenwich Central School District and the Schuylerville Central School District. The exact tax payments have not yet been determined. In addition, it is anticipated that a PILOT will be remitted to the Town of Easton annually during the operating period of the Project to offset any tax incentives for which the Project is eligible. Specific conversations regarding a PILOT are slated to commence in late 2023, at which time an agreement will be established.

4.3. VISUAL IMPACTS

The Applicant completed a Visual Impact Assessment (VIA) in March 2023 to determine viewpoints from which the Project will be most visible and to consider how best to mitigate visual impacts. The VIA helps guide planning for adequate landscape buffering for surrounding properties and the general public. "Visual Study Area" refers to a 2-mile radius around the Project.

4.3.1. Project Setting

The Project is situated between Old Schuylerville Road and Windy Hill Road, with a smaller portion on the east side of Windy Hill Road. As noted above, it is surrounded to the north by residential and forested areas and the Windy Hills Golf Course, the Batten Kill River and Batten Kill Country Club to the east/southeast, open fields and the Washington County Fairgrounds to the south and southwest, and a few residences, a smaller solar array and a National Grid substation to the west. The nearest significant scenic/cultural resources are the Saratoga Monument and the Saratoga Surrender Site memorial park, which are located at a distance of approximately 2.75 miles and 2.5 miles, respectively. Dionondahowa Falls is a destination of local scenic value. There is a small two-car parking area at the trailhead on the east side of Windy Hill Road that has a clear view of the Project area. The trail itself is in a forested district which obscures visibility to the Project area during leaf-on months of the year when the Falls are most likely to attract visitors.

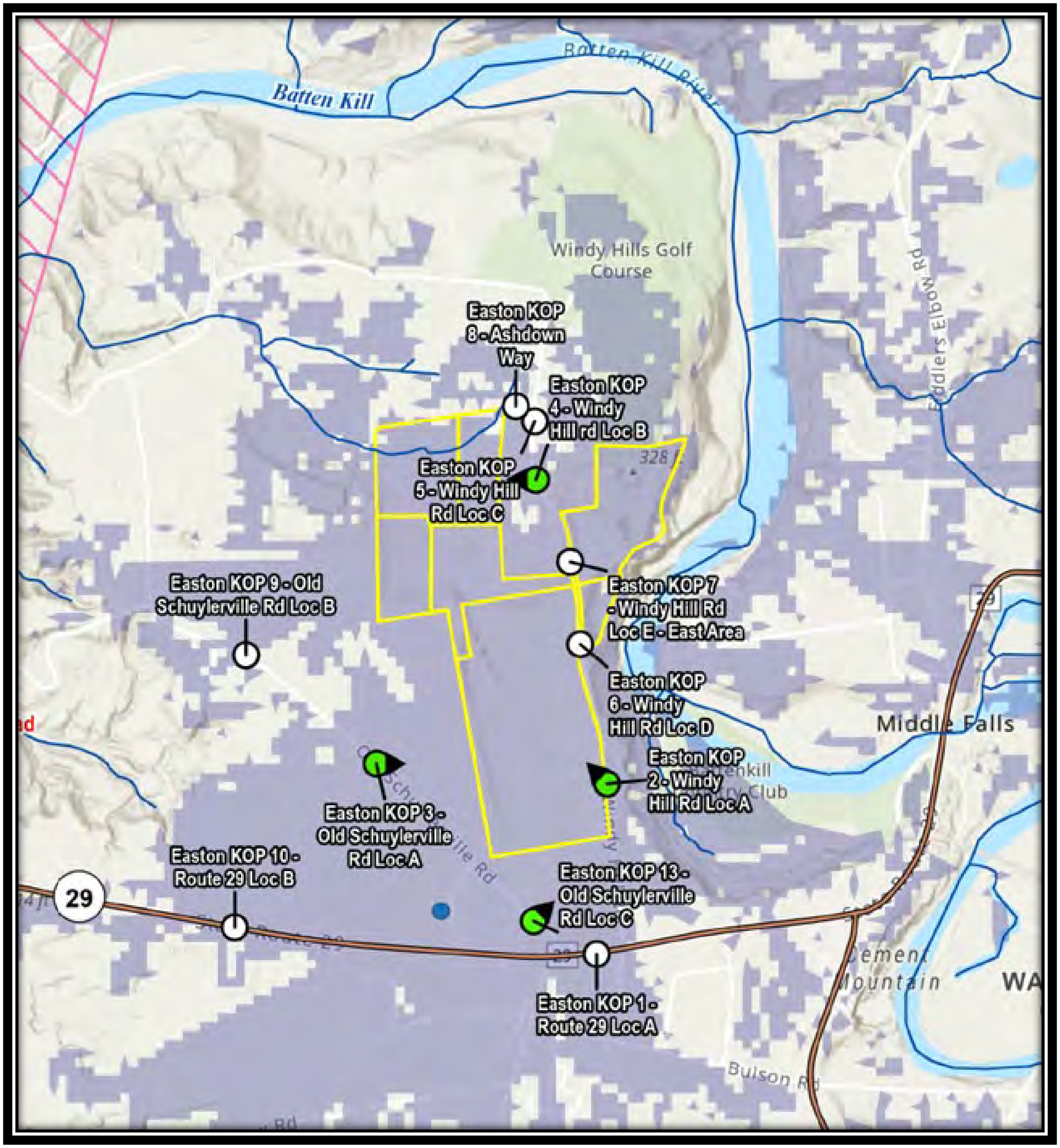
Project components have been carefully designed to avoid and minimize environmental and visual impacts to the maximum extent practicable. The solar arrays will consist of photovoltaic (PV) panels mounted on single-axis tracking systems arranged in rows running north to south. The panels will pivot east to west, following the sun throughout the day, and will have a maximum tilt height of approximately 15 feet at a 52-degree tilt. The PV panels will be ground-mounted on racking that will be supported by I-beam posts driven into the ground; this will result in extremely small ground disturbance associated with the panels. Although construction-ready design of the Project has not yet been finalized, it is anticipated that rows will be widely spaced at a distance of approximately 39 feet between the posts. The PV panels will generally follow the existing contours of the land. Inverters (with integrated transformers) within boxes on concrete pads will be located throughout the Project (amongst the solar arrays) to convert DC electricity to AC electricity. Internal infrastructure will be limited to permanent gravel access roads (approximately 20 to 25 ft wide), grassed access corridors, and security fencing around the Project perimeter. Public roads will be used for construction access and general access during Project operation. It is not anticipated that any improvements to public road intersections or the addition of turnarounds will be required. Security fencing will consist of an approximately 7-foot-high fence, subject to electrical and building code requirements. Fencing materials will be decided in consultation with the Town of Easton and residential stakeholders.

4.3.2. Viewshed Analysis

The methodology that was applied for the viewshed analysis included inventorying potential visual resources by establishing a Visual Study Area; identifying scenic resources and representative viewpoints; conducting fieldwork to identify and evaluate line of sight viewpoints within the Visual Study Area; creating visual simulations; and assessing impacts and mitigation.

After establishing the Visual Study Area, a number of key observation points (KOP) were selected based on potential for visibility of the Project. A site visit was conducted on December 1, 2022, to confirm visibility from various KOPs. The locations of all the evaluated KOPs are shown in Figure 8. The blocks of lavender shading scattered across the map indicate potential for visibility of the Project from those areas based purely on bare-earth topography (i.e., without taking into account vegetation, buildings, or other objects that might block the view). Visibility from vantage points across the local area were assessed in-person during the December 1st field visit. Of the total list of thirteen KOPs, four were selected as most representative of the viewshed for residences and public roadways. The four representative KOPs are shaded green in Figure 8. Photographic simulations that assume a viewer height of 6 feet were completed for the four KOPs (see ***Appendix E***).

Figure 8. Easton Solar KOPs in the Viewshed



4.3.3. Photographic Simulations

Photographic simulations were created for the four representative KOPs to depict the appearance of the solar arrays during leaf-off conditions, which simulates worst-case scenarios. The simulations were prepared using ArcGIS software, Autodesk 3D Studio Max®, and rendering software, as well as Adobe Photoshop and InDesign. To create the simulations, the location data captured by the GPS device were transferred to ArcMap, where it was combined with GIS data of the preliminary facility layout. A map showing the data was exported at true scale and imported into 3D Studio Max®. Using this scaled map as a base, 3D models of the Project were created to scale with appropriate locations and elevations. The views from the existing photographs were then matched in the 3D model using virtual cameras with the same focal length and field of view as the cameras used to capture photography during the field visits. This process of creating a 3D model at true scale and rendering images using the same specifications used by the camera ensures that the spatial relationships of the landscape, Project features, and viewer perspective are accurate and match the existing site photographs.

The simulations were used to determine the level of contrast between the existing landscape and the expected landscape after the Project is constructed. In addition, they incorporate planned vegetative screening to illustrate proposed mitigation for visual impact. Table 1 lists locations of the KOPs with brief notations indicating why they were chosen as representative viewpoints for the Project. It also shows the geolocation of the viewpoints and indicates what images have been included in the simulation deck. All viewpoints include the existing, pre-Project condition, followed by initial installation of the solar arrays. The “Planting Yr Zero” column indicates approximate maximum height of the trees planted as part of the Applicant’s designed landscape screening. “Planting Yr Five” indicates estimated height of the trees assuming a normal growth rate over five years. Vegetative screening in the simulations is comprised of double rows of evergreen trees, one row of Eastern redcedar (*Juniperus virginiana*) and one row of Canadian juniper (*Juniperus communis*). The Eastern redcedar is a taller species, while the Canadian juniper is shorter and also slower growing.

The full photographic simulations are included in ***Appendix E***. Simulations depict actual weather conditions at the time the photographs were taken on December 1, 2022. It was a cold, overcast day and the field work was conducted between 10:00 AM EST and 1:00 PM EST.

Table 1. Representative Viewpoints for Photographic Simulations

KOP	Viewpoint	Lat / Long	Existing Condition	PV Install	Planting Yr Zero	Planting Yr Five
2	Windy Hill Road – public corridor with direct view of the facility	Lat: 43.097666 Lon: -73.539016	X	X	6’	~14’
3	Old Schuylerville Road – proximal to rural residences on the east side of the road	Lat: 43.096777 Lon: -73.546432	X	X	6’, Not visible	n/a
4	300 Windy Hill Road – non-participating residence	Lat: 43.106813 Lon: -73.541626	X	X	10’	~18’
13	Washington County Fairgrounds entrance – public activity center	Lat: 43.093536 Lon: -73.542134	X	X	6’	n/a

As shown in ***Appendix E***, the solar arrays are minimally visible from KOP3 (Old Schuylerville Road) and KOP13 (Washington County Fairgrounds). Existing treelines between the viewer and the Project provide a fair amount of screening. Planned landscape screening will augment natural buffers. The combined effect has the potential to entirely obscure the Project from view at those locations within two or three years, especially during the leaf-on season. KOP2 depicts the viewpoint of motorists traveling north on Windy Hill Road. While the panels are clearly visible upon initial installation, the Project area is at the same elevation as the road, which means vegetative screening should effectively block visibility of the arrays from the viewer’s perspective within five years. KOP4 depicts the view from the yard of a non-participating property owner located at 300 Windy Hill Road. This viewpoint is the most challenging in terms of mitigating visual impact. The elevation of the property is well above the Project area, and even with initial planting of taller trees, the arrays will remain visible from the residence for several years. The Applicant has actively engaged with the property owner to discuss additional landscaping options that may draw attention away from the solar arrays and enhance the property’s backyard aesthetics. These options include larger, more mature specimens of native flowering or otherwise ornamental trees and shrubbery. The Applicant will continue to consult with adjacent residents in order to decide upon a satisfactory screening strategy.

4.3.4. Line-of-Sight Profiles

Line-of-sight profiles were prepared to demonstrate potential Project visibility and sources of screening from the two most prominent cultural resource locations within the Visual Study Area: (1) Saratoga Monument; (2) Saratoga Surrender, as depicted in ***Appendix F***. These profile lines were selected because they represent scenic, historical destinations for public enjoyment. Using ArcGIS software, data regarding landscape features, Project components, and the two representative viewpoint locations were overlaid on topographical elevation data. Next, lines were drawn from the Saratoga viewpoints across direct lines of sight to the Project area. Existing features located along the viewing paths were identified using recent aerial photography. Page 2 and page 3 of ***Appendix F*** illustrate that the Project will not be visible from either of the two scenic locations, primarily due to differences in elevation along the viewing path.

4.3.5. Scenic Byways

New York State Environmental Conservation Law Article 49 was enacted to preserve the viewsheds of nationally- or state-designated scenic byways and roads. National Scenic Byways are transportation corridors of particular nationwide interest. They are designated by the United States Department of Transportation Federal Highway Administration, and there are four in New York State. In 1992, the New York legislature created Designated Scenic Byways and Designated Scenic Roads that are representative of a region's scenic, recreational, cultural, natural, historic or archaeological significance. These official state designations can be found on the New York Department of Transportation website, www.dot.ny.gov.

None of the roads that border the Project area, and from which the solar arrays may be visible, is a Designated Scenic Byway or Designated Scenic Road. This includes Old Schuylerville Road and Windy Hill Road. Nonetheless, as mentioned above, double rows of trees will be planted in visually strategic portions of the Project perimeter to screen the arrays from people traveling on surrounding roads.

4.3.6. Glare Analysis

A glare analysis of the proposed Easton Solar Project was conducted using the Solar Glare Hazard Analysis Tool (SGHAT) software through an online tool (GlareGauge) developed by Sandia National Laboratories and hosted by ForgeSolar. A total of three glare analyses were conducted for the Project. Two of the analyses modeled the points of view from an average first- and second-floor structure, as well as those from a typical commuter car and commercial truck. These analyses included seven representative observation points (OPs) and four segmented traffic routes from representative locations in proximal areas surrounding the Project.

The results of the analyses indicate that the representative OPs and traffic routes would experience no glare as a result of the Project. The third analysis included two final approach flight paths associated with Garnseys Airport (B04), a privately owned, public use airport located one mile south of Schuylerville, New York. Based on the results of the Federal Aviation Administration (FAA) Notice Criteria Tool (NCT), a FAA *Form 7460-1 Notice of Proposed Construction or Alteration* is being filed with the FAA Obstruction

Evaluation Group (OEG) due to the Project's proximity to B04. The analyses did not predict glare at the modeled two-mile final approach paths for the airport; however, formal filing to the FAA OEG will confirm this upon receipt of an FAA "no effect" letter. Boralex expects to receive the FAA's response letter in July 2023 and will share with the PB upon receipt. The full glare analysis was previously submitted to the Town of Easton as part of the Site Approval Application package. A separate copy can be provided upon request.

4.3.7. Neighborhood Character and Mitigations

The existing landscape character provides the context for assessing the effects of changes to the landscape. Landscape character is identified and described by the combination of the scenic attributes that make each landscape identifiable or unique. A region's landscape character creates a sense of place and describes the visual image of an area. Past and present resource-based activity within the region surrounding the proposed Project has substantially changed the landscape by altering natural landforms and vegetation and introducing human-made features.

A noticeable change throughout much of the visual setting has been the activity of sand and gravel mining, electric utility infrastructure, conversion of land to agricultural fields, and some residential development. There is an existing electric utility substation on the east side of Old Schuylerville Road, to which the Project would interconnect. The visual setting has also been modified by a number of commercial operations. At the south end of the Project, the Washington County Fairgrounds is a large complex of buildings with extensive exhibition and parking areas. Less than a half mile away from the Project area, on the south side of State Route 29, there is additional industrial/business development including the Fort Miller Group, Inc., the Hand Meron Market, and the Tymetal Corporation. A little further west along Rout 29 is a large United Ag & Turf facility.

In the context of a varied mix of commercial, agricultural, utility and industrial uses in the area, the Project is not visually out of character with the neighborhood or community land use patterns. The following measures will be taken to ensure that the Project does not detract from the character of the neighborhood and to minimize and mitigate visual impacts:

- "Good housekeeping" will be implemented to keep the Project free of debris, trash, and waste during construction.
- The solar panels will be located within the existing open fields within the Project area and vegetation clearing will be minimal. A large swath of forested wetland at the north end of the Project will be preserved.

- Vegetative screening will be provided along the edges of the Project area, with special attention given to the residential property located at 300 Windy Hill Road.
- When construction is complete, areas disturbed during the construction process will be reseeded.
- Panels will have anti-reflective coatings that will reduce the level of reflectivity and will be using trackers, minimizing glare even further.
- The electrical collection system will be located underground, to the maximum extent practicable. Structures will be constructed overhead for portions where necessary based on engineering constraints and environmental considerations.

4.3.8. Conclusion of Visual Impact Assessment

Overall, the Project will result in minimal to no change to the landscape conditions for most viewers within the Visual Study Area. Higher levels of change to the landscape may be apparent to a limited number of viewers located adjacent to the Project area and to travelers along stretches of Windy Hill Road. During the construction period, viewers will be able to observe construction equipment, laydown areas, and crews. Varying degrees of visual contrast will occur when equipment and construction crews are present; however, this source of contrast will be short-term since equipment and support facilities will be removed once construction is complete. Visual effects during operation of the Project will result from the visibility of the aboveground components associated with the solar facility, including PV panels, inverters, distribution and collection lines, access roads, and perimeter fencing.

Landscaping is proposed around the perimeter of the Project where adjacent viewers will have unobstructed views towards the facility. Landscaping will consist of a variety of evergreen trees that will help to screen portions of the Project and break up the uniformity of the blocks of PV panels. A more tailored landscaping solution will be offered the owner of the most impacted residential property. Viewers not directly adjacent to the Project will be mostly to completely screened by topography and/or vegetation within the existing landscape and will therefore result in minimal to no visual impacts.

4.4. SOIL / GROUNDWATER CONTAMINATION FROM SOLAR PANEL MATERIALS

The following section includes a discussion of the particular components to be used in the proposed development, the potential for negative environmental impacts at the various phases of project implementation, and mitigation measures that will be put in place to reduce any potential impacts.

4.4.1. Project Modules Do Not Contain Toxic Levels of Heavy Metals

The Applicant has not yet selected a final panel vendor but it is anticipated that the Project will utilize monocrystalline silicon (MoCS) panels (e.g., bifacial panels sold by Canadian Solar, see ***Appendix M --***

Equipment Specifications), which is the most common type of material used in solar cells (approximately 95% of modules sold; NREL 2016). Current iterations of MoCS panels are not manufactured using significant amounts of heavy metals or other materials that are inherently considered hazardous. Aluminum, nickel, magnesium, and copper are found in the welding compounds used to affix solar cells to the housing of the panels. A recent study (Panthi et al., 2021) indicated that these elements could leach from the panel structure if the panel was severely broken and left unattended for an extended period of time. However, none of these metals are considered toxic at the concentrations found in the panels. While previous iterations of MoCS panels utilized lead (Pb) and cadmium (Cd) as a key component of solder due to its metallurgic properties, levels of Pb in solder have been significantly reduced or eliminated. Solders for solar panels may at one time have contained up to 36% Pb but they are now limited to no more than 0.10% Pb (and less than 0.01% Cd) and certain solders are lead-free; this can be attributed to advances in solder components and increased strictness of environmental standards (NCSU, 2017). All solar panels used in the construction of the Project will have been certified to meet the US EPA Toxicity Characteristic Leaching Procedure Standards (TCLP).

Under normal operating conditions, leaching of solder compounds into the soil will not occur. Even in the event where panels are damaged or broken, there is an adhesive protective coating that encapsulates the entire panel and prevents exposing components to the environment. This is described in a whitepaper from the North Carolina Clean Energy Technology Center at North Carolina State University (see ***Appendix L*** for this report and another from the SAGE Environmental Health & Safety consulting firm):

> *To provide decades of corrosion-free operation, PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet. … The plastic ethylene-vinyl acetate (EVA) commonly provides the cell encapsulation. For decades, this same material has been used between layers of tempered glass to give car windshields and hurricane windows their great strength. In the same way that a car windshield cracks but stays intact, the EVA layers in PV panels keep broken panels intact. (NCSU, 2017)*

In the unlikely event that panels are broken, which can occur because of natural disasters or other force majeure events, Boralex's full-time employee representative would be on-site to assess any damage and make timely replacements before corrosion and leaching could occur in any appreciable amount. (See ***Appendix G – Operation & Maintenance Plan.***) The greater risk for environmental contamination from solar panels occurs at the end of the Project's lifespan when all components of the facility must be disposed of. The decommissioning plan (see ***Appendix H***) for the Project indicates that care would be taken to avoid contamination of the Project area after the operating term is complete. Disassembly of the array would be accomplished mostly by hand. Panels and support components would then be loaded into trucks and removed from the site. It should not be necessary to cut or destroy any panels in the course of decommissioning. After removal from the site, panels will either be re-sold on the market, sold for scrap or recycled. Any materials deemed to be hazardous or universal waste will be disposed of in accordance with all applicable federal, state, and local standards. Therefore, risk of environmental contamination resulting from trace metals contained within solar panels is minimal for the proposed Project.

4.4.2.Fire Safety and Potential for Toxic Emissions

Ground-mounted, commercial PV Solar Systems are not prone to causing fires. The Solar Project site will be monitored 24 hours a day for equipment failures that could impact the intended functions of the site, such as trackers, transformers and inverters. The site can be shut down and disconnected from the grid, from our headquarters in Kingsey Falls and will also be monitored from our South Glens Falls office. When an issue is detected, which can be from physical damage, the central inverter shuts down and a solar technician will be sent onsite to find the problem and disconnect it if needed. Our sites have perimeter roads that are gravel to act as a fire break. We graze sheep and mow the sites to keep the vegetation low, we control vegetation around inverters and combiner boxes to limit fire risk.

Since a solar facility collects and transports high voltage outputs, a possible scenario is that fire may begin due to circuit overloads in an inverter or transformer. The level of risk is similar to that associated with electrical utility wires and substations. Components of the solar facility are likewise subject to the same strict electrical codes and standards as electric utilities with respect to material design, installation and operation for the purpose of preventing such occurrences. Inverters also contain several sensors to detect anomalies not just internal to the inverter but the energy coming from the solar array. If the inverter senses any of these issues it will shut down and send a fault alert to control center in Kingsey Falls as well as a notice in our data analytics system for the technician respond to, thus the fire risk is very small.

The Easton PB expressed concern regarding the release of toxic substances from the PV panels if a fire incident should occur at the solar facility (e.g., if a grassfire broke out on an adjacent property and expanded into the facility). Few studies have been conducted to analyze the impacts of burning solar panels, especially for ground-mounted systems. However, peer reviewed studies that focus on the flammability and fire hazards of building integrated PV panels have measured several parameters of PV modules when exposed to fire such as ignition time, critical heat flux, mass loss rate, heat release rate and toxicity of gases. Findings were that the release of Cd from solar modules during a fire was insignificant with 99.96% of the Cd content remaining encapsulated in the molten glass matrix as it melts (Fthenakis *et al*., 2005). Release of Pb into the ground during a PV fire was also found to occur at insignificant concentrations (Gok, 2020). In another study, air emissions of carbon monoxide and carbon dioxide were found to be negligible (Yang *et al.*, 2015). No release of heavy metals to groundwater is anticipated to occur in a fire hazard scenario.

The primary concern should a fire occur at the Project facility would be the immediate safety of emergency responders. Boralex will provide an Emergency Response and Safety (ERS) Plan and training to the Middle Falls, Schuylerville and Victory Mills fire departments for use during facility emergencies such as a fire or other catastrophe. The ERS Plan and associated training will identify all components of the PV system and explain the voltage and flow of electricity through collectors, conduits, inverters and transformers. The ERS Plan will highlight potential safety risks for emergency responders and provide instructions for how to avoid electric shock, how to disconnect the system from transmission lines if necessary, and how to extinguish an electrical/PV fire without causing injury to firefighters. Personnel at the aforementioned fire departments will be given keys or access codes for the facility's gates. Access roads will be constructed with a minimum width of 20 feet in compliance with the International Fire Code.

4.5. CRITICAL ENVIRONMENTAL AREAS

This section addresses the NYSDEC's comment regarding a CEA proximal to the Project. NYSDEC correspondence dated June 30, 2022, indicated concerns related to impacts on the CEA, NYSDEC wetlands, grassland bird habitat, and cultural resources. According to data downloaded from gis.ny.gov, the CEA located on and adjoining the Project area coincides with NYSDEC mapped wetlands. See section 5.2 for further discussion on wetlands. Avoidance of the CEA and regulated forested wetlands at the northernmost end of the Project has been carefully incorporated into the civil design for the solar facility. Panels, fencing, landscape buffering and construction area of disturbance will all be limited to the area outside of the CEA and outside of the required 100-foot wetland buffer.

In addition, the Applicant received "no impact" and "no jurisdiction" letters provided by the New York State Historic Preservation Office (SHPO) and the NYSDEC Division of Environmental Permits Region 5, respectively (see section 5). The Applicant has thus determined that the Project will not adversely impact cultural resources, the identified CEA, the wetlands or other existing habitat.

4.6. OTHER PROJECT IMPACTS – ENERGY/UTILITY FACILITIES

This section discusses how the Project will help meet energy needs in the region and advance New York State goals to implement a Clean Energy Standard (CES), which promotes the development of clean energy and renewable resources.

New York State's CES mandates that 70% of the State's electricity come from renewable generation by 2030. The State's Climate Leadership and Community Protection Act (CLCPA) has set the framework to achieve at least ten gigawatts of distributed solar by 2030, enough to annually power over 700,000 homes. The proposed Project is consistent with State policies that encourage the development of renewable energy projects, seek solutions to fight climate change, and emphasize the need to transition New York's energy markets away from a reliance on fossil fuels for electricity generation.

One of the impediments to successful solar project development is cost effective access to utility infrastructure. There is limited hosting capacity for renewable energy projects to connect to utility infrastructure throughout New York State, and in particular, the National Grid service territory. Substations and 3-phase distribution feeders can only support a finite number of these projects, and those projects must be sited near these utility assets in order to achieve cost effective interconnection. Project access to utility infrastructure with hosting capacity is further limited by the availability of land suitable to host such projects. Environmental, regulatory, and permitting constraints on potential host properties negate many sites within sufficient proximity to viable interconnections. Land constraints may include presence of New York State Department of Environmental Conservation (NYSDEC) wetlands, prime farmland, threatened and endangered species habitat, and/or cost prohibitive commercial or industrial land-use with which solar projects cannot compete.

The siting of the Easton Solar Project is ideal because the property is not located in an agricultural district, the forested wetland at the north end can be completely avoided, a history of soil depletion and cleared land across the parcels precluded potential for habitat and high value farming, and the location is in close proximity to National Grid infrastructure, including an existing substation. The final piece needed to ensure successful integration with the regional power grid and to advance New York CLCPA energy goals to 2030 and beyond is an assurance of interconnection and utilization of the electricity generated by the Project. The Applicant is expecting to sign an Interconnection Agreement for the Project in Q2 2023 and in 2022, a 20-year New York State Energy Research and Development Authority (NYSERDA) offtake agreement was awarded to the Project.

4.7. SOCIOECONOMIC CONDITIONS

According to data gathered by the US Census Bureau, the Town of Easton population is around 2,352 people, with a median household income of $74,932 and an unemployment rate of 2.4%. The Easton Solar Project will not displace people or employment within the Town, nor will it have a negative impact on median incomes in the community. This section further considers the social and economic impact of converting approximately 123 acres of farmed land to a solar energy generating facility.

The land has most recently been used for production of corn. The USDA calculates that the average corn yield per harvested acre within Washington County ranges between 150 to 175 bushels (USDA NASS, 2021). It is assumed this average was calculated based on prime soils located in NYS agricultural districts. As noted above, the parcels within the Project area are not included in a NYS agricultural district. The land of the Project area was instead used for sand and gravel extraction for several years. Thus, the soil quality is likely to be poorer and average yield lower than that found in the agricultural districts without a large amount of added fertilizers.

The USDA Economic Research Service (ERS) publishes "cost and return" data for commodity farming products across the United States. Statistics for the gross value of corn production versus total costs in 2022 in the Eastern United States (USDA ERS, 2023) provide a comparative use case for understanding the approximate economic contribution of using the Project area for corn crops. Members of the Town of Easton PB have indicated that about 123 acres of the Project area are currently farmed, with an average yield of 170 bushels per acre and revenue of $6.30/bushel. This aligns with USDA ERS data, which then enables calculation of the farming expense and profit margin break down as follows:

Table 2. 2022 Corn Production Costs & Returns Per Acre – Eastern U.S.

Budget Item	Corn Yield & Cost per Acre	123 Acres (Project Multiplier*)
Expected Yield per Acre (in bushels)	170 bu	20,910 bu
Harvest Price (per bushel)	$ 6.30/bu	$ 6.30/bu
Market Revenue	$ 1,073/acre	$ 131,979
Operating Costs (Fertilizer, Seed, Pesticides, Machinery Fuel, Repairs, Hauling, Insurance, etc)	$ 472/acre**	$ 58,056
Allocated Overhead (Labor, Machinery, Leasing of Land, etc)	$ 326/acre**	$ 40,098
Profit Margin	$ 275/acre**	$ 33,825

*Approximately 123 acres of farmed land will be converted to a solar facility in the Easton Solar project.
**Average costs/returns for corn production in Eastern US, courtesy of *USDA Economic Research Service, 2023*

With reference to the estimated calculations in Table 2, continued farming of the land may result in a maximum of $58,056 per year (in variable operational costs) that will be spent on products and services provided by businesses that support agricultural operations. It is unknown how much of this sum would be spent with local community businesses rather than regional or national distributors. Considering the proximity of large agricultural districts all around the Town of Easton, it is likely that local agricultural businesses derive the majority of their livelihoods from larger, more productive farms with higher revenue streams.

The Project will curtail revenue from corn farming but replace it with several tangible and intangible community benefits. Boralex confirmed that the land is currently being farmed and has been disc-plowed for field preparation, depending on the conditions present that season. Disc-plowing is a type of conventional tillage which is utilized to loosen and add nutrients to the soil. This farming method results in the following adverse environmental effects:

- destroys soil cover and structure, promotes “crusting” and weakening of the top layer leading to increased erosion;
- disrupts the lifecycle of beneficial organisms, depleting it of natural nutrients;
- necessitates repeated application of synthetic nitrogen / fertilizer that leads to significant nitrous oxide emissions in the community;
- produces increased nutrient and sediment load that is likely to find its way into the Batten Kill River since the property drains into the Batten Kill subwatershed;
- consumes between 38 and 43 British thermal units (BTU) of energy per bushel of corn produced;
- emits greenhouse gases at a rate of around 10.7 pounds per bushel of corn

In contrast, the Easton Solar Project will provide the following benefits:

- production of clean energy to support national, statewide and local decarbonization goals;
- potential to reduce overall energy costs in the region;
- temporary local employment during the 12-15 months of construction and approximately 50 temporary full-time jobs while the development is under construction (i.e., from approximately Q4 2024 through Q4 2025)
- land cover with native plantings that are naturally nitrogen fixing and will improve quality and microbial resilience of the soil instead of depleting it with continuous crop farming;
- de minimis erosion or transfer of synthetic fertilizers into the watershed during the operational life of the facility due to low-maintenance vegetative cover and no annual tillage;
- a co-utilization plan geared towards the needs of the community, with the potential to support a less resource-intensive agricultural use and provide an additional economic offset; and
- the ability to re-purpose the land with a return to agriculture, or some other community use, after decommissioning of the facility.

Earthwork, piles, racking and panel installations, collecting system and construction of the substation are several examples of work that will be done exclusively in NYS. The Applicant intends to hire state-based employees from the South Glens Falls office to operate the Project during its service life. A register of local suppliers will be developed, and networking events will be held to connect local businesses with the Project's contractor prior to construction. The Applicant also intends to reserve an annual budget for a donation and sponsorship program to support local initiatives and charities near the Project. Donation and sponsorship opportunities will be pursued through consultation with the Town and community groups, with a special focus on disadvantaged communities.

During the construction phase, emergency services could be called upon in the unlikely event of a job site accident. However, employment at the site will not create an increase in local population that would disproportionately affect municipal resources such as fire and police protection, schools, parks & recreation, etc. In fact, the temporary increase in population and the Project itself are anticipated to result in a net economic benefit to the community resulting from opportunities for local businesses to offer their services, including environmental consultants, engineering consultants, legal firms, hotels, restaurants, and grocery stores. Ongoing local investments by the Applicant during construction and operation may also include, but not be limited to, road maintenance, snow removal, internet and IT maintenance, vehicle leasing and maintenance, and land maintenance.

The Easton Solar Project will not result in adverse socioeconomic impacts to the Town's population, housing, or economic opportunities. It will instead provide a short-term boost in employment and patronage of local goods and services and long-term investment in the community.

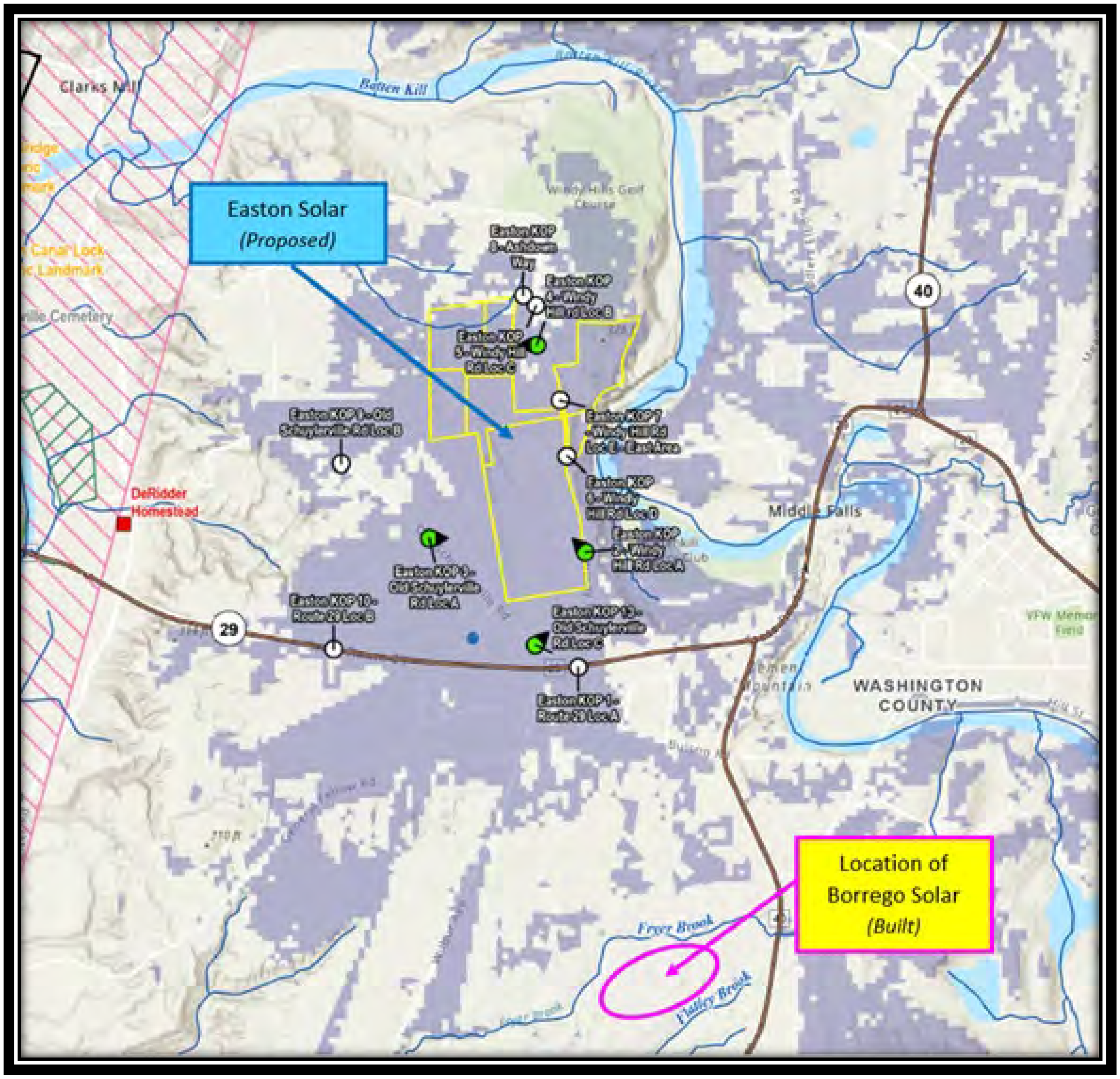
4.8. CUMULATIVE IMPACTS

The SEQR process encourages consideration of the cumulative impacts of new development and, in this case, on the expansion of solar facilities in the region. A smaller independent solar energy facility borders the northeast portion of the Project. The Easton Solar Project has a much larger footprint, and it is likely that the independent solar facility will look as if it is part of the Project. Although the Project will add significantly to the amount of solar generation in Easton, it will not represent an adverse cumulative impact on traffic, ambient noise levels, or stormwater drainage. It is also unlikely to encourage additional development of surrounding parcels, which do not have the uniquely suitable characteristics of those that comprise the Project area.

As noted in Section 3.5, three other commercial solar facilities have been constructed in the Town of Easton. The larger Branscomb and Darby solar installations are not in the same viewshed as the proposed Project. They are located behind natural screening (forest and vegetation) on opposite sides of McGowan Road about 10 miles south of the Project site. The smaller Borrego Solar facility is about 1.5 miles from the

Project site and is sufficiently screened from public roads and adjacent properties by forested land. Viewshed analysis as illustrated in Figure 9 indicates with lavender shading where there is potential visibility to the Project under bare-earth conditions (i.e., ignoring vegetation or manmade structures that might otherwise provide screening). There is no potential visibility between the Project and the Borrego Solar site.

Figure 9. Viewshed Between Easton Solar & Borrego Solar



5. CONCERNS/ IMPACTS DETERMINED TO BE IRRELEVANT OR INSIGNIFICANT

Under SEQR (6 NYCRR 617) the Lead Agency is responsible for eliminating consideration of those impacts and concerns that have been identified during the scoping process that are determined to be irrelevant or insignificant either because they are not legally relevant to the environmental review of the proposed action, they are not environmentally significant, or they have been adequately addressed prior to the scoping process.

This section addresses comments provided by the NYSDEC on the Project in correspondence dated June 30, 2022, that have been deemed non-significant to the Project. The comments include concerns related to proximal NYSDEC wetlands, grassland bird habitat, and cultural resources. The Applicant considers these concerns to have been adequately alleviated.

5.1. CULTURAL RESOURCES

Existing Conditions

There are no previously recorded archeological sites within or adjacent to the Project area, and there are two archeologically sensitive areas that extend into the Project area. There are 11 historic properties that are listed in the State and National Register of Historic Places ("S/NRHP") within five miles of the Project area, with the closest resource located 1.1 miles to the west, in the Village of Schuylerville.

"No Impact"

Tetra Tech submitted a consultation request to the New York State Office of Parks, Recreation, and Historic Preservation's (OPRHP) Cultural Resource Information System (CRIS) database on March 16, 2021, to identify properties listed on the State and National Register of Historic Places (NRHP) on or in the vicinity of the Project area. SHPO issued a determination of "No Impact" in a letter dated September 10, 2021. The letter is provided as ***Appendix I***.

5.2. WETLANDS AND WATERBODIES

Existing Conditions

Wetland delineation was included in an Aquatic Resource Report that was prepared for the Project in October 2021. Wetland delineation field surveys for the Project were conducted during one field mobilization that occurred on April 19 and 20, 2021. An additional wetland delineation was done on September 30 to include an additional 2.51 acres for an interconnection line to an existing substation.

Wetland boundaries, stream channels and banks, data collection points, open waterbody boundaries, and nonwatery points were surveyed using an Arrow global positioning system (GPS) unit.

Wetlands were delineated using the method described in the United States Army Corps of Engineers 1987 Manual (USACE 1987), along with the Northcentral Northeast Regional Supplement (Version 2.0) (USACE 2012). Wetlands were also delineated in a manner consistent with the 2015 Clean Water Rule (USACE 2015). The wetland boundaries were delineated using the routine on-site determination method described in the Regional Supplement and the *National Wetland Plant List 2018* (NWPL) (Lichvar et al. 2012) for the determination of the plant indicator status and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979) to classify wetlands. Wetland datasheets were completed at sample points within each wetland community type (i.e., Cowardin classification) making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point.

Tetra Tech identified one wetland and two man-made ponds within the Project. Table 3 below lists the delineated wetlands and waterbody, included unique ID, location, size within the Project, presumed USACE and NYSDEC jurisdictional status, and Cowardin classification. Wetland W-3 represents the southern portion of a New York State Class 2 regulated wetland SY-14. The Aquatic Resource Report is provided in ***Appendix J***.

Table 3. Metrics of Waterbodies and Wetlands on the Easton Solar Project

Wetland or Waterbody Name	Cowardin Class	Centroid (Wetland) or Data Point (Stream) Coordinates		Area within Project area (acres)	Jurisdiction: USACE / NYSDEC / Non-Jurisdictional
		Latitude (DD) °N	Longitude (DD) °W		
W-1	PUB3r	43.106374	-73.537229	0.25	Non-Jurisdictional
W-2	PUB3r	43.106968	-73.538984	0.17	Non-Jurisdictional
W-3	PFO	43.108023	-73.546046	11.87	USACE, NYSDEC (SY-14)

Avoidance and Mitigation

The Project will be designed to use driven posts or screw piles to support the solar panel racking system. Wetland delineations were completed in spring/summer 2021. The delineations confirmed the boundary of wetland W-3, which is located in the forested northern portion of the Project area on tax parcels 228.-5-8.23 and 228.-5-8.24. The site layout for the solar facility was designed to leave this jurisdictional 11.9-

acre wetland and its prescribed Adjacent Area undisturbed. The extent of the proposed solar arrays and fencing has been limited to the southern portions of the parcels thereby completely avoiding impact to the wetland and preserving its ecological value. Two man-made ponds were also identified within the Project area. They are considered non-jurisdictional by state and federal agencies and do not require mitigation measures. To minimize potential impacts during construction the Applicant will implement all standards and conditions in the Project's Stormwater Pollution Prevention Plan (SWPPP) and the New York State Pollution Discharge Elimination System (SPDES) permit.

5.3. GRASSLAND BIRD HABITAT

Existing Conditions

The Project area contains active agricultural land, and some of the parcels to be developed are currently used, in rotation, for row crops of corn, and hay and alfalfa. A large portion of the Project area was historically used as a sand pit for sand extraction between approximately 1995 and 2013 and was progressively converted to agricultural use over time. The closest Grassland Focus Area, identified by Audubon New York as grassland bird habitat, is approximately four miles north of the Project area. In addition, the NYSDEC Letter of No Jurisdiction determined that the Project area is not likely to result in the take of threatened or endangered species due to the lack of suitable habitat to support grassland obligate bird species. As such, the Project does not include high quality grassland bird habitat.

Avoidance and Mitigation

The NYSDEC issued a Letter of No Jurisdiction under the Endangered Species Act for the Project dated February 17, 2021, ***Appendix K***. The letter states that the Project "is not likely to result in the take of threatened or endangered species." The Project was also reviewed by the Division of Fish and Wildlife, who determined that "there is not enough suitable habitat on this site to support grassland obligate bird species." No permit for the Project is required pursuant to NYCRR Part 182 of the New York Endangered Species Act (Article 11-0535).

6. PROJECT ALTERNATIVES

The purpose of an alternatives analysis is to examine reasonable and practicable options that avoid or reduce project-related significant adverse impacts while achieving the goals and objectives of the proposed Project. Alternatives for the Easton Solar Project would require a similarly sized area with available hosting capacity by the regional utility and an equal or reduced level of environmental and community impact.

6.1. NO ACTION ALTERNATIVE

The no action alternative would leave the parcels as they are, presumably to be farmed with continuous corn crops year over year. If the land continued to be used for agricultural production, there would be ongoing need for farm products and services, as described in section 4.7. Another benefit of perpetuating the current agricultural use of the land is that it presents no change in visual aesthetics to the surrounding neighborhood. Considering the sparse residential properties in the immediate neighborhood, that benefit would be enjoyed by relatively few residents and those traveling on Old Windy Hill Road.

A potential adverse effect of the no action alternative is related to the historical and ongoing depletion of soil on the parcels. It is likely that the soil composition is low in naturally occurring nutrients and that productivity of the land is thus lower than average without the intervention of copious amounts of synthetic fertilizers. Continuous corn cropping will also degrade soil over time, again creating the need for repeated soil amendment. The drawbacks associated with heavy fertilizer use are described in section 4.1. Another potential drawback is that if agricultural revenue from the land becomes depressed, the owner may opt to sell the parcels to an industrial or commercial interest that is less environmentally friendly and potentially noisier and more disruptive to local residents than a renewable energy generation facility. Finally, on a grander scale, the no-action alternative would deprive the community and the region of a major source of clean energy and the dual benefit of both energy cost reductions and a local source of revenue.

6.2. PROJECT DESIGN / LAYOUT CONSIDERATIONS

The Easton Solar Project was designed to maximize efficient use of the most suitable areas within the leased parcels while adhering to Town zoning and planning requirements and minimizing adverse environmental or community impact. The arrays were oriented in a pattern that allows them to follow the sun and take advantage of the best angle of solar radiation throughout the day. They have been placed in discrete sections of the parcels in a layout that observes required setbacks from property lines and wetland areas, as well as the easement for the overhead power line that runs diagonally across the middle of the largest parcel.

The Project's design process has taken into consideration stakeholder input, conservation of existing vegetation and NYSDAM guidelines for agricultural compatibility. The Applicant has met with Easton's Town Board, PB, and Code Enforcement Officer, as well as the NYSDEC, NYSDAM and area residents to discuss the project and solicit feedback. The Applicant established a toll-free phone number (1-844-990-9146), an email address (info.usa@boralex.com) and a website dedicated to providing the public information about the Project, sustainability and renewable energy generation (www.boralex.com/projects/easton/). Most of the Project area is comprised of previously cleared and disturbed land. However, in recognition of the value of natural buffers, the Project has been designed to limit clearing of trees that line its periphery. In addition, placement of the arrays was designed to enable an agricultural co-utilization of open areas between the racking. Finally, the Applicant will be implementing methods of construction and decommissioning that comply with NYSDAM guidelines with the intention of leaving the land in better condition for agricultural use than it is presently.

6.3. DISCUSSION OF ALTERNATIVE SITES

Siting of the Easton Solar Project was done carefully with painstaking due diligence. Among the many characteristics of the Project site that make it suitable for a solar energy facility, access to utility infrastructure and adequate hosting capacity are critical due to shrinking interconnection opportunities across the region and state. Other necessary considerations were to select a site that would render minimal impacts to the environment, avoid NYS certified agricultural districts, and fit in with surrounding land use patterns. As discussed throughout preceding sections, the selected Project site satisfies all of these key criteria.

7. SUMMARY AND CONCLUSIONS

This Environmental Impact Statement has been prepared for the Easton Solar Project, a 20 MW PV solar energy generation facility in the Town of Easton, Washington County, New York. As stated in section 2.2 above, the Project area is comprised of properties with LDR and MDR land use designations. The Easton Town Supervisor and Planning Board Chair have confirmed that the project is an allowed use in the LDR and MDR areas. Out of a total land area of 196 acres, the Project has been proposed for an area of approximately 136 acres that cover land previously used for sand and gravel extraction and is currently used mainly for corn production. The Project will consist of solar arrays, inverters, cable collection system, interconnection facility, internal infrastructure (i.e., access roads and fencing), and temporary laydown areas. This document has been prepared in response to concerns raised by the Town of Easton Planning Board as noted in the PB's SEQR Positive Declaration. Objectives of the EIS are to facilitate an understanding in the community of the proposed Project and to provide discussion of potential impacts, mitigation strategies and overall benefit that the Project can bring to the community. In the sections above, the following five potentially significant adverse environmental impacts have been evaluated:

- Impacts on agricultural land
- Impacts to community character
- Visual impacts
- Leaching of contaminants from solar panels
- Impact to a NYSDEC Critical Environmental Area

Existing conditions and land use patterns describe the character of the neighborhood in and around the Project area. These conditions were used as a baseline for assessing potentially significant adverse impacts that could be created by the Project. While the neighborhood appears agrarian at first glance, it in fact hosts a variety of different land uses including several industrial and commercial properties and utility infrastructure both at present and historically. This helps to explain why the area around Windy Hill Road and Old Schuylerville Road has not been included within the nine consolidated NYS agricultural districts that are certified in Washington County. In addition, it should be noted that the same Project area was reviewed by the Easton PB in 2017 for an aggregate solar facility (Jennings/Borrego Solar, COA in ***Appendix D***) that was designed with the same overall capacity of 20MW. The PB at the time determined that the Jennings/Borrego Solar project would not have a significant impact on the environment or the character of the community and approved the project in 2017.

With reference to geotechnical findings for the Project parcels and the long-term effects of their prior use for sand and gravel extraction, it appears that soils within the Project area are in a depleted state. Over the operating life of the Project majority of the soils will benefit from deep-rooted, no-till vegetation and be provided a rest and rejuvenation period (as described in Section 4.1, a portion of the facility area may be used to grow shade-tolerant and/or hand-harvested produce which can be grown in marginal sandy soils). It can also provide benefit to the community through a co-utilization plan and other forms of remuneration, such as a PILOT agreement. By the time the Project is decommissioned, it is anticipated that the land could be more suitable for agriculture or ecological habitat than it is at present.

Visual impacts to area residents and the public are expected to be minimal due to the low number of residences in the area and planned landscaping and enhancement of existing natural buffers. One property owner has been identified as needing additional screening options. The Applicant is actively engaged in designing a solution that is agreeable to that property owner.

As explained in section 4.4, the panels to be erected at the Project site will not contain significant amounts of heavy metals, such as lead or cadmium, and will not be left in a dilapidated state where leaching of any compounds could occur. The Applicant will have an automated 24-hour monitoring system in place to detect when panels are damaged or not generating expected output. In addition, the Project is located very close to Boralex's existing operations center in Glens Falls, with full-time on-site staff, which can respond to any unscheduled maintenance or repair needs in a timely fashion. If panels are compromised in any way Boralex will ensure they are replaced as soon as possible, in order to comply with Boralex's contract with NYSERDA and established level of service agreements, operations and maintenance plan, and health and safety plan in place at that time. Under this strategy, no significant quantity of contaminants will have the opportunity to leach into the ground.

In the event of a fire at the facility, the safety of firefighters and the environment is paramount. Boralex will provide area fire departments with an ERS Plan, PV solar training, instruction for how to disconnect collectors from the system, if not already disconnected, and direct access to the solar facility. Should the PV panels catch fire, studies have shown that they will not release a sufficient amount of toxic substances to contaminate the environment.

Finally, the CEA that has been delineated within a regulated PFO wetland at the north end of the Project will be left preserved and untouched. The site layout for the solar facility includes a 100-foot buffer away from the boundary of the wetland and CEA.

It is expected that the Project will not detract from the overall socioeconomic framework of the community but will instead provide a boost to the local economy during the construction phase and a more subtle lift during the operational life of the facility. Boralex intends to facilitate ongoing agricultural activities at the facility during operation, through creation of the agricultural co-utilization plan and associated Working

Group. The intent of these actions is to contribute to both the agricultural character and agricultural economy of the region. Approval of the Project by the Town of Easton will represent an important step toward not only achieving New York State's CLCPA decarbonization goals, but also providing cheaper, cleaner energy to the region at large.

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9. APPENDICES

The following appendices are attached below:

- **Appendix A – Memorandum Of Lease**
- **Appendix B – Site Location Map**
- **Appendix C – USDA NRCS Soil Mapping**
- **Appendix D – Jennings/Borrego Solar Conditions of Approval**
- **Appendix E – Visual Simulations**
- **Appendix F – Line of Sight Profiles**
- **Appendix G – Operation & Maintenance Plan**
- **Appendix H – Decommissioning Plan**
- **Appendix I – SHPO "No Impact" Letter**
- **Appendix J – Aquatic Resource Report**
- **Appendix K – NYSDEC "No Jurisdiction" Letter**
- **Appendix L – Solar Panel Component Reports**
- **Appendix M – Equipment Specifications**
- **Appendix N – Soil Analysis Report**

Appendix A – Memorandum of Lease

WASHINGTON COUNTY – STATE OF NEW YORK
STEPHANIE C. LEMERY, COUNTY CLERK
383 BROADWAY, BUILDING A
FORT EDWARD, NY 12828

COUNTY CLERK'S RECORDING PAGE
THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH

INSTRUMENT #: 2020-4581

Receipt#: 2020455542
Clerk: MP
Rec Date: 09/23/2020 01:54:50 PM
Doc Grp: RP
Descrip: AMENDMENT
Num Pgs: 8
Rec'd Frm: ELEXCO LAND SERVICES, INC.

Party1: JENNINGS MICHAEL J
Party2: BORALEX US DEVELOPMENT LLC

Related: Instr#: 2020-490

Recording:

Cover Page	5.00
Recording Fee	55.00
Cross References	0.50
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
Total:	80.50

**** NOTICE: THIS IS NOT A BILL ****

Record and Return To:

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WARNING***
*** Information may be amended during the verification process, and may not be reflected on this cover page.

THIS PAGE CONSTITUTES THE CLERK'S ENDORSEMENT, REQUIRED BY SECTION 316-a (5) & 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK.

Stephanie C. Lemery

Stephanie C. Lemery
Washington County Clerk

PREPARED BY:

Elexco Land Services, Inc.
505 West Henley Street
Olean, New York 14760

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:

Elexco Land Services, Inc.
505 West Henley Street
Olean, New York 14760

FIRST AMENDMENT OF GROUND LEASE OPTION AGREEMENT and MEMORANDUM OF GROUND LEASE OPTION AGREEMENT

This First Amendment to Ground Lease Option Agreement and Memorandum of Ground Lease Option Agreement ("First Amendment") is made effective as of this 6th day of September, 2020, by and between Michael J. Jennings, a single man, with an address of 338 Windy Hill Road, Greenwich, New York 12834 ("Owner"), and Boralex US Development LLC, a Delaware limited liability company, with an address of c/o Boralex, Inc., 900 Boul. De Maisonneuve West, suite 2400, Montreal (Quebec) H3A 0A8, Attn: Vice President, Chief Legal Officer and Corporate Secretary ("Company").

RECITALS

A. Owner is the owner of the real property known by Tax Parcel No. 228.-5-8.19; 228.-5-8.21; 228.-5-8.22; 228.-5-8.23; 228.-5-8.24, located in Town of Easton, Washington County, New York; (the "Property").

B. Owner and Company entered into a Ground Lease Option Agreement (the "Option") on the 14th day of February, 2019.

C. Owner and Company filed a Memorandum of Ground Lease Option Agreement with the Recorders Office for Washington County, New York, on or around the 29th day of January, 2020, which Memorandum was filed as Document #: 2020-490 (the "Memorandum").

D. After the Option was signed and the Memorandum filed, there were changes to the acreage and the legal description in the parcels subject to the Option.

F. Owner and Company mutually desire to enter into this First Amendment to clarify and document the current acreage and legal description of the Property.

NOW, THEREFORE, for and in consideration of the sum of one ($1.00) dollar and other good and valuable consideration paid by Company, the receipt and sufficiency of which is hereby acknowledged by Owner, and in further consideration of the covenants and agreements hereinafter contained, the Parties agree as follows:

1. Owner and Company agree that Exhibit A-1 of the Option is hereby replaced with the attached Exhibit A-1A.

2. Owner and Company agree that Exhibit A-2 of the Option is hereby replaced with the attached Exhibit A-2A.

3. Owner and Company agree that this First Amendment shall also act as a First Amendment to the Memorandum by replacing the Exhibit A to the Memorandum with the attached Exhibit A-1 and Exhibit A-2A .

4. Owner hereby ratifies and confirms the Option in every respect and acknowledges that the Option is still effective with respect to the Property. Other than the amendments set forth above, all terms and conditions of the Option remain unchanged.

5. This First Amendment shall be binding upon and shall inure to the benefit of the Parties, their successors, assigns and personal representatives.

IN WITNESS WHEREOF, this First Amendment has been executed as of the date first written above.

OWNER:

Michael J. Jennings

COMPANY:
Boralex US Development LLC,
a Delaware limited liability company

By:
Name: Hugues Girardin
Title: Authorized Signatory

ACKNOWLEDGEMENTS

STATE OF NEW YORK)
) SS.
COUNTY OF Washington)

On the 6th day of September, 2020 before me, the undersigned, personally appeared Michael J. Jennings, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(~~s~~) whose name(~~s~~) is (~~are~~) subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ capacity(~~ies~~), and that by his/~~her/their~~ signatures(~~s~~) on the instrument, the individual(~~s~~), or the person upon behalf of which the individual(~~s~~) acted, executed the instrument.

Diane V. Varney

Notary Public

DIANE V. VARNEY
NOTARY PUBLIC, State of New York
Washington County #01VA4673533
My Commission Expires February 28, 2023

PROVINCE OR STATE OF QUEBEC IF)
) SS.
APPLICABLE, COUNTY OF CANADA)

On this __15__day of __SEPTEMBER___, _2020__, before me personally appeared Hugues Girardin, an Authorized Signatory of Boralex US Energy Inc., a Delaware corporation, the sole member of Boralex US Development LLC, a Delaware limited liability company, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that (s)he executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Van-Anh Dang Vu
228 728
COMMISSAIRE À L'ASSERMENTATION
Québec

Signature: Van

Name: VAN-ANH DANG VU

~~Notary Public, State of~~ ________

My commission expires: November 11, 2022

EXHIBIT A-1A
TO GROUND LEASE OPTION AGREEMENT and

EXHIBIT A-1
MEMORANDUM OF GROUND LEASE OPTION AGREEMENT

LEGAL DESCRIPTION OF THE PROPERTY

PARCEL ID : # 228.-5-8.19; 228.-5-8.21; 228.-5-8.22; 228.-5-8.23; 228.-5-8.24

ADDRESS: Windy Hill Road, Easton, NY

LEGAL DESCRIPTIONS:

that tract, piece and/or parcel of land lying west of Windy Hill Road, situate in the Town of Easton, County of Washington, State of New York, and being more fully described as follows: Beginning at a point in the centerline of Windy Hill Road, said point also being at the northeast corner of lands now or formerly of Harris (Bk. 499, Pg. 697); thence westerly along the northerly lands of Harris, passing thru an iron pipe, North 84° 14′ 01″ West, 381.06 feet to an iron pipe; thence southerly along the westerly lands of Harris, South 12° 21′ 59″ West, 1320.00 feet along a line of blazed trees to an iron pipe; thence westerly along the northerly lands of Tracy Materials, Inc. (Bk. 801, Pg. 867), North 84° 14′ 01″ West, 458.66 feet to a point 7.9 feet south and 0.9 feet west of an iron pipe found; thence southerly along a westerly line of Tracy Materials, Inc., South 5° 21′ 09″ West, 577.51 feet to an iron pipe; thence westerly, North 84° 14′ 01″ West, 165.00 feet to an iron pipe in the easterly line of lands now or formerly of Hanak (Bk. 398, Pg. 476); thence northerly along the easterly line of Hanak, North 5° 02′ 15″ East, 550.92 feet to an iron pin; thence westerly along the northerly line of Hanak, North 83° 51′ 35″ West, 774.94 feet to an iron pin in the easterly line of lands now or formerly of New York State Electric & Gas Corp.; thence northerly along the easterly lands of New York State Electric & Gas Corp., North 26° 35′ 59″ East, 31.72 feet to an iron pin; thence continuing northerly along the easterly lands of N.Y.S.E.&G., North 14° 33′ 07″ East, 2062.88 feet to a point; thence northerly, North 56° 43′ 04″ East, 60.21 feet to a point; thence easterly along the southerly line of lands now or formerly of New Covenant Community, South 83° 22′ 41″ East, 1713.44 feet passing thru an iron pin to the centerline of Windy Hill Road; thence southerly along the centerline of Windy Hill Road, South 17° 43′ 25″ West, 125.95 feet to a point at the northeast corner of lands now or formerly of Holmes (Bk. 328, Pg. 581); thence westerly along the northerly lands of Holmes, North 83° 22′ 58″ West, passing thru an iron pin, 225.22 feet to an iron pin; thence southerly along the westerly line of Holmes, South 17° 43′ 25″ West, 181.31 feet to an iron pin; thence easterly along the southerly lands of Holmes, South 83° 22′ 58″ East, passing thru an iron pin in the westerly line of Windy Hill Road, 225.22 feet to the centerline; thence southerly along the centerline of Windy Hill Road, the following three (3) courses, (1) South 17° 43′ 25″ West, 318.68 feet to a point (2) South 16° 41′ 23″ West, 104.72 feet to a point (3) South 10° 36′ 11″ West, 32.89 feet to the point and place of beginning; said parcel to contain 73.162 acres of land, be the same more or less.

Excepting and reserving from the above all that tract, piece or parcel of land conveyed to Tracy Materials, Inc. by warranty deed from Ronald B. Carmean and Marcie M. Carmean dated 01/01/2008 and recorded 01/09/2008 in Book 2078 at page 114 bounded and described as follows:

ALL THAT TRACT, PIECE OR PARCEL OF LAND lying west of Windy Hill Road, situate in the Town of Easton, County of Washington, State of New York, and being more fully described as follows:

Beginning at a point in the centerline of said Windy Hill Road, said point also being the most northeasterly corner of the parcel herein described, said point also being the southeasterly corner of lands now or formerly of the New Covenant Community Church;
Thence southerly along said centerline, South 17 deg. 43'25"
West, 1[illegible].34 feet to a point at the northeast corner of lands now or formerly of Holmes;
Thence westerly along the northerly lands of Holmes, North 83
deg.22'59" West, 325.22 feet to a point at the northwest corner of Holmes;
Thence southerly along the westerly lands of Holmes, South 17
deg.43',25" West, 131.21 feet to a point;
Thence easterly along the southerly lands of Holmes, South 83
deg.22' 59" East, 325.22 feet to a point in the centerline of said Windy Hill Road;
Thence southerly the following three (3) courses along the centerline of said road,
1.South 17 deg.43'25" West 318.[illegible] feet to a point;
2.South 14 deg.41'23" West 104.73 feet to a point;
3.South 10 deg.36'11" West 32.40 feet to a point at the northeasterly corner of lands now or formerly of Harris;
Thence westerly along the northerly lands of Harris, North 84
deg.14'01" West, 381.08 feet to an iron pin at the northwest corner of Harris and the southwest corner of the parcel herein described;
Thence northerly along the easterly line of lands to be retained by Tracy Materials, Inc., North 21 deg. 36' 11" East, 781.72 feet to an iron pin in the south line of the New Covenant Community Church;
Thence easterly along the southerly lands of said church, South 83
deg.22': 41" East, 322.24 feet to the point and place of beginning;
Said parcel to be known as Lot 1 shall contain 5.1+/- acres of land, be the same more or less.
Said parcel subject to any rights, restrictions, easements or covenants of record.

The above parcel is shown on subdivision map of lands of Tracy Materials, Inc. dated 6/23/[illegible] and filed in the Washington County Clerk's Office on 7/13/[illegible] as map # 22[illegible]-41.

THAT tract, piece and/or parcel of land lying west of Windy Hill Road, situate in the Town of Easton, County of Washington, State of New York and being more fully described as follows:

BEGINNING at a point marked by an iron pipe, said point being in the westerly line of Windy Hill Road, said point also being located at the southeasterly corner of the lot herein described;

Thence westerly along the lands of Tracy Materials, Inc., North 84° 23' 01" West, 785.82 feet to an iron pipe at the southwesterly corner of the lot herein described;

Thence northerly along the easterly lands of Tracy Materials, Inc., North 12° 21' 59" East, 442.40 feet to an iron pin;

Thence easterly along the southerly line of lot 1B-2, South 84° 23' 01" East, 719.73 feet to an iron pin in the westerly line of Windy Hill Road at the northeast corner of the lot herein described;

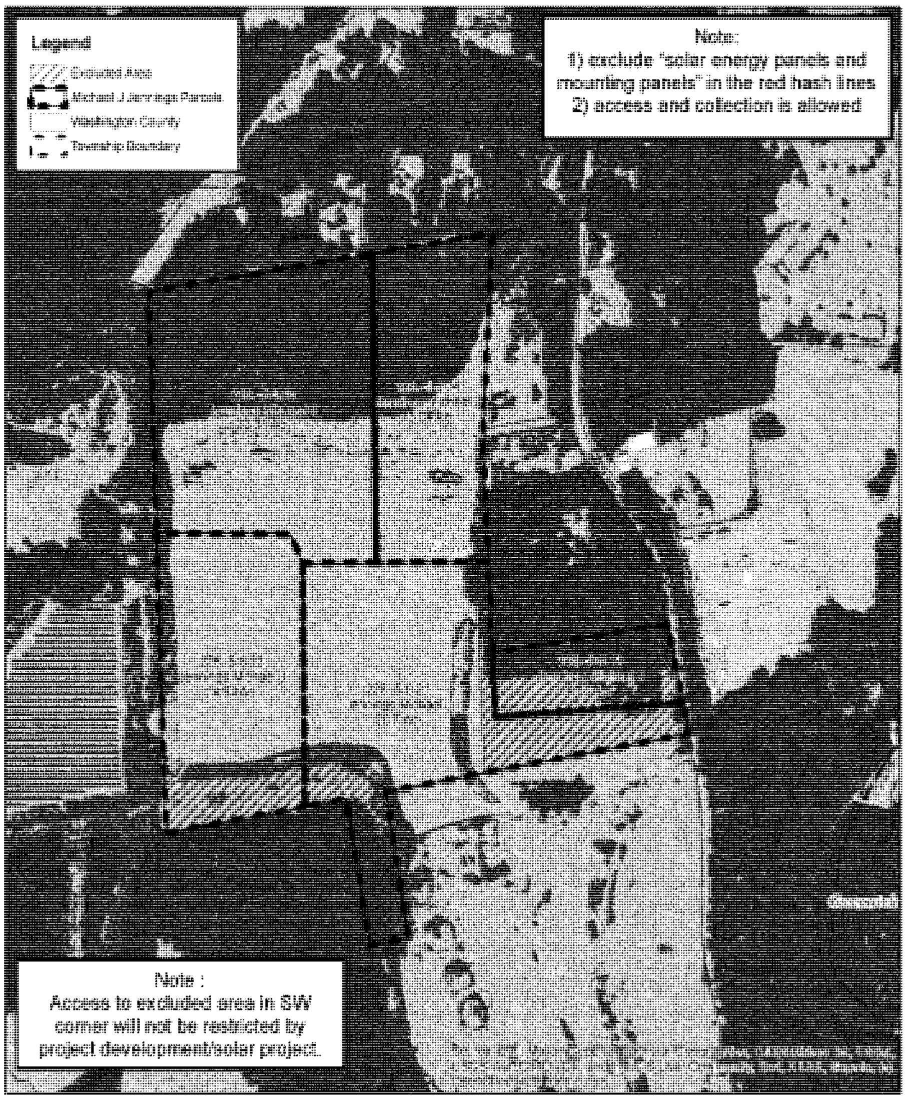
Thence southerly along the westerly line of said road the following two (2) courses,
1. South 5° 50' 19" West, 83.76 feet to a point;
2. South 3° 17' 39" West, 353.87 feet to the point and place of beginning.

Said lot 1B-1 to contain 7.5 acres of land, be the same more or less.

TOTAL AREA AVAILABLE (Approximately): 75.72 Acres (before exclusions of 14.187 acreage) and after exclusion the total area available is 60.248 acres

EXHIBIT A-2A
TO GROUND LEASE OPTION AGREEMENT

(Sketch or Survey of Optioned Property)



0 480 960 1,920
Feet

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Elexco Land Services (ER)
512001
Aug 17, 2020

Notice All data is approximate and is intended only to provide an indication of the presence of said information or data. Additional information and data that have not been mapped may be present
Some data licensed from, and copyright by, the respective county

ELEXCO

Form 583X N. Y. DEED—WARRANTY with Lien Covenant

TUTBLANX REGISTERED U. S. PAT. OFFICE
TUTTLE LAW PRINT, PUBLISHERS, RUTLAND, VT 05701

This Indenture

Made the 2nd *day of* July

Nineteen Hundred and eighty-four

Between KENNETH R. TRACY, JR. and CHARLES R. TRACY, both residing at R.D., Greenwich, New York 12834,

parties *of the first part, and*

TRACY MATERIALS, INC., a New York corporation having its principal place of business at R.D., Greenwich, New York 12834,

party *of the second part,*

Witnesseth *that the* parties *of the first part, in consideration of*

Fifty Thousand and 00/100------------------------- *Dollar* ($50,000.00)

lawful money of the United States, paid by the party *of the second part, do hereby grant and release unto the* party *of the second part,* its successors *and assigns forever, all* that certain tract or parcel of land situate on the West and East sides of Windy Hill Road, Town of Easton, Washington County, State of New York, and being more particularly bounded and described as follows:

Beginning at an iron pipe on the West boundary of Windy Hill Road, said point of beginning also being on the Northeast corner of George Nanek and being approximately 1206' north from the northerly boundary of N.Y.S. Route #29, thence from point of beginning the following 3 courses along lands of George Nanek:

N 85-06'-00" W 1317.74' to an iron pipe; thence

N 04-24'-40" E 1615.11' to an iron pipe; thence

N 04-50'-00" E 610.49' to an iron pipe, thence the following 2 courses along lands now or formerly Sarle:

S 84-45'-10" E 165.00' to an iron pipe, thence

N 04-50'-00" E 577.51' to an iron pipe, thence

S 84-45'-10" E 458.56' to an iron pipe, thence

S 84-45'-10" E 785.82' thru lands of Stevens and Thompson to an iron pipe on the west boundary of Windy Hill Roads, thence the following nine courses along the West boundary of Windy Hill Road;

S 02-55'-30" W 119.86' to a point, thence

Southerly 177.41' along a curve to the right having a radius of 876.51' to a point, thence

S 14-31'-20" W 404.66' to a point, thence

Southerly 139.97' along a curve to the left having a radius of 586.58' to a point, thence

S 0-51'00" W 438.17' to a point, thence

S 03-30'-50" E 208.83'to a point, thence

Southerly 348.26' along a curve to the right having a radius of 1486.31' to a point, thence

S 09-54'-40" W 587.35' to a point, thence

S 07-07'-10" W 383.79' to the point and place of beginning.

Subject to easements and rights of way of record. Said parcel containing 85.413 plus or minus acres.

AND ALSO all that certain tract or parcel of land beginning at an iron pipe on the East boundary of Windy Hill Road, said point of beginning being the Southeast corner of the herein described tract and lands of Henry R. Goman; thence from said point of beginning along lands reputedly of Henry R. Goman;

S 84-45'-10" E 708.22' to an iron pipe, thence

N 13-56'-40" E 720.72' to an iron pipe on the south boundary of lands reputedly of Frank Coffin and Elsie Henderson, thence

S 84-22'-50" E 990.00' along lands of Coffin and Henderson to an iron pipe, thence the following 2 courses along lands of Henry Goman:

S 22-22'-10" W 396.00' to an iron pipe, thence

S 84-22'-50" E 101.32' to an iron pipe on the west boundary of Niagara Mohawk Power Corp., thence the following 3 courses along Niagara Mohawk:

Southwesterly 437.72' along a curve to the right having a radius of 1046.50' to a point, thence

S 36-48'-20" W 504.30' to a point, thence

Southerly 451.44' along a curve to the left having a radius of 509.10' to a point, thence the following ten courses along the top of the West bank of the Battenkill River and remaining lands of Stevens and Thompson Paper Co.,

S 54-33'-50" W 127.71' to an iron pipe, thence
S 82-04'-10" W 167.63' to an iron pipe, thence
S 76-53'-40" W 141.23' to an iron pipe, thence
S 51-13'-30" W 110.52' to an iron pipe, thence
S 47-53'-40" W 131.99' to an iron pipe, thence
S 09-04'-40" W 131.51' to an iron pipe, thence
S 36-31'-40" W 536.93' to an iron pipe, thence
S 28-59'-50" W 141.43' to an iron pipe, thence
S 44-23'-20" W 72.88' to an iron pipe, thence
S 83-01'-00" W 192.68' to an iron pipe on the East boundary of Windy Hill Road thence the following 8 courses along the east boundary of Windy Hill Road:

Northeasterly 56.01' along a curve to the right having a radius of 536.58' to a point; thence

N 14-31'-20" E 404.66' to a point, thence

Northwesterly 187.53' along a curve to the left having a radius of 926.51' to a point; thence

N 02-55'-30" E 454.63' to a point, thence

N 05-28'-10" E 166.40' to a point, thence

Northwesterly 513.46' along a curve to the left having a radius of 960.62' to a point, thence

N 25-09'-20" W 171.59' to a point, thence

Northeasterly 210.61' along a curve to the right having a radius of 312.21' to the point and place of beginning.

Parcel No. 2 containing 56-284 plus or minus acres. Subject to easements and rights of way of record.

Being the same premises conveyed by Dixico Incorporated to Kenneth R. Tracy Jr. and Charles R. Tracy by deed dated April 13, 1984 and recorded in the Washington County Clerk's Office on April 13, 1984 in Book 499 of Deeds at page 699.

RECEIVED
$ 220.00
64 REAL ESTATE
AUG - 8 1984
TRANSFER TAX
WASHINGTON
COUNTY

Together *with the appurtenances and all the estate and rights of the part*ies *of the first part in and to said premises,*

To have and to hold *the premises herein granted unto the part*y *of the second part,* its successors *and assigns forever.*

And *said* parties of the first part

covenant as follows:

First, *That the part*y *of the second part shall quietly enjoy the said premises;*

Second, *That said* parties of the first part

will forever **Warrant** *the title to said premises.*

Third, *That, in Compliance with Sec. 13 of the Lien Law, the grantor*s *will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.*

In Witness Whereof, *the part*ies *of the first part have hereunto set* their *hands and seal*s *the day and year first above written.*

In Presence of

James A. Catalfimo

Kenneth R. Tracy Jr.

Kenneth R. Tracy, Jr.

Charles R. Tracy

Charles R. Tracy

State of New York
County of Washington } ss.

On this 2nd *day of* July *Nineteen Hundred and* eighty-four *before me, the subscriber, personally appeared*

Kenneth R. Tracy, Jr. and Charles R. Tracy

*to me personally known and known to me to be the same person*s *described in and who executed the within Instrument, and* they severally *acknowledged to me that* they *executed the same.*

James A. Catalfimo

Notary Public

JAMES A. CATALFIMO
Notary Public in the State of New York
Residing in Washington County
Commission Expires March 30, 1985

753
753

REC'D
INDEXED & PAGED

AUG 9 ... '84

LIBER 501
PAGE 869
WASH... EXAMINED
... N.Y.

J Catalfimo

WASHINGTON COUNTY – STATE OF NEW YORK

STEPHANIE C. LEMERY, COUNTY CLERK
383 BROADWAY, BUILDING A
FORT EDWARD, NY 12828

COUNTY CLERK'S RECORDING PAGE

THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH

INSTRUMENT #: 2021-3476

Receipt#: 2021465859
Clerk: MP
Rec Date: 06/10/2021 04:06:54 PM
Doc Grp: RP
Descrip: EASEMENT
Num Pgs: 21
Rec'd Frm: ELEXCO LAND SERVICES, INC.

Party1: HOLLINGSWORTH AND VOSE COMPANY
Party2: BORALEX US DEVELOPMENT LLC
Town: EASTON

Recording:

Cover Page	5.00
Recording Fee	120.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
TP584	5.00
Sub Total:	150.00
Transfer Tax	
Transfer Tax - State	60.00
Sub Total:	60.00
Total:	210.00

**** NOTICE: THIS IS NOT A BILL ****

***** Transfer Tax *****
Transfer Tax #: 2265
Transfer Tax
Consideration: 15000.00

Transfer Tax - State	60.00
Total:	60.00

Record and Return To:

ELECTRONICALLY RECORDED BY SIMPLIFILE

WARNING***
*** Information may be amended during the verification process, and may not be reflected on this cover page.

THIS PAGE CONSTITUTES THE CLERK'S ENDORSEMENT, REQUIRED BY SECTION 316-a (5) & 319 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK.

Stephanie C. Lemery

Stephanie C. Lemery
Washington County Clerk

ELECTRICAL EASEMENT AGREEMENT

THIS ELECTRICAL EASEMENT AGREEMENT (this "**Agreement**") is made, dated and effective as of May 12th, 2021 (the "**Effective Date**"), and is entered into by and between Hollingsworth & Vose Company, a Massachusetts corporation authorized to do business in the State of New York, whose mailing address is 112 Washington Street, East Walpole, Massachusetts 02032 ("**Grantor**"), and Boralex US Development LLC, a Delaware limited liability company, whose mailing address is c/o Boralex, Inc., 900 Boul. De Maisonneuve West, #2400, Montreal (Quebec) H3A 0A8, Attn: Vice President, Chief Legal Officer and Corporate Secretary("**Grantee**").

RECITALS

A. Grantor owns certain real property located in the Town of Easton, Washington County, State of New York, which real property is more particularly described on the attached Exhibit A (the "**Property**").

B. Grantee requires facilities for the collection, distribution and transmission of electric power and for communication purposes in support of Grantee's proposed solar power facility in the vicinity of the Property (the "**Solar Project**").

C. Grantee desires the right to construct and install such facilities on, across, and/or under the Property, and Grantor desires to grant such right on the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual obligations and covenants of the parties herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby mutually acknowledged, the parties hereto agree as follows:

EASEMENT

1. **GRANT OF EASEMENT.** Grantor hereby grants, transfers and conveys to Grantee its employees, contractors, subcontractors, licensees, agents, invitees, successors and assigns an easement in gross (the "**Easement**") on, under, through and across the Easement Areas(s) (defined below) for the following purposes:

1.1 a non-exclusive easement on, under, through and across the Property during the Term (defined below) to conduct notably structural strength, surface and subsurface, environmental and archeological studies, tests and investigations related to the development and construction of Grantee's Solar Project of which the Electrical Facilities (defined below) form a part as Grantee may deem necessary to determine if the Property is a feasible location for its Electrical Facilities (as defined below) and the exact location of same (the "**Study Easement**");

1.2 Subject to Section 2(a), a non-exclusive easement on, under, through and across the Property to construct, reconstruct, replace, improve, enlarge, alter the voltage, remove, maintain and use the following from time to time (collectively, the "**Electrical Facilities Easement**"): underground electric lines, wires and cables, structures, conduit, footings, foundations, control, communications, fiber optic lines, radio relay systems and telecommunications equipment, and improvements, facilities, appliances, machinery and equipment related to any of the foregoing that are necessary or convenient for the installations or maintenance of the Solar Project, in each case of any type or technology, as Grantee may elect (collectively, the "**Electrical Facilities**") but expressly excludes overhead electric lines, solar panels, invertors, substations, transformers, meteorological stations, and switch stations; and

1.3 the appropriate non-exclusive rights of way, on, along and in the Easement Area(s) (defined below) for vehicular (including construction equipment) and pedestrian access to the Electrical Facilities and for other activities, which, without limiting the generality of the foregoing, shall entitle Grantee to enter upon the Easement Area(s) with equipment, tools, materials and personnel and dig trenches and conduct such other construction, installation, repair, reinstallation, maintenance, brush clearing, and such tests, surveys, studies and inspections, as Grantee in its sole discretion deems necessary or desirable to install, maintain, repair and/or operate any of the foregoing.

The rights conveyed by the Easements shall include, without limitation, the rights (i) to install equipment and to construct or otherwise make improvements in the Easement Areas; (ii) to modify or change the contour and/or grade of the Easement Areas defined below and to cut, prune and remove or otherwise dispose of any foliage or vegetation on or near the Easement Areas that Grantee reasonably believes may interfere with its rights under the Agreement; (iii) to demolish, remove, replace, alter, reconstruct or add to any of its Electrical Facilities in or on the Easement Areas and (iv) to utilize the Easement Areas as reasonably necessary for the construction, alteration, replacement, repair or removal of the Access Roads and Electrical Facilities.

2. <u>EASEMENT AREA</u>. Grantor does hereby grant, bargain, sell and convey unto Grantee the following:

(a) <u>Electrical Facilities Easement Area:</u> a fifty (50) foot wide non-exclusive easement on, under, through and across the Property to construct, install, own, operate, maintain, repair, replace and remove the Electrical Facilities, together with a right of access over and across the Property for access to and from the Electrical Facilities (the "**Electrical Facilities Easement Area**").

(b) **<u>Location</u>**. The location of the Electrical Facilities Easement Area shall be confined to specific portions of the Property designated by Grantee with the approval of Grantor as provided in this Section 2 as set forth herein:

(i) <u>Site Plan</u>. Attached as Exhibit A-1 is the preliminary sketch of the Electrical Facilities Easement Area. Prior to commencing construction of the Electrical Facilities, Grantee shall provide Grantor, for Grantor's review, a site plan ("**Site Plan**"), showing the location of such Easements (each such location, an "Easement Area") and the proposed location of the

Electrical Facilities to be constructed within the Easement Areas. Grantee agrees to consult with Grantor in preparing the Site Plan prior to delivering the Exercise Notice, and Grantor agrees to consent to the Grantee's choice of Electrical Facilities Easement Area, which consent shall not be unreasonably be withheld, conditioned or delayed, provided that Grantee developed the description of the easement area in accordance with this paragraph. The Parties agree that this Site Plan shall thereafter be attached hereto as Exhibit A-1, replacing the preliminary sketch.

(ii) Changes to Location. Notwithstanding the foregoing, Grantee shall have the right to vary the location of any facilities, structures or improvements as originally shown on the Site Plan as Grantee considers necessary or desirable; provided, however, that Grantee may not vary the location of any Easement Area by more than fifty (50) feet without Grantor's prior written consent, which shall not be unreasonably withheld or delayed. The Site Plan shall be automatically deemed to be modified to reflect such variations and approved without any additional action by any of the Parties.

(iii) Amendment to the Agreement. Upon Grantee's completion of the construction of the Electrical Facilities, Grantee shall prepare an as-built survey of the Easement Areas, based on the location of the constructed Electrical Facilities and consistent with the terms above. The as-built survey will show the location of the constructed Electrical Facilities and the legal description of the Easement Areas, and the Easement Areas shown thereon will be deemed the "Easement Areas" for purposes of the Agreement and shall be thereafter shall be attached hereto as Exhibit A-2. At the request of either Party, the Parties shall execute and record an amendment to this Agreement designating the confined location of the Easement Areas. No confinement of the Easement Areas as provided herein shall limit application of provisions of the Agreement that affect other portions of the Property.

3. TERM. The term of this Agreement and the Easements (the "**Term**") shall be for an initial period commencing on the Effective Date and ending on the third anniversary of the Effective Date ("**Initial Development Term**"). After conclusion of the Initial Development Term, this Term shall automatically extend for an additional three-year period (the "**Additional Development Term**" and, collectively with the Initial Development Term, the "**Development Term**") unless Grantee gives Grantor written notice of Grantee's intent to not extend, which notice must be delivered to Grantor not less than 60 days prior to the end of the Initial Development Term. The terms and conditions in effect during the Initial Development Term shall be applicable during the Additional Development Term. The Development Term shall be automatically and without further notice extended ("**Extended Term**") if Grantee has commenced construction of the Electrical Facilities during the Development Term, unless Grantee gives Grantor written notice of Grantee's intent to not extend. The Extended Term shall continue until eighteen (18) months following permanent cessation of operations of the Solar Project. The Development Term and Extended Term are sometimes referred to as the "**Term**".

4. **PAYMENTS TO GRANTOR.** In consideration of the Easements, Grantee shall make payments to Grantor in the amounts and at the times specified in Exhibit B hereto.

5. **GRANTOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS.** Grantor hereby represents warrants and covenants to Grantee as follows:

5.1 Grantor's Authority. Grantor is the sole owner of the Property and owns the Property in fee simple, subject to no liens or encumbrances except as would appear in a title report for the Property, or as otherwise disclosed in writing to Grantee prior to execution of this Agreement. Grantor and each person signing this Agreement on behalf of Grantor has the full and unrestricted right and authority to execute and deliver this Agreement and to grant to Grantee the Easements and other rights granted hereunder. Each person signing this Agreement on behalf of Grantor is authorized to do so, and all persons having any ownership or possessory interest in the Property (including spouses) are signing this Agreement as Grantor. When signed by Grantor, this Agreement constitutes a valid and binding agreement enforceable against Grantor in accordance with its terms.

5.2 No Interference. Grantor's activities and any grant of rights Grantor makes to any person or entity, whether located on the Property or elsewhere, shall not, currently or in the future, impede or interfere with (i) the siting, permitting, construction, installation, maintenance, operation, replacement, or removal of Electrical Facilities, whether located on the Property or elsewhere; (ii) access over the Property to Electrical Facilities, whether located on the Property or elsewhere; or (iii) the undertaking of any other activities of Grantee permitted under this Agreement. Grantor shall protect and defend the right, title and interest of Grantee hereunder from any other rights, interests, title and claims.

5.3 Reserved.

5.4 Requirements of Governmental Agencies; Public Utilities. Grantor shall assist and fully cooperate with Grantee in complying with or obtaining any land use permits and approvals, tax-incentive or tax-abatement program approvals, building permits, environmental impact reviews or any other approvals required or deemed desirable by Grantee in connection with the development, financing, construction, installation, replacement, relocation, maintenance, operation or removal of the Electrical Facilities, including execution of applications for such approvals and delivery of information and documentation related thereto, and execution, if required, of any orders or conditions of approval. Further, Grantor shall join with Grantee in the signing of any protest, petition, appeal or pleading that Grantee may deem advisable to file or in requesting any and all zoning changes or any waivers, variances, land use permits and/or approvals. Grantor shall join in any grants for rights-of-way and easements within the Easement Area for electric and other public utilities and facilities and any other electric power purpose (including any power collection line) as Grantee may deem necessary or desirable for its development and use of the Easement Area. Grantee shall reimburse Grantor for its reasonable and actual out-of-pocket expense directly incurred in connection with such cooperation.

5.5 Title Review; Encumbrances. There are no liens, encumbrances, leases, mortgages, deeds of trust, fractured interests, mineral or oil and gas rights, or other exceptions to Grantor's fee title Ownership of the Property except as disclosed in a title report or other writing obtained by Grantee and reviewed by Grantor prior to the Effective Date. There are no tenants on the Property, except those disclosed by Grantor to Grantee in writing prior to the Effective Date. Grantor shall cooperate with Grantee to obtain nondisturbance, subordination and other title curative agreements with respect to any liens, encumbrances, mortgages, leases or other exceptions to Grantor's fee title to the Property to the extent reasonably deemed necessary by Grantee to eliminate any actual or potential interference with any rights granted to Grantee under this Agreement.

5.6 Reserved.

5.7 Reserved.

5.8 Reserved.

5.9 Quiet Enjoyment. As long as Grantee observes the terms and conditions of this Agreement, it shall peacefully hold and enjoy all of the rights granted by this Agreement for its entire term without hindrance or interruption by Grantor or any person lawfully or equitably claiming by, through or under Grantor.

5.10 Taxes.

(a) Grantor's Obligations. Except as specifically set forth in Section 5.10(b) below, Grantor shall pay when due any property taxes levied or assessed by any governmental authority upon the Property, and any other monetary obligations associated with the Property; subject to Grantor's right to contest the same in a manner that does not jeopardize Grantee's rights hereunder. If Grantor fails to pay the taxes or any other monetary obligations for which it is responsible hereunder, or otherwise defaults under this Agreement, then Grantee shall have the right to pay such taxes and other obligations, and/or remedy any such default, by any appropriate means; and Grantee may offset such cost against any amounts owed to Grantor under this Agreement.

(b) Grantee's Obligations. Grantee shall pay when due any property taxes levied or assessed by any governmental authority upon the Property on account of the Electrical Facilities placed thereon by Grantee; subject to Grantee's right to contest the same in a manner that does not jeopardize Grantor's rights hereunder. To the extent the applicable taxing authority provides a separate tax bill to Grantee, Grantee will pay such taxes directly to the applicable taxing authorities prior to the date such taxes become delinquent. If Grantee fails to pay the taxes or any other monetary obligations for which it is responsible hereunder, or otherwise defaults under this Agreement, then Grantor shall have the right to pay such taxes and other obligations, and/or remedy any such default, by any appropriate means; and the cost thereof shall be reimbursed to Grantor by Grantee within thirty (30) days. If a separate tax bill for Grantee's installation is not provided to Grantee, Grantee shall pay its prorated portion of the taxes (which shall be based upon the documented increase in the assessed value of the Premises due to the installation of the Electrical Facilities) within thirty (30) days following receipt of written demand from Grantor of the amount of said taxes with a copy of the applicable tax bill. In the event that Grantor fails to pay any such taxes or other fees and assessments for which it is responsible under this Agreement, Grantee shall have the right, but not the obligation, to pay such owed amounts and deduct them from amounts due under this Agreement.

5.11 Encumbrances and Subordination. Any leases, licenses, easements, encumbrances and other rights entered into by Grantor after the Effective Date shall expressly provide that they are subject and subordinate in all respects to this Agreement and any amendments hereto, and to the rights of Grantee hereunder and thereunder. If at any time during the Term any lease, license, easement, encumbrance or other right or interest against the Property that is senior to this Agreement or any amendments hereto is claimed to exist or otherwise comes to the attention of Grantor, then (i) Grantor shall notify Grantee in writing within ten (10) days of Grantor gaining knowledge of the same, (ii) if Grantee so requests, Grantor shall execute agreements presented by Grantee subordinating such lease, license, easement, encumbrance or other right to the Easement granted herein, or protecting Grantee and Grantee's rights hereunder from disturbance by the holder(s) thereof, and (iii) if Grantee so requests, Grantor shall cause such holder(s) to execute such agreements within fifteen (15) days of such presentation by Grantee.

5.12 Grantor acknowledges that Grantor has had the full opportunity to obtain independent legal representation or advice in connection with this Agreement. If Grantor signs this Agreement, Grantee shall reimburse Grantor for reasonable legal fees.

6. **GRANTEE'S REPRESENTATIONS. WARRANTIES AND COVENANTS.** Grantee hereby represents, warrants and covenants to Grantor that:

6.1 Insurance. At all times during the Term, Grantee shall, at its own cost and expense, obtain and maintain in effect (1) Commercial General Liability Insurance, including bodily injury and property damage coverage with minimum limits of $1,000,000 per occurrence and $2,000,000 in the aggregate; and (2) Umbrella Liability Insurance with minimum limits of $5,000,000 per occurrence and $5,000,000 in the aggregate. Grantee shall upon reasonable written request provide to Grantor a certificate evidencing such coverage.

6.2 Indemnity. Grantee shall defend, indemnify and hold Grantor harmless for, from and against any claims, losses, expenses, liabilities, actions, suits or judgment for physical damage to property and for physical injuries or death to Grantor, Grantor's property or the public, to the extent caused by (i) Grantee's construction, operation, maintenance or removal of Electrical Facilities on the Property, except to the extent such damages, injuries or death are caused or contributed to by the operations, activities, acts, omissions, negligence or willful misconduct of Grantor or Grantor's tenants, invitees or permittees; and (ii) breach of this Agreement and the failure to be true of any representation or warranty made by Grantee in this Agreement. The reference to property damage hereinabove does not include any damages to crops or any losses of rent, business opportunities, profits and the like that may result from Grantor's loss of use of any portions of the Property occupied by, or otherwise attributable to the installation of, Electrical Facilities pursuant to this Agreement. This indemnification shall survive the termination of this Agreement.

6.3 Construction Liens. Grantee shall keep the Property free and clear of all liens and claims of liens for labor and services performed on, and materials, supplies or equipment furnished to, the Property in connection with Grantee's use of the Property pursuant to this Agreement. Within sixty (60) days after Grantee receives notice of the filing of such lien Grantee shall discharge the lien pursuant to NY Lien Law, or otherwise cause the lien to be removed.

6.4 Hazardous Materials. Grantee shall not violate, and shall indemnify Grantor against, any violation by Grantee or Grantee's agents or contractors of any federal, state or local law, ordinance or regulation relating to the generation, manufacture, production, use, storage, release or threatened release, discharge, disposal, transportation or presence of any Hazardous Materials on or under the Property.

6.5 Access to Easement Areas. After completion of construction and installation of the Electrical Facilities, Grantee agrees that access to the Easement Areas requires Grantor's prior authorization, which will not be unreasonably withheld, conditioned, or delayed.

6.6 Restoration of Disturbed Areas. Grantee shall restore all portions of the Property temporarily disturbed during construction to substantially the same condition as existed prior to commencement of construction, including grass reseeding. Grantee shall use commercially reasonable efforts to control, minimize, and prevent the introduction of noxious weeds into areas re-vegetated by Grantee for a period of two (2) years after the initial seeding.

(a) Upon expiration or termination of this Agreement, Grantee shall remove the any Electrical Facilities beneath the soil surface, and restore the area formerly occupied by the Electrical Facilities to substantially the same physical condition that existed immediately before the installation of the Electrical Facilities. Grantee shall leave the surface of the Property (or such part thereof, as applicable) free from debris and shall repair any damage caused by such removal. Grantee shall remove any hazardous materials introduced by Grantee and shall re-seed the portion of the grass on the Property disturbed by Grantee's use. Grantee shall not be required to replant any trees. Grantee's removal of the Electrical Facilities shall be completed in a manner that does not unreasonably and adversely affect the suitability of the Property for farming purposes.

7. ASSIGNMENT.

7.1 Grantee shall at all times have the right to sell, assign, encumber, or transfer any or all of its rights and interests under this Agreement without Grantor's consent, including without limitation, subordinate rights and interests (including subeasements and licenses) in the Easement and/or any or all of its other rights and interests under this Agreement; provided, however, that any and all such transfers shall be subject to all of the terms, covenants and conditions of this Agreement and that any such transfer shall include the transfer of the Solar Project.

7.2 Grantor may sell, assign or transfer the entirety of its fee interest in the Property, without the consent of the Grantee, but subject to the terms of this Agreement and provided Grantor obtains the written agreement of any such transferee or assignee in favor of Grantee that such transferee or assignee shall assume Grantor's obligations under this Agreement, in a manner satisfactory to Grantee.

8. ENCUMBRANCE OF EASEMENTS BY GRANTEE.

8.1 Right to Encumber. Grantee and its successors and assigns may at any time mortgage to any entity (herein, a "**Mortgagee**") all or any part of Grantee's interest under this Agreement and the easements created by this Agreement without the consent of Grantor.

8.2 Protection of Mortgagee. Any Mortgagee of any interest of Grantee under this Agreement shall for so long as its Mortgage is in existence and until the lien thereof has been extinguished be entitled to the following protection:

(a) No Amendment. Grantor shall not agree to any amendment or modification of the Agreement which would materially adversely affect the Mortgagee's interest in the Agreement, or agree to any mutual termination or accept any surrender of this Agreement, nor shall any such amendment, termination, modification or surrender be effective, without the written consent of the Mortgagee.

(b) Notice of Default. Where Grantee has given written notice to Grantor of the name and mailing address of a Mortgagee, Grantor shall, as a precondition to exercising any rights or remedies as a result of any real or alleged default by Grantee, deliver a duplicate copy of each and every notice of default to each such Mortgagee (at the address for such Mortgagee indicated in Grantor's notice) concurrently with delivery of such notice of default to Grantee, specifying in detail the default and the required remedy.

(c) Right to Perform. A Mortgagee shall have the absolute right (but not the obligation) to do one, some or all of the following: (a) assign its Mortgage; (b) enforce its Mortgage; (c) acquire title (whether by foreclosure, assignment in lieu of foreclosure or other means) to the real estate interest granted by this Agreement; (d) take possession of and operate the Electrical Facilities or the Solar Project; (e) assign or transfer this Agreement to a third party; (f) exercise any rights of Grantee under this Agreement or with respect to this Agreement; or (g) cause a receiver to be appointed to do any of the foregoing things. Grantor's consent shall not be required for any of the foregoing or for any third party to acquire title via foreclosure or assignment in lieu of foreclosure; and, upon acquisition of this Agreement by a Mortgagee or any other third party who acquires the same from or on behalf of the Mortgagee or via foreclosure or assignment in lieu of foreclosure, Grantor shall recognize the Mortgagee or such other party (as the case may be) as Grantee's proper successor, and this Agreement shall remain in full force and effect.

(d) Right to Cure. Each Mortgagee shall have the same period of time after receipt of a notice of default to remedy a default, or cause the same to be remedied, as is given to Grantee after Grantee's receipt of a notice of default hereunder, plus, in each instance, the following additional time periods: (a) 30 days in the event of any monetary default; and (b) 90 days in the event of any non-monetary default; provided, however, that (i) such 90-day period shall be extended for the time reasonably required by the Mortgagee to complete such cure, including the time reasonably required for the Mortgagee to obtain possession of the real estate interest granted by this Agreement (including possession by a receiver), institute foreclosure proceedings or otherwise perfect its right to effect such cure; and (ii) neither the Mortgagee shall be required to cure those Events of Default that are not reasonably susceptible of being cured or performed by Grantee ("**Non-Curable Defaults**"), it being agreed that Grantee's default as a result of Grantee's bankruptcy shall conclusively be deemed to be a Non-Curable Default. Each Mortgagee shall have the absolute right to substitute itself for Grantee and perform the duties of Grantee hereunder or with respect to the real estate interest granted by this Agreement for purposes of curing such default. Grantor expressly consents to such substitution, agrees to accept such performance, and authorizes each Mortgagee (and their respective employees, agents, representatives or contractors) to enter upon the Easement Areas to complete such performance with all of the rights and privileges of Grantee hereunder. Grantor shall not terminate this Agreement prior to expiration of the cure periods available to each Mortgagee as set forth above. Further, (1) neither the bankruptcy nor the insolvency of Grantee shall be grounds for terminating this Agreement as long as the amounts payable by Grantee hereunder are paid by a Mortgagee in accordance with the terms thereof and (2) Non-Curable Defaults shall be deemed waived by Grantor upon the Mortgagee's completion of foreclosure proceedings or other acquisition of the real estate interest granted by this Agreement. Nothing herein contained shall require any Mortgagee or its nominee or designee to cure any default of Grantee.

(e) Possessory Issues. If any default by Grantee under this Agreement cannot be cured by a Mortgagee without its obtaining possession of all or part of the Easement Areas, then such default shall nonetheless be deemed remedied if: (a) within 90 days after receiving notice from Grantor as set forth in Section 8.2(b), a Mortgagee acquires possession of the Easement Area, or commences appropriate judicial or nonjudicial proceedings to obtain the same; (b) the Mortgagee is prosecuting any such proceedings to completion with commercially reasonable diligence; and (c) after gaining possession thereof, the Mortgagee performs all other obligations of Grantee (other than in connection with Non-Curable Defaults) as and when the same are due in accordance with the terms of this Agreement. If a Mortgagee is prohibited by any process or injunction issued by any court or by reason of any action of any court having jurisdiction over any bankruptcy or insolvency proceeding involving Grantee from commencing or prosecuting the proceedings described above, then the 90-day period specified above for commencing such proceedings shall be extended for the period of such prohibition.

(f) Foreclosure/Power of Sale. A Mortgagee that does not directly hold an interest in the real estate interest granted by this Agreement, or that holds a Mortgage, shall not have any obligation under this Agreement prior to the time that such Mortgagee succeeds to absolute title to such estate; and such Mortgagee shall be liable to perform obligations under this Agreement only for and during the period of time that such Mortgagee directly holds such absolute title. Further, in the event that a Mortgagee elects to (a) perform Grantee's obligations under this Agreement; (b) continue Grantee's operations; (c) acquire any portion of Grantee's right, title or interest under this Agreement; or (d) enter into a new agreement as provided in Section 8.2(g), then such Mortgagee shall not have any personal liability to Grantor in connection therewith, and Grantor's sole recourse in the event of default by such Mortgagee shall be to execute against such Mortgagee's interest in the real estate interest granted by this Agreement. Moreover, any Mortgagee or other party who acquires the real estate interest granted by this Agreement pursuant to foreclosure or an assignment in lieu of foreclosure shall not (i) assume any liability for: (x) claims of Grantor against Grantee arising prior to an assumption of the Agreement; (y) representations and/or warranties of Grantee made prior to the effective date of an assumption of the Agreement; or (z) indemnity, defense, or hold harmless obligations of Grantee except to the extent that such obligations are attributable to events first arising after the assumption of the Agreement; or (ii) be liable to perform any obligations hereunder to the extent the same are incurred or accrue after such Mortgagee or other party no longer has ownership of such real estate interest granted by this Agreement.

(g) Termination of Agreement. If this Agreement shall terminate prior to the expiration of the Term for any reason, including without limitation, as a result of the bankruptcy of Grantee, by operation of law or because of a failure to cure a default pursuant to Section 9, Grantor shall enter into a new agreement in recordable form with the Mortgagee which holds the most senior lien against Grantee's real estate interest and demands such new agreement within 30 days following receipt of Grantor's notice. Such new agreement shall contain the same terms and provisions as this Agreement. Grantor's obligation to enter into a new agreement as provided in this Agreement is conditioned upon the cure of any and all defaults under this Agreement other than defaults, if any, that are unique to the defaulting Grantee which cannot be cured by the payment of money or the acts of the curing Mortgagee.

(h) Assignment Following Foreclosure or Termination. In the event (i) that any Mortgagee or purchaser of the Easement Areas from such Mortgagee acquires Grantee's real estate interest granted by this Agreement following a final order of foreclosure or exercise of the power of sale contained in, any Mortgage; or (ii) any Mortgagee enters into a new agreement, such Mortgagee or purchaser, as the case may be, shall have the right to assign or transfer this Agreement or any such new agreement, one time only, to any person or entity without Grantor's consent, provided notice of such assignment is given to Grantor. The liability of such Mortgagee or purchaser, as the case may be, under this Agreement or any such new agreement shall cease upon the assignment, provided that the assignee agrees to perform each and every obligation of Grantee under this Agreement or such new Agreement and that there is no default under this Agreement or any such new agreement. The right of such Mortgagee or purchaser, as the case may be, to assign this Agreement or any such new Agreement as provided in this Agreement is conditioned upon the cure of any and all defaults under this Agreement as of the time of such assignment other than defaults, if any, that are unique to the defaulting Grantee which cannot be cured by the payment of money or the acts of the curing Mortgagee or purchaser, as the case may be.

(i) Cooperation. At Grantee's request and sole expense, Grantor shall use its commercially reasonable efforts to cooperate in a prompt manner with Grantee's efforts to obtain financing from a Mortgagee, including the amendment of this Agreement to include any provision that may reasonably be requested by an existing or proposed Mortgagee, and shall execute such additional documents as may reasonably be required to evidence such Mortgagee's rights hereunder; provided that Grantor shall have no obligation to grant a lien on or security interest in the fee title to the Property in favor of any Mortgagee and shall not be obligated to enter into any modification of this Agreement that has a material adverse economic effect on Grantor. Further, Grantor shall, within ten days after written notice from Grantee or any existing or proposed Mortgagee, execute and deliver thereto a certificate to the effect that (a) Grantor recognizes such entity as a Mortgagee under this Agreement; and (b) will accord to such entity all the rights and privileges of a Mortgagee under this Agreement.

(j) No Merger. In the event Grantee acquires fee ownership of the Property, or in the event of Grantee's voluntary surrender of the real estate interest, there shall be no merger of the real estate interest created by this Agreement with the fee without the prior written consent of all Mortgagees.

(k) Mortgagee as Beneficiary; Order of Precedence. The provisions of this Section 8.2 are for the benefit of any Mortgagee and may be relied upon and shall be enforceable by any Mortgagee, and each Mortgagee shall be a third party beneficiary thereof. No Mortgagee shall be liable upon the covenants, agreements or obligations of Grantee contained in this Agreement, except as expressly provided in this Agreement, and in the event of any inconsistency between this Section 8.2 and the terms of any other section of this Agreement, the terms of this Section 8.2 shall control.

9. DEFAULT AND TERMINATION.

9.1 Grantee's Right to Terminate. Grantee shall have the right to terminate this Agreement, and assignees and subtenants of Grantee shall have the right to terminate their respective interests in or under this Agreement, as to all or any part of the Property at any time, effective upon thirty (30) days' written notice to Grantor. If such termination is as to only part of the Property, this Agreement shall remain in effect as to the remainder of the Property.

9.2 Grantor's Right to Terminate. Except as qualified by Section 8.2, Grantor shall have the right to terminate this Agreement if (i) a material default in the performance of Grantee's obligations under this Agreement shall have occurred and remains uncured, (ii) Grantor simultaneously notifies Grantee in writing of the default, which notice sets forth in reasonable detail the facts pertaining to the default and specifies the method of cure, and (iii) the default shall not have been remedied within ninety (90) days after Grantee, or within one hundred twenty (120) days in the case of all Mortgagees, receive the written notice, or, if cure will take longer than ninety (90) days for Grantee, or twenty (120) days for any Mortgagee, Grantee or a Mortgagee on Grantee's behalf, has not begun diligently to undertake the cure within the relevant time period and thereafter prosecutes the cure to completion.

9.3 Effect of Termination. Upon termination of this Agreement, whether as to the entire Property or only as to part, Grantee shall (i) upon written request by Grantor, execute and record a termination of the Easement and this Agreement as to all of Grantee's right, title and interest in and to the Property, or to that part thereof as to which the Agreement has been terminated, and (ii) remove all Electrical Facilities installed by Grantee on the Property in accordance with the provisions of Section 6.5. If Grantee fails to remove the Electrical Facilities within eighteen (18) months of termination of the Agreement, Grantor may do so, in which case Grantee shall reimburse Grantor for reasonable and actual costs of removal incurred by Grantor. Grantee shall have a continuing easement to enter the Property for such purposes during such eighteen (18) month period. Grantee shall, within a reasonable time after such termination, execute and deliver to Grantor a quitclaim deed in recordable form quitclaiming all of Grantee's rights, title, and interest in and to the Property.

10. Reserved

11. MISCELLANEOUS.

11.1 Recording. The parties contemplate that this Agreement will be recorded in the Office of the County Clerk of Washington County, New York at Grantee's expense. The parties agree that Exhibit B of this Agreement may be omitted from the copy recorded to as to maintain the confidentiality of the financial terms specified on that Exhibit.

11.2 Ownership of Electrical Facilities. Grantor agrees that the Electrical Facilities installed or placed on the Property by Grantee and its successors or assigns, whether real, personal or mixed, shall remain the property of Grantee and shall be removable by Grantee at any time.

11.3 Cooperation. Grantor shall fully support and cooperate with Grantee in the conduct of its operations and the exercise of its rights hereunder and Grantor shall perform all such acts (including executing and delivering maps, instruments and documents within ten (10) days after receipt of a written request made from time to time by Grantee) as Grantee may reasonably specify to fully effectuate each and all of the purposes and intent of this Agreement, including without limitation, executing and delivering standard Grantor's affidavits reasonably requested by any title company or attorney reviewing title to the Property or reasonable consent and nondisturbance agreements with any Mortgagee.

11.4 Estoppel Certificates. Each party agrees that it shall, at any time and from time to time, and within (10) days after a written request by the other party, execute, acknowledge and deliver to the requesting party a written statement certifying that this Agreement is unmodified and in full force and effect (or modified and stating the modifications), the dates to which the payments and any other charges have been paid, and that there are no defaults existing (or that defaults exist and stating the nature of such defaults), and stating such other facts as the requesting party may reasonably provide. The failure of a party to deliver any such certificate within such time shall be conclusive upon such party that this Agreement is unmodified and in full force and effect, all payments to such party are current, there are no defaults existing, and such other facts are true and correct.

11.5 Notices. All notices or other communications required or permitted by this Agreement, including payments to Grantor, shall be in writing and shall be deemed given when personally delivered to Grantor or Grantee, or in lieu of such personal service, five (5) days after deposit in the United States mail, first class, postage prepaid, certified; or the next business day if sent by reputable overnight courier, provided receipt is obtained and charges prepaid by the delivering party. Any notice shall be addressed as follows:

If to Grantor:	If to Grantee:
Hollingsworth & Vose Company Attn: Chief Legal Officer 112 Washington Street East Walpole, Massachusetts 02032	Boralex US Development LLC Attn: Hugues Girardin, Authorized Signatory Email: Hugues.girardin@boralex.com
With a copy to: Hollingsworth & Vose Company Attn: NY Plant Manager 3235 County Road 113 Greenwich, New York 12834	With a copy of: c/o Boralex, Inc. Attn: Vice President, Chief Legal Officer and Corporate Secretary 900, Boul. de Maisonneuve West, #2400 Montreal (Quebec) H3A 1A8 E-mail: legal.north.america@boralex.com

Any party may change its address for purposes of this paragraph by giving written notice of such change to the other parties in the manner provided in this paragraph.

11.6 Entire Agreement; Amendments. This Agreement constitutes the entire agreement between Grantor and Grantee respecting its subject matter. Any agreement, understanding or representation respecting the Property, this Agreement, or any other matter referenced herein not expressly set forth in this Agreement or a subsequent writing signed by both parties is null and void. This Agreement shall not be modified or amended except in a writing signed by both parties. No purported modifications or amendments, including without limitation any oral agreement (even if supported by new consideration), course of conduct or absence of a response to a unilateral communication, shall be binding on either party.

11.7 Successors and Assigns. This Agreement and the easements granted to Grantee hereunder shall burden the Property, shall be deemed an interest in and encumbrance upon the Property that shall run with the Property. This Agreement and the easements granted to Grantee hereunder shall inure to the benefit of and be binding upon Grantor and Grantee and any assignee, and their respective heirs, transferees, successors and assigns, and all persons claiming under them.

11.8 Legal Matters. This Agreement shall be governed by and interpreted in accordance with the laws of the State of New York. THE PARTIES' LIABILITY ARISING OUT OF OR RELATED TO THIS AGREEMENT UNDER ANY LEGAL THEORY, WHETHER CONTRACT, TORT, STRICT LIABILITY, STATUTORY OR OTHERWISE, SHALL BE LIMITED TO DIRECT DAMAGES, AND IN NO EVENT SHALL GRANTOR, GRANTEE, OR ANY OF THEIR RESPECTIVE OFFICERS, DIRECTORS, MEMBERS, PARTNERS, SHAREHOLDERS, EMPLOYEES, AGENTS OR AFFILIATES BE LIABLE FOR INDIRECT, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

11.9 Counterparts. This Agreement may be executed with counterpart signature pages and in duplicate originals, each of which shall be deemed an original, and all of which together shall constitute a single instrument. A signature on a copy of this Agreement received by either party by facsimile transmission or electronic signature is binding upon the other party as an original.

11.10 No Partnership. Nothing contained in this Agreement shall be construed to create an association, joint venture, trust or partnership covenant, obligation or liability on or with regard to any one or more of the parties to this Agreement.

11.11 Interpretation. The parties agree that the terms and provisions of this Agreement embody their mutual intent and that such terms and conditions are not to be construed more liberally in favor, nor more strictly against, either party. Grantor acknowledges that he/she/it has had the full opportunity to obtain independent legal representation or advice in connection with this Agreement.

11.12 Partial Invalidity. If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement or the application of such term or provision to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each remaining term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

11.13 Confidentiality. Grantor shall maintain in confidence (i) the amounts payable and terms in this Agreement, and any other information that is proprietary or that Grantee requests be held confidential, in each such case whether disclosed by Grantee or discovered by Grantor ("**Confidential Information**"). Excluded from the foregoing is any such information that is in the public domain by reason of prior publication through no act or omission of Grantor. Grantor may disclose Confidential Information to (a) Grantor's personal advisors, (b) any prospective purchaser of the Property or (c) pursuant to lawful process, subpoena or court order; so long as in making such disclosure Grantor advises the person receiving the Confidential Information of the confidentiality thereof and obtains the agreement of said person not to disclose such Confidential Information.

[signature pages to follow]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

Grantor
Hollingsworth & Vose Company

By: _______________
Name: Shawn Littrell
Title: Mill Manager NY Operations

STATE OF New York)
) SS.
COUNTY OF Washington)

On the 12 day of May, 2020 before me, the undersigned, personally appeared Shawn Littrell, Mill Manager NY Operations for Hollingsworth & Vose Company personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signatures(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Laurie Moore
Signature and Office of individual taking acknowledgment

LAURIE MOORE
Notary Public, State of New York
Registration No. 01MO6013082
Qualified in Washington County
Commission Expires Sept. 8, 2022

Grantee:

Boralex US Development LLC, a Delaware limited liability company, by its sole member Boralex US Energy Inc.

By: ______________________
Printed Name: Hugues Girardin
Title: Authorized Signatory

PROVINCE OR STATE OF QUEBEC IF)
) SS.
APPLICABLE, COUNTY OF CANADA)

On this __27__ day of __May_________, __2021_, before me personally appeared Hugues Girardin, an Authorized Signatory of Boralex US Energy Inc., a Delaware corporation, the sole member of Boralex US Development LLC, a Delaware limited liability company, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that (s)he executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Signature: Van [signature]

Name: VAN-ANH DANG VU

~~Notary Public, State of~~ __________

My commission expires: November 11, 2022

Van-Anh Dang Vu
228 725
COMMISSAIRE À L'ASSERMENTATION
Pour le Québec
Québec

(Official Stamp or Seal)

EXHIBIT A

TO ELECTRICAL EASEMENT AGREEMENT

Property Description

Tax Parcel Number: 228.-5-21.1

LEGAL DESCRIPTION OF PROPERTY:

PARCEL A

ALL THAT PARCEL of LAND situated in the Town of Easton, County of Washington and State of New York commencing at a point on the Northeasterly bounds of a parcel of land conveyed by Alfred C. Brown to New York Power and Light Corp. by deed dated 19 June 1931 and recorded in the Washington County Clerk's Office in Deed Book 203, Page 166 at the intersection of the said Northeasterly bounds with the Westerly bounds of a parcel of land conveyed as parcel No. 1 by Stanley J. Wiatrak and Mary Wiatrak, his wife, to John C. Meek by deed dated 24 September 1959 and recorded in the Washington County Clerk's Office in Deed Book 373, Page 210; thence along the West bounds of the said Meek Parcel N 22° 48' E, 1109.73 feet; thence S 84° 29' E, 1510.17 feet; thence S 13° 07' W, 2110.02 feet; thence S 31° 12'W 745.87 feet to lands of Niagara Mohawk Power Corp.; thence along same the following five courses; N 19° 19' W, 185.34 feet; N 18° 05' E, 717.50 feet; N 84° 25' W, 102.40 feet; S 18° 05' W, 564.50 feet; and S 70° 41' W, 407.50 feet to the Northeasterly bounds of the said New York Power Corp., lands; thence along same N 19° 19' W, 1716.22 feet to the place of beginning and containing 79.93 acres of land, more or less, and being a part of Parcels 1 & 2 in the above referenced Meek Parcel.

PARCEL B

ALL THAT PARCEL of LAND situated in the Town of Easton, County of Washington and State of New York commencing at a point on the Southwesterly bounds of a parcel of land conveyed by Alfred C. Brown to New York Power and Light Corp., by deed dated 16 April 1930 and recorded in the Washington County Clerk's Office in Deed Book 200, Page 338 at the intersection of the said southwesterly bounds with the Westerly bounds of a parcel of land conveyed as parcel No. 1 by Stanley J. Wiatrak and Mary Wiatrak, his wife, to John C. Meek by deed dated 24 September 1959 and recorded in the Washington County Clerk's Office in Deed Book 373, Page 210; thence along the bounds of the said Power Corporation S 19° 19' E, 373.33 feet; thence S 82° 24' W, 265.12 feet to the west bounds of the said Meek parcel; thence along same N 22° 48' E, 364.12 feet to the bounds of the said Power Corporation and place of beginning and containing 1.05 acres of land, more or less and being a part of the above referenced Parcel No. 1 in the Meek deed.

PARCEL C

ALL THAT PARCEL of LAND situated in the Town of Easton, County of Washington and State of New York commencing at a point on the Northeasterly bounds of the Old Schuylerville Road at the intersection of the said Northeasterly bounds with the Southwesterly bounds of a parcel of land conveyed by Alfred C. Brown to New York Power and Light Corporation by deed dated 16 April 1930 and recorded in the Washington County Clerk's Office in Deed Book 200, Page 338; thence along the said Highway N 35° 56' W 355.36 feet; thence N 13° 22' E, 188.18 feet to the Southwesterly bounds of lands of the New York Power & Light Corp.; thence along same S 19° 19' E. 498.91 feet to the bounds of the said highway and place of beginning and containing 0.58 acres of land, more or less.

The foregoing premises are located on the North side of the Old Schuylerville Road in the Town of Easton, County of Washington and State of New York and are a portion of the premises contained in the deed from Stanley J. Wiatrak and Mary Wiatrak, to John C. Meek, dated September 24, 1959 and recorded in the Washington County Clerk's Office September 28, 1959 in Liber 373 of Deeds at page 210.

The foregoing three parcels are in accordance with a boundary survey dated August 1973 of Andrew G. Stine, Land Surveyor, License Number 31745.

Also conveying grantors easements and rights-of-way with respect to ingress and egress over and through property and easements now owned by Niagara Mohawk Power Company with respect to premises lying to the NOrth of Old Schuylerville Road and retaining the rights-of-way pertaining to property retained by the grantor to the South of Old Schuylerville Road.

There are being presented for filing the following two survey maps:

1. Site Development Plan of Rist-Frost, Associates dated December 18, 1973 marked "Approved Subdivision Regulations Town of Easton Planning Board, Dated 2/26/74 File No. 5-74 by George C. Houser, Jr. Chairman, Dated Feb. 26, 1974.":

2. Boundary Line Survey dated August 1973 of Andrew G. Stine, Land Surveyor, License Number 31745, showing a 33-foot set off as required in connection with the approval of the Easton Town Planning Board.

EXHIBIT A-1

TO ACCESS AND ELECTRICAL EASEMENT AGREEMENT

Preliminary Sketch

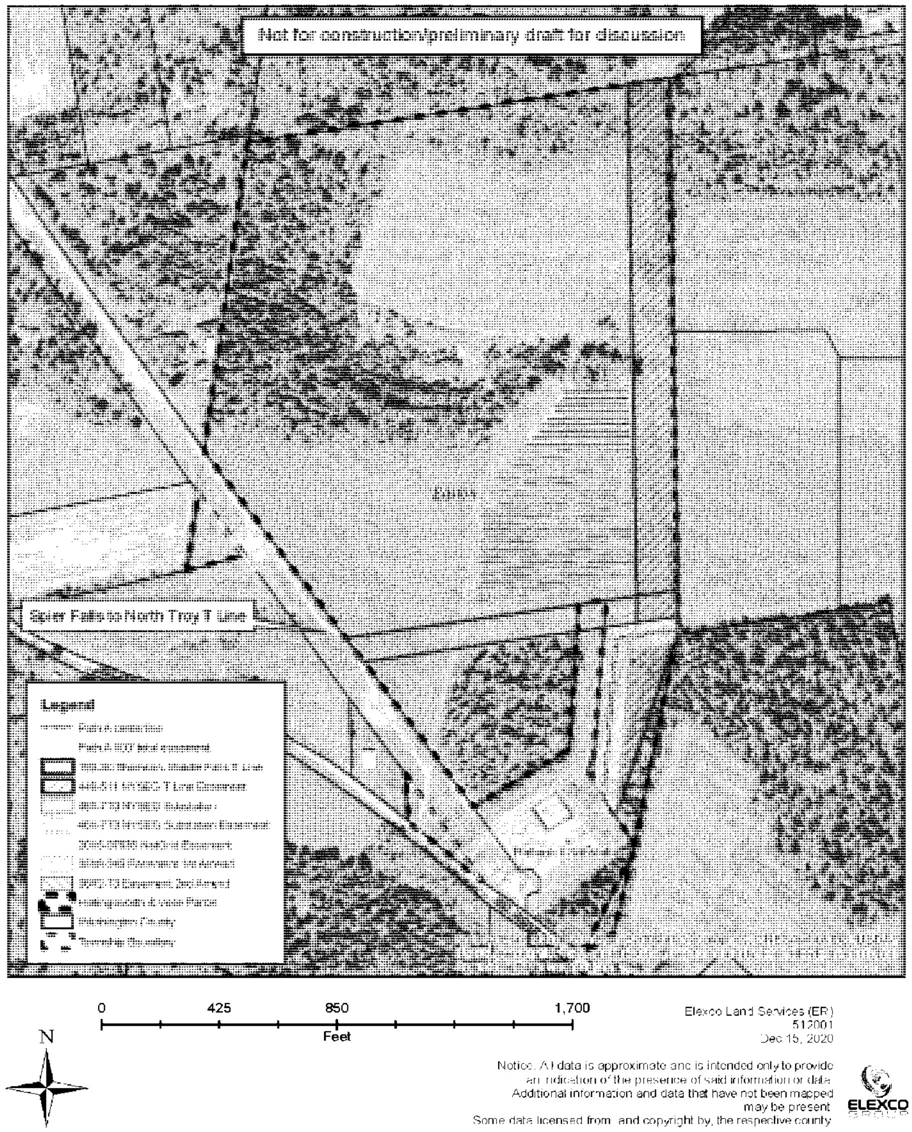


EXHIBIT A-2

TO ELECTRICAL EASEMENT AGREEMENT

AS BUILT SURVEY TO BE ATTACHED AT A LATER DATE

Appendix B – Site Location Map

Legend

Approximate Site Boundary

Approximate Project Area

Approximate Scale:

0 0.275 0.55 1.1 Miles

TETRA TECH

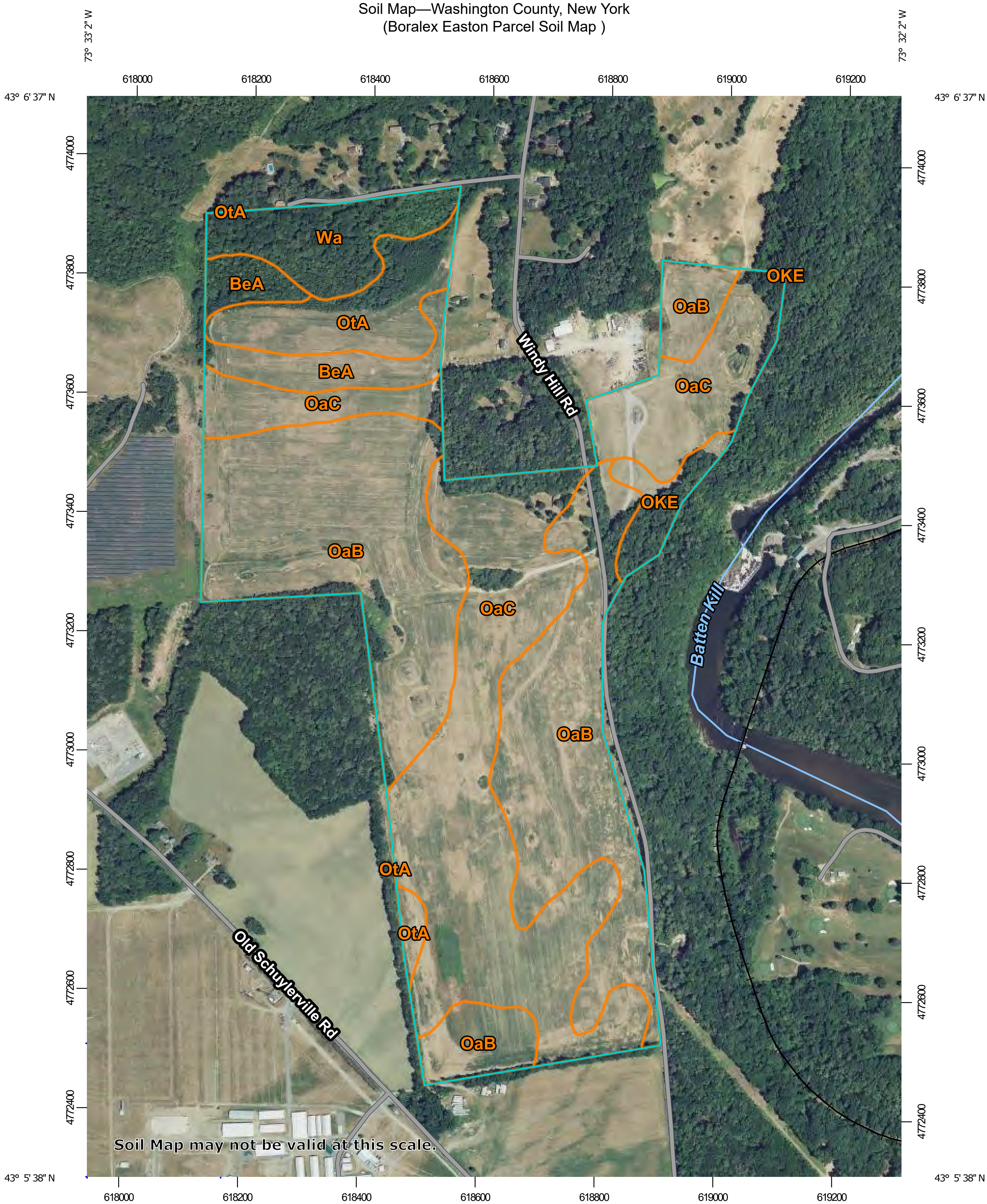
Site Location Map

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Appendix C – USDA NRCS Soil Mapping

Soil Map—Washington County, New York
(Boralex Easton Parcel Soil Map)



Map Scale: 1:8,830 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 100, 200, 400, 600

Feet: 0, 400, 800, 1600, 2400

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, New York
Survey Area Data: Version 22, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

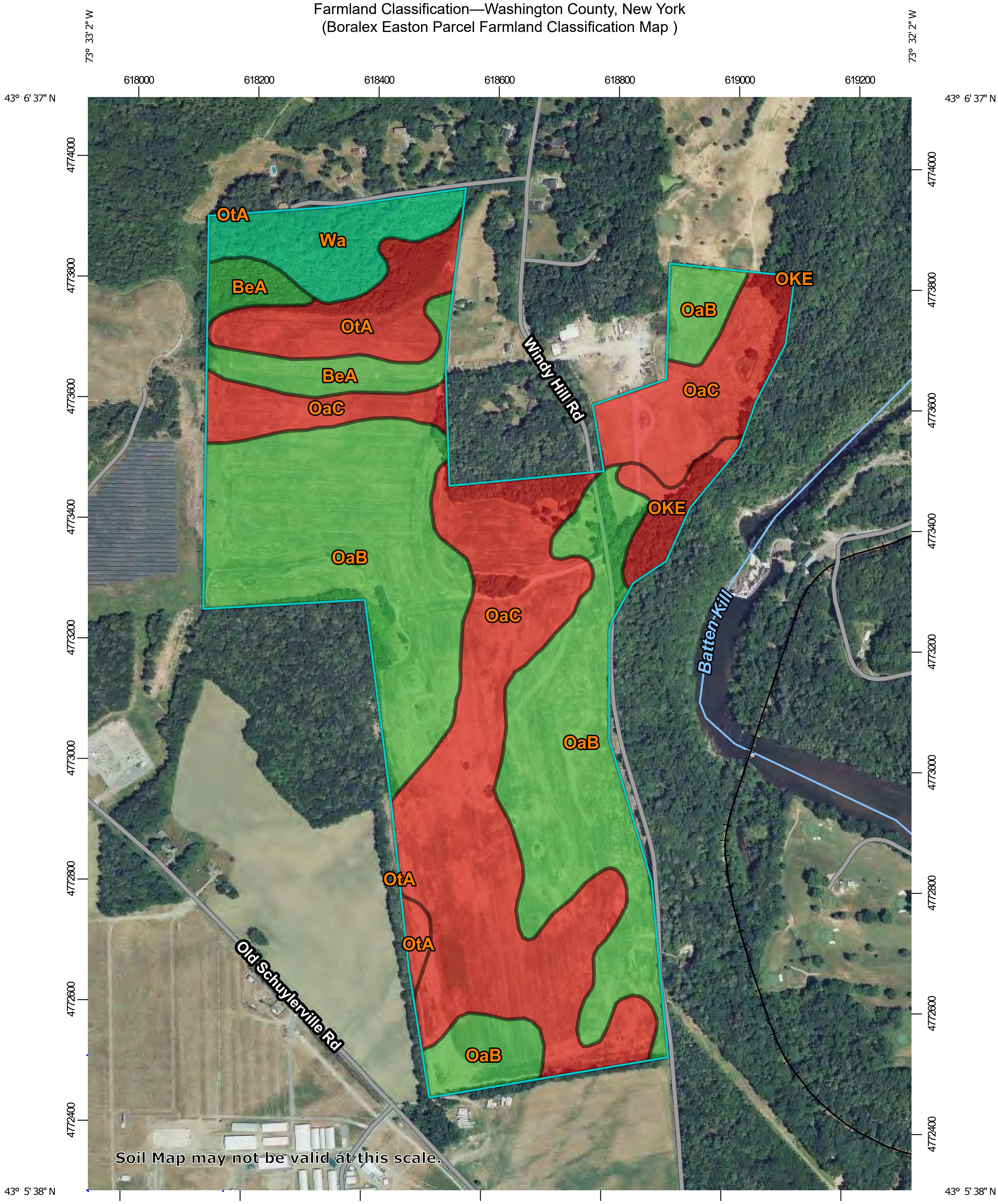
Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

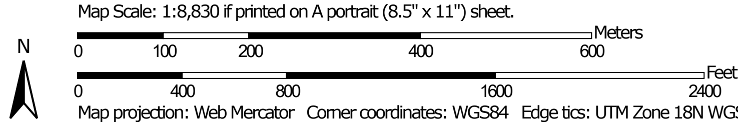
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeA	Belgrade silt loam, 0 to 2 percent slopes	9.1	5.0%
OaB	Oakville loamy fine sand, 0 to 5 percent slopes	78.7	43.1%
OaC	Oakville loamy fine sand, 5 to 15 percent slopes	67.3	36.8%
OKE	Oakville loamy fine sand, moderately steep and steep	4.3	2.4%
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes	12.7	6.9%
Wa	Wallington silt loam, sandy substratum	10.7	5.8%
Totals for Area of Interest		**182.8**	**100.0%**

Farmland Classification—Washington County, New York
(Boralex Easton Parcel Farmland Classification Map)



Map Scale: 1:8,830 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season

Farmland of statewide importance, if irrigated and drained

Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season

Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer

Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium

Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season

Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season

Farmland of statewide importance, if warm enough

Farmland of statewide importance, if thawed

Farmland of local importance

Farmland of local importance, if irrigated

Farmland of unique importance

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, New York
Survey Area Data: Version 22, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

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Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeA	Belgrade silt loam, 0 to 2 percent slopes	All areas are prime farmland	9.1	5.0%
OaB	Oakville loamy fine sand, 0 to 5 percent slopes	All areas are prime farmland	78.7	43.1%
OaC	Oakville loamy fine sand, 5 to 15 percent slopes	Not prime farmland	67.3	36.8%
OKE	Oakville loamy fine sand, moderately steep and steep	Not prime farmland	4.3	2.4%
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes	Not prime farmland	12.7	6.9%
Wa	Wallington silt loam, sandy substratum	Prime farmland if drained	10.7	5.8%
Totals for Area of Interest			**182.8**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix D – Jennings/Borrego Solar Conditions of Approval

Easton Town Planning Board
State Environmental Quality Review Determination

Michael Jennings/Borrego Solar Resubdivision #01-17
March 28, 2017

Project Number: #01-17 Location: 338 Windy Hill Road

Project Summary: Create 4 new leased lots for the purpose of creating 4 new solar farms

Reasons supporting this Determination:

WHEREAS, the Easton Town Planning Board has read and reviewed the application and accompanying EAF for approval of a major re subdivision plat #01-17, and

WHEREAS, the land to be subdivided lies within Agricultural District No.3 in the Town of Easton, and thereby qualifies as a Type 1 action under SEQR, and

WHEREAS, this will be the 3rd new lot on this property since 1972 and the creation of AG District No 2., and

WHEREAS, a waiver from the Easton Town Board to meet the Driveway Law was accepted, February 14, 2107, motion by Stevens, 2nd by Brand, 5 ayes

WHEREAS, a driveway plan was submitted, and

WHEREAS, a redacted lease agreement was submitted, and

WHEREAS, a Visual Impacts evaluation sheet and Long Form Part 2 has been completed, and

WHEREAS, on SEQR Part 2, Impact on land, it was noted that the land was a former mine pit, and the pit, will now be constructed with solar panels, and

WHEREAS, there are some visual impacts upon the scenic rural character of the area, they are off-set by the planting of trees and,

WHEREAS, the access will be and is proposed for use only as a driveway, and has been planned to meet the Driveway Law Standards for visibility, cutbacks, and drainage, and

WHEREAS, the density thresholds will not be exceeded, and

WHEREAS, the new Lots 2, 3, 4 and 5 are proposed are for the creation of solar farm ONLY and not proposed for development, and

WHEREAS, upon the completion of the lease, the deed and map shall reflect the dissolving of lots 2, 3, 4 and 5, and the parcel will go back to one lot, and

WHEREAS, the impacts on the water table and water quality have been considered, and are determined to be of no potential for impact, due to no building, and

WHEREAS, therefore, the approval of this subdivision will not result in the creation of a material conflict with the Town Comprehensive Plan or goals, nor impair aesthetic resources or existing community or neighborhood character, and

WHEREAS, the Easton Town Planning Board has determined that there are no other thresholds that will be exceeded, and

WHEREAS, therefore, be it resolved that the Easton Town Planning Board determines that this proposed action will not have a significant impact on the environment, and

WHEREAS, the Easton Town Planning Board therefor grants this proposed action a NEGATIVE DECLARATION, and

WHEREAS, correspondence from the NYS Department of Environmental Conservation dated February 27, 2017 has been received for this proposed resubdivision, and

WHEREAS, the soils shown in the Washington County Soils booklet are identified as Oakville, and

Resolution adopted March 28, 2017 on motion by Finan, 2nd by Sievers, 4 ayes, 1 nay-Squire has serious concerns with view scape.

Appendix E – Visual Simulations

VISUAL SIMULATIONS FOR EASTON SOLAR FARM

GREENWICH, NEW YORK

February 2023

KOP 2: WINDY HILL ROAD (A)

EXISTING CONDITION

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. A
Date of Photograph:	December 1, 2022
Time of Photograph:	15:05PM (EDT)
Latitude:	43.097665° N
Longitude:	-73.539016° W
Viewing Direction:	Northwest
Weather Condition:	Overcast

Image Data

KOP 2: WINDY HILL ROAD (A)

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. A
Date of Photograph:	December 1, 2022
Time of Photograph:	15:05PM (EDT)
Latitude:	43.097665° N
Longitude:	-73.539016° W
Viewing Direction:	Northwest
Weather Condition:	Overcast

SIMULATED CONDITION

Image Data

KOP 2: WINDY HILL ROAD (A)

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. A
Date of Photograph:	December 1, 2022
Time of Photograph:	15:05PM (EDT)
Latitude:	43.097665° N
Longitude:	-73.539016° W
Viewing Direction:	Northwest
Weather Condition:	Overcast

Image Data

SIMULATED CONDITION: With Plant Screening at installation

KOP 2: WINDY HILL ROAD (A)

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. A
Date of Photograph:	December 1, 2022
Time of Photograph:	15:05PM (EDT)
Latitude:	43.097665° N
Longitude:	-73.539016° W
Viewing Direction:	Northwest
Weather Condition:	Overcast

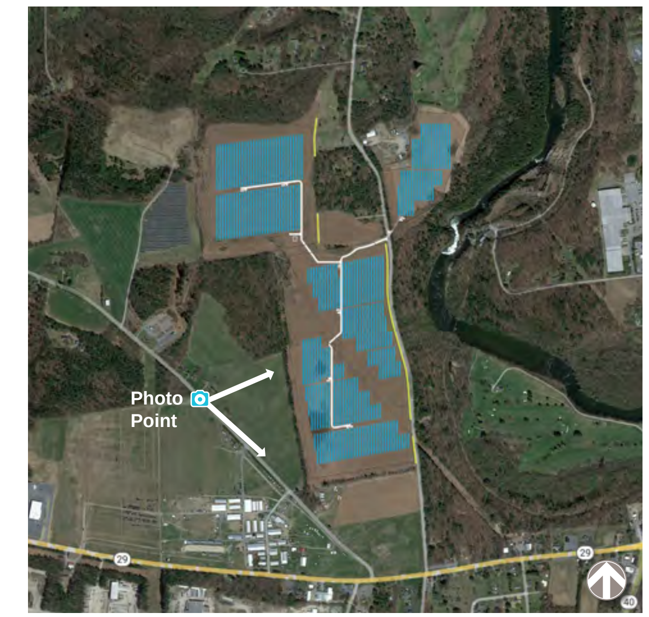
SIMULATED CONDITION: With Plant Screening at 5 year after installation

Image Data

KOP 3: OLD SCHUYLERVILLE RD NEAR RESIDENCES

EXISTING CONDITION

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.



Key Location Map

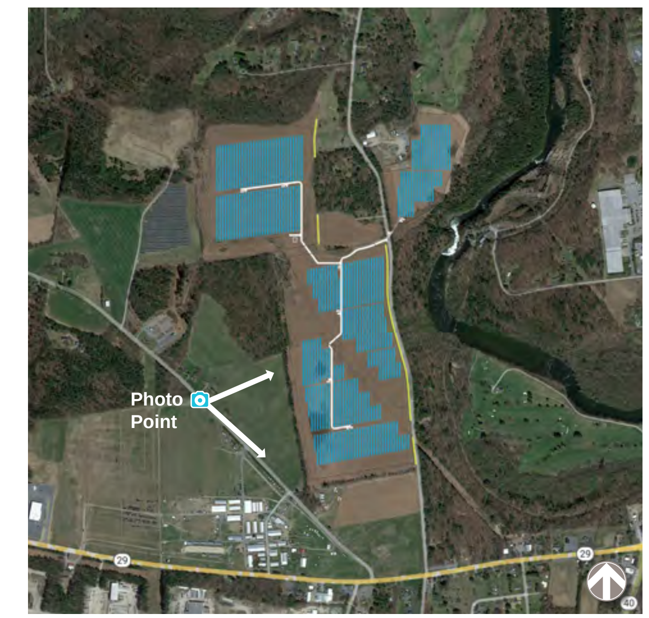
Viewpoint Location:	Old Schuylerville Rd
Date of Photograph:	December 1, 2022
Time of Photograph:	15:27PM (EDT)
Latitude:	43.098356° N
Longitude:	-73.548580° W
Viewing Direction:	East
Weather Condition:	Overcast

Image Data

KOP 3: OLD SCHUYLERVILLE RD NEAR RESIDENCES

SIMULATED CONDITION (Plant Screening is not visible from this viewpoint)

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.



Key Location Map

Viewpoint Location:	Old Schuylerville Rd
Date of Photograph:	December 1, 2022
Time of Photograph:	15:27PM (EDT)
Latitude:	43.098356° N
Longitude:	-73.548580° W
Viewing Direction:	East
Weather Condition:	Overcast

Image Data

KOP 4: WINDY HILL ROAD (B), STEFFEN RESIDENCE

EXISTING CONDITION

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. B
Date of Photograph:	December 1, 2022
Time of Photograph:	14:55PM (EDT)
Latitude:	43.106813° N
Longitude:	-73.541626° W
Viewing Direction:	West
Weather Condition:	Cloudy

Image Data

KOP 4: WINDY HILL ROAD (B), STEFFEN RESIDENCE

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. B
Date of Photograph:	December 1, 2022
Time of Photograph:	14:55PM (EDT)
Latitude:	43.106813° N
Longitude:	-73.541626° W
Viewing Direction:	West
Weather Condition:	Cloudy

SIMULATED CONDITION

Image Data

KOP 4: WINDY HILL ROAD (B), STEFFEN RESIDENCE

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

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Date of Photograph:	December 1, 2022
Time of Photograph:	14:55PM (EDT)
Latitude:	43.106813° N
Longitude:	-73.541626° W
Viewing Direction:	West
Weather Condition:	Cloudy

Image Data

SIMULATED CONDITION: With Plant Screening at installation

KOP 4: WINDY HILL ROAD (B), STEFFEN RESIDENCE

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Windy Hill rd. B
Date of Photograph:	December 1, 2022
Time of Photograph:	14:55PM (EDT)
Latitude:	43.106813° N
Longitude:	-73.541626° W
Viewing Direction:	West
Weather Condition:	Cloudy

SIMULATED CONDITION: With Plant Screening, 5 year after installation

Image Data

KOP 13: WASHINGTON COUNTY FAIR GROUNDS

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Washington County Fair Grounds
Date of Photograph:	December 1, 2022
Time of Photograph:	15:37PM (EDT)
Latitude:	43.093536° N
Longitude:	-73.542134° W
Viewing Direction:	East
Weather Condition:	Cloudy

EXISTING CONDITION

Image Data

KOP 13: WASHINGTON COUNTY FAIR GROUNDS

SIMULATED CONDITION

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

Viewpoint Location:	Washington County Fair Grounds
Date of Photograph:	December 1, 2022
Time of Photograph:	15:37PM (EDT)
Latitude:	43.093536° N
Longitude:	-73.542134° W
Viewing Direction:	East
Weather Condition:	Cloudy

Image Data

KOP 13: WASHINGTON COUNTY FAIR GROUNDS

Print Guide / Image Notes:
This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at 18 inches away from viewer's eyes. If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at 18 inches.

Key Location Map

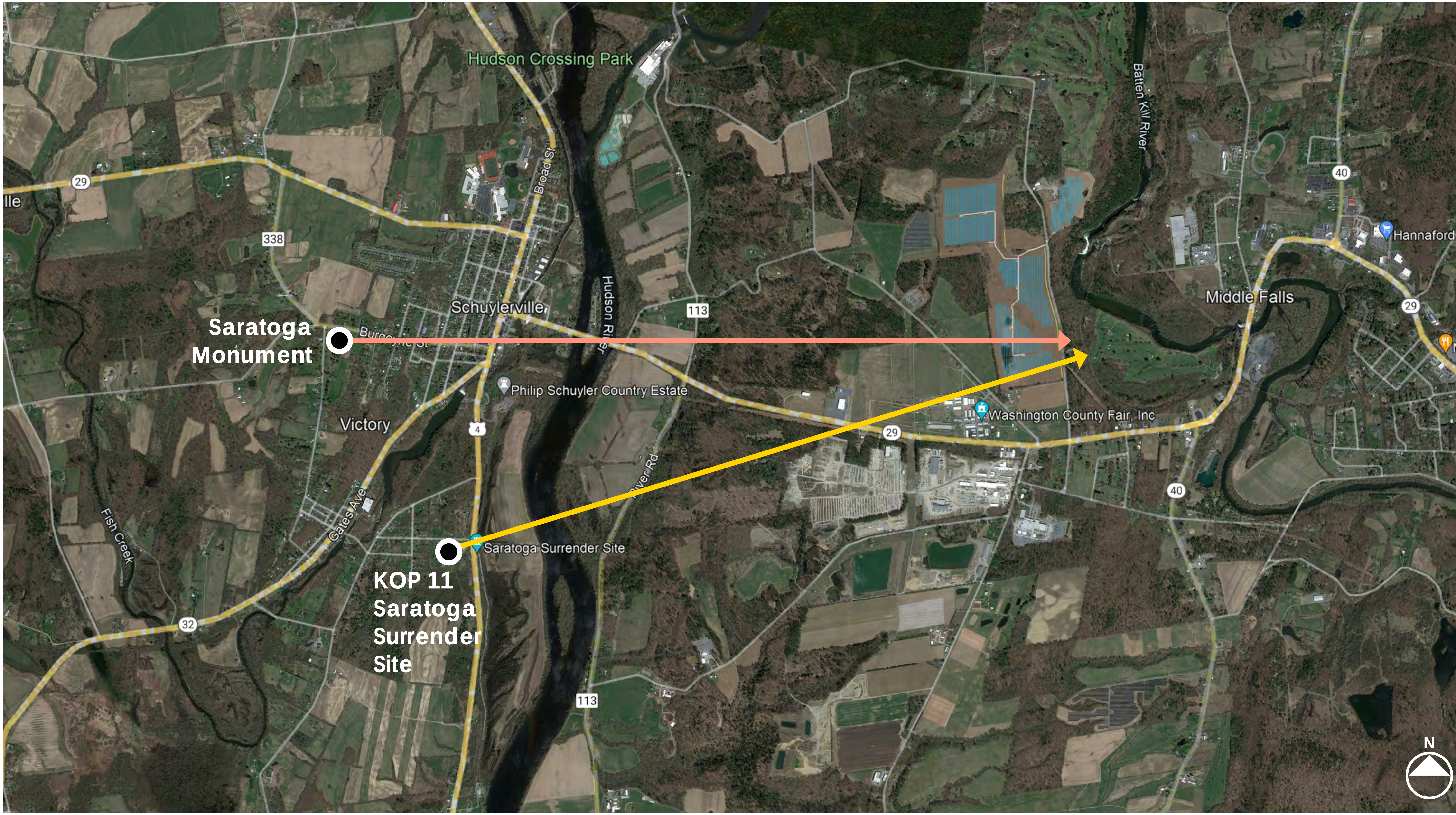
Viewpoint Location:	Washington County Fair Grounds
Date of Photograph:	December 1, 2022
Time of Photograph:	15:37PM (EDT)
Latitude:	43.093536° N
Longitude:	-73.542134° W
Viewing Direction:	East
Weather Condition:	Cloudy

SIMULATED CONDITION: With Plant Screening at installation

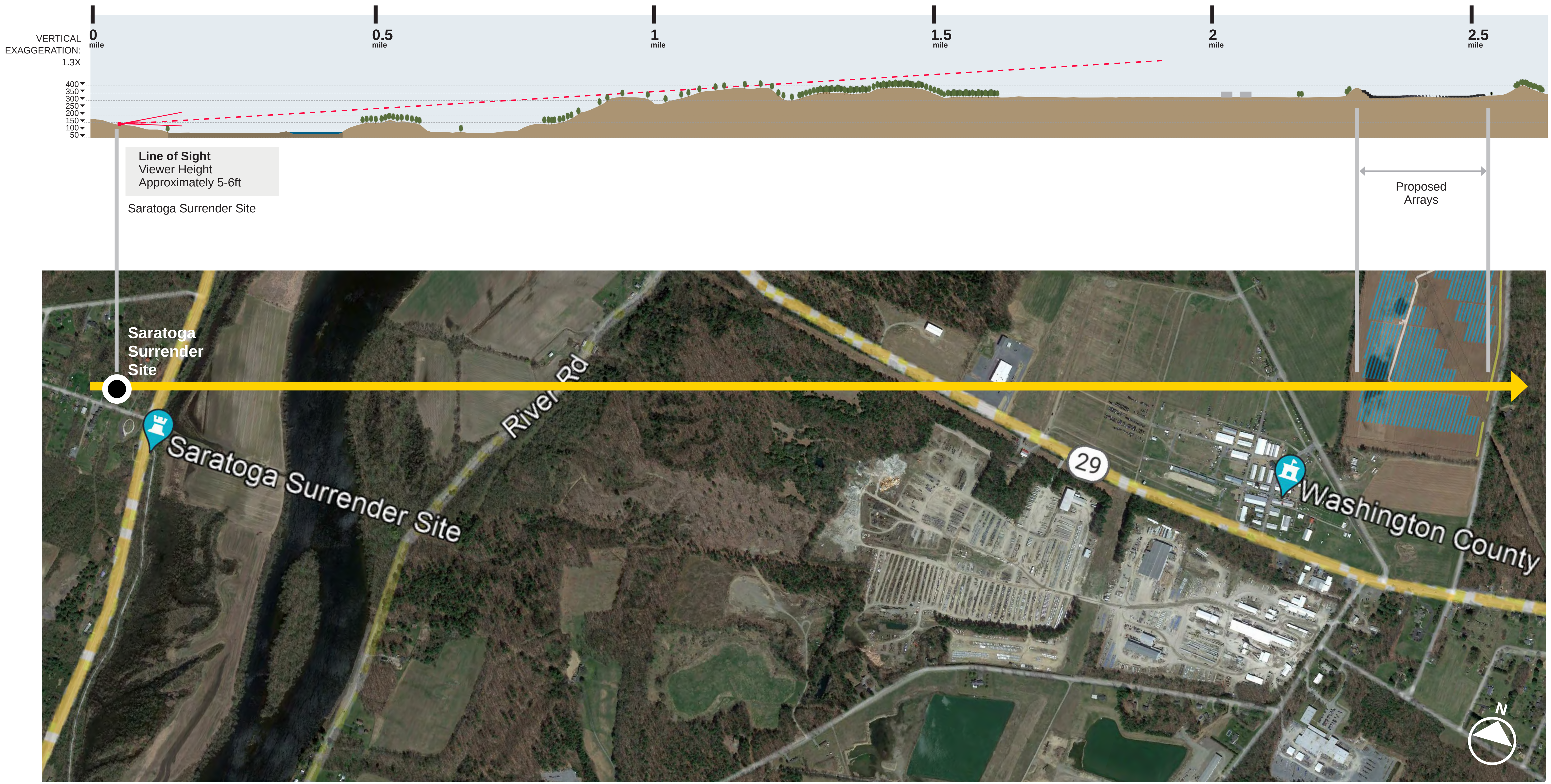
Image Data

Appendix F – Line of Sight Profiles

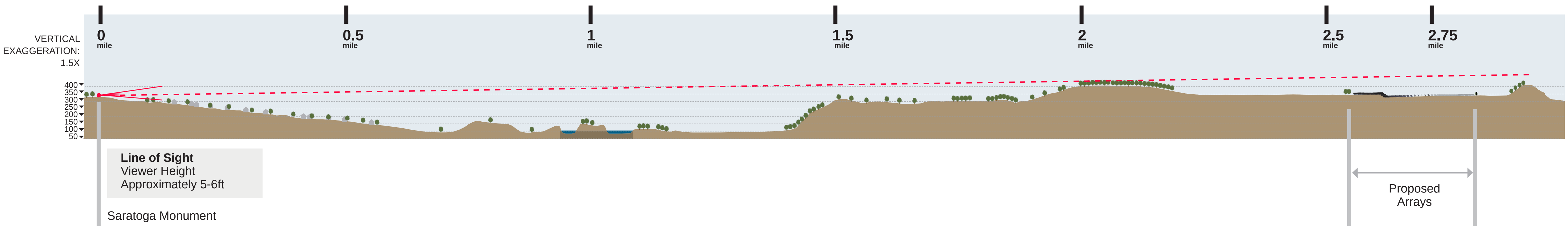
LINE OF SIGHT WITH KEY PROFILE



LINE-OF-SIGHT: KOP11 SARATOGA SURRENDER SITE



LINE-OF-SIGHT: SARATOGA MONUMENT



Appendix G – Operation & Maintenance Plan

Operation and Maintenance Plan

BORALEX

Easton Solar LLC

Solar Facility Operation and Maintenance Plan

2023

Prepared For:

Town of Easton

Table of Contents

Attachments

1. **NYSAGM Solar Guidelines**
2. **Preliminary Sheep Grazing Business Plan**

1. Introduction

Easton Solar, LLC (“Project Owner”), has prepared this operation and maintenance plan (“O&M Plan”) for the proposed installation of a 20 MW solar photovoltaic facility (“Solar Facility”) located at 431 Windy Hill Road, Greenwich, NY. This Plan has been developed to describe the activities that will be undertaken during operation and maintenance and are applicable to federal, state and local operating permits; and relevant commitments made by the Project Owner regarding vegetation management.

2. Operation and Maintenance Scope

The Project Owner will operate and maintain the Solar Facility in accordance with this Operation and Maintenance Scope ("O&M Scope"). While the Project Owner, through their Operation Manager and O&M Personnel, will be the primary party undertaking activities to fulfill this O&M Scope, subcontractors may also be used.

The O&M Scope will include essential works and services needed for the proper operation and maintenance of the Solar Facility and maintenance of the Project Site. The O&M Scope will include at least, but not be limited to, the following items:

- Compliance with the local, state and federal rules, codes, regulations and laws regarding the health and safety of any operation and maintenance work;
- Control and remote monitoring of the Solar Facility 24/365, including CCTV alarms and system failure monitors, and coordination with the local fire department and law enforcement;
- Maintain and operate all the infrastructure, equipment and facilities related to the Solar Facility required for proper operation;
- Provide reports to Operation Manager (monthly and yearly) of any major unexpected event;
- Administer and manage suppliers’ guarantees and warranties;
- Management and paperwork involved with third party site visits such as insurers and governmental agencies;
- Annual infrared thermography field test of modules and the electrical panels, for system performance monitoring;

- Spare parts stock management, including all associated costs such as insurance, security or transportation;
- Maintenance of access roads (including snow removal); and
- Vegetation maintenance.

3. Solar Facility Operation and Maintenance

Preventative and corrective maintenance programs will be designed to direct the O&M Scope. The O&M Scope of work will occur primarily during scheduled site visits, but unscheduled site visits may also be required.

3.1 Preventative and Corrective Maintenance

The preventive and corrective maintenance programs to maintain and operate the Solar Facility will include:

- Inspect, test, and clean equipment, including cleaning PV modules as required;
- Stock and manage all spare parts, supplies and consumables necessary for performance of the O&M Contract according to the Preventive and Corrective Maintenance Program and the manufacturer's user manual;
- Perform field tests and repair any potential failures that arise;
- Provide a monthly report to the Operation Manager including: energy estimate, energy production, onsite weather station information, preventive maintenance services performed, corrective maintenance services performed including spare parts and consumables used. Monthly reports will also include a description of:
    - Any material failure covered by any warranties, action plan and expected timeframe to cover the incident;
    - Any violation of any applicable law, applicable permit, or prudent industry practice due to the O&M practices, including environmental laws, rules, or regulations enforced by governmental agencies;
    - Any adverse events or conditions that may affect normal Solar Facility operation;
    - Record of all tests and reviews performed to maintain systems in compliance

with the manufacturer user manual, including name of company involved and nature of service.

- Administer and manage suppliers' guarantees and warranties, including without limitation any claims or remedies against any subcontractors or suppliers; and
- Comply with and maintain all permits required for operation and maintenance of the Solar Facility.

3.2 Scheduled Service Visits: Preventative Maintenance and Inspections

The majority of routine Solar Facility maintenance will occur during normal business hours (8:00 A.M. to 5:00 P.M. Eastern Standard Time), with some testing and preventive maintenance occurring overnight for safety and to limit downtime and outage requests with the Connecting Utility Owner ("National Grid").

Periodic maintenance will be performed each year, including:

- Monthly interim maintenance visits:
  - Solar Facility field inspection: visual, electrical and mechanical once per month, or as determined by Supplier's recommendations.
- Annual full maintenance visit, which may include:
  - System testing and verification of data acquisition systems, at least once per calendar year;
  - Module cleaning once a year, or as determined by Operation Manager;
  - Inverter cleaning and servicing to ensure proper operation;
  - Data acquisition system maintenance as needed; and
  - Scheduled maintenance and testing required to maintain all manufacturers' warranties on Solar Facility components.

3.3 Unscheduled Service Visits: Corrective Maintenance and Repairs

- Unscheduled maintenance visits will generally occur if:
- An "Emergency Situation" occurs that would endanger the health and/or safety of workers onsite, or to the surrounding area, or
- A "Major Disruption" to the Solar Facility occurs that degrades electricity generation that does not create an Emergency Situation, such as failure of Solar Facility components, vandalism, or fallen trees.

In the event of an Emergency Situation, the O&M Contractor and/or the Project Owner will contact the appropriate emergency response personnel (fire department, police department) to inform them of the emergency. The Connecting Utility Owner (National Grid) may also be contacted or may already be aware through remote monitoring of the system, depending on the type of emergency. The O&M Contractor, the Project Owner, and/or National Grid will dispatch appropriate personnel to the Project Site as soon as possible.

In the event of a Major Disruption, the O&M Contractor will schedule a corrective maintenance visit as soon as possible, making all reasonable efforts to schedule any such maintenance activities between 8:00 A.M and 5:00 P.M.

4. Project Site Maintenance

The O&M Contractor will also be responsible for maintaining the Project Site.

All routine Project Site maintenance will occur during normal business hours (8:00 A.M. and 5:00 P.M. Eastern Standard Time).

4.1 General Maintenance

The O&M Contractor will be responsible for maintaining the Project Site. This will include general maintenance tasks such as:

- access road maintenance, including snow removal; and
- maintenance of gates, fences, and any locks or other security devices used to secure these.

4.2 Vegetation Management

The O&M Personnel will be responsible for maintaining vegetation within the Solar Facility's lease area, both within and immediately outside the Project Site fence line. Sheep are intended to be utilized to graze within the array area (see “Harvesting, Trimming & Sheep Grazing” below). If mowing is utilized, it is anticipated mowing will occur two to three times per season.

Post-Construction Restoration

The Solar Facility is not in an Agricultural District and does not contain any of the Mineral Soil Group 1 to 4 soils. To address concerns regarding current agricultural use the Project Owner will adhere to the New York State Department of Agriculture and Markets Guidelines for Solar Energy Projects – Construction Mitigation for Agricultural Lands, 2019 (“NYSAGM Guidelines”, appended) during construction and post-construction restoration to the extent required. The O&M Scope will include the following provisions in the NYSAGM Guidelines:

- An Environmental Monitor (“EM”) will make site inspections to oversee the construction, restoration, and follow-up monitoring in agricultural lands[1] both within and outside the Solar Facility fence line;
- The EM will serve as the agricultural point of contact and will have a general understanding of normal agricultural practices, chemical application, agricultural equipment operation, fencing, soils, and use of a soil penetrometer for compaction testing and record keeping;
- The EM will be onsite whenever restoration work requiring or involving Ground Disturbance[2] is occurring on agricultural land and shall notify NYSAGM of Project activity;
- While onsite, the EM will ensure any stripped topsoil is stockpiled and managed in an appropriate location; and
- The EM will monitor the restoration activities with respect to timing, utilization of excess topsoil, and seeding.

Soil Sampling and Invasive Plant Surveys

In order to establish a benchmark for maintenance and restoration activities and to measure changes

[1] Agricultural land includes: lands where agriculture use will continue or resume following the completion of construction (typically those lands outside of the project’s fence); and lands where the proposed solar development will be returning to agricultural use upon decommissioning (typically those lands inside the project’s fence).

[2] Ground Disturbance includes any activity that contributes to measurable soil compaction, alters the soil profile or removes vegetative cover.

over the duration of the Project, the Project Owner intends to conduct the following prior to the start of construction[3] and every five years during operation:

- Soil compaction tests and soil sampling for pH, percent organic material, cation exchange capacity, Carbon (C), Nitrogen (N), Phosphorus/Phosphate (P), and Potassium/Potash (K); and
- Invasive plant species survey.[4]

Regenerative Soil Practices

During operation vegetation will be managed following regenerative soil practices with the aim of promoting soil health by reducing soil compaction, improving the water cycle, and increasing soil organic matter. Implementing these management practices over the life of the Project will also maximize carbon sequestration at the Project Site. The regenerative soil practices intended to be implemented at the Project Site include:

- Seeding the fenced area with a mix of no-tillage perennial grasses and pollinator-friendly plantings;
- Monitor restoration for one complete growing season following construction;
- If sheep are grazed onsite, ensuring vegetation is non-toxic for sheep;
- Limiting fertilizer and pesticide use, following the New York State Integrated Pest Management process (see below); and
- Maintaining a mowing/grazing schedule in order to keep the sod active and prevent oversized growth.

Integrated Pest Management

Weed and pest management will follow the New York State Integrated Pest Management ("IPM") process[5], which outlines the following steps:

1. Identify the weeds/pests;
2. Monitor the weeds/pest to understand patterns of the weeds/pests in the space;

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[3] NYSAGM Guidelines require soil samples prior to the stripping of any topsoil.

[5]https://cals.cornell.edu/new-york-state-integrated-pest-management.

3. Act – develop an action threshold at the first sign of pests to determine when pest control action should be taken;
4. Explore – consider and research all possible pest management strategies before taking action; and
5. Evaluate - consider how the IPM tools worked or how they could be improved for next time.

If, through following this process, the application of herbicide or pesticide becomes necessary to manage vegetation the Project Owner will provide the Town of Easton with the proposed herbicide/pesticide type, manufacturer, and application details prior to any application being made. Application of any herbicides or pesticides will only be done by licensed professionals with New York State Department of Environmental Conservation ("NYSDEC") certification.

Mowing, Trimming & Sheep Grazing

Maintenance of the ground cover within the fence will follow the mowing /grazing schedule set-up for the Project Site, weather depending. Existing and screening vegetation outside of the fence may also need to be trimmed or cut back to avoid shading of the solar arrays. Shading inspections will be done semi-annually and trimming will occur as needed.

In the event there is any damage to ground cover, vegetation, or vegetative screening due to maintenance activities (other than caused by normal maintenance activities), the affected areas and vegetation will be repaired in the next appropriate season such repair can be made.

Grazing of sheep will be used as the preferable method of maintaining vegetation, and as a way to continue agricultural activities at the Project Site. The Project Owner has engaged with a local sheep farm and is in preliminary discussions to contract their services during operation (see Preliminary Sheep Grazing Business Plan attached for reference). The Project Owner anticipates entering in to a contract for services once the Project has received its permits and prior to the start of construction. The contract for services will include a sheep grazing plan which may include the following items:

- Rotation rates;
- Forage availability;
- Forage testing protocols;
- Vegetation height requirements pre/post grazing;
- Acreage to be grazed;
- Duration of seasonal grazing; and
- Ongoing management considerations based on environmental conditions and water supply.

Reporting
Annual reports will be completed describing all vegetation maintenance activities completed in the previous year and outlining activities for the upcoming year. The Project Owner may provide annual vegetation maintenance reports to the Town of Easton, if requested.

NYSDAM SOLAR GUIDELINES

NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS

Guidelines for
Solar Energy Projects - Construction Mitigation for Agricultural Lands
(Revision 10/18/2019)

The following are guidelines for mitigating construction impacts on agricultural land during the following stages of a solar energy project: Construction, Post-Construction Restoration, Monitoring and Remediation, and Decommissioning. These guidelines apply to project areas subject to ground disturbance[1] within agricultural lands including:

- Lands where agriculture use will continue or resume following the completion of construction (typically those lands outside of the developed project's security fence);
- Lands where the proposed solar development will be returning to agricultural use upon decommissioning, (typically those lands inside of the developed project's security fence);
- Applicable Area under review pursuant to Public Service Law Article 10 Siting of Major Electric Facilities.

The Project Company will incorporate these Guidelines into the development plans and applications for permitting and approval for solar projects that impact agricultural lands. If the Environmental Monitor, hereafter referred to as EM, determines that there is any conflict between these Guidelines and the requirements for project construction that arise out of the project permitting process, the Project Company and its EM, will notify the New York State Department of Agriculture and Markets (NYSDAM), Division of Land and Water Resources, and seek a reasonable alternative.

Environmental Monitor (EM)

The Project Company (or its contractor) shall hire or designate an EM to oversee the construction, restoration and follow-up monitoring in agricultural areas. The EM shall be an individual with a confident understanding of normal agriculture practices[2] (such as cultivation, crop rotation, nutrient management, drainage (subsurface and/or surface), chemical application, agricultural equipment operation, fencing, soils, plant identification, etc.) and able to identify how the project may affect the site and the applicable agricultural practices. The EM should also have experience with or understanding of the use of a soil penetrometer for compaction testing and record keeping. The EM may serve dual inspection roles associated with other Project permits and/or construction duties, if the agricultural workload allows. The EM should be available to provide site-specific agricultural information as necessary for project development through field review and direct contact with both the affected farm operators and NYSDAM. The EM should maintain regular contact with appropriate onsite project construction supervision and inspectors throughout the construction phase. The EM should maintain regular contact with the affected farm operator(s) concerning agricultural land impacted, management matters pertinent to the agricultural operations and the site-specific implementation of agricultural resource mitigation measures. The EM will serve as the agricultural point of contact.

[1]Ground Disturbance is defined as an activity that contributes to measurable soil compaction, alters the soil profile or removes vegetative cover. Construction activities that utilize low ground pressure vehicles that do not result in a visible rut that alters soil compaction, is not considered a Ground Disturbance. Soil compaction should be tested using an appropriate soil penetrometer or other soil compaction measuring device. The soil compaction test results within the affected area will be compared with those of the adjacent unaffected portion of the agricultural area.

[2] An EM is not expected to have knowledge regarding all of the listed agricultural practices, but rather a general understanding such that the EM is able to perform the EM function.

1. For projects involving less than 50 acres of agricultural land within the limits of disturbance (LOD),[3] the EM shall be available for consultation and/or on-site whenever construction or restoration work that causes Ground Disturbance is occurring on agricultural land.

2. For projects involving 50 acres or more of agricultural land within the (LOD) (including projects involving the same parent company whether phased or contiguous projects), the EM shall be on site whenever construction or restoration work requiring or involving Ground Disturbance is occurring on agricultural land and shall notify NYSDAM of Project activity. The purpose of the agency coordination would be to assure that the mitigation measures of these guidelines are being met to the fullest extent practicable. The Project Company and the NYSDAM will agree to schedule inspections in a manner that avoids delay in the work. NYSDAM requires the opportunity to review and will approve the proposed EM based on qualifications or capacities.

Construction Requirements

- Before any topsoil is stripped, representative soil samples should be obtained from the areas to be disturbed. The soil sampling should be consistent with Cornell University's soil testing guidelines, and samples should be submitted to a laboratory for testing PH, percent organic material, cation exchange capacity, Phosphorus/Phosphate (P), and Potassium/Potash (K). The results are to establish a benchmark that the soil's PH, Nitrogen (N), Phosphorus/Phosphate (P), and Potassium/Potash (K) are to be measured against upon restoration. If soil sampling is not performed, fertilizer and lime application recommendations for disturbed areas can be found at https://www.agriculture.ny.gov/ap/agservices/Fertilizer_Lime_and_Seeding_Recommendations.pdf .

- Stripped topsoil should be stockpiled from work areas (e.g. parking areas, electric conductor trenches, along access roads, equipment pads) and kept separate from other excavated material (rock and/or sub-soil) until the completion of the facility for final restoration. For proper topsoil segregation, at least 25 feet of additional temporary workspace (ATWS) may be needed along "open-cut" underground utility trenches. All topsoil will be stockpiled as close as is reasonably practical to the area where stripped/removed and shall be used for restoration on that particular area. Any topsoil removed from permanently converted agricultural areas (e.g. permanent roads, etc.) should be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the project Limits of Disturbance (LOD) ; however not to significantly alter the hydrology of the area. Clearly designate topsoil stockpile areas and topsoil disposal areas in the field and on construction drawings; changes or additions to the designated stockpile areas may be needed based on field conditions in consultation with the EM. Sufficient LOD (as designated on the site plan or by the EM) area should be allotted to allow adequate access to the stockpile for topsoil replacement during restoration.

    - Topsoil stockpiles on agricultural areas left in place prior to October 31st should he seeded with Aroostook Winter Rye or equivalent at an application rate of three bushels (168 lbs.) per acre and mulched with straw mulch at rate of two to three bales per 1000 Sq. Ft.

    - Topsoil stockpiles left in place between October 31st and May 31st should be mulched with straw at a rate of two to three bales per 1000 Sq. Ft. to prevent soil loss.

- The surface of access roads located outside of the generation facility's security fence and constructed through agricultural fields shall be level with the adjacent field surface. If a level road design is not

[3] The Limits of Disturbance (LOD) includes all project related ground disturbances and all areas within the project's security fencing.

feasible, all access roads should be constructed to allow a farm crossing (for specific equipment and livestock) and to restore/ maintain original surface drainage patterns.

- Install culverts and/or waterbars to maintain or improve site specific natural drainage patterns.

- Do not allow vehicles or equipment outside the planned LOD without the EM seeking prior approval from the landowner (and/or agricultural producer), and associated permit amendments as necessary. Limit all vehicle and equipment traffic, parking, and material storage to the access road and/or designated work areas, such as laydown areas, with exception the use of low ground pressure equipment.[4] Where repeated temporary access is necessary across portions of agricultural areas outside of the security fence, preparation for such access should consist of either stripping / stockpiling all topsoil linearly along the access road, or the use of timber matting.

- Proposed permanent access should be established as soon as possible by removing topsoil according to the depth of topsoil as directed by the EM. Any extra topsoil removed from permanently converted areas (e.g. permanent roads, equipment pads, etc.) should be temporarily stockpiled and eventually spread evenly in adjacent agricultural areas within the project Limits of Disturbance (LOD); however not to significantly alter the hydrology of the area.

- When open-cut trenching is proposed, topsoil stripping is required from the work area adjacent to the trench (including segregated stockpile areas and equipment access). Trencher or road saw like equipment are not allowed for trench excavation in agricultural areas, as the equipment does not segregate topsoil from subsoil. Horizontal Directional Drilling (HDD) or equivalent installation that does not disrupt the soil profile, may limit agricultural ground disturbances. Any HDD drilling fluid inadvertently discharged must be removed from agricultural areas. Narrow open trenches less than 25 feet long involving a single directly buried conductor or conduit (as required) to connect short rows within the array, are exempt from topsoil segregation.

- Electric collection, communication and transmission lines installed above ground can create long term interference with mechanized farming on agricultural land. Thus, interconnect conductors outside of the security fence must be buried in agricultural fields wherever practicable. Where overhead utility lines are required, (including Point(s) of Interconnection) installation must be located outside field boundaries or along permanent access road(s) wherever possible. When overhead utilities must cross farmland, minimize agricultural impacts by using taller structures that provide longer spanning distances and locate poles on field edges to the greatest extent practicable.

- All buried utilities located **within** the generation facility's security fence must have a minimum depth of 18-inches of cover if buried in a conduit and a minimum depth of twenty-four inches of cover if directly buried (e.g. not routed in conduit).[5]

- The following requirements apply to all buried utilities located **outside** of the generation facility security fence:

  - In cropland, hayland, and improved pasture buried electric conductors must have a minimum depth of 48-inches of cover. In areas where the depth of soil over bedrock is less than 48-inches, the

[4] low ground pressure vehicles that do not result in a visible rut that alters soil compaction.

[5] Burial of electrical conductors located within the energy generation facility may be superseded by more stringent updated electrical code or applicable governing code.

electric conductors must be buried below the surface of the bedrock if friable/rippable, or as near as possible to the surface of the bedrock.

- In unimproved grazing areas or on land permanently devoted to pasture the minimum depth of cover must be 36-inches.

- Where electrical conductors are buried directly below the generation facility's access road or immediately adjacent (at road edge) to the access road, the minimum depth of cover must be 24-inches. Conductors must be close enough to the road edge as to be not subject to agricultural cultivation / sub-soiling.

- When buried utilities alter the natural stratification of soil horizons and natural soil drainage patterns, rectify the effects with measures such as subsurface intercept drain lines. Consult the local Soil and Water Conservation District concerning the type of intercept drain lines to install to prevent surface seeps and the seasonally prolonged saturation of the conductor installation zone and adjacent areas. Install and/or repair all drain lines according to Natural Resources Conservation Service conservation practice standards and specifications. Drain tile must meet or exceed the AASHTO M-252 specifications. Repair of subsurface drains tiles should be consistent with the NYSDAM's details for *"Repair of Severed Tile Line"* found in the pipeline drawing A-5 (http://www.agriculture.ny.gov/ap/agservices/Pipeline-Drawings.pdf).

- In pasture areas, it may be necessary to construct temporary fencing (in addition to the Project's permanent security fences) around work areas to prevent livestock access to active construction areas and areas undergoing restoration. For areas returning to pasture, temporary fencing will be required to delay the pasturing of livestock within the restored portion of the LOD until pasture areas are appropriately revegetated. Temporary fencing including the project's required temporary access for the associated fence installations should be included within the LOD as well as noted on the construction drawings. The Project Company will be responsible for maintaining the temporary fencing until the EM determines that the vegetation in the restored area is established and able to accommodate grazing. At such time, the Project Company should be responsible for removal of the temporary fences.

Post-Construction restoration requirements applicable to continued use agricultural areas that suffered ground disturbance due to construction activities (typically lands outside of the developed project's security fence).

- All construction debris in active agriculture areas including pieces of wire, bolts, and other unused metal objects will need to be removed and properly disposed of as soon as practical to prevent mixing with any topsoil.

- Excess concrete will not be buried or left on the surface in active agricultural areas. Concrete trucks will be washed outside of active agricultural areas. Remove all excess subsoil and rock unearthed from construction related activities occurring in areas intended to return to agricultural use. On-site disposal of such material is not permissible in active agricultural lands. Designated spoil disposal locations should be specified in the associated construction plans. If landowner agreements, LOD boundary, or Project's land use approvals do not allow for on-site disposal, material must be removed from the site.[6]

[6] Any permits necessary for disposal under local, State and/or federal laws and regulations must be obtained by the facility operator, with the cooperation of the landowner when required.

- Excess stripped topsoil shall not be utilized for fill within the project area. Any extra topsoil removed from permanently impacted areas (e.g. roads, equipment pads, etc.) should be evenly spread in adjacent agricultural project areas, however not to significantly alter the hydrology of the area.

- Regrade all access roads outside of the security fencing (as determined necessary by the EM), to allow for farm equipment crossing and restore original surface drainage patterns, or other drainage pattern incorporated into the design.

- Repair all surface or subsurface drainage structures damaged during construction as close to preconstruction conditions as possible, unless said structures are to be removed as part of the project design. Correct any surface or subsurface drainage problems resulting from construction of the solar energy project with the appropriate mitigation as determined by the Environmental Monitor, Soil and Water Conservation District and the Landowner.

- On agricultural land needing restoration because of ground disturbance, postpone any restoration practices until favorable (workable, relatively dry) topsoil/subsoil conditions exist. Restoration must not be conducted while soils are in a wet or plastic state of consistency. Stockpiled topsoil must not be regraded, and subsoil must not be decompacted until plasticity, as determined by the Atterberg field test, is adequately reduced. No permanent project restoration activities shall occur in agricultural areas between the months of October through May unless favorable soil moisture conditions exist.

- In all continued use agricultural land where the topsoil was stripped, subsoil decompaction shall be conducted prior to topsoil replacement. Following construction, all such areas will be decompacted to a depth of 18 inches with a tractor mounted deep ripper or heavy-duty chisel plow. Soil compaction results shall be no more than 250 pounds per square inch (PSI) throughout the decompacted 18 inches as measured with a soil penetrometer. Following decompaction, all rocks 4 inches and larger in size unearthed from decompaction will be removed from the surface of the subsoil prior to replacement of the topsoil. The topsoil will be replaced to original depth and the original contours will be reestablished where possible. All rocks 4 inches and larger from topsoil shall be removed from the surface of the topsoil. Subsoil decompaction and topsoil replacement must be avoided after October 1, unless approved on a site-specific basis by the landowner in consultation with NYSDAM. All parties involved must be cognizant that areas restored after October 1st may not obtain sufficient growth for stabilization[7] to prevent erosion over the winter months. If areas are to be restored after October 1st, necessary provisions must be made to prevent potential springtime erosion, as well as restore any eroded areas in the springtime, to establish proper growth. Excess stripped topsoil shall be evenly spread in the adjacent project areas, or adjacent agricultural areas (within the LOD), however, not to significantly alter the hydrology of the area.

- In all continued use agricultural areas where the topsoil was not stripped, including timber matted areas, the EM shall determine appropriate activities to return the area to agricultural use. These activities may include decompaction, rock removal, and revegetation. Soil compaction should be tested in the affected areas and the affected area's adjacent undisturbed areas using an appropriate soil penetrometer or other soil compaction measuring device as soon as soils achieve moisture equilibrium with adjacent unaffected areas. Compaction tests will be made at regular intervals of distance throughout the affected areas, including each soil type identified within the affected areas. Soil compaction results shall be measured with a soil penetrometer not exceeding more than 250 pounds per square inch (PSI), by

[7] Sufficient growth for stabilization should be determined by comparison with unaffected crop production. Annual crops restored after normal planting window (as determined by the landowner or associated producer) should be stabilized with Aroostook Winter Rye at the rate of 150/100 lbs. per acre (broad cast/drill seeder).

comparing probing depths of both the affected and unaffected areas. Where representative soil density of the affected area's collective depth measurements present compaction restrictions exceeding an acceptable deviation of no more than 20% from the adjacent undisturbed area's mean soil density, additional decompaction may be required to a depth of 18-inches with a tractor mounted deep ripper or heavy-duty chisel plow. Following decompaction, remove all rocks unearthed from decompaction activities 4 inches and larger in size from the surface. Revegetation shall be performed in accordance with the instructions below.

- Seed all agricultural areas from which the vegetation was removed or destroyed with the seed mix specified by the landowner/agriculture producer or as otherwise recommended in the Department's fertilizer, lime and seeding guideline: [https://www.agriculture.ny.gov/ap/agservices/Fertilizer_Lime_and_Seeding_Recommendations.pdf]. Soil amendments should be applied as necessary so that restored agricultural areas' soil properties, at minimum, reasonably reflect the pre-construction soil test results or as otherwise agreed to by the involved parties to ensure continued agricultural use. All parties must be cognizant that areas restored after October 1st may not obtain sufficient growth to prevent erosion over the winter months. If areas are to be restored after October 1st, necessary provisions must be made to restore and/or re-seed any eroded or poorly germinated areas in the springtime, to establish proper growth.

Monitoring and Remediation

Project Companies shall provide a monitoring and remediation period of one complete growing season following the date upon which the desired crop is planted. All projects subject to NYS Public Service Law Article 10 will provide a monitoring period of two complete growing seasons following the date upon which the project achieves the establishment of the desired crop.

On site monitoring shall be conducted seasonally at least three times during the growing season (Spring, Summer, Fall). Monitoring is required to identify any remaining impacts directly associated with the construction of the project on agricultural lands proposed to remain or resume agriculture production, including the effects of climatic cycles such as frost action, precipitation and growing seasons to occur, from which various monitoring observations can be made. NYSDAM expects the Project Company (or its contractor) to retain the EM for follow-up monitoring and remediation (as needed) in agricultural areas. Monitoring is limited to the restored agricultural area. Non-project related impacts affecting the restored project area will be discussed with NYSDAM staff and considered for omission from future monitoring and remediation. The EM is expected to record the following observations from onsite inspections:[8]

- **Topsoil Thickness and Trench Settling –** The EM observations may require small hand dug holes to observe the percentage of settled topsoil in areas where the topsoil was stripped, or trenching was performed without stripping topsoil. Observations concerning depth of topsoil deficiencies shall require further remediation by re-appropriating additional topsoil. Acceptable materials for remediation are: known areas of native excess topsoil (according to records of project specific excess topsoil disposal spread within the original LOD) or imported topsoil free of invasive species that is consistent with the quality of topsoil on the affected site.

[8] The activities that follow are not necessary for restored agricultural lands on which the farmer or landowner has commenced activities, including agricultural activities or other use that tend to reverse restoration or create conditions that would otherwise trigger restoration. Should NYSDAM contend upon inspection that conditions indicate that post-construction restoration activities were improperly performed or insufficient, NYSDAM may inform the project company and NYSERDA for further investigation and remediation.

- **Excessive Rock (>4-inches)** - Determined by a visual inspection of disturbed areas as compared to unaffected portions of the same field located outside the construction area. Observations concerning excess stone material in comparison to off-site conditions shall require further remediation including removal and disposal of all excess rocks and large stones.

- **Soil Compaction** - Project affected agricultural soils should be tested using an appropriate soil penetrometer or other soil compaction measuring device. Compaction tests will be made at regular intervals of distance throughout the access or work areas, including each soil type identified on the affected agricultural areas. Where representative soil density of the affected area exceeds the representative soil density of the unaffected areas, additional decompaction may be required. Consultation with NYSDAM staff and the agricultural producer(s) should be conducted prior to scheduling additional decompaction. If warranted, decompaction to a depth of 18-inches with a tractor mounted deep ripper or heavy-duty chisel plow. Restoration of displaced topsoil to original depth and re-establish original contours where possible. Decompaction deep shattering will be applied during periods of relatively low soil moisture to ensure the desired mitigation and to prevent additional soil compaction. Oversized stone/rock (Four-inches) material that is uplifted/unearthed to the surface as a result of the deep shattering will be removed.

- **Drainage –** The EM shall visually inspect the restored agricultural areas in search of pervasive stunted crop growth due to seasonal saturation, not previously experienced at the site and not resulting from the agricultural producer's irrigation management or due to excessive rainfall. Identified areas of stunted crop growth shall be compared to the nearest undisturbed adjacent areas under a substantially equivalent terrain and crop management plan. Drainage observations should be evaluated to determine if the project affected surface or sub-surface drainage during construction or restoration. Project caused drainage issues affecting or likely to reduce crop productivity of the adjacent areas will have to be remediated via a positive surface drainage, sub-surface drainage repair or an equivalent.

- **Agriculture Fencing and Gates –** The EM shall inspect Project associated fencing and gates (installed, altered or repaired) within the Project's LOD associated with agricultural activities for function and longevity. The Project Company is responsible during the Monitoring and Remediation Phase for maintaining the integrity of Project associated fencing and gates.

The Project Company (or its contractor) shall consolidate each applicable growing season's observations into an annual report during the monitoring period and shall be provided upon request to NYSDAM. Annual reports should include date stamped photographs illustrating crop growth in comparison with unaffected portions the agricultural areas.

The EM shall record observations of the establishment of the desired crop and subsequent crop productivity within restored agricultural areas and shall be evaluated by comparing its productivity to that of the nearest adjacent undisturbed agricultural land of similar crop type within the same field. If a decline in crop productivity is apparent the Project Company as well as other appropriate parties must determine whether the decline is due to project activities. If project activities are determined to be the primary detrimental factor, the project EM will notify NYSDAM concerning unsuccessful restoration and to potentially schedule a NYSDAM staff field visit. If project restoration is determined to be insufficient, the Project Company will develop a plan for appropriate rehabilitation measures to be implemented. NYSDAM staff will review and approve said plan prior to implementation. Additional monitoring may be required depending on additional restoration activities needed.

The Project Company is not responsible for site conditions and/or potential damages attributable to the agricultural producer's land use management or others' land use management.

Decommissioning

If the operation of the generation facility is permanently discontinued, remove all above ground structures (including panels, racking, signage, equipment pad, security fencing) and underground utilities if less than 48-inches deep. All concrete piers, footers, or other supports must be removed to a minimum depth of 48-inches below the soil surface. The following requirements apply to electric conductors located at the respective range of depth below the surface:

- 48-inches plus: All underground electric conduits and direct buried conductors may be abandoned in place. Applicable conduit risers must be removed, and abandoned conduit must be sealed or capped to avoid a potential to direct subsurface drainage onto neighboring land uses.

- Less than 48-inches: All underground direct buried electric conductors and conductors in conduit and associated conduit with less than 48-inches of cover must be removed, by means of causing the least amount of disturbance as possible.

Access roads in agricultural areas must be removed, unless otherwise specified by the landowner. If access is to be removed, topsoil will have to be returned from recorded project excess native topsoil disposal areas, if present, or imported topsoil free of invasive species that is consistent with the quality of topsoil on the affected site. Restore all areas intended for agricultural production, according to recommendations by the current landowner or leasing agricultural producer, and as required by any applicable permit, the Soil and Water Conservation District, and NYSDAM.

Monitoring and restoration requirements in accordance to the prior sections of these guidelines, will be required for the decommissioning restoration. NYSDAM requires notice before the Project Company undertakes decommissioning.

PRELIMINARY SHEEP GRAZING BUSINESS PLAN

[redacted] FARM
STRATEGIC BUSINESS PLAN 2023

Introduction
I am [redacted], the founder of [redacted] Farm. I began my solo venture into agricultural entrepreneurship in 2017. While the primary location of [redacted] Farm is [redacted], Greenwich, NY, the operation consists of an abundance of added rental ground for pasture use. Chances are you have seen some of our livestock in the Greenwich area at one time or another. I would encourage you to take note of my phone number in the event that any future opportunities for business may arise – [redacted]. I genuinely appreciate your interest in the operation, growth and continued development of [redacted] Farm.

Mission Statement
The mission of [redacted] Farm is to pasture raise livestock while being conscious of the impact to the land. With mindful planning and preparation, we have steadily improved the conditions of both our owned and rented ground, as well as our animals. [redacted] Farm will always have a reputation for quality – in practices and as a livestock producer.

Business Goals
The following list of goals includes some items we have already achieved in addition to future ambitions.

- Steady growth without unnecessary debt
- Strict adherence to no-chemical farming
- Add rental ground for grazing
- Variance of markets to establish presence and provide economic diversity
- Increase livestock relative to increased pasture acreage
- Build soil health (thereby maximizing animal nutrition)
- Explore potential value-added opportunities
- Continually explore ways to minimize inputs without disrupting quality
- Market locally as much as possible

Income Projections for 2023 (based off average of prior years)
Production lamb sales: $42,825.00
Backgrounding/pre-conditioning lamb sales: $10,000.00
Custom grazing income: $18,400.00
Hired flock management: $19,500.00
Solar vegetation management: $65,000.00
Pasture egg production: $49,275.00
Projected Total Gross Income: $205,000.00

Expense Projections for 2023 (based off average of prior years)
Equipment: $9,000.00
Hay: $13,500.00
Land Rental: $5,000.00
Poultry Feed: $20,800.00
Land Maintenance: $5,000.00
Fuel: $4,000.00
Trucking: $2,800.00
Vet & Health: $1,900.00
Insurance: $2,000.00
Projected Total Gross Expenses: $64,000.00

Projected Net Income for 2023:
$141,000.00

Comprehensive Summary
As an established agricultural producer in multiple markets, [redacted] Farm exhibits stability and is positioned for continued growth. With well-regulated expenses and increasing market demand, a decrease in profitability is certainly not anticipated. A solid routine and years of experience have elevated the overall efficiency of our operation and afforded us extra time to pursue favorable business relationships. [redacted] Farm will remain a solid name in the ag sector for years to come.

Appendix H – Decommissioning Plan

DECOMMISSIONING AND SITE RESTORATION PLAN

FOR

Easton Solar Farm

Town of Easton, Washington County, New York

Owner/Operator:
Easton Solar LLC
39 Hudson Falls Road
South Glens Falls, NY 12803

Published: February 2023
Revised: July 6, 2023

Prepared By:

FISHER ASSOCIATES

FA Job Number: 210030

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II. EXECUTIVE SUMMARY

Fisher Associates on behalf of Boralex (the Applicant), has prepared this Decommissioning and Site Restoration Plan (the Plan) to outline the methods and means to decommission the Easton Solar Farm (the Project) at the end of the Project's useful life, and steps to restore the site following decommissioning. In addition, this Plan identifies the methodologies to be utilized to mitigate potential impacts resulting from the decommissioning process. All decommissioning and restoration activities will adhere to the requirements of appropriate governing authorities, and will be in accordance with all applicable federal, state, and local permits and decommissioning agreements. The Applicant will obtain any federal, state, or local permits required for site restoration prior to commencement of decommissioning.

The Project is anticipated to have a lifespan between thirty (30) to forty (40) years. At the end of its life, the Plan assumes the Project will be decommissioned and restored to pre-construction conditions. Decommissioning will include the removal of all solar panels, ground supports & racking, electrical wiring, ancillary equipment, inverters, substation, buildings, fencing, access drives and all foundations. The trigger event to start decommissioning is if the Project has not generated electricity for a period of twelve (12) continuous months, unless the twelve (12) month period of no energy output is the result of: (a) a repair, restoration, or improvement to an integral part of the Project that affects the generation of electricity and that repair, restoration or improvement is being diligently pursued by the applicant, or (b) a Force Majeure event. Force majeure includes, but is not limited to, causes or events beyond the reasonable control of, and without the fault or negligence of the Party claiming Force Majeure, including acts of God, sudden actions of the elements such as floods, earthquakes, hurricanes, or tornados; sabotage; terrorism; war; riots; explosion; blockades; and/or insurrection.

The decommissioning activities will generally occur in the following order:

- Dismantling of solar arrays including the panels, racks, and supports.
- Removal of electrical cables, inverter units, substation & other miscellaneous electrical equipment.
- Dismantling and removal of all gates and fencing.
- Removal of inverter pads, substation pads and foundations.
- Removal of any temporary laydown areas or stockpiles followed by the removal of all access/ service roads.
- Site restoration including restoration to pre-construction contours (where required in wetland and stream areas and certain agricultural areas) and reseeding and revegetation of disturbed areas.

Prior to commencing decommissioning, the Project will be shut down, de-energized and disconnected from the transmission line tie-in at the Project's collection substation. The Applicant will coordinate de-energization with National Grid and NYISO to ensure no disruption occurs to the overall electrical system. Additionally, the Applicant will give landowners and the Town of

Easton at least six weeks advance notice prior to commencing decommissioning activities.

During decommissioning, all aboveground components such as buildings, structures, and equipment will be removed. Similarly, the foundations will be removed to a depth of at least three (3) feet below the ground surface in non-agricultural areas and to at least four (4) feet below ground surface in agricultural areas. Once the foundations are removed to the specified depth, they will be filled with compacted fill material and covered with a minimum of four (4) inches of topsoil. Access roads that are no longer necessary, as agreed upon with the landowners, will be removed. The disturbed land areas will then be graded and reseeded according to the outlined plan.

The PV solar modules, including all support components and pile or helical screw foundations, will be dismantled and either reused at another solar energy facility, recycled as scrap metal, or transported to an approved waste disposal facility. Concrete pads and foundations can be broken and crushed into recycled aggregate for potential reuse as road base material. After fluid removal, inverters, and electrical control devices will be reused at other facilities or recycled as scrap metal, while electrical equipment will either be recycled or transported to an approved facility for disposal. Underground electrical and fiber optic control cables will be de-energized. Underground cables that are greater than three (3) feet deep in non-agricultural areas or four (4) feet deep in agricultural areas will be left in-place. All cables do not contain materials that are harmful to the environment.

The goal of decommissioning is the safe and efficient removal of all solar energy facility components and restoration of the site to conditions as close to pre-construction characteristics as possible including restoration of native vegetation, wildlife habitat and/ or land use including agricultural crops. The same safety protocols that are used during construction will be used during decommissioning, ensuring the continued health and safety of the workers and nearby residents.

The major activities associated with decommissioning the Project are summarized in the following sections. The decommissioning process is expected to take approximately nine (9) months. This time includes the two-week site mobilization, site preparation and erosion and sedimentation (E&S) installation per NYDOT current standards; sixteen-to-twenty-week period to disassemble solar panels; an additional eight weeks to remove and reclaim panel foundations and access roads; and eight weeks to remove and reclaim the substation, any temporary laydown areas, and finally demobilize from the site. During disassembly and removal of the solar panels, and for up to four weeks thereafter, restoration work including grading, backfilling, erosion control activity, reseeding and revegetation will take place. Restoration monitoring will be conducted by a third-party environmental monitor and is anticipated to take place for several months thereafter and additional restoration work will be conducted on an “as needed” basis.

All decommissioning activities will be completed within one year of decommissioning initiation unless otherwise approved by the Towns where the Project components are located.

III. REMOVAL OF FACILITIES

A. Solar Panels

Panel disassembly would mostly be accomplished by hand. Components would be removed in reverse-order of installation; PV modules shall be disconnected from the electrical cables then removed, followed by the mounting racks, then support post sections. The racking system and framework may need to be cut to fit into dump trucks and a post -puller should be used to remove ground posts. The components would then be loaded either directly onto trucks for removal from the Project or placed onto the ground for eventual loading onto trucks.

Some of the solar panels may be reused at another solar facility or resold on the market. If the solar panel components cannot be reused on another project, they would be disassembled and sold for scrap. Any hazardous material such as lubricants will be removed and disposed of in accordance with all applicable federal, state, and local standards.

B. Electrical Collection System

Before removal, ensure that all electric cables are disconnected and confirmed to be inactive. The collection system's cables are generally installed underground, with a minimum depth of three feet below grade and four feet below grade in agricultural areas. In agricultural areas, any collection cables less than four feet deep will be removed, while in other areas, cables less than three feet deep will be removed, specifically in areas where they connect to junction boxes or transformers. Cables buried deeper than four feet below grade will be left in place following the NYSDAM 2019 Guidelines for Solar Energy Projects - Construction Mitigation for Agricultural Lands, which helps reduce environmental and soil impacts in agriculture. All cables are free from environmentally harmful materials.

The cable installation includes a warning tape and tracer cable to alert anyone digging in the vicinity of the cables. Use of tractors or backhoes may be utilized to pull out all surface/ subsurface cables that meet the previously discussed depth criteria. Wherever cables are to be removed, they will be removed by excavating a narrow trench above the cable to expose it, then cut and loaded onto trucks for removal from the site. Each trench will then be backfilled with native soil and restored as laid out in this Plan.

C. Junction Boxes

Junction box removal would consist of disconnecting the junction box from the electrical system. All high value sellable components, such as the copper conductor materials, would be removed and the remaining cables, equipment, and other components would be salvaged for scrap value.

After removal of the junction boxes, the remaining concrete pad would be removed, and the area restored to pre-existing conditions and contours consistent with this Plan.

D. Substation and Inverters

The substation shall be shut down and disconnected from the transmission line. The transmission line shall be grounded via portable grounds at multiple points, disconnected, and then removed. Disassembly of the remainder of the substation would include the removal of the steel, transformers, panel board/switches, conductors, and other materials that could be reconditioned and reused or sold as scrap material. Prior to removal the transformer(s) shall be drained of any oils or lubricants and properly disposed of in accordance with the Facility's SPCC Plan and in accordance with all applicable federal, state, and local standards. All underground electrical collector cables coming to the substation from the surrounding inverters would be cut at the perimeter of the substation; with any cables less than three feet (four feet in agricultural areas) deep removed in accordance with Section B above.

Any hazardous material such as oil or lubricants will be removed in accordance with applicable federal, state, and local requirements. All concrete foundations would be removed to a minimum depth of three feet (four feet in agricultural areas) and holes backfilled with suitable material in controlled, compacted lifts, (see section E below for details). Fencing around the substation will be broken down and removed. The gravel or aggregate surface at the substation will be loaded onto trucks and removed for sale, reuse, or disposal.

All inverters will be disconnected from all wiring and removed entirely. The inverters may be sold, reused, or properly disposed of offsite. Any foundations or gravel from the pads should then be broken down and/or removed in the same fashion as the substation. Upon completion of the removal of the inverters, the site will be restored consistent with this Plan.

E. Foundations

Once the panels, inverters, and substation are removed, excavation around the foundations to expose the concrete would be accomplished using traditional excavation equipment. The foundations will be excavated to a depth sufficient to ensure complete removal of the anchor bolts, rebar, conduits, cables, and concrete to a depth of at least three feet below grade in non-agricultural areas and four feet in agricultural areas. Shallow concrete foundations will be removed by mechanical means and properly disposed of or reused offsite. After removal of the foundations are completed, the area would be backfilled with clean, compatible fill, compacted to a density similar to the surrounding in-situ material. All disturbed areas will receive a minimum of four inches of topsoil and be restored to pre-existing conditions, and contours will be restored consistent with this Plan. This may require minor site grading.

F. Access Roads

To perform the decommissioning activities, it may be necessary to temporarily return some roads to the geometry and width used during the construction stage. This allows for more efficient equipment or machinery access to the panel sites and facilitates for the removal of the larger, heavier components. Prior to the start of decommissioning activities, a road survey should be conducted on the public roads to be used for hauling activities, to verify their conditions. During the decommissioning process the roads may be temporarily improved to allow safe access for clearing, backfill, decompaction, and grading activities.

Once decommissioning has been completed, temporary improvements would be removed and restored. Access roads would be removed unless the landowner(s) request that they remain in place. Removal of access roads includes the removal of all gravel or aggregate, removal of any geotextile fabric, removal of any culverts and/or drainage infrastructure that are no longer necessary, and de-compaction of the road subgrade and shoulder. These areas would then be backfilled with clean, compatible fill compacted to a density similar to the surrounding in-situ material and the area graded to restore preconstruction drainage patterns. Finally, topsoil will be spread across all restored access drives and reseeded in accordance with Section III of this Plan.

G. Transmission Line

The transmission line from the substation to the interconnect has only overhead portions. All poles, high voltage lines, and overhead conductors running from the old substation location to the point of interconnection (POI) would be de-energized, removed, and scrapped, and any holes left by the poles being removed would be backfilled and compacted back to existing grade. The POI along the transmission line and the transmission line itself will remain as this infrastructure is owned and operated by National Grid.

H. Temporary Decommissioning Facilities

With the scale of the decommissioning construction, it may be necessary to establish temporary facilities to assist project decommissioning. The personnel involved in the decommissioning of the project may require temporary office space, parking, equipment storage and/or material storage. Because there are no buildings onsite, a trailer complex and laydown yard(s) may need to be established, like those used during the initial construction phase. Additional temporary facilities may also include portable bathrooms, air conditioning or heating equipment and potable water. Temporary parking will be provided along with security during standard non-working hours. Upon completion of all site decommissioning activities these temporary facilities shall be restored in accordance with this Plan.

IV. SITE RESTORATION

A. Reseeding, Revegetation, Backfilling and Grading

Site restoration activities will begin as soon as the decommissioning activities are completed in a certain area and will be ongoing until the entire site is restored. This work includes reseeding and revegetation using appropriate seed mixes with native species in non-agricultural areas. Revegetating these areas through planting or seeding is important to prevent the establishment of invasive or undesirable species in an area, and to ensure slope stability. If mulch is used, the mulch will be certified weed-free prior to use in restoration efforts. Seed mixtures may be considered in consultation with NY State Department of Agriculture and Markets (NYSDAM) and/or the New York State Department of Environmental Conservation (NYSDEC) for use during restoration of the Project.

In agricultural areas, site restoration will be coordinated with the landowner(s) to plant desired crops in these locations. To the fullest extent possible, topsoil will be removed and stockpiled separately from other materials near the area it was retrieved from. The salvaged topsoil will be protected from erosion per current state standards and temporarily stabilized as necessary. In areas where the solar farm infrastructure or decommissioning activities have compacted the topsoil surface, the soil will be de-compacted to match the density and consistency of the surrounding undisturbed ground. Stockpiled topsoil will be replaced over the disturbed areas to the original depth, if possible, but to a minimum depth of four (4”) inches. Final grading of the topsoil will be performed to reestablish the predevelopment surface contours, conditions, and drainage patterns whenever possible. Stabilization measures will be implemented and maintained in and around disturbed areas to control erosion and sedimentation during final site reclamation.

The topsoil in all disturbed soil surfaces within agricultural fields will be de-compacted to a minimum depth of 18 inches and restored to a density and depth consistent with the surrounding fields. In all areas, restoration may include leveling, terracing, mulching, and other necessary steps to prevent soil erosion, to ensure establishment of suitable plants, and to control noxious weeds. Reseeding will occur over all disturbed surfaces. Appropriate restoration methods and best management practices (BMPs) to minimize wind and water erosion will be implemented to maximize revegetation success.

In areas with steeper slopes, additional measures may be taken to reduce soil movement or erosion. These measures may include placing the topsoil in a roughened condition to prevent erosion, scarification, tilling or harrowing of the area to a depth of approximately three to four inches below ground surface to create a suitable seedbed, or dozer-tracked perpendicular to the slope to provide suitable areas for seed germination. In some instances, a mulch with tackifier additives for hydroseed applications or a biodegradable fiber additive may be introduced to the seed mixture to increase soil stability and reduce the likelihood of erosion.

Grading activities will be limited to the minimal area required to complete site restoration of disturbed areas using standard construction earth moving equipment. Disturbed areas will be graded and contoured to restore the predevelopment topography and drainage of the site.

B. Erosion Control and Stormwater Management

Erosion control and stormwater management during site reclamation will utilize similar measures and best management practices (BMPs) outlined in the Project’s stormwater pollution prevention plan (SWPPP) and in accordance with New York State Standards and Specifications for Erosion and Sediment Control to maintain downstream water quality and manage stormwater runoff during decommissioning of the Project. Selection and design of erosion and sedimentation controls will account for climate, topography, in-situ soil characteristics, and vegetative cover to be re-established at the site following decommissioning.

Silt fences, compost filter sock, straw bales, erosion control blankets (ECB) or other similar stormwater structures will be installed as needed to control soil erosion and sedimentation while re-establishing vegetation in seeded areas. Reclamation will likely include the installation of several temporary stormwater control structures (i.e., berms, hay bales, blankets, etc.) to prevent soil erosion and/ or sedimentation during the seeding and re-establishment of native grasses across the Project. In large areas where soil disturbance from restoration grading will occur, such as the substation, it may be necessary to install a temporary sediment trap or rock filter structure to ensure sediment is controlled and treated onsite. These BMP's should be designed and constructed in accordance with the most current NYS Stormwater Management Design Manual and be maintained until they are no longer necessary, then restored. Note these are installed as a secondary control method as explained below.

Erosion controls are the primary method for preventing impacts to stormwater runoff quality while sediment controls provide a secondary method of protection to erosion controls by facilitating containment of any sediment in stormwater runoff. Upon completion of restoration and reclamation activities, any temporary structures, silt fences or barriers used as E&S controls during decommissioning, restoration, and reseeding activities will be removed when they are no longer needed. Perimeter BMP's should only be removed once the upstream area it captures is stabilized and well-established vegetative growth is present. In addition, native grasses will be utilized to stabilize disturbed areas and control stormwater runoff during site reclamation.

Commonly used BMPs that may be employed at the site during reclamation will include:

- Minimize disturbed areas and protect natural features of the site (native soil, topsoil, vegetation, topography, and drainage areas);
- Control stormwater runoff and flow to and from disturbed areas;
- Stabilize soils as quickly as possible following disturbance of work areas, including temporary stockpiles;
- Protect slopes and exposed soil;
- Protect culvert inlets, drainage structures and nearby surface water features;
- Establish perimeter controls, such as silt fence or compost filter sock, around disturbed areas;
- Retain and stockpile soils onsite to prevent unnecessary transport and additional truck traffic;
- Maintain BMP controls including maintenance during, decommissioning, restoration, and re-establishment of vegetation; and
- Use native soils, and appropriate seed mixtures for revegetation activities.

C. Debris, Waste Management and Cleanup

During the decommissioning phase, the majority of materials associated with the panels will be recycled or reused. If a material, or portion such as copper wiring, can be recycled it should be. Another example of material reuse could be donating the gravel from the reclaimed access drives to a local Town or Municipality. All remaining materials that cannot be reused or repurposed will be removed and disposed of at an off-site approved waste facility. The Applicant shall be responsible for hauling, recycling, and disposing all decommissioned site materials at an approved off-site facility.

Trash containers and regular site cleanup will be provided for proper disposal of solid waste during decommissioning and site reclamation work. Trash and bulk waste collection areas with containers will be designated at the site and materials will be recycled when possible. Litter and assorted trash will be removed daily from decommissioning areas and placed in designated trash receptacles for disposal. Trash, debris, and any other solid waste generated during decommissioning will be minimized and managed in accordance with applicable regulations and routinely removed from the site, as needed. Solid and industrial wastes may also result from the dismantling of the solar energy equipment, specifically around the substation with the concentration of large equipment. Any fluids generated during the decommissioning, requiring disposal will be collected in appropriate containers and transported to an approved facility for reclamation or disposal.

Following final site cleanup, seeding, and revegetation vegetative debris (woody and non- woody) should be chipped and reused as mulch over reclaimed areas.

D. Restoration Monitoring

Following completion of site reclamation, routine monitoring will be implemented at the site to ensure native vegetation, habitats, and pre-development land use is re-established in the areas disturbed during decommissioning of the Project until the site has successfully been restored to pre-construction conditions. Inspection frequency should occur in accordance with the most current NYSDEC guidelines.

Reseeded areas will be routinely monitored and inspected to ensure stormwater controls remain effective while vegetation is re-established for slope stability and erosion control. Any areas with concentrated erosion or slips appear should be immediately repaired, restabilized and reseeded. Once dense, well-established vegetation occurs (80% growth), any perimeter silt fences, or barriers used to stabilize the site are no longer needed and will be removed.

Invasive species and noxious weeds will be managed during the site restoration monitoring period to prevent the establishment of them within reclaimed areas. To prevent the establishment and spread of noxious and invasive weeds in reseeded areas, routine monitoring and control of weeds will be implemented at the site following completion of decommissioning activities. Vegetation control may include manual, mechanical, biological, or chemical treatment methods. If herbicides are deemed necessary, the application and use will comply with applicable federal, state, and county guidelines. As a pre-construction compliance filing, the Applicant will develop an invasive species control plan which will describe monitoring requirements and the specific period where monitoring of invasive plant species will occur.

E. Notifications & Approval

Prior to the start of decommissioning activities, the Applicant will send notifications to all stakeholders and surrounding landowners providing the nature of the proposed decommissioning work at the Project. Federal, state, county, and local authorities will be notified, as needed, to discuss the potential approvals required to engage in decommissioning activities. These types of permits typically may include site plan or jurisdictional road use permits. Towns will be notified at least six weeks prior to commencement of any decommissioning activities.

Well-planned and well-managed solar energy facilities are not expected to pose environmental risks at the time of decommissioning. Decommissioning of the Project will follow the standards and best practices at the time of decommissioning. The Applicant will ensure that any required permits and agreements are obtained prior to decommissioning.

This decommissioning Plan will be revised and updated as necessary in the future to ensure that changes in technology and site restoration methods are taken into consideration.

V. SUMMARY OF DECOMMISSIONING COSTS

Decommissioning costs are based on the engineer's experience & regional construction prices at the time of this report for 20 MW AC Solar farm. The total cost of the Project decommissioning is estimated to be *$1,436,958* and includes all overhead, contractor margin, expenses, fees, transportation, equipment, and labor to restore the Project to the most practical extent back to predevelopment conditions. It assumes the work will be led and performed by an experienced contractor, of the Applicant's choosing, who possess regional expertise and familiarity in solar farm decommissioning work. The cost estimate also includes an additional 15% contingency to offset any unforeseen expenses.

As noted previously, certain equipment from decommissioning the Project could potentially be sold for reuse following decommissioning of the Project. In addition, the panels, cables, substation, and other equipment containing large quantities of steel, copper, and other valuable commodities with significant scrap value. It is assumed that the sale of scrap material can offset a portion of the cost of decommissioning. The Applicant will demonstrate financial assurance and if not will provide a performance bond, surety bond, or letter of credit prior to the start of decommissioning. The table on the following pages summarizes decommissioning costs. As the project nears the end of its projected lifecycle the cost summary should be updated to reflect current market rates and prices, including updated methods and technology used in similar decommissioning practices.

Table 1 Panel and Racks Disassembly and Removal Costs

Cost Item	Unit Price	Unit	Quantity	Total Cost ($)
Removal of PV Modules, Racking, Trackers, & Posts	$15.62	Each	57,096	$ 891,800
Wire/Cables/Conductor <36"-48" bgs	$8,000.00	Lump	1	$ 8,000
Removal of Concrete Foundations	$34.61	CF	300	$ 10,400
Fence Removal, Including Posts	$1.24	LF	18,894	$ 23,400
Site Restoration & Revegetation**	$460.84	AC	110	$ 50,700
Remove Gravel Access Roads	$5.28	CY	2,876	$ 15,200
Transformer, Panelboards, and Switchboards	$50,000.00	Lump	1	$ 50,000
Mobilization & Demobilization	$200,000.00	Lump	1	$ 200,000
			Subtotal	**$ 1,249,500**
			15% Contingency	**$ 187,425**
			Total	**$ 1,436,925**

Table 2 Resale Values

Cost Item	Unit Price	Unit	Quantity	Total Cost ($)
Module Resale*	$0.0775	Watts	22,381,632	$ 1,734,600
Racking, Tracking, and Posts	$220.00	Metric Tons	716	$ 157,600
			Subtotal	**$ 1,892,200**
			10% Approximate Damage Rate and waste	**$ 189,220**
			Total	**$ 1,702,980**

*Assumes output capacity of modules and resale price at the time of Decommissioning is 80% of their initial output. Unit price estimated from previously approved projects.

** Includes Mechanical seeding, labor, and materials such as seed, topsoil, and stormwater mitigation. Ongoing monitoring is not included.

1. Actual decommissioning costs may change based on the final construction drawings. Decommissioning estimate must be revise every 5 years.

2. Quantities and costs were estimated using engineering judgment, DOT Pay Item Catalog, previously approved project pricing, previously approved agency pricing, RSMeans data, USGS "Mineral Commodity Summaries, current market prices, and current dollar value. Costs include associated equipment fees, material disposal costs, and labor.

Appendix I – SHPO "No Impact" Letter

August 24, 2021

Jodi Hunt
Project Manager
Tetra Tech
3136 South Winton Road Suite 303
Rochester, NY 14623

Re: ERDA
Boralex Easton Solar/20 MW/85 of 200 Acres
Town of Easton, Washington County, NY
21PR01628

Dear Jodi Hunt:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Roger Daniel Mackay

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

Appendix J – Aquatic Resource Report

Aquatic Resource Report
Easton Solar Project
Town of Easton, Washington County, New York

PRESENTED TO	PREPARED BY
Boralex **39 Hudson Falls Road** **South Glen Falls, NY 12803**	**Tetra Tech, Inc.** **3136 South Winton Road** **Suite 303** **Rochester, NY 14623**

October 29, 2021

Contents

1.0 INTRODUCTION

Boralex is proposing to develop Easton Solar Project within multiple agricultural fields into a 20-megawatt (MW) alternating current (AC) solar energy generation facility (the Project). The proposed Project is located off Windy Hill Road within the Town of Easton, Washington County, New York (Figure 1).

At Boralex's request, Tetra Tech has performed a wetland and waterbody survey within the Project area on April 19 and 20, and September 30, 2021. During the survey, field conditions were typical for late April and Fall in Central New York.

1.1 Project Description

The Project is located on multiple active agricultural fields (row cropping/hayfields) that would be leased to Boralex for the purposes of operating the renewable energy facility. The Project is located west of Windy Hill Rd with a small parcel to the east of Windy Hill Road, Town of Easton, Washington County, New York, less than two miles northwest of the center of the Village of Greenwich (Figure 1). The Project Area is comprised of several tax parcels making up approximately 193.8 acres. The actual solar array area will be smaller than the total Project Area, with the provided Project boundary from Boralex being approximately 114.4 acres.

1.2 General Environmental Setting and Current Land Use

Generally, the project infrastructure will be located within agricultural fields, with wooded areas located along the edges of the Project Area. Slopes are moderate to flat, rolling hills with steeper slopes to the northeast. Aerial photography is found in Figure 2.

1.2.1 Physiography, Geology, and Geomorphology

The Project is located within the Ridge and Valley Province within the Appalachian Highlands Region (NPS 2021). The Project is atop a series of gently, rolling hills ranging in elevation from approximately 340 feet along the eastern boundary (Windy Hill Road) to approximately 300 ft along the northwestern boundary. The surface is underlain by Poultney Formation and Canajoharie Shales (USGS 2021).

1.2.2 Hydrology

The Project has one river system, Batten Kill, east of the of the Project boundary. The Project area drains to the north or east eventually into Batten Kill. According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, entirety of the Project area is located within the Zone X: *areas of minimal flooding.*

1.2.3 Soils

The Project area consists of many soil series, with the Oakville (160.1 acres) soil series being the dominant soil types. The Oakville series consists of very deep, excessively drained sandy soils with a very dark surface layer. These soils formed in water-sorted or wind-sorted sandy deposits. These soils are on nearly level to steep areas and are on deltas and terraces. Moisture capacity is very low to moderate, being droughty with water draining through them very rapidly (MLRA 1975). No soils identified on site are identified as hydric soils (USDA NRCS 2021). Table 1 below provides a complete list of soil series mapped by the United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) in the Project. Figure 3 depicts the distribution of soil series within the Project area. Figure 4 is NRCS Hydric Soil Map that provides additional soil information.

Table 1: USDA NRCS Soil Series Mapped in the Project

Map Unit	Map Unit Name	Hydric Rating	Total Acres	% of Total
BeA	Belgrade silt loam, 0 to 2 percent slopes	0	9.4	4.8%
OaB	Oakville loamy fine sand, 0 to 5 percent slopes	0	85.9	44.3%
OaC	Oakville loamy fine sand, 5 to 15 percent slopes	0	66.0	34.1%
OKE	Oakville loamy fine sand, moderately steep and steep	0	8.2	4.2%
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes	10	13.5	7.0%
Wa	Wallington silt loam, sandy substratum	5	10.7	5.5%
Totals for Project			**193.8**	**100.0 %**

1.2.4 Vegetation

The Project mainly consists of agricultural land with patches of old field and forest along the western and eastern boundaries respectively. The active row cropping was primarily corn (*Zea mays*). Upland forests found along the northern boundary were dominated by bigtooth aspen (*Populus grandidentata*), paper birch (*Betula papyrifera*), Japanese honeysuckle (*Lonicera japonica*), and garlic mustard (*Alliaria petiolata*).

Wetlands onsite were palustrine open water (POW) and palustrine forested (PFO). The POW had limited vegetation which included duckweed (*Lemna minor*), common reed (*Phragmites australis*), and narrowleaf cattail (*Typha angustifolia*). The other forested wetland was dominated by red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), green ash (*Fraxinus pennsylvanica*), silky dogwood (*Cornus amomum*), elderberry (*Sambucus nigra*), arrowwood viburnum (*Viburnum dentatum*) and eastern skunk cabbage (*Symplocarpus foetidus*). Wetland data sheets are included in Appendix A.

2.0 METHODS

2.1 Desktop Review

Prior to conducting field surveys, Tetra Tech reviewed high-resolution aerial photography and Geographic Information System (GIS) data including National Wetland Inventory (NWI), National Hydrography Dataset (NHD), NRCS Web Soil Survey, and U.S. Geological Survey (USGS) topographic maps. These resources were used both prior to and during field surveys to identify potential wetland or waterbody areas.

The Project area was evaluated using the above desktop resources to determine the potential presence of wetlands and waterbodies (streams and ponds). Data was also collected to document a lack of water features where desktop data, such as NWI, indicated water features may be present but area not indicated in recent aerial photography. These were referred to as non-water points.

2.2 Resource Review

The following GIS data sources were reviewed to supplement the wetland and waterbody field surveys.

2.2.1 National Wetland Inventory

NWI data were overlaid on high-resolution aerial imagery and reviewed in conjunction with soil surveys and topographic maps. Because ground conditions change and because the criteria used to identify wetlands for mapping purposes may have been different than the currently required by the U.S. Army Corps of Engineers (USACE), wetland maps were only used as a guide to aide in identifying potential wetlands. This data was provided to field crew to guide fieldwork. NWI mapping is included in Figure 5.

2.2.2 National Hydrography Dataset

The NHD depicts surface waters across the United States, including some, but not all, rivers, streams, canals, lakes, and ponds. The data is provided at a scale of 1:24,000. Not all water features are shown at this scale and those that are provide only a moderate level of detail. The NHD layer includes data for perennial, intermittent, and ephemeral streams as well as artificial paths, canal/ditch, coastline, connector, pipeline, and underground conduit. Table 2 below provides a description of the NHD classifications.

Table 2: Description of NHD Water Classifications

NHD Classification	NHD Waterbody Classification Description
Stream/River	A body of flowing water.
Perennial Stream	Stream that contains water throughout the year, except for infrequent periods of severe drought.
Intermittent Stream	Stream that contains water for only part of the year, but more than just after rainstorms and at snowmelt.
Ephemeral Stream	Stream that contains water only during or after a local rainstorm or heavy snowmelt.
Underground Conduit	Subsurface drainage channels formed from the dissolution of soluble rocks in Karst terrain or in terrain similar to karst but formed in non-soluble rocks, as by melting of permafrost or ground ice or collapse after mining.
Artificial Path	An abstraction to facilitate hydrologic modelling through open water bodies to act as a surrogate for lakes and other water bodies.
Canal/Ditch	An artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft.
Connector	A known, but nonspecific, connection between two nonadjacent network segments.

2.2.3 Soil Survey

The NRCS Web Soil Survey, called Soil Survey Geographic Database (SSRUGO), was used to obtain soil survey information for Washington County. The information was the most current county soil information available electronically. Existing soils maps were used as a guide to identify locations of potential hydric soils. Field investigation was required to verify the presence of hydric soils, particularly given the disturbed conditions present throughout much of the Project area. Figure 3 presents the soil series mapped in the Project area.

2.2.4 Aerial Photography

High resolution aerial photography from June 2018 and several years of older imagery was reviewed to assist in evaluating the Project area for possible wetland signatures and recent disturbances on the landscape that could influence the presence and extent of wetlands. Possible visual signatures include, but are not limited to, surface water, varying color changes in vegetation, and isolated areas within farmland that are not successfully farmed due to poor drainage.

2.3 FIELD SURVEY

Wetland delineation field surveys for the Project were conducted during one field mobilization that occurred on April 19 and 20, 2021. An additional wetland delineation was done on September 30 to include an additional 2.51 acres for an interconnection line to an existing substation. Wetland boundaries, waterbody thalweg or banks, data collection points, open waterbody boundaries, and non-water points were surveyed using an iPad connected to an Arrow global positioning system (GPS) unit. The field data collection settings within the GPS units used available satellites to capture location data. Note that while the GPS data collected during survey provides reasonably accurate spatial information regarding the wetlands, open waterbodies, and non-water points delineated, typically one-meter accuracy with sufficient satellite reception, it does not constitute the same accuracy as a professional land survey.

2.3.1 Wetlands

Wetlands were delineated using the method described in the USACE 1987 Manual (USACE 1987, along with the Northcentral Northeast Regional Supplement (Version 2.0) (USACE 2012). Wetlands were also delineated consistent with the 2015 Clean Water Rule (USACE 2015). The wetland boundaries were delineated using the routine on-site determination method described in the Regional Supplement and the *National Wetland Plant List 2018* (NWPL) (Lichvar et al. 2012) for the determination of the plant indicator status and the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin 1979) to classify wetlands. According to the USACE 1987 Wetland Manual, three criteria or parameter are considered during the wetland delineation; for a plant community to be considered a wetland, it must have:

- A predominance of hydrophytic vegetation,
- Indications of wetland hydrology, and
- The presence of hydric soils under normal circumstances (i.e., where naturally problematic conditions or disturbances are absent).

Wetland datasheets were completed at sample points within each wetland community type (i.e., Cowardin classification) making up the wetland or wetland complex, along with a minimum of one corresponding upland community sample point.

2.3.1.1 Hydrophytic Vegetation

The 1987 Manual and NWPL define the wetland indicator status of plants as follows:

Obligate Wetland Plants (OBL): almost always occur in wetlands (estimated probability >99 percent) in wetlands under natural conditions. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.

Facultative Wetland Plants (FACW): usually occur in wetlands (estimated probability >67 percent to 99 percent), but may occur in non-wetlands. These plants predominantly occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.

Facultative Plants (FAC): occur in wetlands and uplands (estimated probability 33 percent to 99 percent within wetlands). These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH and elevation. They have a wide tolerance of soil moisture conditions.

Facultative Upland Plants (FACU): usually occur in uplands, but many occur in wetlands (estimated probability 1 percent to <33 percent in wetlands). These plants predominantly occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.

Upland Plants (UPL): almost never occur in wetlands (estimated probability <1 percent). These plants occupy mesic to xeric upland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

Dominant vegetation was assessed for each stratum present (tree, sapling/shrub, woody vine, and herbaceous) at a sample point location. In most cases, plant dominance was determined using the USACE's "50/20 Rule" in which species from each stratum that individually or collectively make up more than 50 percent of the total cover in each stratum, plus any other species that account for at least 20 percent of the total cover in the stratum are determined to be dominant species. The hydrophytic vegetation criterion is met when greater than 50 percent of the dominant plant species are classified as OBL, FACW, or FAC. Vegetation information was recorded on the appropriate USACE data forms.

2.3.1.2 Wetland Hydrology

Hydrology is influenced by many variables, including seasonal and long-term rainfall patterns, local geology, topography, soil type, local water table conditions, and drainage. According to the 1987 Manual and Regional Supplements, wetland hydrology is present if 14 or more consecutive days of inundation or water saturation within 12 inches of the soil surface occurs during the growing season at a minimum frequency of 5 in 10 years.

Indicators of wetland hydrology provide evidence that a site has a persistent wetland hydrologic regime. The Regional Supplement provides a list of hydrology indicators that include primary and secondary indicators, which are grouped as:

- Observation of Surface Water or Saturated Soils
- Evidence of Recent Inundation
- Evidence of Current and Recent Soil Saturation
- Evidence of Other Site Conditions or Data

One primary indicator or two secondary indicators are required to confirm that wetland hydrology is present or occurs at some time during the growing season. Field observations of hydrology were made at each vegetation community sample point. Examples of key indicators observed include presence of water above the ground surface, high water table within the hole dug for soil observations, saturated soil in the upper portion of the soil profile, water-stained leaves, drainage patterns as evidence of water presence, and the geomorphic position of the vegetation community and sample point location. Hydrology information was recorded on the appropriate USACE datasheets.

2.3.1.3 Hydric Soil

Hydric soils are characterized by specific morphological characteristics developed in the soil profile over time due to reduction of iron, manganese, and sulfur under saturated and anaerobic conditions. The 1987 Manual defines hydric soils as soils that are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The hydric soil indicators described in the Regional Supplement are a subset of hydric soil indicators described in *Field Indicators of Hydric Soils in the United States, Version 8.2* (USDA, NRCS 2018). The *Munsell Book of Soil Color Charts (2014)* was used to determine soil matrix and mottle colors (redoximorphic features) and record soil profile descriptions. The soils were observed and documented at representative sample point locations in both wetland communities and adjacent upland communities to help establish the wetland boundary. Soil profile descriptions were recorded on the appropriate USACE datasheets.

2.3.1.4 Cowardin Classification

The Cowardin Classification was developed in 1979 to classify a variety of wetland habitats and divides wetlands into five systems: marine, estuarine, riverine, lacustrine, and palustrine. These represent the five major landscape settings. The classification system further divides wetland communities into systems and classes. This survey was conducted in inland wetlands, and descriptions of the common Cowardin Classification inland community types are described in the bullets below.

- Palustrine System Emergent Wetland Class (PEM): A PEM wetland is defined as a non- tidal wetland characterized by erect, rooted, hydrophytic herbaceous species. These wetland habitats are often dominated by perennial plants, where the vegetation is present for the majority of the growing season (Cowardin, 1979).
- Palustrine System Scrub-Shrub Wetland Class (PSS): A PSS wetland is defined as a non-tidal wetland consisting of woody vegetation that is less than 20 feet tall, including shrubs, young trees, and stunted trees or shrubs (Cowardin, 1979).
- Palustrine Forested Wetland Class (PFO): A PFO wetland is defined as a non-tidal wetland characterized by dominant woody vegetation that is greater than 20 feet tall, with an understory of small trees and shrubs, as well as an herbaceous layer (Cowardin, 1979).

Each wetland delineated was assigned a Cowardin class. For wetland complexes, or wetlands that are comprised of more than one wetland plant community (i.e., Cowardin class) a sample point was established, and observations recorded to document each community. Unique wetland IDs and separate polygons were established based on the wetland community present within the complex. The field crews collected wetland information for PEM, PSS, and PFO wetlands.

2.3.2 Waterbodies

Waterbodies documented during each field survey were assigned a Unique ID according to their flow and hydrology regimes: linear or flowing waterbodies, such as streams and rivers were assigned a unique ID starting with an "s"; non-flowing open waterbodies, such as ponds and lakes, were assigned a unique ID starting with an "o." Linear or flowing waterbodies were identified as landscape features with a channel that include a bed and a bank in a concave landscape position where water flow has resulted in a feature that possesses an ordinary high water mark (OHWM). Waterbodies do not include erosional features, such as gullies, rills, and ephemeral streams that do not have a bed and banks and OHWM, in accordance with the USACE Regulatory Guidance Letter regarding Ordinary High Water Mark Identification (USACE 2005).

Based on evidence of flow regime at the time of survey, linear waterbodies were attributed a flow regime according to the definitions provided by the USACE for the Nationwide Permit Program in Title 33 Code of Federal Regulations (CFR) Part 330 (Federal Register, 1993). Similarly, non-flowing, open waterbody features were assigned a Cowardin hydrology regime based on observations recorded at the time of survey. Definitions of these flow and hydrology regimes are included below, as defined in 33 CFR 330.

- Perennial Stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year, and groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

- Intermittent Stream: An intermittent stream has flowing water during most times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water, and runoff from rainfall is a supplemental source of water for stream flow.
- Ephemeral Stream: An ephemeral stream has flowing water only during and for a short duration after precipitation events. Ephemeral stream beds are located above the water table year-round, therefore, groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Non-flowing or open waterbodies were documented based on the evidence of inundation/saturation at the time of surveys, utilizing one of four categories based on the Cowardin classification including the following:

- Non-flowing: Water covers the land surface throughout the year in all years.
- Semi-Non-flowing: Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
- Seasonally flooded: Surface water is present for extended periods especially early in the growing season but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.
- Temporarily flooded: Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

3.0 RESULTS

The following section summarizes wetland and waterbody delineation conducted in the Project area on April 19 and 20, with an additional survey on September 30, 2021. Field conditions were typical for early Spring and Fall in Central New York, with the onsite ponds slightly below OHWM. With the beginning of April being the start of the growing season, vegetation was beginning to grow with some dead making some identification difficult. Nevertheless, it is Tetra Tech wetland biologists' best professional judgment that the growing state of vegetation did not substantially affect the results of the delineation.

Tetra Tech identified one wetland and two man-made ponds within the Project. Table 3 below lists the delineated wetlands and waterbody, included unique ID, location, size within the Project, presumed USACE and NYSDEC jurisdictional status, and Cowardin classification. Wetland W-3 represents the southern portion of a New York State Class 2 regulated wetland SY-14. Data sheets can be found in Appendix A, and photographs of each sample point are provided in Appendix B.

Table 3
Summary Metrics of Waterbodies and Wetlands on the Easton Solar Project, Town of Easton, New York

Wetland or Waterbody Name	**Cowardin Class**	**Centroid (Wetland) or Data Point (Stream) Coordinates**		**Area with Project Area (acres)**	**Jurisdiction: USACE / NYSDEC / Non-Jurisdictional**
		Latitude (DD) °N	Longitude (DD) °W		
W-1	PUB3r	43.106374	-73.537229	0.25	Non-Jurisdictional
W-2	PUB3r	43.106968	-73.538984	0.17	Non-Jurisdictional
W-3	PFO	43.108023	-73.546046	11.87	USACE, NYSDEC (SY-14

5.0 REFERENCES

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FIGURES

Legend

Approximate Site Boundary

Approximate Project Area

Approximate Scale:

0 0.275 0.55 1.1 Miles

TETRA TECH

Figure 1
Topographic Map

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Legend

Approximate Site Boundary

Approximate Project Area

Approximate Scale:

0 0.075 0.15 0.3 Miles

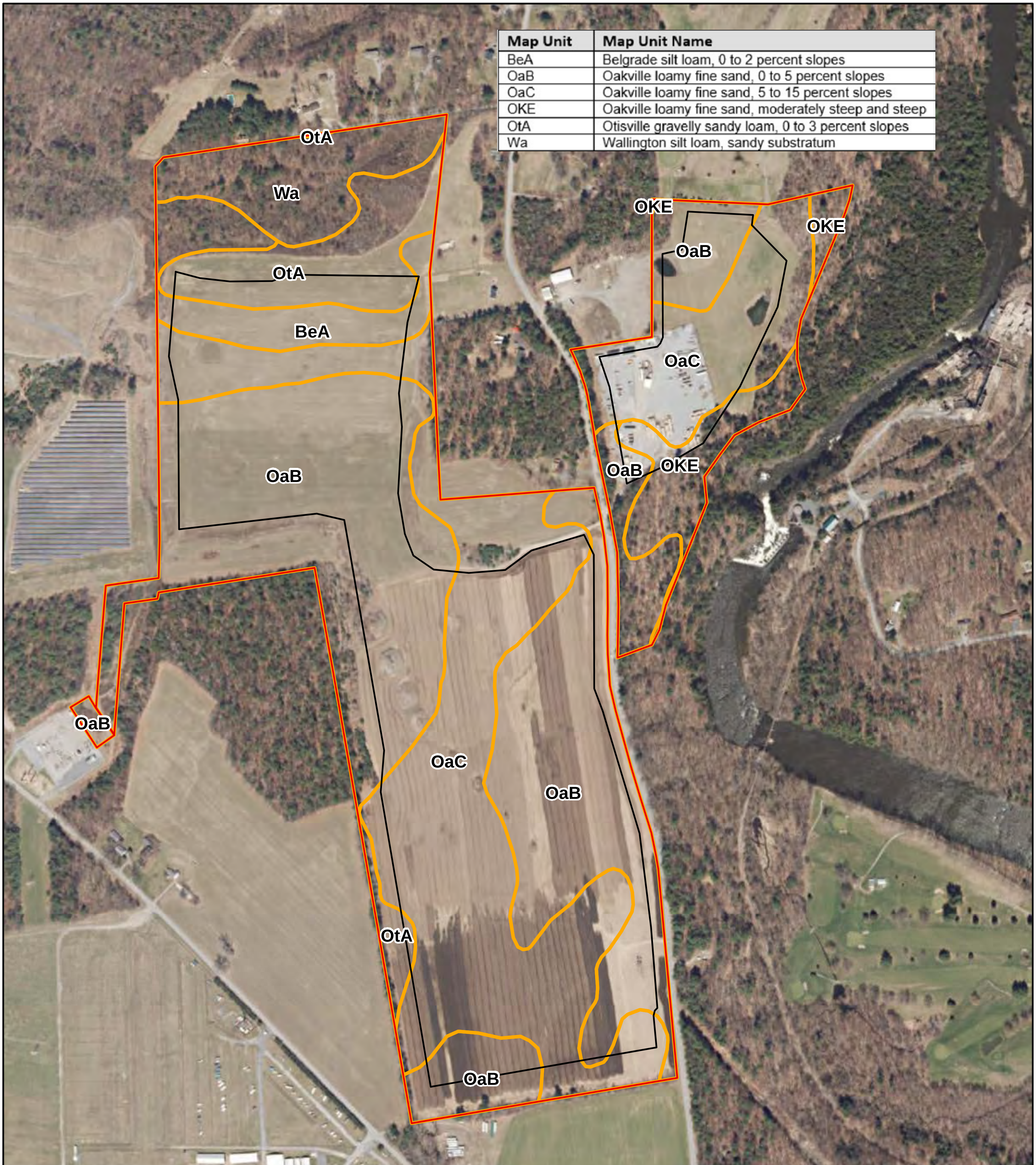
N

TETRA TECH

Figure 2
Aerial Map

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map Unit	Map Unit Name
BeA	Belgrade silt loam, 0 to 2 percent slopes
OaB	Oakville loamy fine sand, 0 to 5 percent slopes
OaC	Oakville loamy fine sand, 5 to 15 percent slopes
OKE	Oakville loamy fine sand, moderately steep and steep
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes
Wa	Wallington silt loam, sandy substratum

Legend

Approximate Site Boundary
Approximate Project Area
Soil Boundary

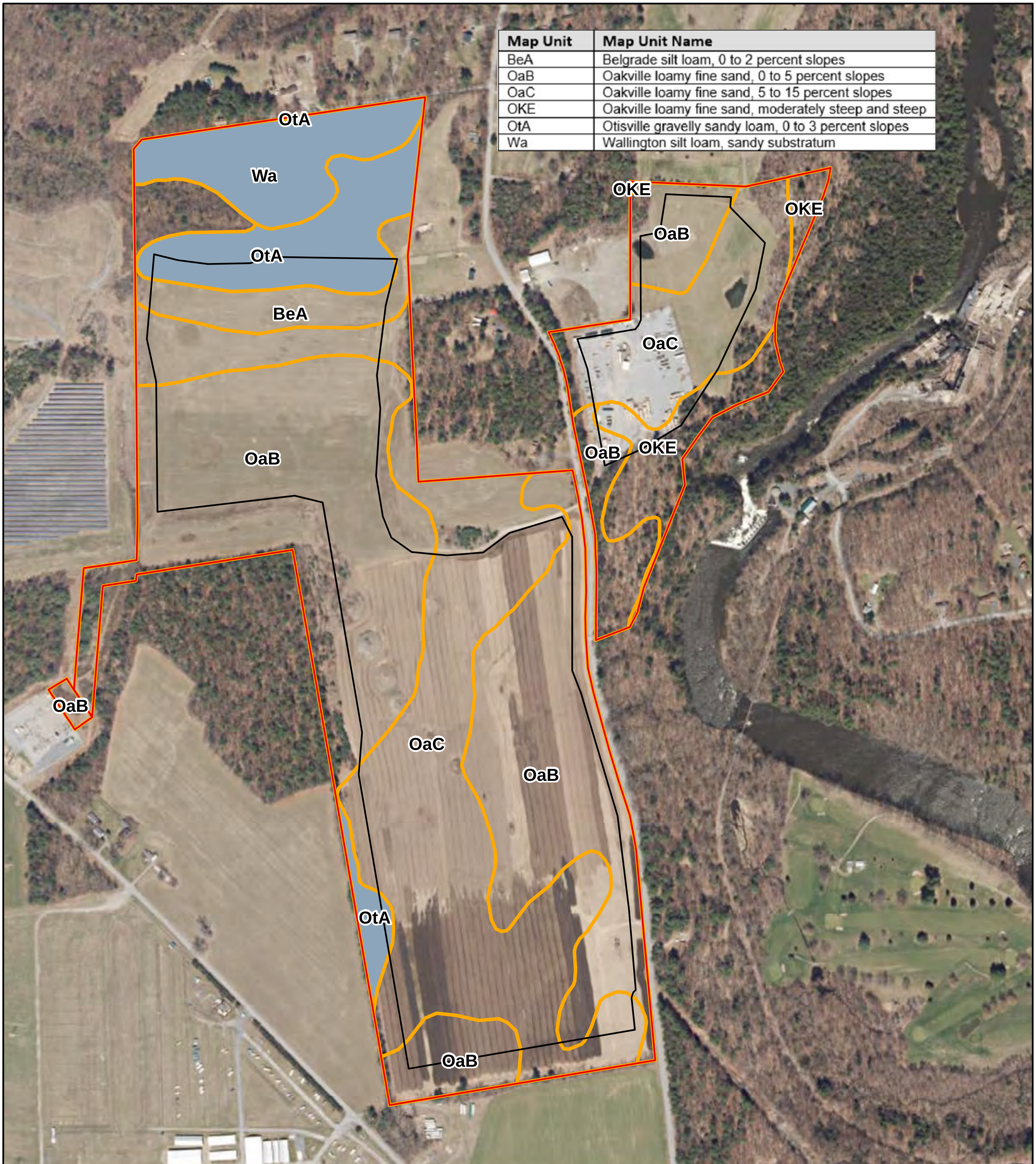
Approximate Scale:
0 0.075 0.15 0.3 Miles

TETRA TECH

Figure 3
Soil Classification Map

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map Unit	Map Unit Name
BeA	Belgrade silt loam, 0 to 2 percent slopes
OaB	Oakville loamy fine sand, 0 to 5 percent slopes
OaC	Oakville loamy fine sand, 5 to 15 percent slopes
OKE	Oakville loamy fine sand, moderately steep and steep
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes
Wa	Wallington silt loam, sandy substratum

Legend

Approximate Site Boundary
Approximate Project Area
Soil Boundary

Hydric Rating
0%
1 - 10%

Approximate Scale:
0 0.075 0.15 0.3 Miles

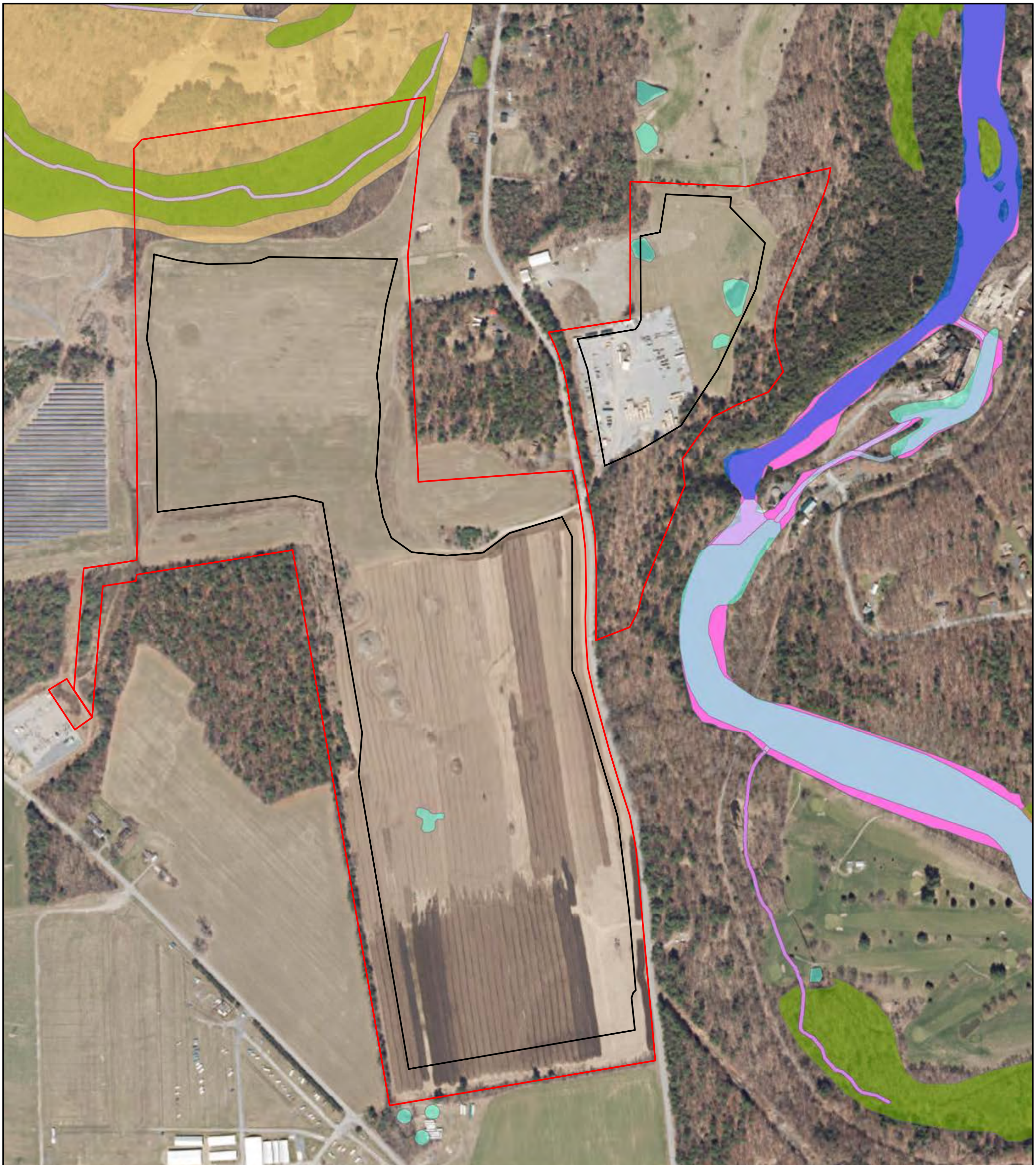
N

TETRA TECH

Figure 4
NRCS Hydric Rating Map

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Legend

Approximate Site Boundary
Approximate Project Area
NYS Wetlands

NWI Wetlands
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Riverine

NHD Area
NHD Flowline

Approximate Scale:

0 0.075 0.15 0.3 Miles

TETRA TECH

Figure 5
Mapped Aquatic Features

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Appendix A

Wetland Datasheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: W-1

Investigator(s): AC, DT Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 43.106177 Long: -73.537274 Datum: WGS 84

Soil Map Unit Name: Oakville loamy fine sand NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Farm pond with some duckweed. Many Notophthalmus viridenscens found within the pond. Man-made feature.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	___ Water-Stained Leaves (B9)	
X High Water Table (A2)	___ Aquatic Fauna (B13)	
X Saturation (A3)	___ Marl Deposits (B15)	
X Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
X Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
X Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 18
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Lemna minor*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	5 (A)		5 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 3/1	100					Mucky Sand	
4-20	10Y 5/1	95	2.5YR 6/2	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: U-1

Investigator(s): AC, DT Section, Township, Range: ______

Landform (hillside, terrace, etc.): Summit Local relief (concave, convex, none): Flat Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 43.10611 Long: -73.537286 Datum: WGS 84

Soil Map Unit Name: Oakville loamy fine sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	Is the Sampled Area within a Wetland? **Yes** ___ **No** X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)
Agricultural field that was not active at time of survey.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: U-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Taraxacum officinale*	35	Yes	FACU
2. *Cardamine hirsuta*	40	Yes	FACU
3. *Daucus carota*	25	Yes	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	25	x 5 =	125
Column Totals:	100 (A)		425 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: U-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	10YR 3/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: W-2

Investigator(s): AC, DT Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 43.106951 Long: -73.538801 Datum: WGS 84

Soil Map Unit Name: Oakville loamy fine sand NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Farm pond. Man-made.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

X Surface Water (A1)	___ Water-Stained Leaves (B9)
X High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
X Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
X Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
X Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 16
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phragmites australis*	10	Yes	FACW
2. *Typha angustifolia*	15	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	25 (A)		35 (B)

Prevalence Index = B/A = 1.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric) Loose gray sandy soils. Too saturated to get an accurate soil profile. Assumed hydric due to the presence of the pond above it.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: U-2

Investigator(s): AC, DT Section, Township, Range: ______

Landform (hillside, terrace, etc.): Summit Local relief (concave, convex, none): Flat Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 43.107045 Long: -73.538791 Datum: WGS 84

Soil Map Unit Name: Oakville loamy fine sand NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X
Hydric Soil Present?	Yes ___	No X
Wetland Hydrology Present?	Yes ___	No X

Is the Sampled Area within a Wetland? **Yes** ___ **No** X

If yes, optional Wetland Site ID: ______

Remarks: (Explain alternative procedures here or in a separate report.)
Agricultural field that was not active at time of survey.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: U-2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: U-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/3	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: W-3

Investigator(s): AC, DT Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Flat Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 43.107281 Long: -73.547199 Datum: WGS 84

Soil Map Unit Name: Wallington silt loam NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ___		**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present? Yes X No ___		
Wetland Hydrology Present? Yes X No ___		If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
NYSDEC Freshwater Wetland SY-14.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X No ___	Depth (inches): 1	
Water Table Present?	Yes X No ___	Depth (inches): 3	
Saturation Present? (includes capillary fringe)	Yes X No ___	Depth (inches): 0	**Wetland Hydrology Present? Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: W-3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	Yes	FAC
2. *Acer saccharinum*	30	Yes	FACW
3. *Fraxinus pennsylvanica*	20	Yes	FACW
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	40	Yes	FACW
2. *Sambucus nigra*	10	No	FACW
3. *Viburnum dentatum*	10	No	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Symplocarpus foetidus*	65	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	100	x 2 =	200
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		385 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 2.5/1	100					Muck	
8-20	10YR 4/1	90	5Y 6/8	5	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 6/6	5	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
X Histic Epipedon (A2)
X Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Easton Solar City/County: Greenwich/Washington Sampling Date: 4/20/21

Applicant/Owner: Boralex State: NY Sampling Point: U-3

Investigator(s): AC, DT Section, Township, Range: ____

Landform (hillside, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex Slope (%): 3-8

Subregion (LRR or MLRA): LRR R Lat: 43.10725 Long: -73.547169 Datum: WGS 84

Soil Map Unit Name: Belgrade silt loam NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No X	Is the Sampled Area within a Wetland?	Yes ___ No X
Hydric Soil Present?	Yes ___	No X		
Wetland Hydrology Present?	Yes ___	No X	If yes, optional Wetland Site ID:	____

Remarks: (Explain alternative procedures here or in a separate report.)
Forest edge between W-3 and agricultural field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required) are listed in the third column.

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: U-3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	85	Yes	FACU
2. *Betula papyrifera*	15	No	FACU
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera morrowii*	45	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	145	x 4 =	580
UPL species	0	x 5 =	0
Column Totals:	145 (A)		580 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: U-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 8.1 2018 Errata. (http://soils.usda.gov/use/hydric)

Appendix B

Photolog

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View manmade pond W-1 found in northeastern portion of Site, facing northeast.

TETRA TECH, INC.
Photograph taken by Drew Timmis on April 20, 2021.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of upland area surrounding W-1, facing north.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of manmade pond W-2 located in northeast portion of Site, facing southwest. Surrounding upland area is agricultural field and construction area.

Photograph Number 3

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of forested wetland W-3, facing north.

Photograph Number 4

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of adjacent agricultural upland making up majority of the Site, facing west. Forested wetland W-3 is along the northern edge.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of utility line corridor with successional growth and forested upland looking southwest to substation. Located in the western portion of the Site.

Photograph Number 6

TETRA TECH, INC.

Photograph taken by Drew Timmis on September 30, 2021.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Boralex	**Project No:**	194-1025-0001.01.01
Site Name:	Easton Solar Site	**Location:**	Easton, New York

Description:	View of small upland forested row in between utility line clear cut areas facing southwest. Area and small and surrounded by landscaped areas.

Photograph taken by Drew Timmis on September 30, 2021.

Appendix K – NYSDEC "No Jurisdiction" Letter

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 5
1115 State Route 86, Raybrook, NY 12977
Phone: (518) 897-1200 • **Fax:** (518) 623-3603
Website: www.dec.ny.gov

Basil Seggos
Commissioner

LETTER OF NO JURISDICTION
ENDANGERED SPECIES ACT

February 17, 2021

Julia Stahl
Boralex
39 Hudson Falls Road
South Glens Falls, NY 12803

Re: Easton Solar Project
Town of Easton, Washington County

Dear Julia:

The Department of Environmental Conservation (DEC) has determined that your proposal to develop the Easton solar project in the Town of Easton is not likely to result in the take of threatened or endangered species. This determination is based on the information submitted by your office on December 2, 2020 and reviewed by staff from the Division of Fish and Wildlife. The review determined that there is not enough suitable habitat on this site to support grassland obligate bird species. Therefore, no permit is required at this time pursuant to the implementing regulations (6NYCRR Part 182) of the New York State Endangered Species Act (Article 11-0535).

Be advised that any changes in location, expansion of the footprint of the project, modifications of the scope, or changes in the timing of proposed actions that are not identified in the submission referenced above may trigger DEC authorization. Please reinitiate contact with this office if such activities are contemplated.

Please note that this letter does not relieve you of the responsibility of obtaining any necessary permits or approvals from other agencies or local municipalities.

Sincerely,

Beth A. Magee

Beth Magee
Deputy Permit Administrator

Appendix L – Solar Panel Component Reports

NC CLEAN ENERGY
TECHNOLOGY CENTER

Health and Safety Impacts of Solar Photovoltaics

MAY 2017

NC STATE UNIVERSITY

Health and Safety Impacts of Solar Photovoltaics

The increasing presence of utility-scale solar photovoltaic (PV) systems (sometimes referred to as solar farms) is a rather new development in North Carolina's landscape. Due to the new and unknown nature of this technology, it is natural for communities near such developments to be concerned about health and safety impacts. Unfortunately, the quick emergence of utility-scale solar has cultivated fertile grounds for myths and half-truths about the health impacts of this technology, which can lead to unnecessary fear and conflict.

Photovoltaic (PV) technologies and solar inverters are not known to pose any significant health dangers to their neighbors. The most important dangers posed are increased highway traffic during the relative short construction period and dangers posed to trespassers of contact with high voltage equipment. This latter risk is mitigated by signage and the security measures that industry uses to deter trespassing. As will be discussed in more detail below, risks of site contamination are much less than for most other industrial uses because PV technologies employ few toxic chemicals and those used are used in very small quantities. Due to the reduction in the pollution from fossil-fuel-fired electric generators, the overall impact of solar development on human health is overwhelmingly positive. This pollution reduction results from a partial replacement of fossil-fuel fired generation by emission-free PV-generated electricity, which reduces harmful sulfur dioxide (SO_2), nitrogen oxides (NO_x), and fine particulate matter ($PM_{2.5}$). Analysis from the National Renewable Energy Laboratory and the Lawrence Berkeley National Laboratory, both affiliates of the U.S. Department of Energy, estimates the health-related air quality benefits to the southeast region from solar PV generators to be worth 8.0 ¢ per kilowatt-hour of solar generation.[1] This is in addition to the value of the electricity and suggests that the air quality benefits of solar are worth more than the electricity itself.

Even though we have only recently seen large-scale installation of PV technologies, the technology and its potential impacts have been studied since the 1950s. A combination of this solar-specific research and general scientific research has led to the scientific community having a good understanding of the science behind potential health and safety impacts of solar energy. This paper utilizes the latest scientific literature and knowledge of solar practices in N.C. to address the health and safety risks associated with solar PV technology. These risks are extremely small, far less than those associated with common activities such as driving a car, and vastly outweighed by health benefits of the generation of clean electricity.

This paper addresses the potential health and safety impacts of solar PV development in North Carolina, organized into the following four categories:

(1) Hazardous Materials
(2) Electromagnetic Fields (EMF)
(3) Electric Shock and Arc Flash
(4) Fire Safety

1. Hazardous Materials

One of the more common concerns towards solar is that the panels (referred to as “modules” in the solar industry) consist of toxic materials that endanger public health. However, as shown in this section, solar energy systems may contain small amounts of toxic materials, but these materials do not endanger public health. To understand potential toxic hazards coming from a solar project, one must understand system installation, materials used, the panel end-of-life protocols, and system operation. This section will examine these aspects of a solar farm and the potential for toxicity impacts in the following subsections:

(1.2) Project Installation/Construction
(1.2) System Components
  1.2.1 Solar Panels: Construction and Durability
  1.2.2 Photovoltaic technologies
    (a) Crystalline Silicon
    (b) Cadmium Telluride (CdTe)
    (c) CIS/CIGS
  1.2.3 Panel End of Life Management
  1.2.4 Non-panel System Components
(1.3) Operations and Maintenance

1.1 Project Installation/Construction

The system installation, or construction, process does not require toxic chemicals or processes. The site is mechanically cleared of large vegetation, fences are constructed, and the land is surveyed to layout exact installation locations. Trenches for underground wiring are dug and support posts are driven into the ground. The solar panels are bolted to steel and aluminum support structures and wired together. Inverter pads are installed, and an inverter and transformer are installed on each pad. Once everything is connected, the system is tested, and only then turned on.

Figure 1: Utility-scale solar facility (5 MW_{AC}) located in Catawba County. Source: Strata Solar

1.2 System Components

1.2.1 Solar Panels: Construction and Durability

Solar PV panels typically consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life. [2] Today there are two PV technologies used in PV panels at utility-scale solar facilities, silicon, and thin film. As of 2016, all thin film used in North Carolina solar facilities are cadmium telluride (CdTe) panels from the US manufacturer First Solar, but there are other thin film PV panels available on the market, such as Solar Frontier's CIGS panels. Crystalline silicon technology consists of silicon wafers which are made into cells and assembled into panels, thin film technologies consist of thin layers of semiconductor material deposited onto glass, polymer or metal substrates. While there are differences in the components and manufacturing processes of these two types of solar technologies, many aspects of their PV panel construction are very similar. Specifics about each type of PV chemistry as it relates to toxicity are covered in subsections a, b, and c in section 1.2.2; on crystalline silicon, cadmium telluride, and CIS/CIGS respectively. The rest of this section applies equally to both silicon and thin film panels.

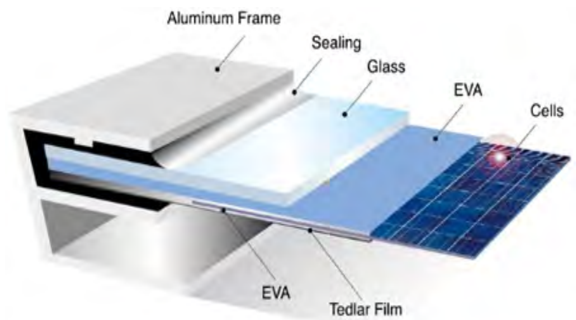


Figure 2: Components of crystalline silicon panels. The vast majority of silicon panels consist of a glass sheet on the topside with an aluminum frame providing structural support. Image Source: www.riteksolar.com.tw

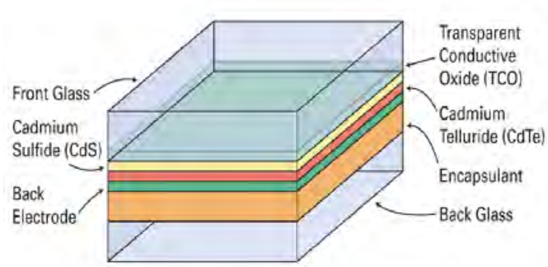


Figure 3: Layers of a common frameless thin-film panel (CdTe). Many thin film panels are frameless, including the most common thin-film panels, First Solar's CdTe. Frameless panels have protective glass on both the front and back of the panel. Layer thicknesses not to scale. Image Source: www.homepower.com

To provide decades of corrosion-free operation, PV cells in PV panels are encapsulated from air and moisture between two layers of plastic. The encapsulation layers are protected on the top with a layer of tempered glass and on the backside with a polymer sheet. Frameless modules include a protective layer of glass on the rear of the panel, which may also be tempered. The plastic ethylene-vinyl acetate (EVA) commonly provides the cell encapsulation. For decades, this same material has been used between layers of tempered glass to give car windshields and hurricane windows their great strength. In the same way that a car windshield cracks but stays intact, the EVA layers in PV panels keep broken panels intact (see Figure 4). Thus, a damaged module does not generally create small pieces of debris; instead, it largely remains together as one piece.

Figure 4: The mangled PV panels in this picture illustrate the nature of broken solar panels; the glass cracks but the panel is still in one piece. Image Source: http://img.alibaba.com/photo/115259576/broken_solar_panel.jpg

PV panels constructed with the same basic components as modern panels have been installed across the globe for well over thirty years.[3] The long-term durability and performance demonstrated over these decades, as well as the results of accelerated lifetime testing, helped lead to an industry-standard 25-year power production warranty for PV panels. These power warranties warrant a PV panel to produce at least 80% of their original nameplate production after 25 years of use. A recent SolarCity and DNV GL study reported that today's quality PV panels should be expected to reliably and efficiently produce power for thirty-five years.[4]

Local building codes require all structures, including ground mounted solar arrays, to be engineered to withstand anticipated wind speeds, as defined by the local wind speed requirements. Many racking products are available in versions engineered for wind speeds of up to 150 miles per hour, which is significantly higher than the wind speed requirement anywhere in North Carolina. The strength of PV mounting structures were demonstrated during Hurricane Sandy in 2012 and again during Hurricane Matthew in 2016. During Hurricane Sandy, the many large-scale solar facilities in New Jersey and New York at that time suffered only minor damage.[5] In the fall of 2016, the US and Caribbean experienced destructive winds and torrential rains from Hurricane Matthew, yet one leading solar tracker manufacturer reported that their numerous systems in the impacted area received zero damage from wind or flooding.[6]

In the event of a catastrophic event capable of damaging solar equipment, such as a tornado, the system will almost certainly have property insurance that will cover the cost to cleanup and repair the project. It is in the best interest of the system owner to protect their investment against such risks. It is also in their interest to get the project repaired and producing full power as soon as possible. Therefore, the investment in adequate insurance is a wise business practice for the system owner. For the same reasons, adequate insurance coverage is also generally a requirement of the bank or firm providing financing for the project.

1.2.2 Photovoltaic (PV) Technologies

a. **Crystalline Silicon**

This subsection explores the toxicity of silicon-based PV panels and concludes that they do not pose a material risk of toxicity to public health and safety. Modern crystalline silicon PV panels, which account for over 90% of solar PV panels installed today, are, more or less, a commodity product. The overwhelming majority of panels installed in North Carolina are crystalline silicon panels that are informally classified as Tier I panels. Tier I panels are from well-respected manufacturers that have a good chance of being able to honor warranty claims. Tier I panels are understood to be of high quality, with predictable performance, durability, and content. Well over 80% (by weight) of the content of a PV panel is the tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the backsheet, EVA encapsulation of the PV cells, polyphenyl ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components makeup less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO_2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

The other minor components of the PV cell are also generally benign; however, some contain lead, which is a human toxicant that is particularly harmful to young children. The minor components include an extremely thin antireflective coating (silicon nitride or titanium dioxide), a thin layer of aluminum on the rear, and thin strips of silver alloy that are screen-printed on the front and rear of cell.[7] In order for the front and rear electrodes to make effective electrical contact with the proper layer of the PV cell, other materials (called glass frit) are mixed with the silver alloy and then heated to etch the metals into the cell. This glass frit historically contains a small amount of lead (Pb) in the form of lead oxide. The 60 or 72 PV cells in a PV panel are connected by soldering thin solder-covered copper tabs from the back of one cell to the front of the next cell. Traditionally a tin-based solder containing some lead (Pb) is used, but some manufacturers have switched to lead-free solder. The glass frit and/or the solder may contain trace amounts of other metals, potentially including some with human toxicity such as cadmium. However, testing to simulate the potential for leaching from broken panels, which is discussed in more detail below, did not find a potential toxicity threat from these trace elements. Therefore, the tiny amount of lead in the grass frit and the solder is the only part of silicon PV panels with a potential to create a negative health impact. However, as described below, the very limited amount of lead involved and its strong physical and chemical attachment to other components of the PV panel means that even in worst-case scenarios the health hazard it poses is insignificant.

As with many electronic industries, the solder in silicon PV panels has historically been a lead-based solder, often 36% lead, due to the superior properties of such solder. However, recent advances in lead-free solders have spurred a trend among PV panel manufacturers to reduce or remove the lead in their panels. According to the 2015 Solar Scorecard from the Silicon Valley Toxics Coalition, a group that tracks environmental responsibility of photovoltaic panel manufacturers, fourteen companies (increased from twelve companies in 2014) manufacture PV panels certified to meet the European Restriction of

Hazardous Substances (RoHS) standard. This means that the amount of cadmium and lead in the panels they manufacture fall below the RoHS thresholds, which are set by the European Union and serve as the world's de facto standard for hazardous substances in manufactured goods.[8] The Restriction of Hazardous Substances (RoHS) standard requires that the maximum concentration found in any homogenous material in a produce is less than 0.01% cadmium and less than 0.10% lead, therefore, any solder can be no more than 0.10% lead.[9]

While some manufacturers are producing PV panels that meet the RoHS standard, there is no requirement that they do so because the RoHS Directive explicitly states that the directive does not apply to photovoltaic panels.[10] The justification for this is provided in item 17 of the current RoHS Directive: "The development of renewable forms of energy is one of the Union's key objectives, and the contribution made by renewable energy sources to environmental and climate objectives is crucial. Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources (4) recalls that there should be coherence between those objectives and other Union environmental legislation. Consequently, this Directive should not prevent the development of renewable energy technologies that have no negative impact on health and the environment and that are sustainable and economically viable."

The use of lead is common in our modern economy. However, only about 0.5% of the annual lead consumption in the U.S. is for electronic solder for all uses; PV solder makes up only a tiny portion of this 0.5%. Close to 90% of lead consumption in the US is in batteries, which do not encapsulate the pounds of lead contained in each typical automotive battery. This puts the lead in batteries at great risk of leaching into the environment. Estimates for the lead in a single PV panel with lead-based solder range from 1.6 to 24 grams of lead, with 13g (less than half of an ounce) per panel seen most often in the literature.[11] At 13 g/panel[12], each panel contains one-half of the lead in a typical 12-gauge shotgun shell. This amount equates to roughly 1/750th of the lead in a single car battery. In a panel, it is all durably encapsulated from air or water for the full life of the panel.[14]

As indicated by their 20 to 30-year power warranty, PV modules are designed for a long service life, generally over 25 years. For a panel to comply with its 25-year power warranty, its internal components, including lead, must be sealed from any moisture. Otherwise, they would corrode and the panel's output would fall below power warranty levels. Thus, the lead in operating PV modules is not at risk of release to the environment during their service lifetime. In extreme experiments, researchers have shown that lead can leach from crushed or pulverized panels.[15, 16] However, more real-world tests designed to represent typical trash compaction that are used to classify waste as hazardous or non-hazardous show no danger from leaching.[17, 18] For more information about PV panel end-of-life, see the Panel Disposal section.

As illustrated throughout this section, silicon-based PV panels do not pose a material threat to public health and safety. The only aspect of the panels with potential toxicity concerns is the very small amount of lead in some panels. However, any lead in a panel is well sealed from environmental exposure for the operating lifetime of the solar panel and thus not at risk of release into the environment.

b. Cadmium Telluride (CdTe) PV Panels

This subsection examines the components of a cadmium telluride (CdTe) PV panel. Research demonstrates that they pose negligible toxicity risk to public health and safety while significantly reducing the public's exposure to cadmium by reducing coal emissions. As of mid-2016, a few hundred MWs of cadmium telluride (CdTe) panels, all manufactured by the U.S. company First Solar, have been installed in North Carolina.

Questions about the potential health and environmental impacts from the use of this PV technology are related to the concern that these panels contain cadmium, a toxic heavy metal. However, scientific studies have shown that cadmium telluride differs from cadmium due to its high chemical and thermal stability.[19] Research has shown that the tiny amount of cadmium in these panels does not pose a health or safety risk.[20] Further, there are very compelling reasons to welcome its adoption due to reductions in unhealthy pollution associated with burning coal. Every GWh of electricity generated by burning coal produces about 4 grams of cadmium air emissions.[21] Even though North Carolina produces a significant fraction of our electricity from coal, electricity from solar offsets much more natural gas than coal due to natural gas plants being able to adjust their rate of production more easily and quickly. If solar electricity offsets 90% natural gas and 10% coal, each 5-megawatt (5 MW_{AC}, which is generally 7 MW_{DC}) CdTe solar facility in North Carolina keeps about 157 grams, or about a third of a pound, of cadmium *out of* our environment.[22, 23]

Cadmium is toxic, but all the approximately 7 grams of cadmium in one CdTe panel is in the form of a chemical compound cadmium telluride, [24] which has 1/100th the toxicity of free cadmium.[25] Cadmium telluride is a very stable compound that is non-volatile and non-soluble in water. Even in the case of a fire, research shows that less than 0.1% of the cadmium is released when a CdTe panel is exposed to fire. The fire melts the glass and encapsulates over 99.9% of the cadmium in the molten glass.[27]

It is important to understand the source of the cadmium used to manufacture CdTe PV panels. The cadmium is a byproduct of zinc and lead refining. The element is collected from emissions and waste streams during the production of these metals and combined with tellurium to create the CdTe used in PV panels. If the cadmium were not collected for use in the PV panels or other products, it would otherwise either be stockpiled for future use, cemented and buried, or disposed of.[28] Nearly all the cadmium in old or broken panels can be recycled which can eventually serve as the primary source of cadmium for new PV panels.[29]

Similar to silicon-based PV panels, CdTe panels are constructed of a tempered glass front, one instead of two clear plastic encapsulation layers, and a rear heat strengthened glass backing (together >98% by weight). The final product is built to withstand exposure to the elements without significant damage for over 25 years. While not representative of damage that may occur in the field or even at a landfill, laboratory evidence has illustrated that when panels are ground into a fine powder, very acidic water is able to leach portions of the cadmium and tellurium,[30] similar to the process used to recycle CdTe panels. Like many silicon-based panels, CdTe panels are reported (as far back ask 1998[31]) to pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test, which tests the potential for crushed panels in a landfill to leach hazardous substances into groundwater.[32] Passing this test means that they are classified as non-hazardous waste and can be deposited in landfills.[33, 34] For more information about PV panel end-of-life, see the Panel Disposal section.

There is also concern of environmental impact resulting from potential catastrophic events involving CdTe PV panels. An analysis of worst-case scenarios for environmental impact from CdTe PV panels, including earthquakes, fires, and floods, was conducted by the University of Tokyo in 2013. After reviewing the extensive international body of research on CdTe PV technology, their report concluded, "Even in the worst-case scenarios, it is unlikely that the Cd concentrations in air and sea water will exceed the environmental regulation values."[35] In a worst-case scenario of damaged panels abandoned on the ground, insignificant amounts of cadmium will leach from the panels. This is because this scenario is much less conducive (larger module pieces, less acidity) to leaching than the conditions of the EPA's TCLP test used to simulate landfill conditions, which CdTe panels pass.[36]

First Solar, a U.S. company, and the only significant supplier of CdTe panels, has a robust panel take-back and recycling program that has been operating commercially since 2005.[37] The company states that it is "committed to providing a commercially attractive recycling solution for photovoltaic (PV) power plant and module owners to help them meet their module (end of life) EOL obligation simply, cost-effectively and responsibly." First Solar global recycling services to their customers to collect and recycle panels once they reach the end of productive life whether due to age or damage. These recycling service agreements are structured to be financially attractive to both First Solar and the solar panel owner. For First Solar, the contract provides the company with an affordable source of raw materials needed for new panels and presumably a diminished risk of undesired release of Cd. The contract also benefits the solar panel owner by allowing them to avoid tipping fees at a waste disposal site. The legal contract helps provide peace of mind by ensuring compliance by both parties when considering the continuing trend of rising disposal costs and increasing regulatory requirements.

c. **CIS/CIGS and other PV technologies**

Copper indium gallium selenide PV technology, often referred to as CIGS, is the second most common type of thin-film PV panel but a distant second behind CdTe. CIGS cells are composed of a thin layer of copper, indium, gallium, and selenium on a glass or plastic backing. None of these elements are very toxic, although selenium is a regulated metal under the Federal Resource Conservation and Recovery Act (RCRA).[38] The cells often also have an extremely thin layer of cadmium sulfide that contains a tiny amount of cadmium, which is toxic. The promise of high efficiency CIGS panels drove heavy investment in this technology in the past. However, researchers have struggled to transfer high efficiency success in the lab to low-cost full-scale panels in the field.[39] Recently, a CIGS manufacturer based in Japan, Solar Frontier, has achieved some market success with a rigid, glass-faced CIGS module that competes with silicon panels. Solar Frontier produces the majority of CIS panels on the market today.[40] Notably, these panels are RoHS compliant,[41] thus meeting the rigorous toxicity standard adopted by the European Union even thought this directive exempts PV panels. The authors are unaware of any completed or proposed utility-scale system in North Carolina using CIS/CIGS panels.

1.2.3 Panel End-of-Life Management

Concerns about the volume, disposal, toxicity, and recycling of PV panels are addressed in this subsection. To put the volume of PV waste into perspective, consider that by 2050, when PV systems installed in 2020 will reach the end of their lives, it is estimated that the global annual PV panel waste tonnage will be 10% of the 2014 global e-waste tonnage.[42] In the U.S., end-of-life disposal of solar products is governed by the Federal Resource Conservation and Recovery Act (RCRA), as well as state policies in some situations. RCRA separates waste into hazardous (not accepted at ordinary landfill) and solid waste (generally accepted at ordinary landfill) based on a series of rules. According to RCRA, the way to determine if a PV panel is classified as hazardous waste is the Toxic Characteristic Leaching Procedure (TCLP) test. This EPA test is designed to simulate landfill disposal and determine the risk of hazardous substances leaching out of the landfill.[43,44,45] Multiple sources report that most modern PV panels (both crystalline silicon and cadmium telluride) pass the TCLP test.[46,47] Some studies found that some older (1990s) crystalline silicon panels, and perhaps some newer crystalline silicon panels (specifics are not given about vintage of panels tested), do not pass the lead (Pb) leachate limits in the TCLP test.[48,49]

The test begins with the crushing of a panel into centimeter-sized pieces. The pieces are then mixed in an acid bath. After tumbling for eighteen hours, the fluid is tested for forty hazardous substances that all must be below specific threshold levels to pass the test. Research comparing TCLP conditions to conditions of damaged panels in the field found that simulated landfill conditions provide overly conservative estimates of leaching for field-damaged panels.[50] Additionally, research in Japan has found no detectable Cd leaching from cracked CdTe panels when exposed to simulated acid rain.[51]

Although modern panels can generally be landfilled, they can also be recycled. Even though recent waste volume has not been adequate to support significant PV-specific recycling infrastructure, the existing recycling industry in North Carolina reports that it recycles much of the current small volume of broken PV panels. In an informal survey conducted by the NC Clean Energy Technology Center survey in early 2016, seven of the eight large active North Carolina utility-scale solar developers surveyed reported that they send damaged panels back to the manufacturer and/or to a local recycler. Only one developer reported sending damaged panels to the landfill.

The developers reported at that time that they are usually paid a small amount per panel by local recycling firms. In early 2017, a PV developer reported that a local recycler was charging a small fee per panel to recycle damaged PV panels. The local recycling firm known to authors to accept PV panels described their current PV panel recycling practice as of early 2016 as removing the aluminum frame for local recycling and removing the wire leads for local copper recycling. The remainder of the panel is sent to a facility for processing the non-metallic portions of crushed vehicles, referred to as “fluff” in the recycling industry.[52] This processing within existing general recycling plants allows for significant material recovery of major components, including glass which is 80% of the module weight, but at lower yields than PV-specific recycling plants. Notably almost half of the material value in a PV panel is in the few grams of silver contained in almost every PV panel produced today. In the long-term, dedicated PV panel recycling plants can increase treatment capacities and maximize revenues resulting in better output quality and the ability to recover a greater fraction of the useful materials.[53] PV-specific panel recycling technologies have been researched and implemented to some extent for the past decade, and have been shown to be able to recover over 95% of PV material (semiconductor) and over 90% of the glass in a PV panel.[54]

A look at global PV recycling trends hints at the future possibilities of the practice in our country. Europe installed MW-scale volumes of PV years before the U.S. In 2007, a public-private partnership between the European Union and the solar industry set up a voluntary collection and recycling system called PV CYCLE. This arrangement was later made mandatory under the EU’s WEEE directive, a program for waste electrical and electronic equipment.[55] Its member companies (PV panel producers) fully finance the association. This makes it possible for end-users to return the member companies’ defective panels for recycling at any of the over 300 collection points around Europe without added costs. Additionally, PV CYCLE will pick up batches of 40 or more used panels at no cost to the user. This arrangement has been very successful, collecting and recycling over 13,000 tons by the end of 2015.[56]

In 2012, the WEEE Directive added the end-of-life collection and recycling of PV panels to its scope.[57] This directive is based on the principle of extended-producer-responsibility. It has a global impact because producers that want to sell into the EU market are legally responsible for end-of-life management. Starting in 2018, this directive targets that 85% of PV products “put in the market” in Europe are recovered and 80% is prepared for reuse and recycling.

The success of the PV panel collection and recycling practices in Europe provides promise for the future of recycling in the U.S. In mid-2016, the US Solar Energy Industry Association (SEIA) announced that they are starting a national solar panel recycling program with the guidance and support of many leading PV panel producers.[58] The program will aggregate the services offered by recycling vendors and PV manufacturers, which will make it easier for consumers to select a cost-effective and environmentally responsible end-of-life management solution for their PV products. According to SEIA, they are planning the program in an effort to make the entire industry landfill-free. In addition to the national recycling network program, the program will provide a portal for system owners and consumers with information on how to responsibly recycle their PV systems.

While a cautious approach toward the potential for negative environmental and/or health impacts from retired PV panels is fully warranted, this section has shown that the positive health impacts of reduced emissions from fossil fuel combustion from PV systems more than outweighs any potential risk. Testing shows that silicon and CdTe panels are both safe to dispose of in landfills, and are also safe in worst case conditions of abandonment or damage in a disaster. Additionally, analysis by local engineers has found that the current salvage value of the equipment in a utility scale PV facility generally exceeds general contractor estimates for the cost to remove the entire PV system.[59, 60, 61]

1.2.4 Non-Panel System Components (racking, wiring, inverter, transformer)

While previous toxicity subsections discussed PV panels, this subsection describes the non-panel components of utility-scale PV systems and investigates any potential public health and safety concerns. The most significant non-panel component of a ground-mounted PV system is the mounting structure of the rows of panels, commonly referred to as “racking”. The vertical post portion of the racking is galvanized steel and the remaining above-ground racking components are either galvanized steel or aluminum, which are both extremely common and benign building materials. The inverters that make the solar generated electricity ready to send to the grid have weather-proof steel enclosures that protect the working components from the elements. The only fluids that they might contain are associated with their cooling systems, which are not unlike the cooling system in a computer. Many inverters today are RoHS compliant.

The electrical transformers (to boost the inverter output voltage to the voltage of the utility connection point) do contain a liquid cooling oil. However, the fluid used for that function is either a non-toxic mineral oil or a biodegradable non-toxic vegetable oil, such as BIOTEMP from ABB. These vegetable transformer oils have the additional advantage of being much less flammable than traditional mineral oils. Significant health hazards are associated with old transformers containing cooling oil with toxic PCBs. Transfers with PCB-containing oil were common before PCBs were outlawed in the U.S. in 1979. PCBs still exist in older transformers in the field across the country.

Other than a few utility research sites, there are no batteries on- or off-site associated with utility-scale solar energy facilities in North Carolina, avoiding any potential health or safety concerns related to battery technologies. However, as battery technologies continue to improve and prices continue to decline we are likely to start seeing some batteries at solar facilities. Lithium ion batteries currently dominate the world utility-scale battery market, which are not very toxic. No non-panel system components were found to pose any health or environmental dangers.

1.4 Operations and Maintenance – Panel Washing and Vegetation Control

Throughout the eastern U.S., the climate provides frequent and heavy enough rain to keep panels adequately clean. This dependable weather pattern eliminates the need to wash the panels on a regular basis. Some system owners may choose to wash panels as often as once a year to increase production, but most in N.C. do not regularly wash any PV panels. Dirt build up over time may justify panel washing a few times over the panels' lifetime; however, nothing more than soap and water are required for this activity.

The maintenance of ground-mounted PV facilities requires that vegetation be kept low, both for aesthetics and to avoid shading of the PV panels. Several approaches are used to maintain vegetation at NC solar facilities, including planting of limited-height species, mowing, weed-eating, herbicides, and grazing livestock (sheep). The following descriptions of vegetation maintenance practices are based on interviews with several solar developers as well as with three maintenance firms that together are contracted to maintain well over 100 of the solar facilities in N.C. The majority of solar facilities in North Carolina maintain vegetation primarily by mowing. Each row of panels has a single row of supports, allowing sickle mowers to mow under the panels. The sites usually require mowing about once a month during the growing season. Some sites employ sheep to graze the site, which greatly reduces the human effort required to maintain the vegetation and produces high quality lamb meat.[62]

In addition to mowing and weed eating, solar facilities often use some herbicides. Solar facilities generally do not spray herbicides over the entire acreage; rather they apply them only in strategic locations such as at the base of the perimeter fence, around exterior vegetative buffer, on interior dirt roads, and near the panel support posts. Also unlike many row crop operations, solar facilities generally use only general use herbicides, which are available over the counter, as opposed to restricted use herbicides commonly used in commercial agriculture that require a special restricted use license. The herbicides used at solar facilities are primarily 2-4-D and glyphosate (Round-up®), which are two of the most common herbicides used in lawns, parks, and agriculture across the country. One maintenance firm that was interviewed sprays the grass with a class of herbicide known as a growth regulator in order to slow the growth of grass so that mowing is only required twice a year. Growth regulators are commonly used on highway roadsides and golf courses for the same purpose. A commercial pesticide applicator license is required for anyone other than the landowner to apply herbicides, which helps ensure that all applicators are adequately educated about proper herbicide use and application. The license must be renewed annually and requires passing of a certification exam appropriate to the area in which the applicator wishes to work. Based on the limited data available, it appears that solar facilities in N.C. generally use significantly less herbicides per acre than most commercial agriculture or lawn maintenance services.

2. Electromagnetic Fields (EMF)

PV systems do not emit any material during their operation; however, they do generate electromagnetic fields (EMF), sometimes referred to as radiation. EMF produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat), but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. As shown below, modern humans are all exposed to EMF throughout our daily lives without negative health impact. Someone outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no negative health impact from the EMF produced in a solar farm. The following paragraphs provide some additional background and detail to support this conclusion.

Since the 1970s, some have expressed concern over potential health consequences of EMF from electricity, but no studies have ever shown this EMF to cause health problems.[63] These concerns are based on some epidemiological studies that found a slight increase in childhood leukemia associated with average exposure to residential power-frequency magnetic fields above 0.3 to 0.4 µT (microteslas) (equal to 3.0 to 4.0 mG (milligauss)). µT and mG are both units used to measure magnetic field strength. For comparison, the average exposure for people in the U.S. is one mG or 0.1 µT, with about 1% of the population with an average exposure in excess of 0.4 µT (or 4 mG).[64] These epidemiological studies, which found an association but not a causal relationship, led the World Health Organization's International Agency for Research on Cancer (IARC) to classify ELF magnetic fields as "possibly carcinogenic to humans". Coffee also has this classification. This classification means there is limited evidence but not enough evidence to designate as either a "probable carcinogen" or "human carcinogen". Overall, there is very little concern that ELF EMF damages public health. The only concern that does exist is for long-term exposure above 0.4 µT (4 mG) that may have some connection to increased cases of childhood leukemia. In 1997, the National Academies of Science were directed by Congress to examine this concern and concluded:

> "Based on a comprehensive evaluation of published studies relating to the effects of power-frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is that the current body of evidence does not show that exposure to these fields presents a human-health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer, adverse neurobehavioral effects, or reproductive and developmental effects."[65]

There are two aspects to electromagnetic fields, an electric field and a magnetic field. The electric field is generated by voltage and the magnetic field is generated by electric current, i.e., moving electrons. A task group of scientific experts convened by the World Health Organization (WHO) in 2005 concluded that there were no substantive health issues related to *electric* fields (0 to 100,000 Hz) at levels generally encountered by members of the public.[66] The relatively low voltages in a solar facility and the fact that electric fields are easily shielded (i.e., blocked) by common materials, such as plastic, metal, or soil means that there is no concern of negative health impacts from the electric fields generated by a solar facility. Thus, the remainder of this section addresses magnetic fields. Magnetic fields are not shielded by most common materials and thus can easily pass through them. Both types of fields are strongest close to the source of electric generation and weaken quickly with distance from the source.

The direct current (DC) electricity produced by PV panels produce stationary (0 Hz) electric and magnetic fields. Because of minimal concern about potential risks of stationary fields, little scientific research has examined stationary fields' impact on human health.[67] In even the largest PV facilities, the DC voltages and currents are not very high. One can illustrate the weakness of the EMF generated by a PV panel by placing a compass on an operating solar panel and observing that the needle still points north.

While the electricity throughout the majority of a solar site is DC electricity, the inverters convert this DC electricity to alternating current (AC) electricity matching the 60 Hz frequency of the grid. Therefore, the inverters and the wires delivering this power to the grid are producing non-stationary EMF, known as extremely low frequency (ELF) EMF, normally oscillating with a frequency of 60 Hz. This frequency is at the low-energy end of the electromagnetic spectrum. Therefore, it has less energy than other commonly encountered types of non-ionizing radiation like radio waves, infrared radiation, and visible light.

The wide use of electricity results in background levels of ELF EMFs in nearly all locations where people spend time – homes, workplaces, schools, cars, the supermarket, etc. A person's average exposure depends upon the sources they encounter, how close they are to them, and the amount of time they spend there.[68] As stated above, the average exposure to magnetic fields in the U.S. is estimated to be around one mG or 0.1 µT, but can vary considerably depending on a person's exposure to EMF from electrical devices and wiring.[69] At times we are often exposed to much higher ELF magnetic fields, for example when standing three feet from a refrigerator the ELF magnetic field is 6 mG and when standing three feet from a microwave oven the field is about 50 mG.[70] The strength of these fields diminish quickly with distance from the source, but when surrounded by electricity in our homes and other buildings moving away from one source moves you closer to another. However, unless you are inside of the fence at a utility-scale solar facility or electrical substation it is impossible to get very close to the EMF sources. Because of this, EMF levels at the fence of electrical substations containing high voltages and currents are considered "generally negligible".[71, 72]

The strength of ELF-EMF present at the perimeter of a solar facility or near a PV system in a commercial or residential building is significantly lower than the typical American's average EMF exposure.[73, 74] Researchers in Massachusetts measured magnetic fields at PV projects and found the magnetic fields dropped to very low levels of 0.5 mG or less, and in many cases to less than background levels (0.2 mG), at distances of no more than nine feet from the residential inverters and 150 feet from the utility-scale inverters.[75] Even when measured within a few feet of the utility-scale inverter, the ELF magnetic fields were well below the International Commission on Non-Ionizing Radiation Protection's recommended magnetic field level exposure limit for the general public of 2,000 mG.[76] It is typical that utility scale designs locate large inverters central to the PV panels that feed them because this minimizes the length of wire required and shields neighbors from the sound of the inverter's cooling fans. Thus, it is rare for a large PV inverter to be within 150 feet of the project's security fence.

Anyone relying on a medical device such as pacemaker or other implanted device to maintain proper heart rhythm may have concern about the potential for a solar project to interfere with the operation of his or her device. However, there is no reason for concern because the EMF outside of the solar facility's fence is less than 1/1000 of the level at which manufacturers test for ELF EMF interference, which is 1,000 mG.[77] Manufacturers of potentially affected implanted devices often provide advice on electromagnetic interference that includes avoiding letting the implanted device get too close to certain sources of fields such as some household appliances, some walkie-talkies, and similar transmitting devices. Some manufacturers' literature does not mention high-voltage power lines, some say that exposure in public areas should not give interference, and some advise not spending extended periods of time close to power lines.[78]

3. Electric Shock and Arc Flash Hazards

There is a real danger of electric shock to anyone entering any of the electrical cabinets such as combiner boxes, disconnect switches, inverters, or transformers; or otherwise coming in contact with voltages over 50 Volts.[79] Another electrical hazard is an arc flash, which is an explosion of energy that can occur in a short circuit situation. This explosive release of energy causes a flash of heat and a shockwave, both of which can cause serious injury or death. Properly trained and equipped technicians and electricians know how to safely install, test, and repair PV systems, but there is always some risk of injury when hazardous voltages and/or currents are present. Untrained individuals should not attempt to inspect, test, or repair any aspect of a PV system due to the potential for injury or death due to electric shock and arc flash, The National Electric Code (NEC) requires appropriate levels of warning signs on all electrical components based on the level of danger determined by the voltages and current potentials. The national electric code also requires the site to be secured from unauthorized visitors with either a six-foot chain link fence with three strands of barbed wire or an eight-foot fence, both with adequate hazard warning signs.

4. Fire Safety

The possibility of fires resulting from or intensified by PV systems may trigger concern among the general public as well as among firefighters. However, concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

Heat from a small flame is not adequate to ignite a PV panel, but heat from a more intense fire or energy from an electrical fault can ignite a PV panel.[80] One real-world example of this occurred during July 2015 in an arid area of California. Three acres of grass under a thin film PV facility burned without igniting the panels mounted on fixed-tilt racks just above the grass.[81] While it is possible for electrical faults in PV systems on homes or commercial buildings to start a fire, this is extremely rare.[82] Improving understanding of the PV-specific risks, safer system designs, and updated fire-related codes and standards will continue to reduce the risk of fire caused by PV systems.

PV systems on buildings can affect firefighters in two primary ways, 1) impact their methods of fighting the fire, and 2) pose safety hazard to the firefighters. One of the most important techniques that firefighters use to suppress fire is ventilation of a building's roof. This technique allows superheated toxic gases to quickly exit the building. By doing so, the firefighters gain easier and safer access to the building, Ventilation of the roof also makes the challenge of putting out the fire easier. However, the placement of rooftop PV panels may interfere with ventilating the roof by limiting access to desired venting locations.

New solar-specific building code requirements are working to minimize these concerns. Also, the latest National Electric Code has added requirements that make it easier for first responders to safely and effectively turn off a PV system. Concern for firefighting a building with PV can be reduced with proper fire fighter training, system design, and installation. Numerous organizations have studied fire fighter safety related to PV. Many organizations have published valuable guides and training programs. Some notable examples are listed below.

- The International Association of Fire Fighters (IAFF) and International Renewable Energy Council (IREC) partnered to create an online training course that is far beyond the PowerPoint click-and-view model. The self-paced online course, "Solar PV Safety for Fire Fighters," features rich video content and simulated environments so fire fighters can practice the knowledge they've learned. www.iaff.org/pvsafetytraining
- Photovoltaic Systems and the Fire Code: Office of NC Fire Marshal
- Fire Service Training, Underwriter's Laboratory

- Firefighter Safety and Response for Solar Power Systems, National Fire Protection Research Foundation
- Bridging the Gap: Fire Safety & Green Buildings, National Association of State Fire Marshalls
- Guidelines for Fire Safety Elements of Solar Photovoltaic Systems, Orange County Fire Chiefs Association
- Solar Photovoltaic Installation Guidelines, California Department of Forestry & Fire Protection, Office of the State Fire Marshall
- PV Safety & Firefighting, Matthew Paiss, Homepower Magazine
- PV Safety and Code Development: Matthew Paiss, Cooperative Research Network

Summary

The purpose of this paper is to address and alleviate concerns of public health and safety for utility-scale solar PV projects. Concerns of public health and safety were divided and discussed in the four following sections: (1) Toxicity, (2) Electromagnetic Fields, (3) Electric Shock and Arc Flash, and (4) Fire. In each of these sections, the negative health and safety impacts of utility-scale PV development were shown to be negligible, while the public health and safety benefits of installing these facilities are significant and far outweigh any negative impacts.

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NC CLEAN ENERGY
TECHNOLOGY CENTER

SAGE ENVIRONMENTAL

April 13, 2020

Ms. Lindsay McGovern, Vice President
Revity Energy, LLC
117 Metro Center Boulevard, Suite 1007
Warwick, RI 02886
Sent via email to: Lindsay@RevityEnergy.com

RE: Solar Panel Material of Construction Evaluation
A Proposed Solar Farm Development
Frontier Road (AP: 7, Lots: 62, 62A and 63)
Hopkinton, Rhode Island
SAGE Project No. M896

Dear Ms. McGovern:

This correspondence presents the findings of an evaluation of the material of construction for the solar panels being used for the solar project located on Frontier Road (Assessor's Plat 7 Lots 62, 62A and 63) Hopkinton, Rhode Island.

The solar project is utilizing a crystalline silicon panel manufactured by Q CELLS, referred to as Q.PEAK DUO XL-G9.3. Q.PEAK DUO XL-G9.3 is a gapless solar module that is developed for greater power output and efficiency, meaning that less panels are necessary to achieve the same amount of power generation as older solar panels. Note that Q.PEAK DUO XL-G9.3 is a new solar panel to the market and will not be available for installation until mid-2020. These panels are extreme weather rated, they have a high-tech aluminum alloy frame and are certified for high snow loads (5400 Pa) and wind loads (4000 Pa). **Attachment 1** provides the technical specification for Q.PEAK DUO XL-G9.3, note that this solar development project plans to install the 460W power class modules.

Since Q.PEAK DUO XL-G9.3 is a new product Safety Data Sheet (SDS) and toxicity data is not available for this specific module. However, Q CELLS provided data for a comparable module. **Attachment 2** provides the SDS for the comparable module, the Q.PEAK DUO series modules. Per communication with Q CELLS, this module uses the same components as what is used on Q.PEAK DUO XL-G9.3 modules. The only difference between these two modules is the gap between the cells, the Q.PEAK DUO XL-G9.3 module is gapless and allows more cells to be added compared to similar size modules. **Attachment 3** provides a copy of email communication with Q CELLS describing these details. **Table 1** provides a listing of materials that are contained in the Q.PEAK DUO series modules (i.e. comparable modules to Q.PEAK DUO XL-G9.3).

Table 1
Materials Contained in Q CELLS Solar Panel

Component	Material	Composition Range
Frame	Aluminum	8%-16%
	Silicone	<2%
Laminate	Glass	60%-80%
	Plastics (EVA, PET, PE, PPE, PC)	8%-16%
	Silicon	2%-4%
	Metals (Aluminum, Copper, Tin)	1%-3%
	Lead	<0.%
	Silver	<0.05%

Toxicity data provided by Q CELLS was Toxicity Characteristic Leaching Procedure (TCLP) analytical data, this is provided in **Attachment 4**. TCLP is a chemical analysis process that the Environmental Protection Agency (EPA) and Rhode Island Department of Environmental Management (RIDEM) use to determine if waste is considered hazardous. The thresholds that define if waste material is hazardous is defined in 40 CFR Part 261 Subpart C. If a waste constituent is below the TCLP threshold, then health effects are not expected to occur based on drinking water maximum contaminant level (MCL) standards. TCLP leach test is for assessing long-term contaminant release potential for landfills

TCLP data is not available for Q.PEAK DUO XL-G9.3 but is available for a comparable module (Q.PEAK DUO L-G5.2). **Table 2** provides a summary of TCLP analytical data for this comparable module; as displayed all analyzed constituents are below EPA/RIDEM's threshold for hazardous waste. Meaning that health effects are not expected to occur. Per communication with Q CELLS (**Attachment 3**), there is the potential for a 10% increase in materials in the Q.PEAK DUO XL-G9.3 compared to the Q.PEAK DUO L-G5.2. However, this is not expected to cause any TCLP exceedances as amounts would have to increase over 300% to cause any exceedances of EPA/RIDEM's threshold for hazardous waste.

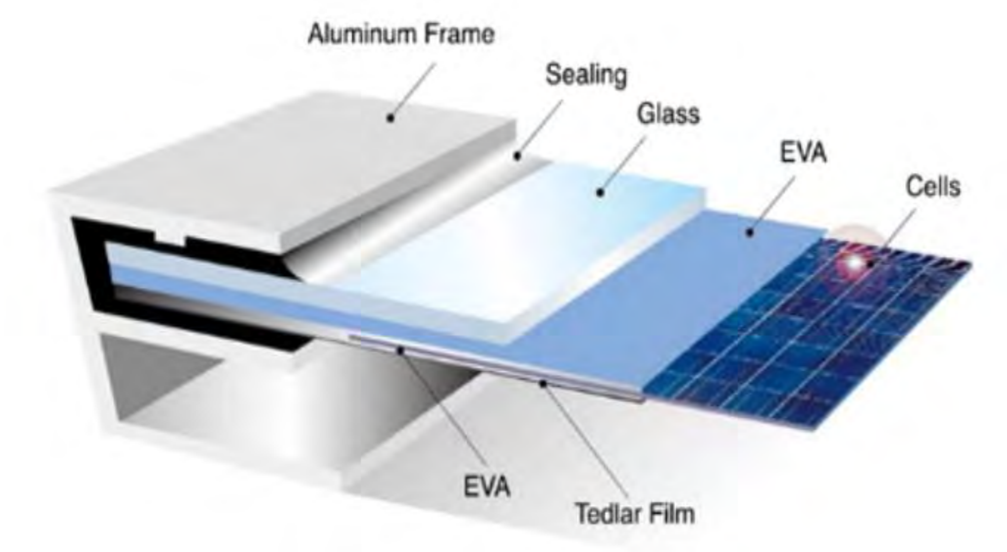
Table 2
Summary of TCLP Analytical Data

Contaminant	Greatest TCLP Concentration Reported	RCRA TCLP Threshold	Hazardous Waste Determination
Mercury (mg/L)	< 0.0001	0.2	Not Hazardous Waste
Arsenic (mg/L)	< 0.01	5	Not Hazardous Waste
Barium (mg/L)	0.12	100	Not Hazardous Waste
Cadmium (mg/L)	< 0.01	1	Not Hazardous Waste
Chromium (mg/L)	< 0.01	5	Not Hazardous Waste
Lead (mg/L)	1.48	5	Not Hazardous Waste
Selenium (mg/L)	< 0.01	1	Not Hazardous Waste
Silver (mg/L)	< 0.01	5	Not Hazardous Waste

Comparing TCLP results to determine if there may be environmental impacts related to solar panel operation is highly conservative. During the TCLP test, waste samples are crushed to a particle size less than 9.5 mm. The crushed material is then mixed with an acid to determine how much of a toxic component in the crushed material would leach out. Note that the smaller the particle size the greater potential for the material to leach, as it provides a greater surface area. TCLP process is a regulated analytical procedure and is defined in EPA Method 1311 Toxicity Characteristic Leaching Procedure. The objective of TCLP is to assess the risk to ground water when potentially hazardous waste is co-disposed with garbage in sanitary landfills, it simulates worst case management of hazardous waste in a landfill. TCLP leach test is for assessing long-term contaminant release potential. This is not a direct comparison to the actual site conditions, as TCLP is more conservative. TCLP is a worst-case scenario, as at no time during normal operation or if a panel was to break would it be exposed to soil/groundwater at the small particle sizes that were analyzed via TCLP.

Crystalline silicon solar panels, such as Q.PEAK DUO XL-G9.3, are manufactured such that all components are fully encased in glass. **Figure 1** provides a schematic showing the different "layers" to a solar panel. Scenarios for how metal components listed in the panel SDS would impact groundwater are unlikely. The metal components are located in the area referred to as "cells" in **Figure 1**. These metals are in the solid form and require a leaching mechanism to get the heavy metal from the panel cell to the soil. Rainwater would be required to enter a broken panel and then travel from the panel cell to the soil, and then partition from the soil to groundwater. The contaminant evaluated for potential leaching in the Q.PEAK DUO XL-G9.3 is lead, as all other contaminants are non-detect or significantly lower than the hazardous threshold. However, environmental contamination due to lead in Q.PEAK DUO XL-G9.3 panels is not a concern because there is not a significant amount of lead found in the panels.

Figure 1
Solar Panel Schematic



From: N.C. Clean Energy Technology Center. "Health and Safety Impacts of Solar Photovoltaics." May 2017.

The lead amount in the Q.PEAK DUO XL-G9.3 is less than 0.1%. Under normal conditions lead does not react with water. In order for lead to leach into water the lead must come into contact with moist air. A layer of lead oxide (PbO) forms at the surface of the metal, when both oxygen and water are present metallic lead is converted to lead hydroxide (Pb(OH)2) [2Pb(s)+ O2(g) + 2H2O(l) -> 2 Pb(OH)2(s)]. This lead hydroxide is what would then potentially leach into water during rain events. This process is not expected to generate hazardous conditions due to the low amount of lead in the Q.PEAK DUO XL-G9.3 panels.

Note that this solar development is equipped with an automated system that would detect any voltage drop that would indicate that there was a significant break to the panel. If a panel was to break allowing for moist air to come into contact with lead, the solar development maintenance staff would be alerted and the panel would be repaired or replaced in a timely and comprehensive manner. Thus, further reducing the potential for any amount of lead reaching the soil or groundwater.

In 2017 the N.C. Clean Energy Technology Center assessed the health and safety impacts of solar photovoltaics, a copy of this assessment is provided in **Attachment 5**. This assessment evaluated hazardous materials found in solar photovoltaic development. The findings of this assessment regarding lead is such that "the very limited amount of lead involved and its strong physical and chemical attachment to other components of the PV panel means that even in worst-case scenarios the health hazard it poses is insignificant". The assessment also compares the quantity of lead in solar panels to other common materials, demonstrating that the amount of lead in solar panels is very low. For example, "Estimates for the lead in a single PV panel with lead-based solder range from 1.6 to 24 grams of lead, with 13g (less than half of an ounce) per panel seen most often in the literature. At 13 g/panel, each panel contains one-half of the lead in a typical 12-gauge shotgun shell." The assessment also specially addresses crystalline silicon panels, which "concludes that they do not pose a material risk of toxicity to public health and safety". Note that the N.C. Clean Energy Technology Center assessment is not specifically addressing the Q.PEAK DUO XL-G9.3 panel, it is a general evaluation of solar panels.

In May 2019, the Journal of Natural Resources and Development published a paper titled "Potential for leaching of heavy metals and metalloids from crystalline silicon photovoltaic systems" authored by Seth A. Robinson (Department of Biology, University of Florida) and George A. Meindl (Environmental Studies Program, Binghamton University); a copy of this paper is provided in **Attachment 6**. This paper evaluated a solar farm in located in Buffalo, New York to determine if soil directly beneath solar panels and adjacent fields were contaminated by metals (lead, cadmium, lithium, strontium, nickel, barium, zinc, and copper) and metalloids (selenium) found in the panels. The study concluded that no elements exceeded soil screening thresholds established by the EPA's Ecological Soil Screening Level (Eco-SSL). The authors of the paper do note that this assessment is specific to the panels evaluated, however it is a case example of field data demonstrating no environmental impacts from components found in solar panels.

In conclusion, the data provided for the Q.PEAK DUO XL-G9.3 demonstrates that the panels are not expected to cause environmental contamination to soils or groundwater. These panels have very small amounts of metal, and even if these panels were broken into very small pieces (which would require an external force of significant magnitude, such as a mechanical shredder) the amount of contaminants that has the potential to leach to the environment is below EPA/RIDEM's threshold for hazardous waste; meaning that health effects are not expected to occur. One should note that the TCLP is a conservative comparison as it does not represent normal panel operation or how a broken panel would impact soil/groundwater, as TCLP evaluates the components as small particles sizes exposed to leaching liquid. TCLP leach test is for assessing long-term contaminant release potential for landfills. However, since the material is not considered hazardous based on those standards, normal panel operation or exposure from a broken panel would not present environmental concern.

Should you have any questions or concerns, please do not hesitate to contact us.

Sincerely,
SAGE Environmental, Inc.

John Clark | *Nicole Mulanaphy*

John Clark
Senior Chemical Engineer

Nicole Mulanaphy, P.E.
Senior Project Manager

Attachments:

Attachment 1: Q.PEAK DUO XL-G9.3 technical data sheet
Attachment 2: Q CELLS Solar Panel SDS
Attachment 3: Q CELLS E-mail Describing SDS and Toxicity Data
Attachment 4: TCLP Analytical Data
Attachment 5: N.C. Clean Energy Technology Center Paper
Attachment 6: Journal of Natural Resources and Development Article

Appendix M – Equipment Specifications

NEW

CanadianSolar

FRONT BACK

BiHiKu7

BIFACIAL MONO PERC

640 W ~ 665 W

CS7N-640|645|650|655|660|665MB-AG

MORE POWER

665 W Module power up to 665 W
Module efficiency up to 21.4 %

Up to 8.9 % lower LCOE
Up to 4.6 % lower system cost

Comprehensive LID / LeTID mitigation technology, up to 50% lower degradation

Compatible with mainstream trackers, cost effective product for utility power plant

Better shading tolerance

MORE RELIABLE

40 °C lower hot spot temperature, greatly reduce module failure rate

Minimizes micro-crack impacts

Heavy snow load up to 5400 Pa, wind load up to 2400 Pa*

* For detailed information, please refer to Installation Manual.

12 Years **Enhanced Product Warranty on Materials and Workmanship***

30 Years **Linear Power Performance Warranty***

1st year power degradation no more than 2%
Subsequent annual power degradation no more than 0.45%

*According to the applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA
CEC listed (US California) / FSEC (US Florida)
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
Take-e-way

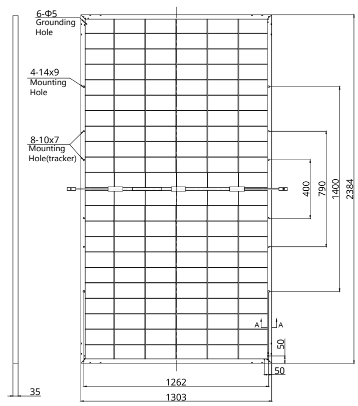
* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

CSI SOLAR (USA) CO., LTD. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 63 GW of premium-quality solar modules across the world.

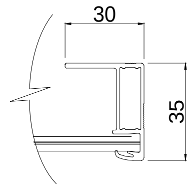
CSI SOLAR (USA) CO., LTD.
1350 Treat Blvd. Suite 500, Walnut Creek, CA 94598, USA | www.csisolar.com/na | service.ca@csisolar.com

ENGINEERING DRAWING (mm)

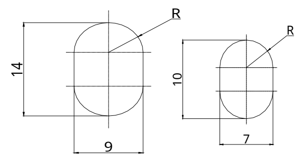
Rear View



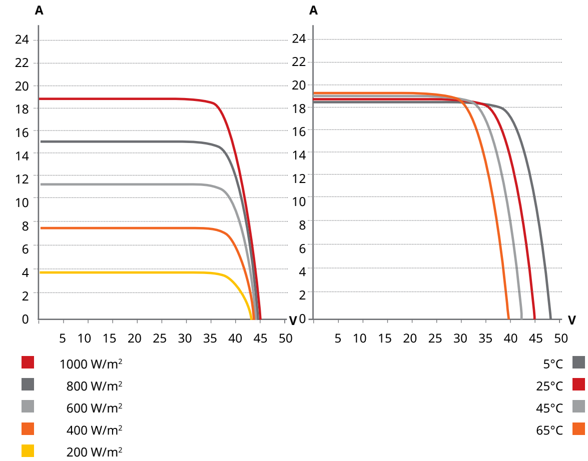
Frame Cross Section A-A



Mounting Hole



CS7N-650MB-AG / I-V CURVES



ELECTRICAL DATA | STC*

		Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS7N-640MB-AG		640 W	37.5 V	17.07 A	44.6 V	18.31 A	20.6%
Bifacial Gain**	5%	672 W	37.5 V	17.92 A	44.6 V	19.23 A	21.6%
	10%	704 W	37.5 V	18.78 A	44.6 V	20.14 A	22.7%
	20%	768 W	37.5 V	20.48 A	44.6 V	21.97 A	24.7%
CS7N-645MB-AG		645 W	37.7 V	17.11 A	44.8 V	18.35 A	20.8%
Bifacial Gain**	5%	677 W	37.7 V	17.97 A	44.8 V	19.27 A	21.8%
	10%	710 W	37.7 V	18.84 A	44.8 V	20.19 A	22.9%
	20%	774 W	37.7 V	20.53 A	44.8 V	22.02 A	24.9%
CS7N-650MB-AG		650 W	37.9 V	17.16 A	45.0 V	18.39 A	20.9%
Bifacial Gain**	5%	683 W	37.9 V	18.03 A	45.0 V	19.31 A	22.0%
	10%	715 W	37.9 V	18.88 A	45.0 V	20.23 A	23.0%
	20%	780 W	37.9 V	20.59 A	45.0 V	22.07 A	25.1%
CS7N-655MB-AG		655 W	38.1 V	17.20 A	45.2 V	18.43 A	21.1%
Bifacial Gain**	5%	688 W	38.1 V	18.06 A	45.2 V	19.35 A	22.1%
	10%	721 W	38.1 V	18.93 A	45.2 V	20.27 A	23.2%
	20%	786 W	38.1 V	20.64 A	45.2 V	22.12 A	25.3%
CS7N-660MB-AG		660 W	38.3 V	17.24 A	45.4 V	18.47 A	21.2%
Bifacial Gain**	5%	693 W	38.3 V	18.10 A	45.4 V	19.39 A	22.3%
	10%	726 W	38.3 V	18.96 A	45.4 V	20.32 A	23.4%
	20%	792 W	38.3 V	20.69 A	45.4 V	22.16 A	25.5%
CS7N-665MB-AG		665 W	38.5 V	17.28 A	45.6 V	18.51 A	21.4%
Bifacial Gain**	5%	698 W	38.5 V	18.14 A	45.6 V	19.44 A	22.5%
	10%	732 W	38.5 V	19.02 A	45.6 V	20.36 A	23.6%
	20%	798 W	38.5 V	20.74 A	45.6 V	22.21 A	25.7%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 29 (UL 61730) or CLASS C (IEC61730)
Max. Series Fuse Rating	35 A
Application Classification	Class A
Power Tolerance	0 ~ + 10 W
Power Bifaciality*	70 %

* Power Bifaciality = $Pmax_{rear}$ / $Pmax_{front}$, both $Pmax_{rear}$ and $Pmax_{front}$ are tested under STC, Bifaciality Tolerance: ± 5 %

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS7N-640MB-AG	480 W	35.2 V	13.64 A	42.2 V	14.77 A
CS7N-645MB-AG	484 W	35.3 V	13.72 A	42.3 V	14.80 A
CS7N-650MB-AG	487 W	35.5 V	13.74 A	42.5 V	14.83 A
CS7N-655MB-AG	491 W	35.7 V	13.76 A	42.7 V	14.86 A
CS7N-660MB-AG	495 W	35.9 V	13.79 A	42.9 V	14.89 A
CS7N-665MB-AG	499 W	36.1 V	13.83 A	43.1 V	14.93 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 × 1303 × 35 mm (93.9 × 51.3 × 1.38 in)
Weight	37.9 kg (83.6 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm² (IEC), 10 AWG (UL)
Cable Length (Including Connector)	460 mm (18.1 in) (+) / 340 mm (13.4 in) (-) or customized length*
Connector	T4 or MC4 series
Per Pallet	31 pieces
Per Container (40' HQ)	527 pieces or 465 pieces (only for US)

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.34 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION

SG3300UD-MV-US
SG4400UD-MV-US

Turnkey Station for 1500 Vdc System MV Transformer Integrated

HIGH YIELD

- Advanced three-level technology, max. inverter efficiency 99%, CEC efficiency 98.5%
- Full power operation at 40 ℃(104 ℉)
- Effective cooling, wide operation temperature

EASY O&M

- Integrated current, voltage and MV parameters monitoring function for onlione analysis and trouble shooting
- Modular design, easy for maintenance

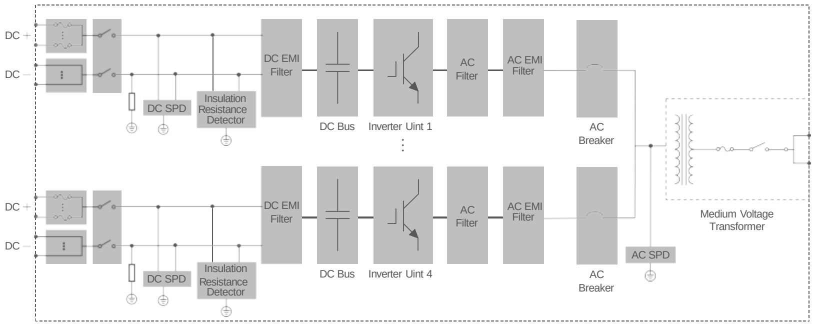
SAVED INVESTMENT

- Low transportation and installation cost due to 20-foot container size design
- DC 1500V system, low system cost
- Integrated MV transformer and LV auxiliary power supply
- Q at night optional

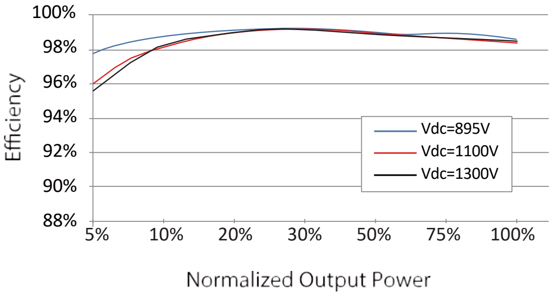
GRID SUPPORT

- Compliance with standards:UL 1741,UL 1741 SA, IEEE 1547-2018, Rule 21 and NEC code
- Low / High voltage ride through (L/HVRT), L/HFRT, soft start/stop
- Active &reactive power control and power ramp rate control

CIRCUIT DIAGRAM



EFFICIENCY CURVE



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SUNGROW
Clean power for all

Type Designation	SG3300UD-MV-US	SG4400UD-MV-US
Input (DC)		
Max. PV input voltage	1500 V	
Min. PV input voltage / Start-up input voltage	895 V / 905 V	
Available DC Fuse Sizes	250A - 630A	
MPP Voltage Range	895 V – 1300 V	
No. of independent MPP inputs	3	4
No. of DC inputs	18(optional: 21 inputs negative grounding)	24(optional:28 inputs negative grounding)
Max. PV input current	3 * 1435 A	4 * 1435 A
Max. DC short-circuit current	3 * 5000 A	4 * 5000 A
PV Array Configuration	Negative grounding or floating	
Output (AC)		
AC output power	3300 kVA @ 40 ℃(104 ℉)	4400 kVA @ 40 ℃(104 ℉)
Nominal Grid Frequency / Grid Frequency Range	60 Hz / 55 – 65 Hz	
Rated Current Distortion	< 3 % (at nominal power)	
Power Factor at Nominal Power / Ajustable Power Factor	> 0.99 / 0.8 leading - 0.8 lagging	
Efficiency		
Inverter Max. efficiency	99.0 %	
Inverter CEC efficiency	98.5%	
Transformer		
Transformer rated power	3300 kVA	4400 kVA
Transformer max. power	3300 kVA	4400 kVA
LV / MV voltage	0.63 kV / (12 – 35) kV	0.63 kV / 34.5 kV
Transformer vector	Dy1 (Optional: Dy11, Yny)	
Transformer cooling type	KNAN (Optional: ONAN)	
Protection		
DC Input Protection	Load break switch + fuse	
Inverter Output Protection	Circuit breaker	
AC MV Output Protection	Load break switch + fuse	
Overvoltage Protection	DC Type II / AC Type II	
Grid Monitoring / Ground Fault Monitoring	Yes / Yes	
Insulation Monitoring	Yes	
Overheat Protection	Yes	
General Data		
Dimensions (W*H*D)*	6058*2896*2438 mm 238.5''*114.0''*96.0''	
Weight*	≤18000 kg (≤39683 lbs)	≤20000 kg (≤44092 lbs)
Degree of Protection	NEMA 4X(Electronic for Inverter) / NEMA 3R(Others)	
Auxiliary Power Supply	5kVA, 120Vac; Optional: 35kVA, 480Vac/277Vac	
Operating Ambient Temperature Range	-35 to 60 ℃ (> 40 ℃ derating) / optional: -40 to 60 ℃ (> 40 ℃ derating) -31 to 140 ℉ (> 104 ℉ derating) / optional: -40 to 140 ℉ (> 104 ℉ derating)	
Allowable Relative Humidity Range	0 - 100 %	
Cooling Method	Temperature controlled forced air cooling	
Max. Operating Altitude	1000 m (Standard) / > 1000 m (Customized) (3280.8 ft (standard) / > 3280.8 ft (Customized)	
Display	LED Indicators, WLAN+WebHMI	
Night Reactive Power Function	Optional	
DC-Coupled Storage Interface	Optional	
Charging Power from the Grid	Optional	
Communication	Standard: RS485, Ethernet	
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC 2017, CSA C22.2 No.107.1-01, PRC-024, Rule 21	
Grid Support	Q at night function (optional), L/HVRT, L/HFRT, Active & reactive power control and power ramp rate control, Volt-var, Frequency-watt, ROCOF, Phase-jump Ride Through	

*: The actual product received shall prevail.

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SUNGROW

SG3150U-MV New

Turnkey Station for North America 1500 Vdc System - MV Transformer Integrated

High Yield

- Advanced three-level technology, max. inverter efficiency 98.8%, inverter CEC efficiency 98.5 %
- Max. DC/AC ratio more than 1.5

Easy O&M

- Integrated current, voltage and MV parameters monitoring function for online analysis and fast trouble shooting
- Modular design, easy for maintenance
- Convenient external LCD

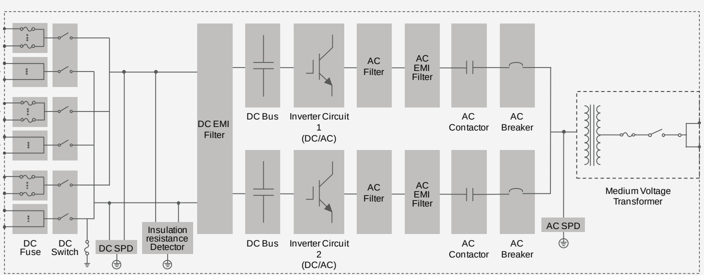
Saved Investment

- Low transportation and installation cost due to 20-foot container design
- 1500V DC system, low system cost
- Integrated MV transformer and LV auxiliary power supply

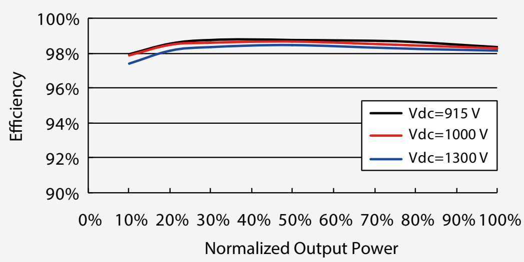
Grid Support

- Complies with UL 1741, UL 1741 SA, IEEE 1547, Rule 21 and NEC 2014/2017
- Grid support including L/HVRT, L/HFRT, active & reactive power control and power ramp rate control

Circuit Diagram



Inverter Efficiency Curve



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SG3150U-MV

Input (DC)	SG3150U-MV
Max. PV input voltage	1500V
Min. PV input voltage / Startup input voltage	915 V / 955 V
MPP voltage range	915 – 1300 V
No. of independent MPP inputs	1
No. of DC inputs	18 – 24
Max. PV input current	3420 A
Max. DC short-circuit current	4800 A
PV array configuration	Negative grounding
Output (AC)	
AC output power	3150 kVA @ 45 ℃ (113 ℉)
Max. inverter output current	2886 A
AC voltage range	34.5 kV
Nominal grid frequency / Grid frequency range	60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / Connection phases	3 / 3
Efficiency	
Inverter max. efficiency / Inverter CEC efficiency	98.8 % / 98.5 %
Transformer	
Transformer rated power	3150 kVA
Transformer max. power	3150 kVA
LV / MV voltage	0.63 kV / 34.5 kV
Transformer vector	Dy1
Transformer cooling type	ONAN (Oil Natural Air Natural)
Oil type	Mineral oil (PCB free) or degradable oil on request
Protection	
DC input protection	Load break switch + fuse
Inverter output protection	Circuit breaker
AC MV output protection	Load break switch + fuse
Overvoltage protection	DC Type II / AC Type II
Grid monitoring / Ground fault monitoring	Yes / Yes
Insulation monitoring	Optional
Overheat protection	Yes
General Data	
Dimensions (W*H*D)	6058*2896*2438 mm **(238.5''*114.0''*96.0'')**
Weight	18 T **(39683.2 lbs)**
Degree of protection	NEMA 3R
Auxiliary power supply	120 Vac, 5 kVA / Optional: 480 Vac, 30 kVA
Operating ambient temperature range	-30 to 60 ℃ (> 45 ℃ derating) **(-22 to 140 ℉ (> 113 ℉ derating))**
Allowable relative humidity range (non-condensing)	0 – 95 %
Cooling method	Temperature controlled forced air cooling
Max. operating altitude	1000 m (standard) / > 1000 m (optional) **(3280.8 ft (standard) / > 3280.8 ft (optional))**
Display	Touch screen
Communication	Standard: RS485, Ethernet; Optional: optical fiber
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC 2014/2017, CSA C22.2 No.107.1-01
Grid support	Night SVG function (optional), L/HVRT, L/HFRT, active & reactive power control and power ramp rate control, Volt-var, Frequency-watt

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Appendix N – Soil Analysis Report

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SITE SPECIFIC SOIL MAPPING

FISHER ASSOCIATES – EASTON SOLAR FARM

TOWN OF GREENWICH, WASHINGTON COUNTY, NEW YORK

Prepared for:

Fisher Associates
180 Charlotte Street
Rochester, NY 14607
585-334-1310

Prepared by:

Soil Hub LLC
428 Coachman Lane
Palmyra, PA 17078
717-305-8516

July 14, 2023

Michael Callahan, CPSS

A field investigation of soils and landscape was undertaken on June 14-16, 2023, along Windy Hill Road, north of SR 29 (43.103163, -73.542509) in Greenwich, Washington County, New York (Site) (**Figure 1**). The Site is proposed to be developed with utility-grade solar panels, similar to an adjacent parcel. As part of the development process, it is necessary to determine if the soils on the Site (145.0± acres) classify as prime or other similarly protected agricultural soils. The objectives of this study were to evaluate the landscape and soils of the project area, field check the mapped soils, and update NRCS farmland classification at a finer scale suitable for site-specific evaluation, as warranted. Soils work was undertaken by Michael P. Callahan, M.S., CPSS and John S. Wah, Ph.D., CPSS.

Background

The town of Easton in Washington County New York has written in their Comprehensive Plan (Hans Klunder Associates, Inc., 1970) a list of community goals, of which is the following:

"A basic and overriding goal for the entire planning program has been the retention and preservation of prime agricultural areas so that farming may continue on the existing prime farms for many years to come. In the simplest terms, the goal is to preserve prime agricultural lands and farms."

Additionally, it states:

"Agriculture should be given priority over all other uses…"

Washington County, New York also has a Farmland Protection Plan (NY State Dept of Agriculture and Markets, 2018). Within that document, there is a list of "Criteria for Identifying Important Farmland". It's a point-ranking system, primarily used for determining eligibility for Requests for Proposals for State Assistance for Farmland Protection Implementation Projects. Of the eight listed criteria, two are directly related to soils. Those two include, NRCS-mapped Prime, Soils of Statewide Importance, and Unique soils. From this classification scheme, areas of the County

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were designated Priority or Special Areas. The subject Site sits on the edge of Priority Area #1 (**Attachment 1**).

Soil Survey reports prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) on a county-wide basis provide a wealth of information on soils and suitability of soils for agricultural, engineering, and other uses. Soil maps, integral to the reports, are produced at a scale between 1:12,000 and 1:24,000. Each delineation on a soil map is named with the dominant soil series within the delineation, in the case of consociations (e.g. Hagerstown silty clay loam). If two or more dissimilar soils comprise a delineation, then the delineation is named by the dominant soils as either a complex or association (e.g. Rohrersville-Lantz complex, Berks-Weikert association). All delineations of the same series, phase, and slope class make up a soil map unit. The Official Soil Series Description (OSD) of a soil map unit provides a detailed description of the named soil's properties that are used to define the series and classify the soil to the family level in Soil Taxonomy. Additionally, OSDs provide a range of characteristics and properties observed in the soil map unit (Soil Survey Staff, 1993).

Information provided in Soil Survey reports is intended for general land use planning. Soil delineations are made using aerial imagery, digital elevations maps, and remote sensing data and the accumulated knowledge of NRCS soil scientists. Polygons are drawn based on landforms or landscape elements (e.g. floodplains) and slope. Soils are assigned to polygons according to soil-landscape-parent material relationships. It is not possible for all soil delineations to be field checked in the compilation of county-wide Soil Survey reports. Mapping scale further affects the accuracy of Soil Surveys by limiting the minimum size of soil delineations. At 1:12,000 scale the minimum delineation size is 1.43 acres; at 1:24,000 the minimum delineation size is 5.7 acres. A soil occupying less than 1.43 acres at 1:12,000 scale (5.7 acres at 1:24,000) must be included in a larger delineation. Finally, a soil delineation generally includes at least 50% of the named soil but may include up to 25% soils dissimilar from the named soil (Soil Survey Staff, 1993). For site specific use detailed soil mapping and evaluation of the landscape and soils is beneficial or necessary.

Based on the review of information available, the soil survey for Washington County was published in 1975. The actual field work would have been done between 1959-1971. Based on a review of aerial photographs, it appears the Site operated as a sand/gravel quarry in the 1990s to approximately 2013. During this time period, extensive disturbance occurred at the Site. This disturbance, coupled with NRCS mapping completed prior to this activity (not to mention the inherent scale issues of NRCS mapping previously discussed) resulted in the need to do a site-specific survey of the soil properties of the Site to determine if they met the criteria to be classified as Prime or Statewide Important soils.

In addition to NRCS soil categorization, we also looked at how soils were classified in the *Soil Productivity Index for Mineral Soils*, which is used to determine the New York Agricultural Soil Group for a soil map unit according to the relative yield of corn silage and hay (New York State Department of Agriculture and Markets, 1981). This system was developed to classify soils based on their suitability for agriculture.

The soil map units are groups of soil delineations, mapped by the United States Department of Agriculture, NRCS as consociations, associations, or complexes, that share the same series and phase, slope class, and/or other distinctive properties.

Of the ten New York Agricultural Groups for mineral soils, Groups 1 through 4 are more productive while Groups 5 through 10 have severe limitations to, or are unsuitable for agriculture. Landscape and soil morphological properties including slope, seasonal high water table, and 'soil structure problems' reduce the soil's usefulness for agriculture (**Table 1**).

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Table 1. New York Agricultural Soil Groups from the Manual Land Classification System, p. IV-2 (New York State Department of Agriculture and Markets, 1981).

Soil Group 1. The soils in this group have the highest productive capacity. They have well-drained sandy loam or silt loam textures and occur on level or nearly level areas of river valleys or the Central Plain region of New York. These soils have good soil structure and low erosion hazard to permit at least seven years of corn in a 10-year rotation without excessive loss of soil or productive capacity.

Soil Group 2. Soils in this group have a very high productive capacity. This group consists of soils similar to those in group 1, except they may either be moderately well-drained or have an erosion hazard that limits corn in rotation to less than seven years.

Soil Group 3. Well-drained, productive soils that have some limitation which drops the productive capacity below group 1, or have an erosion hazard to restrict corn to five years in rotation.

Soil Group 4. These soils have major limitations to production, such as droughtiness, soil structure problems, wetness or erosiveness, that restrict corn to no more than five years in rotation.

Soil Group 5. Soils in this group have severe limitations to production. They have either wetness, erosion or soil structure problems that restrict corn to four years or less, or limit productive capacity.

Soil Group 6. These soils have severe production problems and are the lowest group that may be considered as major row crop producing soils.

Soil Group 7. This group has soils which are restricted to occasional row crops, primarily for the purpose of reestablishing permanent hay.

Soil Group 8. Soils which are not suited to row crops and should, in most cases, be restricted to pasture.

Soil Group 9. Soils which are generally not suited for pasture or other cultivated uses.

Soil Group 10. Soils, including undrained organic soils that are not farmed, freshwater marshes and wetlands.

Soils mapped by the NRCS at 1:20,000 scale on the 145.0± acre Site in this investigation include: Belgrade silt loam (Coarse-silty, mixed, active, mesic Aquic Dystric Eutrudepts); Oakville loamy fine sand (mixed, mesic Typic Udipsamments); and Otisville gravelly sandy loam (Sandy-skeletal, mixed, mesic Typic Udorthents). All mapped soils were formed in glacial outwash (**Attachment 2**) (USDA-NRCS, 2023).

The NRCS has rated the soil map units BeA and OaB as Prime Farmland. The remaining soil map units (OaC, OKE, and Ota) are rated as Not Prime Farmland. Based on this mapping, approximately 54% of the Site is mapped by the NRCS as Prime Farmland.

New York Agricultural Soil Groups of the NRCS mapped soils in the project area ranged from Group 2 to Group 8. Belgrade silt loam, mapped on 5.9 acres (4% percent of the project area), was Group 2; Oakville loamy fine sand, 0 to 5 percent slopes, mapped on 72.5 acres (50% of the project area,) was Group 5; Oakville loamy fine sand, 5 to 15 percent slopes, mapped on 57.6 acres (40% of the project area), was Group 7; Oakville loamy fine sand, moderately steep and steep, mapped on 1.2 acres (1% of the project area), was Group 8; and Otisville gravelly sandy loam, 0 to 3 percent slopes, mapped on 7.8 acres (5% of the project area) was Group 5 (NY Department of Agriculture and Markets, 2023). **Table 2** shows mapped soils and New York Agricultural Soil Groups.

Table 2. Soils mapped by the USDA-NRCS and NY Agricultural Soil Group in the project area.

Soil Series	Map unit symbol	Acres in project area	Percent of project area	NRCS Prime Rating	NY Soil Group
Belgrade	BeA	5.9	4	Prime	2
Oakville	OaB	72.5	50	Prime	5
Oakville	OaC	57.6	40	Not Prime	7
Oakville	OKE	1.2	1	Not Prime	8
Otisville	OtA	7.8	5	Not Prime	5

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Materials and methods

This project included examination of the landscape, examination of soils, and interpretation of findings. Soils were examined in a series of auger borings made using a $3^{1/4}$ open bucket hand auger. Additionally, several backhoe-excavated soil pits were examined. Observations were made to 150 cm below the mineral soil surface or to refusal. Twenty-five (25) auger borings were advanced and seven soil pits were excavated in total. **Figures 2** and **3** show the location of testing points. **Figure 2** has a background image from 2022 (post quarry) and **Figure 3** has an image from 2001 (during quarry operations). The **Appendix** provides detailed soil descriptions. In addition to the observations we made, we reviewed the results of 10 geotechnical borings provided to us prior to field exploration detailed in a July 2, 2021 Geotechnical Evaluation completed by Foundation Design, P.C.

Soil morphological properties including horizonation, color, texture, redoximorphic features, moist consistence, and coarse fragment contents were described according to the Field Book for Describing and Sampling Soils (Schoenberger et al., 2012) and the Soil Survey Manual (Soil Survey Staff, 2017). Soils properties were correlated to the soils mapped by the NRCS in the project area based on morphological properties.

We limited our investigation into the small field on the east side of Windy Hill road because of the presence of nearly mature wheat that limited our view of the Site topography and access without significant crop damage. Based on our observations across the rest of the property, our excavation of Pit 7, the review of Borings 1 and 2 from the Geotechnical report, the review of aerial photographs, and the observation of topography from the available 2-foot lidar data we determined soil conditions were not likely to be any more suitable in this area and further observations within this field would have incurred significant crop loss to the farmer without providing data likely to support a different conclusion than was seen elsewhere on the property.

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Results

The field investigation coupled with a review of past aerial photographs revealed that the Site underwent significant cut and fill activities. What was seen in the soil observations was generally fill material. Sometimes this fill was observed to the full depth of the observation, and sometimes we encountered a transition to the native subsoil. This is evidence that significant fill and grading activities were conducted at the conclusion of quarry activities to attempt to restore the area to agricultural use, as would be expected. The result of that is a landscape with highly variable soils and indications of poor or no structure development. Although structure isn't possible to accurately describe in an auger boring, we did note these observations in the seven test pits that were excavated. Additionally, some platy structure, indicative of compaction, was observed further supporting the evidence of past grading activities. **Pictures 1** and **2** (attached) are provided to show the surface variability encountered. **Picture 1** shows significant coarse fragments present at the surface, while **Picture 2** shows a relatively coarse fragment-free surface. This expression varied across the Site and could not be correlated to landscape, topography or other physical feature, again supporting the variable condition of cut and fill operations. **Pictures 3-6** show some of the soil profiles encountered in the excavated pits to again highlight the variability of soil features encountered across the Site.

Since most of the Site has been significantly disturbed, it wasn't possible to map soils to a particular soil series, other than one that would be classified as human-disturbed. Significantly disturbed soil would not fall under the prime farmland classification. Instead, we compared properties of the on-site soils and compared those properties to a similar analysis that determined whether pre-disturbance soils were either prime or not prime.

The Oakville soil series is the soil series that qualified as prime within certain slope ranges. Those soils are typified by having fine sands that are very deep and excessively drained. Fine sands act similar to coarse silts and help mitigate some of the drought issues of sandy soils. What we found in our investigation was that there were very few soils with textures of fine or very fine sands. Most occurrences of fine or very fine sands were in areas with the least depth of sand removal from past mining activities, but even those were isolated occurrences.

The Otisville series is one that did not qualify as prime. The original mapping had very little Otisville mapped, besides a small section in the northwestern part of the property. One clear characteristic of Otisville is that it has a sandy-skeletal particle size control section. To be sandy skeletal, a soil needs to have at least 35% (by volume) coarse fragments (rocks, >2mm) and less than 8% clay-sized particles. Essentially, this is a very sandy soil with a lot of rocks. What coarse fragments do is take the place of soil. In an already sandy soil, this results in a soil profile even more prone to drought and helps classify it as not prime.

The past quarry activity that occurred on the Site has resulted in most of the soils having a more sandy-skeletal control section, and therefore resembling Otisville more than Oakville (although we are not classifying the soils as either because of the severe disturbance). For that reason, the soils are exhibiting characteristics that would push their categorization into not prime, without even taking into account the other issues (variability, poor structure, etc.) associated with the severe disturbance.

Another aspect of soils that can impact agricultural production is the presence of organic matter in the surface horizon. In laymen's terms this is identified as topsoil, but in soil science morphological descriptions we indicate this as an "Ap" horizon. Measurements of the depth of topsoil across the Site varied greatly in magnitude, with a minimum of 4 cm to a maximum of 49 cm. The median depth was 10 cm. There were a few areas, located on higher portions of the landscape, where the depth of the topsoil was significant because of the way the soil material was placed during the grading process associated with the quarry reclamation. Observations 3, 4, 9, Pit 2, Pit 3, and Pit 7 had topsoil between 24-49 cm. The remaining observation

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points had topsoil between 4-13 cm. Ap horizon development varies with regard to depth and color. Depth is usually correlated to the depth of tillage equipment used, but can also be affected by erosion and deposition forces, which speak to the stability of a particular soil. Color can help us assess the stability of the soil and also the Site conditions that lend themselves to a build up of organic matter versus the breakdown of organic matter. Deep, dark Ap horizons would generally be indicative of stable, organic matter-accumulating conditions. Shallow, light-colored Ap horizons would generally be indicative of less stable, organic matter-accumulating conditions that are more neutral (neither greatly increasing or decreasing in organic matter). The soil conditions observed would best be classified as the latter.

The final piece to the puzzle is soil fertility, meaning does the soil have and/or retain the adequate nutrients needed by plants to produce yields conducive to financially successful operation. A soil's ability to retain nutrients depends on many factors, including soil pH, the chemistry of the nutrient, and the surface area of the soil (ie. particle size). The smaller the soil particle, the more surface area it has. Clay-sized particles have orders of magnitude more surface area than sand-sized particles, and therefore can hold or buffer changes in nutrient content. The soils present on this Site were ubiquitously sandy and would therefore have less surface area and be expected to need more inputs of nutrients and more frequent application of lime (pH adjustments). Organic matter can have even more surface area than clay particles and is a source of nutrients as well. Although the organics present in the Ap horizon improves the situation in the sandy soils on-site, the Ap horizons were not particularly deep or well developed with significant organic matter, likely due to their young existence in place considering quarry activities have only ceased in the last 10 years.

It is possible to test for soil nutrient content with a soil fertility test. We did not conduct soil fertility testing for two reasons. One, soil fertility testing is just a snapshot in time of the nutrient content of a soil, and nutrient application recommendations must be correlated to the crop one wants to cultivate. For example, the same soil fertility test will recommend different applications of nutrients for the same field depending on if the farmer chooses to grow corn or soybeans. Two, based on our examination of the physical properties of the soils, we would not change our conclusion of the soils being categorized as not prime, no matter what the results of the soil fertility tests showed. The sandy-skeletal nature of the soil can be helped by fertilizer application, but that application does not make the soils now prime. If that were the case, the application of fertilizer would make all soils prime, which is not the case.

Regarding the New York Agricultural Soils Groups, the original mapping indicated a range of 2-8. If we correlated the contemporary Site conditions to most closely match the Otisville series, the rating would be Soils Group 5. However, because of the severe disturbance of the Site and the near ubiquitous existence of moved/fill material, it would be more appropriate to place the soils into Group 9. In either case, those groupings would fall outside the characterization as Prime Farmland soils.

Summary and conclusions

The Site was evaluated to determine the classification of soils using the NRCS farmland classification ratings system in conjunction with the locally important soil conditions laid out in community planning documents. Published NRCS soil maps indicated approximately 54% of the Site was Prime Farmland, however, the extensive quarry activity that occurred after this mapping was completed has altered the Site so as to render the remaining soils Not Prime Farmland. Additionally, the New York Agricultural Soils Group ratings have changed to Group 5 or 9.

Based on our examination of the soils, in conjunction with their ratings in the various classification schemes and the past land use change from agriculture to quarry, we would classify the on-site soils as Not Prime Farmland.

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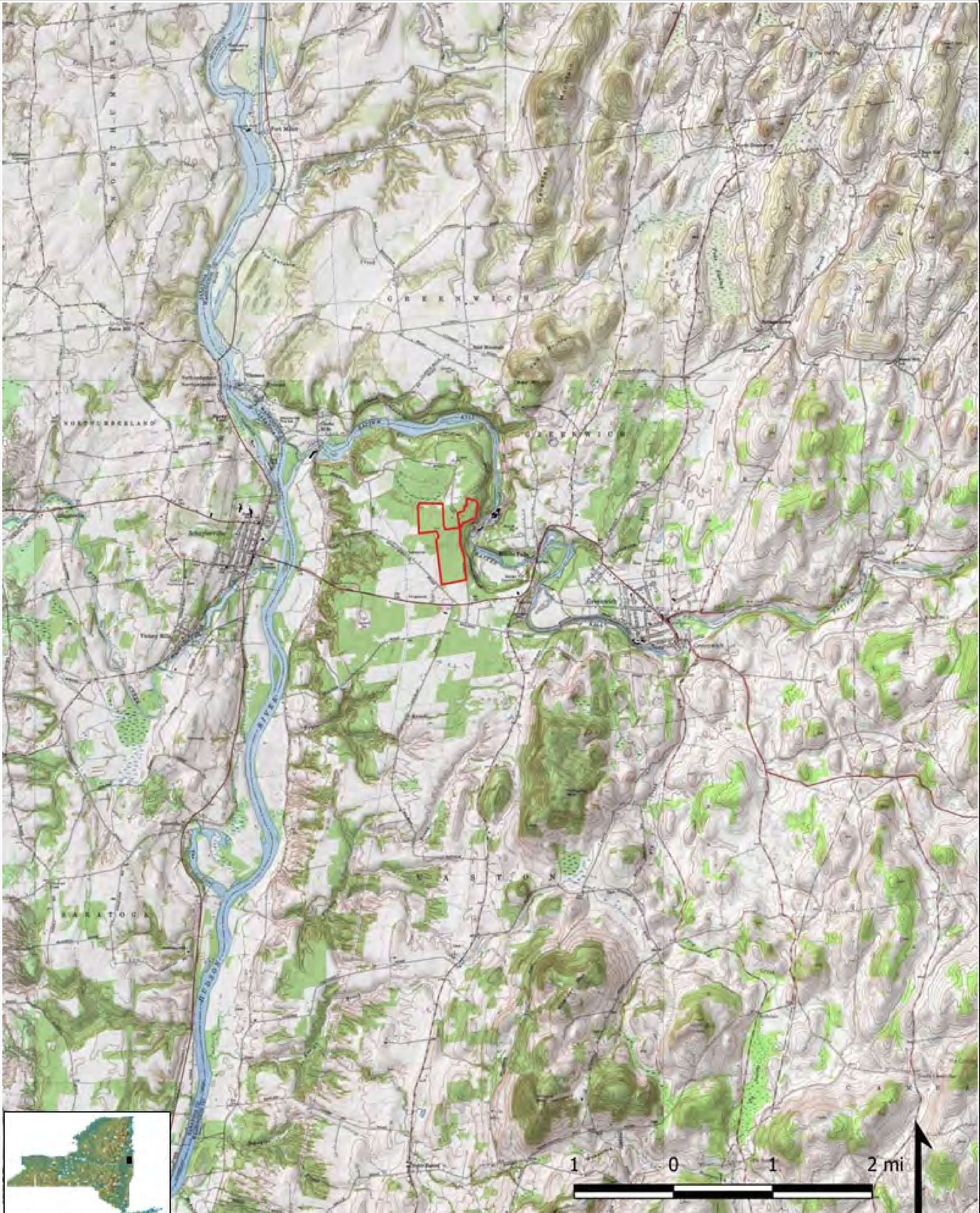

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Figure 1. Site Location Map

Easton Solar Farm, Washington Co., NY

SOILHUB

Figure 2. Test Location Map (2022 Aerial)

Easton Solar Farm, Washington Co., NY

SOILHUB

Figure 3. Test Location Map (2001 Aerial)
Easton Solar Farm, Washington Co., NY

Picture #1: High percentage of coarse fragments at soil surface (43.100261, -73.541646)

Picture #2: Low percentage of coarse fragments at soil surface (43.105216, -73.546818)

Picture #3: Soil Profile at Pit #1

Picture #4: Soil Profile at Pit #2

Picture #5: Soil Profile at Pit #6

Picture #6: Soil Profile at Pit #7

Farmland Plan Steering Committee determined that the methodology, criteria and resulting maps from the ASA study are the same ones desired for the purposes of this plan. Thus, the ASA results are presented and summarized below. See Figure 21 for map showing farmland ranking criteria and

Priority Areas

These areas (See Figure 22) contain significant amounts of high quality farmland and productive soils that are conducive to a long-term agricultural business environment. Priority areas also include current concentrations of conserved farmland and other important anchor farms. In Washington County, these priority areas are:

1. Hudson River Corridor (along Route 40) (some of this priority area extends into Rensselaer County)
2. White Creek Valley (along Route 153)
3. Batten Kill (along Route 313)
4. Hoosic River Watershed (some of this priority area extends into Rensselaer County)

Special Areas

These areas (See Figure 23) contain productive farms and woodlands, areas of scenic, environmental or historical significance and farms that define our unique community character. Special Areas are of secondary priority after Priority Areas. In Washington County, these Special Areas are:

A. Kingsbury – Fort Ann Flats
B. Champlain Canal Corridor
C. Granville/Hebron
D. Black Creek Valley (along Routes 30 and 31)
E. Historic Route 22 Corridor
F. Greenwich-Cambridge Corridor (along Route 372)

Independent Project Sites

The ASA study also discusses independent project sites that are important to protect. These are individual or contiguous properties that otherwise meet the criteria for Priority or Special Areas contained in ASA's Farmland Conservation Plan or other criteria identified within this Agricultural and Farmland Protection Plan, but fall outside of the identified Priority Areas and Special Areas. These properties are important to protect by reason of location, farm viability, or specific development threats. This category also includes properties for which the owners are willing to donate their development rights and/or properties for which private funding is available.

Washington County desires to support all farmland protection projects if it meets the state criteria, or criteria contained in the plan. Thus, independent projects that are not included in the Priority or Special Areas identified above will also be considered for farmland conservation programs.

Other criteria of importance to identification of important farmlands in Washington County include whether the parcel is included in a New York State certified Agricultural District and whether the local municipality has identified the parcels as important farmland within their local agricultural and farmland protection plans.

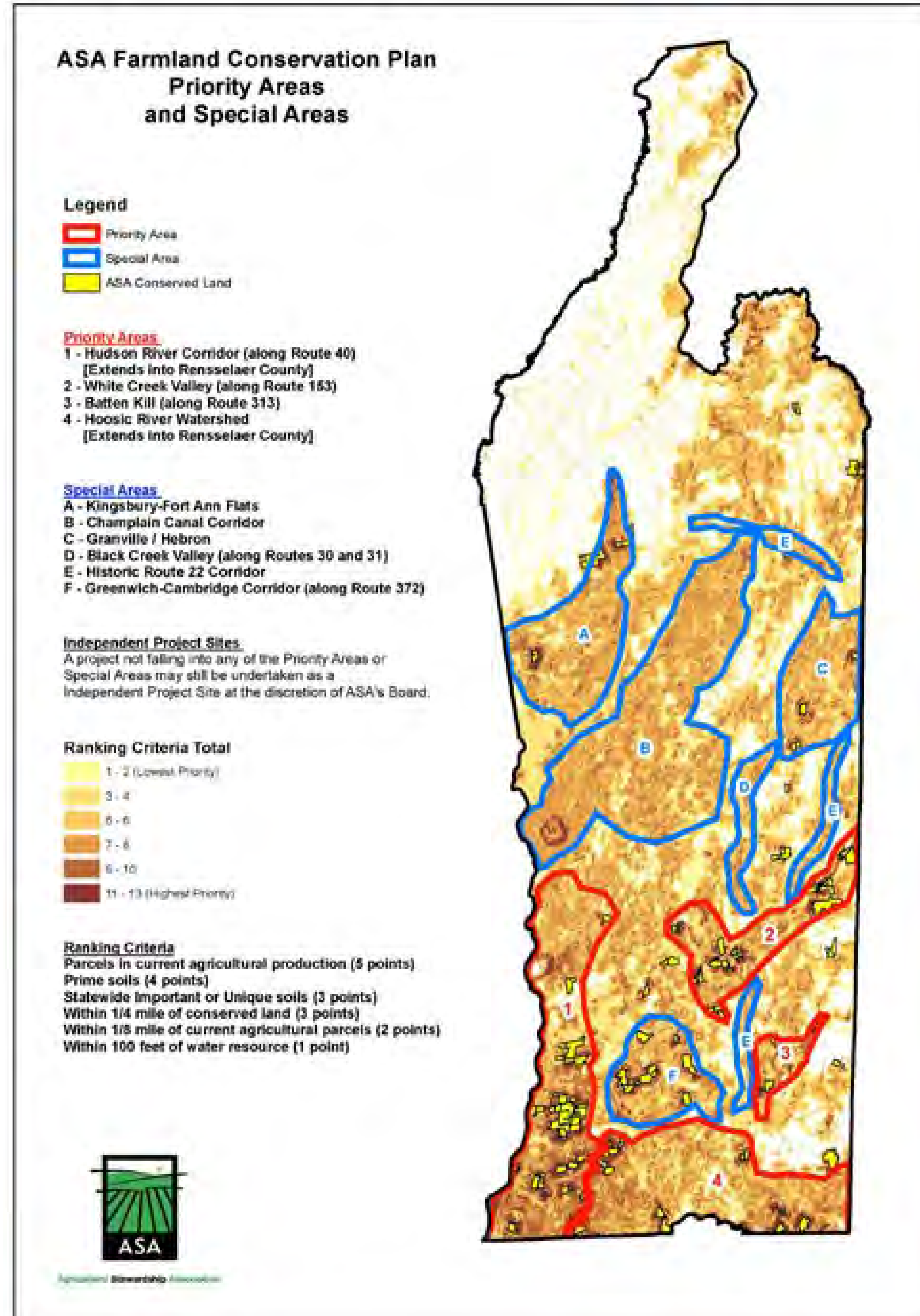

Figure 21 Map of Farmland Ranking Criteria:

Attachment #1: Easton Solar Farm, Washington Co., NY

Attachment #2: Easton Solar Farm, Washington Co., NY

Farmland Classification—Washington County, New York

Map Scale: 1:8,050 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 100, 200, 400, 600

Feet: 0, 350, 700, 1400, 2100

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, New York
Survey Area Data: Version 22, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeA	Belgrade silt loam, 0 to 2 percent slopes	All areas are prime farmland	5.9	4.1%
OaB	Oakville loamy fine sand, 0 to 5 percent slopes	All areas are prime farmland	72.5	50.0%
OaC	Oakville loamy fine sand, 5 to 15 percent slopes	Not prime farmland	57.6	39.7%
OKE	Oakville loamy fine sand, moderately steep and steep	Not prime farmland	1.2	0.8%
OtA	Otisville gravelly sandy loam, 0 to 3 percent slopes	Not prime farmland	7.8	5.4%
Totals for Area of Interest			**145.0**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

APPENDIX

Soil Descriptions

COARSE FRAGMENTS (COF)			STRUCTURE	REDOX FEATURES
15-35%	**35-60%**	**60-90%**	**GRADE**	**ABUNDANCE**
(gr) gravelly	(vgr) very	(xgr) extremely	0 - structureless	f - few
(cn) channery	(vcn)	(xcn)	1 - weak	c - common
(cb) cobbly	(vcb)	(xcb)	2 - moderate	m - many
(fl) flaggy	(vfl)	(xfl)	3 - strong	
(st) stony	(vst)	(xst)		**SIZE**
(bd) bouldery	(vbd)	(xbd)	**SHAPE**	1 - fine
			pl - platy	2 - medium
TEXTURE		**BOUNDARIES**	pr - prismatic	3 - coarse
cos - coarse sand	sicl - silty clay loam	v - very abrupt	gr - granular	4 - very coarse
s - sand	sc - sandy clay	a - abrupt	abk - angular blocky	5 - extremely coarse
fs - fine sand	sic - silty clay	c - clear	sbk - subangular blocky	
vfs - very fine sand	c - clay	g - gradual	m - massive	**CONTRAST**
lcos - loamy coarse sand			sg - single grain	f - faint
ls - loamy sand		s - smooth		d - distinct
lfs - loamy fine sand		w - wavy	**SIZE**	p - prominent
lvfs - loamy very fine sand		i - irregular	vf - very fine	
cosl - coarse sandy loam		b - broken	f - fine	
sl - sandy loam			m - medium	
fsl - fine sandy loam		**MOIST CONSISTENCE**	co - coarse	
vfsl - very fine sandy loam		l - loose	vcos - very coarse	
l - loam		vfr - very friable	ec - extremely coarse	
sil - silt loam		fr - friable	vn - very thin	
si - silt		fi - firm	tn - thin	
scl - sandy clay loam		vfi - very firm	tk - thick	
cl - clay loam			vk - very thick	

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Auger Boring No.: 01 | Date: 6/14/23-6/16/23 | Slope (%): 2
Mapped as: Oakville; OaC
Notes: Refusal on coarse fragments at 45 cm

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/4	VGR	SL	-	vfr	-	-	-
^C	10-45	10YR 4/6	EGR	LS	-	vfr	-	-	-

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Auger Boring No.: 02 | Date: 6/14/23-6/16/23 | Slope (%): 2
Mapped as: Oakville; OaC
Notes: Refusal on coarse fragments at 65 cm

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/4	-	LS	-	vfr	-	-	-
^C1	10-54	10YR 4/6	-	LS	-	vfr	-	-	-
^C2	54-65	10YR 4/6	GR	LS	-	vfr	-	-	-

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Auger Boring No.: 03 | Date: 6/14/23-6/16/23 | Slope (%): 3
Mapped as: Oakville; OaB
Notes: Refusal on coarse fragments at 60 cm

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap1	0-10	10YR 3/2	GR	SL	-	vfr	-	-	-
^Ap2	10-26	10YR 4/4	GR	SL	-	vfr	-	-	-
2Bw	26-42	7.5YR 4/6	GR	LS	-	vfr	-	-	-
2C	42-60	10YR 4/6	VGR	LS	-	vfr	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 04	Date: 6/14/23-6/16/23	Slope (%): 4
Mapped as: Oakville; OaB		
Notes: Refusal on no recovery at 80 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap1	0-9	10YR 3/3	GR	SL	-	vfr	-	-	-
^Ap2	9-34	10YR 3/2	VGR	SL	-	vfr	-	-	-
2C	34-80	10YR 4/6	EGR	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 05	Date: 6/14/23-6/16/23	Slope (%): 4
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 90 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	GR	SL	-	vfr	-	-	-
^A/C	10-60	10YR 3/2 7.5YR 4/6	GR	SL	-	vfr	-	-	-
2Ab	60-68	10YR 3/2	-	FSL	-	vfr	-	-	-
2Bwb	68-79	7.5YR 4/6	-	SL	-	vfr	-	-	-
2Cb	79-90	10YR 4/6	-	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 06	Date: 6/14/23-6/16/23	Slope (%): 3
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 75 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/3	GR	SL	-	vfr	-	-	-
^C	9-43	10YR 4/4	VGR	SL	-	vfr	-	-	-
2Bw1	43-60	7.5YR 4/6	-	VFSL	-	vfr	ffd 7.5YR 5/8	-	-
2Bw2	60-75	10YR 5/4	-	FSL	-	vfr	cfd 7.5YR 4/6	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 07		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Oakville; OaB									
Notes: Refusal on coarse fragments at 30 cm									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/3	VGR	SL	-	vfr	-	-	-
^C	9-30	10YR 4/4	EGR	S	-	lo	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 08		Date: 6/14/23-6/16/23				Slope (%): 4			
Mapped as: Oakville; OaC									
Notes: Refusal on coarse fragments at 73 cm									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	GR	LS	-	vfr	-	-	-
^A/B	10-42	10YR 3/2 7.5YR 4/6	GR	LS	-	vfr	-	-	-
2Bw	42-60	7.5YR 4/6	GR	LS	-	vfr	-	-	-
2C	60-73	10YR 5/4	GR	S	-	lo	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 09		Date: 6/14/23-6/16/23				Slope (%): 3			
Mapped as: Oakville; OaC									
Notes:									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap1	0-9	10YR 4/3	-	VFSL	-	vfr	-	-	-
^Ap2	9-34	10YR 4/4	-	VFSL	-	vfr	-	-	-
Bw1	34-78	10YR 5/6	-	VFSL	-	vfr	cmd 7.5YR 4/6	cmf 10YR 5/2	-
Bw2	78-120	10YR 4/6	-	VFSL	-	vfr	mmd 7.5YR 4/6	mmf 10YR 5/2	-
2C	120-150+	10YR 4/6	-	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 10	Date: 6/14/23-6/16/23	Slope (%): 4
Mapped as: Oakville; OaC		
Notes:		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
Ap	0-8	10YR 4/4	-	SL	-	vfr	-	-	-
Bw	8-43	10YR 4/6	-	LS	-	vfr	-	-	-
C1	43-82	10YR 4/6	GR	S	-	lo	-	-	-
C2	82-150+	10YR 4/4	GR	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 11	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Oakville; OaB		
Notes: Significant buried wood pieces encountered indicating fill; free water at bottom of hole; CF refusal at 110		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/4	-	SL	-	vfr	-	-	-
^C1	10-36	10YR 5/4	GR	SL	-	vfr	-	-	-
^C2	36-60	10YR 3/2	-	SL	-	vfr	cmd 5YR 4/6	-	-
^C3	60-80	10YR 4/2	GR	SL	-	vfr	-	-	-
^C4	80-110	10YR 5/2	VGR	LS	-	vfr	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 12	Date: 6/14/23-6/16/23	Slope (%): 4
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 60 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/4	GR	LS	-	vfr	-	-	-
^C	9-60	10YR 4/6	GR	LS	-	vfr	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 13	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 98 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/4	-	LS	-	vfr	-	-	-
^C	9-22	7.5YR 4/6	-	LS	-	vfr	-	-	-
Cg1	22-72	10YR 6/2	-	LS	-	vfr	-	-	-
Cg2	72-98	10YR 6/2	GR	LS	-	vfr	mcd 7.5YR 4/6	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 14	Date: 6/14/23-6/16/23	Slope (%): 4
Mapped as: Oakville; OaC		
Notes: Refusal on coarse fragments at 72 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-8	10YR 4/3	GR	S	-	lo	-	-	-
C1	8-55	10YR 4/4	VGR	S	-	lo	-	-	-
C2	55-72	10YR 4/6	VGR	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 15	Date: 6/14/23-6/16/23	Slope (%): 5
Mapped as: Oakville; OaC		
Notes: Refusal on coarse fragments at 45 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	GR	LS	-	vfr	-	-	-
C1	10-28	10YR 4/4	VGR	LS	-	vfr	-	-	-
C2	28-45	10YR 4/6	EGR	S	-	lo	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 16		Date: 6/14/23-6/16/23				Slope (%): 3			
Mapped as: Oakville; OaC									
Notes: Refusal on coarse fragments at 80 cm									

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-8	10YR 4/3	-	LS	-	vfr	-	-	-
^C1	8-36	10YR 4/4	GR	LS	-	vfr	cmf 7.5YR 4/6	-	-
^C2	36-58	10YR 4/4	VGR	LS	-	vfr	cmd 7.5YR 4/6	cmf 10YR 5/2	-
^C3	58-80	10YR 5/2	VGR	LS	-	vfr	cmd 7.5YR 4/6	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 17		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Oakville; OaC									
Notes: Ended boring at 15 cm; Soil is hydric									

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Oe	0-4	7.5YR 3/2	-	-	-	-	-	-	-
^Cg	4-15+	10YR 5/2	GR	SL	-	vfr	cfp 5YR 4/6	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 18		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Oakville; OaB									
Notes: Refusal on coarse fragments at 40 cm									

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	VFSL	-	vfr	-	-	-
^C	10-40	10YR 5/3	VGR	SL	-	vfr	mmp 5YR 5/8	cmf 10YR 5/1	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 19	Date: 6/14/23-6/16/23	Slope (%): 5
Mapped as: Oakville; OaB		
Notes:		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-13	10YR 4/4	-	LS	-	vfr	-	-	-
Cg1	13-38	10YR 5/2	-	S	-	lo	-	-	-
Cg2	38-119	10YR 5/1	-	FS	-	lo	cmd 10YR 4/6	cmf 10YR 4/6	-
Cg3	119-150+	10YR 5/2	-	FS	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 20	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 60 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	LS	-	vfr	-	-	-
^C1	10-34	10YR 4/4	-	LS	-	vfr	-	-	-
^C2	34-50	10YR 4/6	-	SL	-	vfr	-	-	-
^Cg	50-60	10YR 5/2	EGR	S	-	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Auger Boring No.: 21	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Oakville; OaB		
Notes: Refusal on coarse fragments at 60 cm		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/3	-	LS	-	vfr	-	-	-
^C1	9-41	10YR 4/4	-	LS	-	vfr	-	-	-
^C2	41-60	10YR 4/6	VGR	LS	-	vfr	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 22		Date: 6/14/23-6/16/23				Slope (%): 3			
Mapped as: Oakville; OaB									
Notes: platyness detected									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	SL	-	vfr	-	-	-
^C	10-40	10YR 4/4	-	LS	-	vfr	-	-	-
Cg1	40-74	10YR 5/2	-	LFS	-	vfr	-	-	-
Cg2	74-150+	10YR 5/3	-	LFS	-	vfr	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 23		Date: 6/14/23-6/16/23				Slope (%): 5			
Mapped as: Oakville; OaB									
Notes: Refusal on no recovery of soil at 80 cm									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-6	10YR 4/3	-	LS	-	vfr	-	-	-
^C1	6-23	10YR 4/6	-	SL	-	vfr	-	-	-
Cg	23-80	10YR 5/2	-	LS	-	vfr	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Auger Boring No.: 24		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Belgrade; BeA									
Notes:									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-9	10YR 4/3	-	LS	-	vfr	-	-	-
^C1	9-36	10YR 4/6	-	SL	-	vfr	-	-	-
^C2	36-60	10YR 4/4	GR	COS	-	lo	-	-	-
2Cb	60-150+	10YR 4/4	-	LS	-	vfr	-	-	-

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Auger Boring No.: 25 | Date: 6/14/23-6/16/23 | Slope (%): 5
Mapped as: Oakville; OaC
Notes:

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	SL	-	vfr	-	-	-
^C1	10-82	10YR 4/6	-	S	-	lo	-	-	-
^C2	82-110	10YR 4/6	GR	S	-	lo	-	-	-
^C3	110-135	10YR 4/6 10YR 5/2	-	S	-	lo	-	-	-
^C4	135-150+	10YR 4/6	-	S	-	lo	-	-	-

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Pit No.: 1 | Date: 6/14/23-6/16/23 | Slope (%): 2
Mapped as: Oakville; OaB
Notes:

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-13	10YR 4/3	-	LS	1FSBK 1THPL	vfr	-	-	AS
^C	13-33	10YR 4/4	-	LS	0M	vfr	-	-	AS
2Cg1	33-93	10YR 5/1	-	LFS	0M	vfr	-	-	CS
2Cg2	93-150+	10YR 5/1	-	LFS	0M	vfr	-	-	-

Project: Easton Solar Farm
Location: See report Figure 2 or 3
Pit No.: 2 | Date: 6/14/23-6/16/23 | Slope (%): 2
Mapped as: Oakville; OaB
Notes:

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap1	0-16	10YR 4/3	VGR	S	0SG	lo	-	-	AS
Ap2	16-32	10YR 3/2	VGR	SL	2FSBK	vfr	-	-	AS
Bw	32-48	7.5YR 4/6	EGR	SL	2COSBK	vfr	-	-	CS
C1	48-81	10YR 4/4	EGR	S	0SG	lo	-	-	CS
C2	81-120+	-	GRAVELS		-	-	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Pit No.: 3		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Oakville; OaB									
Notes:									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
Ap1	0-15	10YR 4/3	-	SL	1MSBK	fr	-	-	AS
Ap2	15-37	10YR 4/4	-	L	1MSBK	vfr	-	-	AS
Ap3	37-49	10YR 5/2	-	L	1MSBK	fr	cmd 5YR 4/6	-	AS
Bw1	49-84	10YR 6/6	-	FSL	1THPL 1COSBK	fr	cmd 7.5YR 5/6	cmf 10YR 6/2	CS
Bw2	84-127	10YR 6/6	-	FSL	1COSBK	fr	mmd 5YR 4/6	cmf 10YR 6/2	CS
2C	127-150+	10YR 4/4	GR	S	0SG	lo	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Pit No.: 4		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Oakville; OaB									
Notes:									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-13	10YR 4/3	-	SL	1MSBK	vfr	-	-	AS
^C	13-33	10YR 4/4	-	SL	1MSBK	vfr	-	-	AS
2Cg1	33-86	10YR 5/1	-	S	1TNPL	lo	-	-	CS
2Cg2	86-130+	10YR 5/1	-	S	1TNPL	lo	-	-	-

Project: Easton Solar Farm									
Location: See report Figure 2 or 3									
Pit No.: 5		Date: 6/14/23-6/16/23				Slope (%): 2			
Mapped as: Belgrade; BeA									
Notes: 8 inch diameter log in pit									
Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	LS	1FSBK	vfr	-	-	AS
^C1	10-45	10YR 4/4	-	S	0M	vfr	-	-	AS
^C2	45-56	10YR 4/4	-	SL	2FPL	fr	-	-	AS
^C3	56-130+	10YR 4/6	-	LS	0M	vfr	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Pit No.: 6	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Belgrade; BeA		
Notes:		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-10	10YR 4/3	-	SL	1MSBK	vfr	-	-	AS
^C	10-23	10YR 5/6	CB	LFS	0M	vfr	-	-	AS
^Cg	23-35	10YR 5/2	GR	LS	1TNPL	fr	-	-	AS
^C'	35-98	10YR 4/4	-	S	0SG	lo	cmd 7.5YR 5/8	-	AS
Cg	98-130+	10YR 5/2	-	S	0SG	lo	-	-	-

Project: Easton Solar Farm		
Location: See report Figure 2 or 3		
Pit No.: 7	Date: 6/14/23-6/16/23	Slope (%): 2
Mapped as: Oakville; OKE		
Notes:		

Horizon	Depth (cm)	Color	COF	Texture	Structure	Moist Consist.	Redox		Bound.
							Conc	Depletions	
^Ap	0-24	10YR 3/3	VGR	LS	1FSBK	vfr	-	-	AS
^Cg	24-55	10YR 5/2	-	LS	1THPL	vfr	-	-	AS
^C	55-99	10YR 4/6	-	LS	1THPL	vfr	-	-	AS
2C	99-130+	10YR 4/4	-	S	0SG	lo	-	-	-

II.

Public Comment Responsiveness Summary

Commenter	No.	Topic	Public Comment	Applicant Response
Debora Wager	1	Neighborhood Character Visual Impact Loss of farmland	My name is Debora Wager. I live on Ashdown Way and attended the Planning Board Meeting about the impending Solar Farm on Windy Hill Road. My concerns are primarily regarding the environmental impact this plan will have on our water and soil. It was discussed at the meeting on October 23, and I have to confess I am not reassured at all by what we were told. I would like to see some genuine studies done by groups outside of government and Boralex affiliated companies. The fact that the landowner's lawyer advised him to take out a million-dollar insurance policy in case there were "issues" is not a comforting reassurance. However, I am appealing to the Planning Commission about another aspect: the beauty of the land itself. I have visited over 10 different countries with amazing landscapes: There is no place that can compare with the stunning beauty of the rolling farmland in Washington County New York. It is a jewel and a treasure. When I drive down Rte 40 and see the acres and acres of solar panels now marring this beautiful land, it literally hurts. We have disfigured enough of this beautiful area. Please let's just preserve as much as we can while we still have some left. This solar farm will destroy real farms. Farmers who count on the corn and silage produced here to feed their animals will have to go farther and pay more for their feed if not going downright under. We will watch our precious farmland wither away. Thank you, I will address additional concerns at another time. Debora Wager	**Neighborhood Character.** As addressed on page 30 *Section 4.3.7 Neighborhood Character and Mitigation* of the EIS: *The existing landscape character provides the context for assessing the effects of changes to the landscape. Landscape character is identified and described by the combination of the scenic attributes that make each landscape identifiable or unique. A region's landscape character creates a sense of place and describes the visual image of an area. Past and present resource-based activity within the region surrounding the proposed Project has substantially changed the landscape by altering natural landforms and vegetation and introducing human-made features. A noticeable change throughout much of the visual setting has been the activity of sand and gravel mining, electric utility infrastructure, conversion of land to agricultural fields, and some residential development. There is an existing electric utility substation on the east side of Old Schuylerville Road, to which the Project will interconnect. The visual setting has also been modified by a number of commercial operations. At the south end of the Project, the Washington County Fairgrounds is a large complex of buildings with extensive exhibition and parking areas. Less than a half mile away from the Project area, on the south side of State Route 29, there are additional industrial/business developments including the Fort Miller Group, Inc., the Hand Meron Market, and the Tymetal Corporation. A little further west along Route 29 is a large United Ag & Turf facility. In the context of a varied mix of commercial, agricultural, utility and industrial uses in the area, the Project is not visually out of character with the neighborhood or community land use patterns.* *The following measures will be taken to ensure that the Project does not detract from the character of the neighborhood and to minimize and mitigate visual impacts:* *1. "Good housekeeping" will be implemented to keep the Project free of debris, trash, and waste during construction.* *2. The solar panels will be located within the existing open fields within the Project area and vegetation clearing will be minimal. A large swath of forested wetland at the north end of the Project will be preserved.* *3. Vegetative screening will be provided along the edges of the Project area, with special attention given to the residential property located*

Commenter	No.	Topic	Public Comment	Applicant Response
				at 300 Windy Hill Road. Vegetative screening will be placed to avoid or minimize shadowing on roads. 4. *Project site perimeter will utilize agricultural fencing to fit in with the visual character of the community.* 5. *When construction is complete, areas disturbed during the construction process will be reseeded.* 6. *Panels will have anti-reflective coatings that will reduce the level of reflectivity and will be using trackers, minimizing glare even further.* 7. *The electrical collection system will be located underground, to the maximum extent practicable. Structures will be constructed overhead for portions where necessary based on engineering constraints and environmental considerations.* 8. *The Project is located directly adjacent to an existing electrical substation, minimizing the need for electrical tie-lines.* **Visual impact.** As addressed on page 31 *Section 4.3.8. Conclusion of Visual Impact Assessment* of the EIS: *Overall, the Project will result in minimal to no change to the landscape conditions for most viewers within the Visual Study Area. Higher levels of change to the landscape may be apparent to a limited number of viewers located adjacent to the Project area and to travelers along stretches of Windy Hill Road. During the construction period, viewers will be able to observe construction equipment, laydown areas, and crews. Varying degrees of visual contrast will occur when equipment and construction crews are present; however, this source of contrast will be short-term since equipment and support facilities will be removed once construction is complete. Visual effects during operation of the Project will result from the visibility of the aboveground components associated with the solar facility, including PV panels, inverters, access roads, and perimeter fencing. Landscaping is proposed around the perimeter of the Project where adjacent viewers will have unobstructed views towards the Project. Landscaping will consist of a variety of evergreen trees that will help to screen portions of the Project and break up the uniformity of the blocks of PV panels. A more tailored landscaping solution will be offered to the owner of the most impacted residential property. Viewers not directly adjacent to the Project will be mostly completely screened by topography and/or vegetation within the existing landscape and will therefore result in minimal to no visual impacts.*

Commenter	No.	Topic	Public Comment	Applicant Response
				Loss of Farmland. As addressed on page 13 *Section 4.1.2. Agricultural Districts* and Easton's Comprehensive Plan of the EIS: *In total, the Project will convert approximately 123 acres of farmed land to solar electric generation during the 30-year life of the solar project. The primary row crop currently being grown on the parcels is corn (Zea mays). During discussion of SEQR considerations, the Easton Planning Board (PB) expressed concerns that the Project is not consistent with the municipal farmland protection plan, as outlined in the Town's Comprehensive Plan and the Washington County Agricultural and Farmland Protection Plan (2017). It is important to note that the proposed action is not located within one of the nine New York State certified agricultural districts that blanket a majority of Washington County. As shown in Figure 5, (of the EIS pg.14) the nearest agricultural district land is located approximately 0.4 mile east of the Project site on the opposite side of Old Schuylerville Road (Cornell IRIS and NYSDAM, 2021). The smaller inset in Figure 5 shows how a vast majority of the land in Washington County lies in a NYS certified agricultural district, while the Project area does not.* *The Zoning Map included in the Town of Easton Comprehensive Plan of 1970 (stamped in 1972) shows the land in and around the Project area as residing in a Medium Density Residential (MDR) district. See Figure 6 below (of the EIS page 16). The area immediately south of the project is designated as Industrial (I) with additional MDR and Community Commercial (CC) districts to the southeast. It should be noted that MDR, I and CC districts are designated only at the north end of the Town. The other 85% of lands in the Town are designated as Agricultural, Forestry or Rural Residential. The Town's Comprehensive Plan reveals that the parcels comprising the Project area have never been part of a NYS certified agricultural district. The following passage is an excerpt from the comprehensive plan that refers to an "existing land use map" that was published by the Commission on Preservation of Agricultural Land in New York State:* The first area, in white, indicates lands which are not currently in farming, have never been in farming or which are obsolete for farming and from which most farming has disappeared. About 15 percent of the town's area falls in this classification. The major areas include the prime farmland bought by Niagara Mohawk, Willard Mountain and the area to the immediate north, and the area just south of the Batten Kill.

Commenter	No.	Topic	Public Comment	Applicant Response
				(Section II. Land Use (p. II-12) in the Town of Easton Comprehensive Plan) *The New York State Legislature passed the Agricultural Districts Law in 1971, and the Project area has not been included in an agricultural district since then. This evidence of land use status for land comprising the Project area supports the assertion that it is not, and historically has not been, considered a premium candidate for the municipal farmland protection plan.* It should be noted that the current landowners are not farmers, and there is no guarantee that they will choose to lease the land for corn/hay production in the event that the Project is not approved. Under the Project's co-utilization plan, agricultural use of the site will continue. The land will be used for the grazing of meat sheep, which is an agricultural business and activity. The agricultural co-use of the land will be reevaluated every five years to be sure the agricultural use is successful and appropriate. Moreover, the Project is a temporary and fully reversible land use. It is not a housing development or business/manufacturing facility that would permanently alter the landscape, rendering it unfit for agriculture, and degrade the Battenkill River ecosystem. During the lifespan of the Project, the soil will have an opportunity to rest and rejuvenate, making it more viable for farming in the future.
Keith Mann, Sr.	2	Visual Impact Property Values Erosion Control Wildlife Impact Environmental Impact Fire Hazard	Solar Panels Take up too much space, they can be an eyesore, when constructed in view of a home and they can impact property values, in our area realtors indicate it will decrease the value of a home by 25 percent. In addition, solar farms can interfere with farming and other land uses, be a danger to wildlife, and create a lot of heat – both in the daytime and at night. The clearing and use of large areas of land for solar power facilities can adversely affect native vegetation and wildlife in many ways, including loss of habitat; interference with rainfall and drainage; or direct contact causing injury or death. **What is a safe distance to live from a large solar farm?** **The safe distance is at least 1.2 miles from a large solar farm.** Impacts on Wildlife	**Visual impact.** Visual impact is addressed on page 31 *Section 4.3.8. Conclusion of Visual Impact Assessment* of the EIS, from which appropriate excerpts have been provided in the Applicant Response to Comment #1 above. **Property Values.** The history of the establishment of large-scale solar farms is relatively new, but there have been numerous studies on the potential impact of solar farms on surrounding property evaluations. None of the peer-reviewed studies report adverse impacts nearly approaching 25%. A comprehensive and multifaceted study was recently published in the academic journal Energy Policy. The study determined solar projects at worst had a minimum impact, but measures can be adopted to ameliorate potential impacts, including compensation for the community, vegetative shading, and land use co-location. A well-regarded study examining property values throughout Illinois found that the value of properties within one mile of solar farms increased in value by an average of 2 percent following installation. Similar studies conducted in Indiana, North Carolina, and Tennessee also found property values increased by an average of 1-2 percent. In addition, the installation of a solar project prevents

Commenter	No.	Topic	Public Comment	Applicant Response
		Electromagnetic Radiation Food Security	Large solar farms can displace populations of birds, deer and wildlife leading to a loss of habitat and potential extinction. Ground-level solar panels can also disrupt the habitats of small animals. In addition to harming wildlife, solar farms can also harm local ecosystems. Here's how: **Large solar farms can disrupt the natural flow of water, leading to erosion and the loss of soil nutrients.** **Solar farms can take up large amounts of land that could otherwise be used for farming or wildlife habitat.** **Solar farms can also disrupt the natural habitats of plants and animals, leading to a loss of biodiversity.** **120 acres of the property proposed was manufactured as a gravel, sand and stone business. At the present time approximately 3 to 4 feet below the service is clay. All water is surfaced on top of the clay and runs toward the Battenkill River, due to the slant of the land. Several homes are placed between the solar farm and the river.** Solar farms require a large amount of land to be built on, which can lead to deforestation, destruction of wildlife habitats, and disruption of ecosystems. In addition, solar farms often require the use of chemicals and pesticides to maintain the cleanliness of the panels. These chemicals can have a detrimental effect on the surrounding environment. The truth is, solar energy is not without its risks. In fact, some of the side effects of solar energy production can be quite serious. Here are a few of the less well-known dangers of solar energy: **Environmental Concerns:** While solar energy itself is green, the production process can have harmful environmental effects. For example, the production of solar panels can involve hazardous chemicals like cadmium, lead, and gallium arsenide. Improper disposal of these materials can lead to soil and water pollution.	the site from being converted to use by a potentially noisier neighbor, such as a housing or industrial development, which could be an option available to the landowner in the future at this site if the Project is not approved. **Safe Distance for Residences.** PV panels convert sunlight directly into electricity, and they do not produce any emissions. A study published in the Journal of Occupational and Environmental Hygiene in 2015 titled "Electromagnetic Fields Associated with Commercial Solar Photovoltaic Electric Power Generating Facilities" (DOI: 10.1080/15459624.2015.1047021) characterized magnetic and electric fields between the frequencies of 0 Hz and 3 GHz at two solar facilities in southern California. Findings of the study: *Static magnetic fields were very small compared to [human health and safety] exposure limits established by the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The highest 60-Hz magnetic fields were measured adjacent to transformers and inverters, and radiofrequency fields from 5 to 100 kHz were associated with the inverters. The fields measured complied in every case with IEEE controlled and ICNIRP occupational exposure limits. In all cases, electric fields were negligible compared to IEEE and ICNIRP limits across the spectrum measured and when compared to the FCC limits (≥0.3 MHz).* In contrast, smartphones emit radiofrequency fields of 1.9-2.2 GHz and household WiFi systems emit in the range of 2.4-2.5 GHz or 5-5.8 GHz. These common electronic devices emit EMF that is an order of magnitude higher than solar facility components. Modern humans are all exposed to EMF throughout our daily lives without negative health impact. Research has concluded that the strength of EMF present at the perimeter of a solar facility or near a PV system in a commercial or residential building is significantly lower than the typical American's average EMF exposure. Importantly, the National Academies of Science in 1997, in response to EMF concerns concluded "Based on a comprehensive evaluation of published studies relating to the effects of power-frequency electric and magnetic fields on cells, tissues, and organisms (including humans), the conclusion of the committee is

Commenter	No.	Topic	Public Comment	Applicant Response
			Fire Hazards: Many people are surprised to learn that solar panels can pose a fire risk. Solar panels generate electricity, and a faulty or damaged panel can cause a fire. **Electromagnetic Fields:** The electromagnetic fields (EMFs) produced by solar panels can impact human and animal health. There is evidence to suggest that exposure to high levels of EMFs can cause health problems like headaches, fatigue, and even cancer. **Bird Deaths:** Solar panels can also pose a danger to birds. Birds can mistake the panels for water and try to land on them, which can result in death by electrocution or collision. **Wild and local pets:** In the proposed area, there are many wild animals, deer, rabbits, etc. Also, many homebound pets may be walking in the area proposed. The largest concern is to eliminate farm products. Some farmers in the area rent the property to plant food for cattle and horses. The final effect for humans will include the absence of milk and food for cattle. **CONCLUSION IN ESSENCE, THERE IS NO JUSTIFIABLE REASON FOR CONSTRUCTING SOLAR FARMS ON FERTILE FARMLAND BECAUSE FOOD SECURITY MUST REMAIN PARAMOUNT, FOR EVER.**	that the current body of evidence does not show that exposure to these fields presents a human-health hazard." It is not uncommon to install PV panels directly on homes. Rooftop PV systems use the same technology as large solar farms. The electromagnetic fields produced by PV panels are extremely low frequency and are not harmful to human health. In addition, solar farms, unlike rooftop solar are located at a significant distance away from homes. This means that there is even less exposure to EMFs from solar farms than there would be from rooftop solar. The Project will use photovoltaic solar technology, which does not emit large amounts of heat, unlike concentrated solar projects. The Project will be surrounded by a perimeter fence, will be remotely monitored and will have signage to prevent people from coming in direct contact with electrical or other components of the Project. Sensitive electrical equipment, such as inverters, will be placed in locked housing, and the medium voltage collector cabling will be installed underground, further protecting the public from any potential harm from direct contact. The Project will be built to meet or exceed the current electrical safety standards and codes. **Erosion Control / Natural flow of water.** The Project will use single-axis trackers that allow the panels to change angle and follow perpendicular to the sun throughout the day. This continual motion of the panels mitigates potential for water channeling and erosion. In addition, the ground will be planted with native grass species that stabilize the soil through well-developed root systems that prevent erosion and increase the ability of the soil to absorb water. The land within the Project area is currently farmed with conventional tillage and monoculture corn cropping, which are two damaging practices that undermine the ability of soil to retain moisture, resist erosion and maintain organic content. Under the current farming methods, the soil is undergoing continual nutrient depletion and is far more likely to be eroded than will be the case with a solar farm that maintains vegetated and untilled ground cover throughout the year. **Environmental/Wildlife Impact.** The Project will not result in deforestation. The Project area was cleared of trees several decades ago for mining and trucking. The current use of the land for corn/hay production does not constitute natural wildlife habitat. Corn cropping destroys soil structure, eradicates the microbiome and displaces native plants that are necessary to sustain wildlife. Monoculture farming also introduces harmful quantities of pesticides,

Commenter	No.	Topic	Public Comment	Applicant Response
				herbicides, and nutrient loading into the environment that are not generated by a solar farm. The proposed Project site maintenance for ground cover is sheep grazing, which is a self-fertilizing operation that requires no pesticide use and no harmful chemicals. Solar panels are washed and maintained using deionized water, without the use of any toxic chemicals. While manufacturing of solar panels does involve industrial chemicals and waste, the same is true for almost any manufactured product in daily use – from the standard automobile to ubiquitous smartphones and electronics, to common articles of clothing, furniture and household appliances. The panels are completely solid state and do not contain any liquids or gases that could leak. The panel solar cells themselves are encapsulated in plastic ethylene vinyl acetate and glass with an aluminum frame, thus preventing any material from leaving the panel. The facility's 24-hour monitoring system will ensure that panels are maintained in peak condition. Any compromised panels will be removed and replaced as quickly as possible. Boralex's main New York operations center is located in South Glens Falls, only a 45 min drive from the Project site, ensuring timely scheduled and unscheduled maintenance activities. After the Project life, the facility will be decommissioned, and it is expected the equipment will be either reused for another purpose or recycled. **Fire Hazard.** While the risk of fire from solar facilities is extremely low, it does exist, as it would for any man-made structure or building. To mitigate the risks of fire, the Project will be monitored 24/7 with emergency shut off capability. The Project will also be built to meet or exceed the current electrical safety standards and codes. Emergency planning materials will be prepared prior to operations, the local fire departments will have the opportunity to receive training prior to electrification of the facility, and the Project site will always be available for emergency access if needed.

Commenter	No.	Topic	Public Comment	Applicant Response
				Bird deaths. Solar panels do not contribute to bird deaths. The anti-reflective coating on panels prevents birds from viewing them as water. In the proposed design, spacing between the panels is 20 to 25 feet, which will prevent birds from being fooled into perceiving the solar array as a continuous water surface. The top concern for bird survival in 2023 is climate change. Taken from Audubon's website: *Climate change is affecting the places that birds need to survive. Audubon's Survival by Degrees report shows that two-thirds of North American bird species could face extinction if we fail to slow the rate of global temperature rise. That's why we support common-sense solutions to reducing carbon emissions, including conserving and restoring forests, wetlands, and grasslands that provide important habitat for birds and serve as natural solutions for storing carbon, and investing in responsibly sited clean energy.* Climate Initiative | Audubon Consultation with the NYSDEC confirmed there are not any species of concern using the proposed area as habitat. Agricultural fencing will be used around the facility allowing movement of small animals. There are also corridors being left without fences to allow for wildlife movement. **Electromagnetic Radiation.** Please see the Applicant Response provided for the **Safe Distance for Residences** concern as noted in above paragraphs within this Comment. **Food Security.** As explained in Section 4.1.3 Suitability of the Project Area for Agricultural Production in the EIS (pages 17-20), extensive soil sampling and analysis for the subject property indicated that it is not fertile farmland. The area is characterized by sandy, coarse-grained soil. "Due to the severe disturbance of the Project area and the near ubiquitous existence of moved/fill material, it would be more appropriate to place the soils into *NYSDAM Soil Group 9 – Soils which are generally not suited for pasture or other cultivated uses*." (DEIS, page 19) Under the solar project, once native vegetation has been established on the site, food production is proposed in the form of meat sheep. This will provide income to local sheep herders, produce food for human consumption, and allow for the continued agricultural use of the land.

Commenter	No.	Topic	Public Comment	Applicant Response
Keith Mann, Sr.	3	Visual Impact Property Values Socioeconomic Concerns Soil Contamination	Dear Planning Board Members, Thank you for inviting all to attend your meeting on October 23 rd. The meeting was attended by many residents in the Town of Easton and myself. Once again, I am not a resident of Easton but I own property in the immediate area of the proposed solar panel farm on Windy Hill Rd. I am also attaching a copy of the information I read to the members so that you may once again understand my objection to the installation of the solar panels as planned. In addition, First: I would like each member of the board to consider the following: If you were to live in an area where solar panels were to be placed. How would you feel if you were to look out of a window or your yard and see solar panels or you would prefer to see a field of corn or hay? Second: How would you feel if your property value decreased by up to 25%? Third: How would you feel if the farmers and friends in the area were to lose feed for their livestock and how it would affect their living? I have several farm friends who will be effected and I am concerned for their situation. Fourth: My concern is for the possible contamination that could take place if a situation occurred that there was damage to the panels. Including water flowing underground to homes in the area. Fifth: I realize that the owners of the property and the Town will realize a considerable increase of income. Unfortunately, money is a number one priority both in government and personal. Sixth: I have lived in the Greenwich and Easton area since 1949. I even had a very successful business in Easton, {The original Ice Cream Mann} My concern is for the <u>local residents,</u> farmers and businesses in the area. Consider all that surrounds the proposed solar farm including the Washington Co. Fair. So friends of this board, consider declining the proposal, unless some panels can be erected in an area that is not visible, and cannot be unsafe in any way to residents, and not a deterrent to our local farmers.	**[Applicant Response is numbered to line up with Mr. Mann's numbered concerns.]** **1. Visual impact**. Visual impact is addressed on page 31 *Section 4.3.8. Conclusion of Visual Impact Assessment* of the EIS, from which appropriate excerpts have been provided in the Applicant Response to Comment #1 above. **2. Property Values. Please see the Applicant Response provided for this concern in Comment #2 above.** **3. Farming Impact.** Please see the response provided for **Loss of Farmland** in the Applicant Response to Comment #1 above. **4. Soil Contamination.** As addressed in *Section 4.4 Soil/Groundwater Contamination From Solar Panel Materials* on pages 31-34 of the EIS, toxic substances will not leach from the solar panels. *While previous iterations of monocrystalline silicon (MoCS) panels utilized lead (Pb) and cadmium (Cd) as a key component of solder due to its metallurgic properties, levels of Pb in solder have been significantly reduced or eliminated. Solders for solar panels may at one time have contained up to 36% Pb but they are now limited to no more than 0.10% Pb (and less than 0.01% Cd) and certain solders are lead-free; this can be attributed to advances in solder components and increased strictness of environmental standards (NCSU, 2017). All solar panels used in the construction of the Project will have been certified to meet the US EPA Toxicity Characteristic Leaching Procedure Standards (TCLP).* **5.** Comment noted. **6.** Comment noted.

Commenter	No.	Topic	Public Comment	Applicant Response
			Best regards, Keith Mann Sr.	
David & Amy Ashdown	4	Visual Impact Landscaping Concerns Solar Glare	Dear Easton Planning Board Members, My name is David Ashdown of 246 Windy Hill Rd. I was in attendance at the meeting last Monday evening regarding the draft Environmental Impact Statement for the Easton Solar Farm project. Since the meeting, I have had the opportunity to review the documentation in more detail and I have some additional concerns: Our family is concerned about the visual impact of the project. In viewing Appendix E: Visual Simulations, it is evident the current plan to reduce the visual impact of the project is insufficient. The concept of the viewshed was brought up at the meeting and the possibility of adding significant berms to further reduce the negative visual impact. We are in support of berms being added to the plan. In addition, the simulations show the evergreen trees growing significantly over the period of 5 years. This seems to run counter to the findings of the report that demonstrate the soil as being severely depleted. The report goes to great length to demonstrate the soil is not good farming soil. So how would we expect the evergreens to thrive in this soil? As the owner of the 5.1 acre lot that is adjacent to the Steffen property and abutting the northeast corner of the proposed project, I can attest to the inability of evergreens to grow in that soil. The picture [tree, at right] which was taken this morning (about 150 feet from the proposed project) is of a spruce tree that we planted well over 5 years ago. We planted just under 100 trees at the same time, and of the 3 trees that survived, this is the tallest one. The soil is simply not healthy enough to sustain the growth of evergreens. 	**Visual Impact & Landscaping Concerns.** A final landscaping plan for the Project will be developed by a landscape architect using species appropriate to the growing conditions in the visual buffer area of the Project and submitted with the final construction plans. The objective is to screen with fast-growing evergreens and may include varieties such as Leyland Cypress that is known to grow well in marginal soils. The landscaping plan will include soil amendments and watering protocols as necessary to enable selected species to thrive. It will also include adaptive mitigation and tree replacement to account for loss of chosen species in cases where they are not successful.

Commenter	No.	Topic	Public Comment	Applicant Response
			One last concern is for our neighbors the Steffens and the potential of significant glare from the panels at certain times of the day. As she mentioned at the meeting, her house sits up on a slight hill, which, based on the images from the simulation, will likely produce glare in the morning hours that is more than a minor inconvenience. The picture [yard, at right] used in the simulation is taken from a lower angle than the back deck their family enjoys each day.  Thank you for your time and consideration of these additional concerns. We appreciate your public service and genuine care and concern for the citizens of the Town of Easton. We consider ourselves fortunate to live here and raise our family in such a beautiful place. Sincerely, David and Amy Ashdown	**Glare / Steffen Residence.** To maximize light absorption, solar modules are coated with anti-reflective materials designed to avoid creating glare. The panels are also mounted on single-axis tracking modules that will change their position throughout the day and minimize oblique angles that might contribute to sun reflection. A glare study was conducted for the project in 2021 that analyzed potential glare from four vehicular traffic vantage points and seven fixed observation points (OP) around the periphery of the Project. The study included analysis of glare at first story (6 feet) and second story (16 feet) heights. One of the OPs was located at the Steffen property (see the #2 OP in the "Figure 2 Receptors" attachment). No glare of any visual type (green, yellow, or red) is predicted to be visible at the Steffen residence from nearby panels. Project representatives have met with Ms. Steffen to discuss mitigation of visual impact for her property and are working with her to provide an acceptable screening solution.
Donna & Curt Lemelin 151 Old Schuylerville Rd, Greenwich, NY	5	Visual Impact Noise Impact Decommissioning	October 27, 2023 Members of the Planning Board: Please add our names to the growing list of Washington County residents who oppose the proposed solar project in Greenwich. Having moved to this area 10 years ago, we were drawn by the beauty of the countryside and farmland. The thought of losing a large portion to solar panels is beyond disturbing. We presently live close to a field filled with solar panels and are dismayed to hear the continuous humming from what was once a beautiful area. Of course the concern is what happens after the lifespan is reached.	**Visual impact.** Visual impact is addressed on page 31 *Section 4.3.8. Conclusion of Visual Impact Assessment* of the EIS, from which appropriate excerpts have been provided in the Applicant Response to Comment #1 above. **Noise Impact.** There will be some noise associated with the Project's construction – truck entry/exit, earthmoving equipment, etc. – but will be temporary in duration and limited to normal working hours. The solar panels themselves are quiet. The greatest potential source of noise is anticipated to be the string inverters at the site. The string inverters will be located within the array of solar panels and more than 300 feet from the nearest residential receptor. Noise levels at a typical inverter will be less than 69 decibels at a distance of one (1) meter (approximately 3.3 feet) and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise

Commenter	No.	Topic	Public Comment	Applicant Response
			Please consider the residents of Greenwich as you reach your decision. We chose to pay considerably higher taxes to live in Washington County. We trust you will do the right thing.	level of approximately 60 decibels, and typical city traffic inside a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the Project's operation are expected to be insignificant. **Decommissioning.** A decommissioning plan has been prepared to provide a description and guidance for activities that will be carried out to disassemble the solar arrays and remove all above ground Project components, including panels, racking, equipment pads, inverters, cabling and fencing at the end of the Project's life. Upon removal of the arrays, the land will again be fully available for agricultural use or ecological conservation.
James & Nancy Trottier 265 Windy Hill Rd. Greenwich, NY 12834	6	Visual Impact Soil Contamination Decommissioning Energy Production Property Values Host Community Benefit Wildlife Groundwater EMR Safety	November 1, 2023 We have recently been made aware of a solar panel project on Windy Hill Road. We have many concerns about this project. We have been researching solar panel farms and have found that there are issues that can arise from a project such as this. Some of our concerns include: 1. The beauty of Washington County will forever be marred by rows of these structures. 2. What are the long-term expectations of these panels? Through research we have discovered that the maximum life expectancy is only 12-20 years and removing them can contaminate the ground. 3. Will these structures be removed after their life expectancy or will they just be left there (decommissioned?) 4. If panels are operational for 5 years- the power generation will be 2.5% lower than the initial output. If this is applied to 20-year-old panels, production drops to 90% of the original output. 5. How will this impact the property value of those that must live near these solar panel farms? 6. How will the local people benefit from them? 7. Solar panels contain harmful chemicals. The toxins include Cadmium tellurid and lead, possibly leaking out into the ground.	**[Applicant Response is numbered to line up with the Trottier's numbered concerns.]** **1. Visual impact.** Visual impact is addressed on page 31 *Section 4.3.8. Conclusion of Visual Impact Assessment* of the EIS, from which excerpts have been provided in the Applicant Response to Comment #1 above. **2. Soil Contamination.** Soil Contamination is addressed in *Section 4.4 Soil/Groundwater Contamination From Solar Panel Materials* on pages 31-34 of the EIS, from which an excerpt is provided in the Applicant Response to Comment #3 to explain that toxic substances will not leach from the solar panels. **3. Decommissioning.** Please see the response provided for **Decommissioning** in the Applicant Response to Comment #5 above. **4. Energy Production.** The industry average is 0.60-0.85% per year of panel energy production degradation. Most Tier One panel manufacturers provide a 25-year warranty on their products. Boralex will not consider modules that are not warrantied. Most manufactures guarantee that the actual power output will be no less than 83% by the 25th year. Boralex assumes a minimum 30-year project life in its modeling, and this is generally accepted by the industry and financing partners. We use commercially available data analytic software by an industry leader. The platform is used for monitoring, data analysis, reporting and other applications to monitor the health and operations of the plant.

Commenter	No.	Topic	Public Comment	Applicant Response
		Noise impact Construction Traffic	8. Solar panels in landfills can cause a harmful health risk due to the make-up of toxic materials. 9. Large scale energy facilities can negatively impact nearby wildlife without careful site selection. 10. What is the impact on our water supply? Many people in this area have shallow wells. 11. According to our research a report states that a safe distance to live from a solar farm is 1.2 miles. Many people on Windy Hill live within that distance. 12. Solar Farms can cause noise pollution with a constant humming noise. Will there be noise mitigation solutions? 13. Solar Farms release aluminum into the soil from a solar system. 14. Solar Panels produce 300 times more toxic energy than nuclear energy. 15. This is a residential area, and we are very concerned with trucks loaded with material driving on Windy Hill Road. Roads are not federally approved for construction or large trucks. We are in the process of reviewing the Environmental Impact Statement (draft) dated July 2023. Thank you for listening to our concerns.	**5. Property Values.** Please see the Applicant Response provided for this concern in Comment #2 above. **6. Host Community Benefit.** As addressed in *Section 4.2 Impact on Community Character* in the EIS (pages 23-24) the local community will benefit from tax revenue and a payment in lieu of taxes arrangement with the Town of Easton: *In addition to indirect economic benefits resulting from purchase of local goods and services by temporary and permanent staff (see discussion of socioeconomic impact in section 4.7 of the EIS), the proposed solar project is anticipated to generate revenue for the community through both tax revenue and payment in lieu of taxes (PILOT) agreed upon by the developer and the Town of Easton. In the first twenty years the Project is anticipated to provide combined tax revenues in excess of $1 Million to the Town of Easton, Washington County, the Greenwich Central School District and the Schuylerville Central School District. The exact tax payments have not yet been determined. In addition, it is anticipated that a PILOT will be remitted to the Town of Easton annually during the operating period of the Project to offset any tax incentives for which the Project is eligible. Specific conversations regarding a PILOT are slated to commence in late 2023, at which time an agreement will be established.* **7. Soil Contamination.** Soil Contamination is addressed in *Section 4.4 Soil/Groundwater Contamination From Solar Panel Materials* on pages 31-34 of the EIS, from which an excerpt is provided in the Applicant Response to Comment #3 to explain that toxic substances will not leach from the solar panels. **8. Solar Panels in Landfills.** Comment noted. It is expected that the Project equipment will either be reused at a different location for another application or recycled. Also, see response to Soil Contamination above. **9. Wildlife.** The current use of the land for corn/hay production does not constitute natural wildlife habitat. Corn cropping destroys soil structure, eradicating the microbiome and displacing native plants that are necessary to sustain wildlife. This site was evaluated using criteria from the USFWS, communication with the NYSDEC and New York State Historic Preservation Offices, which resulted in issuances of no findings for this site. **10. Potential for Contamination of Residential Wells.** As stated above, construction and operation of the Project will not introduce toxic substances into the area's soil or groundwater. Given the shallowness of the water table,

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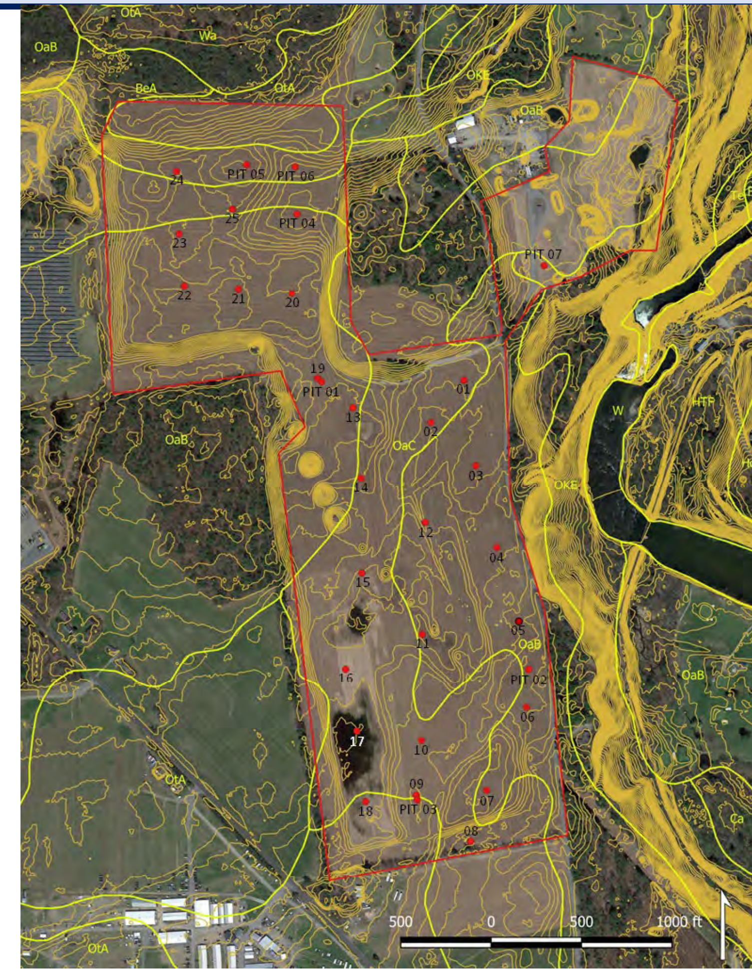
				and the direction of underground flow, the existing groundwater is likely to contain contaminants from the agricultural treatments (pesticides and nitrogen fertilizers, resulting in nitrates) that have been applied to the land for the last 10-15 years. Another concern for residents on well water at the north end of the Project area is groundwater impact from the Hollingsworth and Vose paper mill solid waste landfill. As noted in *Section 3.2 Neighborhood Character and Setting* in the EIS (pages 8-9): *H&V Broke Landfill is an Inactive Solid Waste Landfill. As of May 2022, the NYSDEC Inactive Landfill Initiative (ILI) identified this landfill as a Priority Group 1 landfill with respect to chemical contaminants perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and/or 1,4-dioxane. Priority Group 1 is assigned to landfills with an exceedance of state maximum contaminant levels (MCL) for both on-site groundwater and downgradient drinking water sampling. The Project area and the Critical Environmental Area at its north end are both downgradient from the landfill.* Thus, current land uses – specifically, corn cropping and location of a paper mill sludge landfill – in proximity to residences in the neighborhood are of serious concern for groundwater contamination. In contrast, the proposed Project represents beneficial land use with regard to potential for soil or groundwater contamination, as previously mentioned. **11.Electromagnetic Radiation.** Please see the response provided for **Safe distances for residences** in the Applicant Response to Comment #1 above. **12.Noise Impact**. Please see the response provided for **Noise Impact** in the Applicant Response to Comment #5 above. **13. Soil Contamination** is addressed in *Section 4.4 Soil/Groundwater Contamination From Solar Panel Materials* on pages 31-34 of the EIS, from which an excerpt is provided in the Applicant Response to Comment #3 to explain that toxic substances will not leach from the solar panels. An excerpt is also included in the Applicant Response to **Toxic Substances in Panels** in Comment #7. **14.Comparison to Nuclear.** A nuclear facility is not under consideration. The Project does not need to be evaluated against other forms of energy generation. But the claim that solar panels produce 300 times more toxic waste than nuclear energy is a dubious comparison. Overall, the amount of waste generated per unit of electricity produced is substantially lower compared to nuclear energy. Solar panels have no waste

Commenter	No.	Topic	Public Comment	Applicant Response
				during their operation, and advancements in recycling technologies are improving the handling of these materials upon decommissioning or during regular maintenance-related panel replacement. On the other hand, nuclear energy generates highly hazardous radioactive waste that remains harmful for thousands of years. This waste requires specialized, long-term storage solutions and carries significant environmental and health risks if mishandled or improperly stored. Nuclear energy brings potential catastrophic risks, as seen in historical events like Chernobyl and Fukushima, which have devastating consequences for the environment and human health. Solar energy, being a passive and decentralized source, does not pose such catastrophic risks. Solar energy is a renewable energy source that does not rely on depletable resources like uranium. It provides a more sustainable, long-term solution for energy needs. **Construction Traffic.** There will be a road inspection prior to starting construction to ensure all roads are capable of managing the loads required. Boralex will document the condition of the roads before and after construction to ensure damage is not caused, and if damage is caused, it will be repaired. Boralex will also require the construction contractor to prepare a construction traffic plan, which will include adequate signage on the roads and flaggers where appropriate. Boralex will also communicate the construction schedule, including transport of large loads, to the community and adjacent landowners. Boralex will require a temporary parking area off the road to be established for the construction workers.
Keith R Mann Jr. 431 Windy Hill Rd Greenwich NY, 12834 Keithrm2@Gmail.com 518-812-4635	7	Soil Analysis Groundwater Batten Kill River EMR Safety Soil Contamination	This letter refers to Easton Solar Project #05-22. As a neighboring resident to the proposed Windy Hill Solar Project, I wish to contribute my environmental concerns regarding this project. Let me preface this letter by acknowledging that I do not have an education in environmental sciences, but I do observe, contemplate, and have raised concerns about this quadrant of Easton, and enjoy the pristine beauty, life quality and wildlife surrounding my home. This letter is not only to defend my interests, but those of residents and businesses who might be affected by projects in the future. First, I wish to raise the question as to how site specific the environmental impact statement is to project #05-22 or is it relatively generic to most sites? I have the following questions regarding this site:	**[Applicant Response is numbered to line up with Mr. Mann's numbered concerns.]** **1. Soil Analysis.** Michael Callahan, Certified Professional Soil Scientist and owner of Soil Hub, LLC, conducted soil sampling and analysis for the project area in July 2023. Twenty-five (25) auger borings were dug and seven soil pits were excavated in total. The sampling points were plotted in a grid pattern, as indicated by the numbered red dots in the figure below (next page), to provide representative samples from across all parcels and potential USDA soil types in the project area.

Commenter	No.	Topic	Public Comment	Applicant Response
		Panel Maintenance Decommissioning Bond Wildlife Solar Lake Effect	1. How many test holes were dug throughout the site, and where were they located on theproperties? ***[Keith Mann, Jr. Comment #7 continued below…]*** 2. How deep did they find clay as well as the aquafer which flows easterly toward residents like myself as well as our pristine Batten kill River. I have included with this letter, pictures of where water emerges from the bank and takes direction to the river. 3. Does the environmental impact study map out the locations of nearby shallow and deep wells used by nearby residents and businesses. (A good question would be how far is my well on 431 Windy Hill Rd. from the nearest solar panel?) If this cannot be answered, this environmental impact statement is not site specific and inadequate. 4. I have researched "How far is a safe distance to reside from a solar project?", revealing answers from 200 meters to 1.2 miles. Often these are based on the	 **2. Groundwater.** Foundation Design, P.C. performed a geotechnical analysis for the project area in June 2021. Ten borings down to a depth of 10 feet were completed across the project area. Groundwater was encountered at four of the borings running the length of the largest parcel #228.-5-8.6 in the form of wet and saturated soil samples. The depth to groundwater was between five and nine feet below grades (with seasonal fluctuation). No clay was encountered. Instead, a thin (zero to three inches) of topsoil covered a substrate of glacial outwash that was mainly silty sand / sandy silt with gravel, and characterized as

Commenter	No.	Topic	Public Comment	Applicant Response
			size of the project, but in my uneducated opinion, panel density should be an equal factor. 5. What toxic metals are used in the panels and inverters? Lead? If so, how much, in weight, per panel? Cadmium? Again, how much per panel. Are there toxic chemicals that could also penetrate this relatively high aquafer. 6. How often will said panels be inspected to see if the panels have been compromised? If compromised, will the town of Easton be specifically notified of any breach of panel integrity so they may alert residents? This is a must! 7. If panels contaminate water, who assumes liability for contaminated wells? 8. Is escrow for removing panels at the end of their lifespan based on today's economy or does it consider the costs in 30 years? If panels are sold, who will be liable for removal at their end of life? **Wildlife habitat considerations:** As a sportsman and lover of wildlife, I often observe the parcel's wildlife from my house on Windy Hill Rd. In addition to deer and turkey, I observe myriads of geese both Canada and Greater Snow Geese which harbor on this location during migration. Realizing the importance of this rest stop, to and from Canada, I have researched waterfowl migration and have learned about the Atlantic Flyway, which is the eastern access for waterfowl. Maps (included) suggest a migration pattern with a width extending from Saratoga to New England, with the highest density passing directly over Schuylerville and Easton/Greenwich, making our area near the Hudson an important layover for the nutrition left from harvested grains and corn needed for the journey to their Canadian breeding grounds. This is confirmed on the New York's DEC website that suggests this is part of the reason for the thriving goose population. **Solar Panel Lake Effect** Most of us have heard the term "Lake Effect" and automatically consider the snow belts of central NY and beyond. But are you aware of "Solar Lake Effect"? Solar Lake Effect takes place when waterfowl mistake the reflection from the panels as water, only to meet their demise. Audubon.erg is quoted, "Another problem with large solar farms is that birds sometimes mistake the glossy blue expanse of solar panels for bodies of water and try to land on them. This is called a lake effect."	"loose" throughout, which would facilitate drainage. Solar construction will consist of driven-pile racking. A racking system has not yet been selected for the Project. The choice of the racking system will determine the depth of the piles. Regardless, the Project will not draw or discharge water into the underlying water table and will not otherwise disrupt or impact flow or content of groundwater. With respect to the Battenkill River watershed, the geotechnical report established that the site is relatively flat and solar construction will not likely result in erosion. NRCS soils mapping did not indicate that significant surface erosion features are present and rates the soil as slight to moderate for erosion to develop. Significant erosion was not observed while the team was on site. Any potential for erosion during construction will be addressed by the SWPPP and will be adhered to as disseminated in the SPDES permit, issued by the NYSDEC prior to construction. After construction, native grass species that stabilize the soil through well-developed root systems that prevent erosion and increase the ability of the soil to absorb water will be planted, decreasing the already small chance of erosion. **3. Residential Wells.** The mapping of residential wells was not necessary for site design because the Project will not impact groundwater during either construction or commercial operation. **4. Safe Distance for Residences.** The closest non-participating residence is 247 m away from an inverter, where DC power is converted to AC power. The closest resident to the existing substation is 180 m away. Please see the Applicant Response provided for this concern in Comment #2 above. **5. Toxic Substances in Panels.** The toxicity of elements used in manufacturing of the solar panels is addressed in *Section 4.4.1. Project Modules Do Not Contain Toxic Levels of Heavy Metals* on pages 31-32 of the EIS: *The Applicant has not yet selected a final panel vendor, but it is anticipated that the Project will utilize monocrystalline silicon (MoCS) panels (e.g., bifacial panels sold by Canadian Solar, see* ***Appendix M -- Equipment Specifications****), which is the most common type of material used in solar cells (approximately 95% of modules sold; NREL 2016). Current iterations of MoCS panels are not manufactured using significant amounts of heavy metals or other materials that are inherently considered hazardous. Aluminum, nickel, magnesium, and copper are found in the welding compounds used to affix solar cells to the housing of the panels. A recent study (Panthi et al., 2021) indicated that these elements could leach from the panel structure if the panel was severely*

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			Waterfowl can be killed or injured in this scenario. Some species of ducks who survive this are unable to take flight as they need what I call a water runway to take flight and must struggle to return to the wild. I am not sure if any of this information is mentioned in the environmental impact assessment. If not, I believe it is time for Boralex and other solar companies to dig deeper and be more transparent with negative aspects of such projects as well. Please advise them to fully complete their homework before environmental impact statements are approved for such projects.	*broken and left unattended for an extended period of time. However, none of these metals are considered toxic at the concentrations found in the panels. While previous iterations of MoCS panels utilized lead (Pb) and cadmium (Cd) as a key component of solder due to its metallurgic properties, levels of Pb in solder have been significantly reduced or eliminated. Solders for solar panels may at one time have contained up to 36% Pb but they are now limited to no more than 0.10% Pb (and less than 0.01% Cd) and certain solders are lead-free; this can be attributed to advances in solder components and increased strictness of environmental standards (NCSU, 2017). All solar panels used in the construction of the Project will have been certified to meet the US EPA Toxicity Characteristic Leaching Procedure Standards (TCLP).* **6. Panel Inspection.** Facility operations for the solar arrays will be systematically auto-monitored 24-7. Boralex has provided the Town of Easton with an Operations & Maintenance Plan that includes the following description: *Periodic scheduled maintenance will be performed each year, including:* *Monthly interim maintenance visits:* ▪ *Solar Facility field inspection: visual, electrical and mechanical once per month, or as determined by Supplier's recommendations.* *Annual full maintenance visit, which may include:* ▪ *System testing and verification of data acquisition systems, at least once per calendar year;* ▪ *Module cleaning once a year, or as determined by Operation Manager;* ▪ *Inverter cleaning and servicing to ensure proper operation;* ▪ *Data acquisition system maintenance as needed; and* ▪ *Scheduled maintenance and testing required to maintain all manufacturers' warranties on Solar Facility components.* *Unscheduled maintenance visits will generally occur if:* ▪ *An "Emergency Situation" occurs that would endanger the health and/or safety of workers onsite, or to the surrounding area, or* ▪ *A "Major Disruption" to the Solar Facility occurs that degrades electricity generation that does not create an Emergency Situation, such as failure of Solar Facility components, vandalism, or fallen trees.* *In the event of an Emergency Situation, the O&M Contractor and/or the Project Owner will contact the appropriate emergency response personnel*

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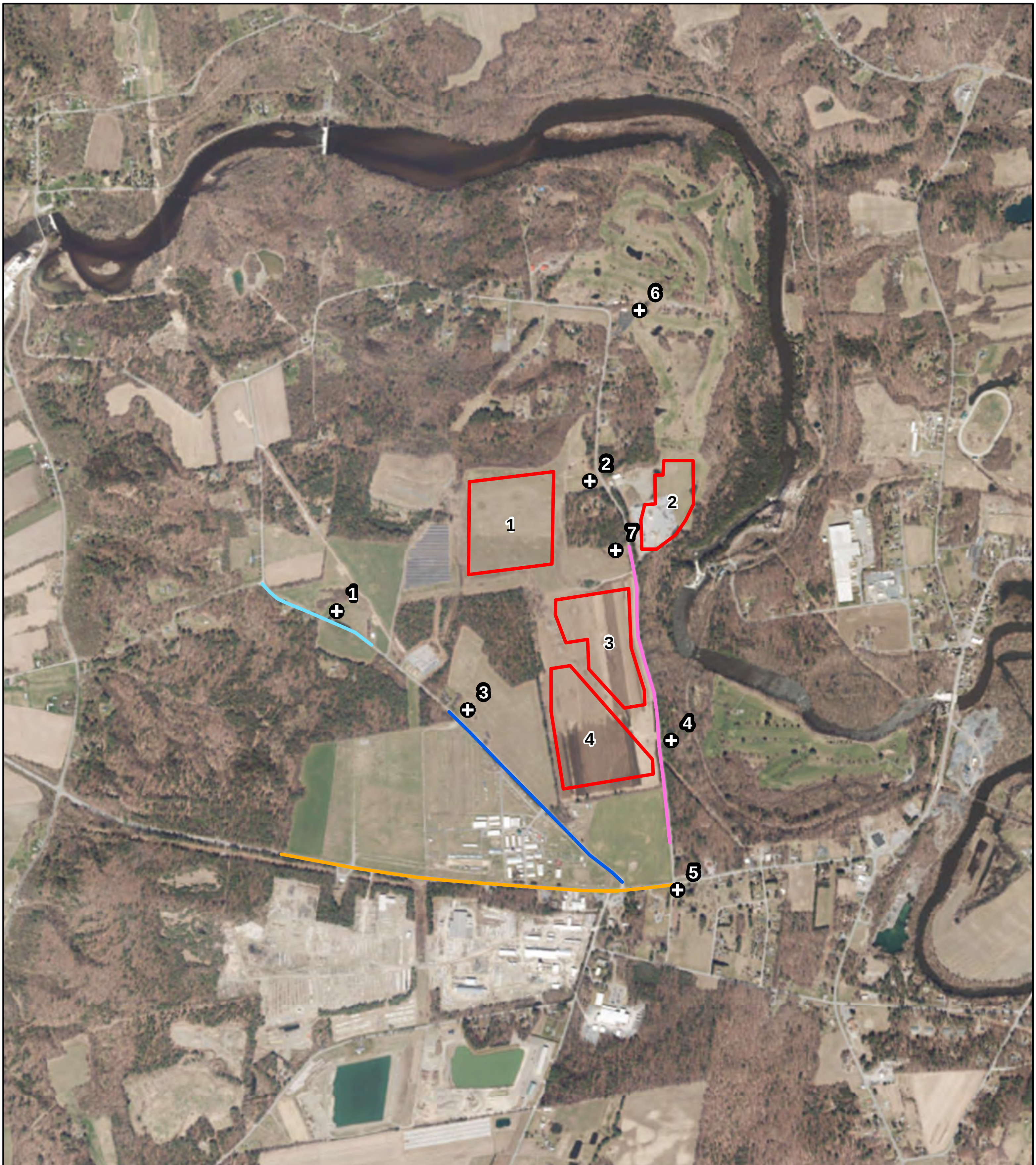
				(fire department, police department) to inform them of the emergency. The Connecting Utility Owner (National Grid) may also be contacted or may already be aware through remote monitoring of the system, depending on the type of emergency. The O&M Contractor, the Project Owner, and/or National Grid will dispatch appropriate personnel to the Project Site as soon as possible. **7. Potential for Contamination of Residential Wells.** Please see the Applicant Response provided for this concern in Comment #6 above. **8. Decommissioning Bond.** A Decommissioning and Site Restoration Plan (Decom Plan) was prepared for the Project by Fisher Associates in February 2023 and shared with the Easton Planning Board. The Decom Plan includes a detailed description of how the facility will be dismantled and acknowledges the Town's requirement that decommissioning must commence if the facility ceases to generate electricity for twelve continuous months. Decommissioning costs will be held in a decommissioning bond to be negotiated and established between Boralex and the Easton Town Board. Once the bond is established, it will be re-estimated every five years to keep pace with materials, labor, and inflation costs. In the event of change of ownership or other unforeseen operator circumstances, the bond will remain intact to cover the cost of decommissioning. **Wildlife** The current use of the land for corn/hay production does not constitute natural wildlife habitat. Corn cropping is done for agricultural markets, not to sustain Canada and snow geese. Migrating geese populations prefer grasses, roots, small shrubs, aquatic vegetation, weeds, and clovers. Some of their favorite food sources are willows, horsetails, cattails, wild rice, and saltgrass. While geese will forage for leftover corn, it is not the mainstay of their diets. Regarding grains in general, they prefer oats and winter wheat. Corn cropping destroys soil structure, eradicating the microbiome and displacing native plants that provide the most complete nutrition for wildlife. In addition, geese and other migratory birds would not use farm fields for breeding because they nest and produce hatchlings at the same time farmers are preparing fields to be seeded. The Project area was evaluated using criteria from the US Fish & Wildlife Service and consultations were made with the NYS Department of Environmental Conservation and New York State Historic Preservation Offices. All agency responses resulted in issuances of no adverse environmental impact for this site. **Solar Lake Effect.** It used to be hypothesized that a "lake effect" where aquatic birds that require water to take off and land are confusing reflective solar panels

Commenter	No.	Topic	Public Comment	Applicant Response
				with water bodies and colliding with them. Little evidence has shown that this lake effect is the cause of deaths near solar facilities. As mentioned by a Boralex advisor during the public hearing held on October 23, 2023 at Burton Hall, instances of solar lake effect were linked to large array configurations in dry western habitats that used racking with solar panels fixed in a flat orientation and spaced very close together. Those methods of design are no longer used and, in any case, do not apply to the single-axis trackers and co-utilization spacing of rows planned for the Easton Solar arrays. Of more concern for the bird population is climate change, as discussed in Comment #2 of this document.
Scott Nowakowski SRN Trucking & Excavation 301 Windy hill Rd Greenwich Ny 12834 518-338-5677	8	Stormwater Management Grading Plan	October 31,2023 To whom it may concern: I am the owner of the property 301 Windy Hill Road in Easton, NY. As the owner of property that is directly adjoined to the proposed solar panel property, I have concerns that must be addressed. I have not seen an environmental impact study for the installation of the solar panels on this property and would like to have access to this document before the project is approved. My primary concern with this project is the drainage pond that is located directly on my property line on the proposed solar panel parcel. It is my concern that this pond will be filled upon the installation of the solar panels. Due to the proposed solar panel property being significantly higher than my land, if this pond is filled without the proper drainage installed to divert water, it will have a negative impact on my land. The impact on my land would be flooding and standing water that could become potentially stagnant resulting in an unhealthy environment. Without the proper drainage and removal of this pond my property that houses my business equipment and materials will essentially become a swamp. I am very familiar with grades, elevations and drainage requirements. Given this knowledge of land and drainage, there will be a significant problem if this pond is filled without proper drainage. I would be willing to meet anyone at the site to further explain my concerns and give my professional opinion on how to redirect the water and avoid a potential problem if the pond is to be filled. I ask that you please formally address this concern with the prospective solar panel company so they can develop an engineered and corrective solution prior to approval at their cost that rectifies the possible negative impact to my property. Feel free to contact me and provide my contact information to the prospective company.	According to current topographical mapping, the Nowakowski property sits at a higher elevation than the Project. The Nowakowski property and the Project area both generally drain from west to east toward the Battenkill River (offsite). Boralex will be removing piles of material within the planned array area. Once these are removed, and with proper grading under the array, there will not be an issue with water backing up onto the Nowakowski property. The grading plan will include measures to provide smooth transition across the property boundary and avoid blockage of existing drainage from the Nowakowski property that flows toward the Project property. Optimal stormwater design may require limited grading on the Nowakowski property (with their consent) where it borders one of the ponds that will be filled. As final construction drawings are prepared for the Project, Mr. Nowakowski will be consulted and drainage considerations between the properties will be incorporated into the final grading plan and final stormwater pollution prevention plan (SWPPP) to be implemented during construction and operation.



Legend

Project Layout (PV Array Areas)
Observation Points (OPs)
Rte 29
Old Schuylerville Rd-1
Old Schuylerville Rd-2
Windy Hill Rd-1

Approximate Scale:
0 0.225 0.45 0.9 Miles

N

TETRA TECH

Figure 2
Receptors

Easton Solar
Windy Hill Road
Easton, NY

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

III.

Easton Town Planning Board

Meeting Minutes – October 23, 2023

(Public Hearing for Easton Solar Farm)

Easton Town Planning Board

Burton Hall 1071 State Route 40 Greenwich, NY 12834

October 23, 2023 7:00 PM

Present: Allen, Boyce, Brand, Johnson, Quinn, Sievers, Skiff
Alternate Fruchtner
Absent:
Others: Robert Carr, Arien Cartrette, Gary & Debora Wager, Michael Leone, Sonja Torpey, Karen Carr, Holly Harris, Keith Mann Sr., Keith Mann JR., Laura Mann, David Ashdown, Joe Helenck, Cindi Steffen, Isaac Ashdown, Bruce Jordan, Charlie Tracy, Laura Reynolds, Michael Jennings, Tom Bowden, Melissa Mansfield, James Muscato, Julia Stahl, Marc

Resolution Summary
3392 Untable Easton Solar Project application #05-22
3393 Accept meeting minutes September 25, 2023
3394 Special meeting on 11/13/23 @ 7 pm to review FEIS Easton Solar Project #05-22
3395 Motion to adjourn

The meeting was called to order at 7:00 pm.

Motion by Johnson to untable Easton Solar Project application #05-22, 2nd by Fruchtner, all in favor, carried, resolution 3392.

The meeting minutes of September 25, 2023 were reviewed. Motion by Allen to accept meeting minutes for September 25, 2023, 2nd by Quinn, all in favor, carried, resolution 3393.

Easton Solar Farm #05-22

The public hearing notice was read aloud and the public hearing was open at 7:05 pm. The draft EIS document was available for review. The public comments were:

Arien Cartrette- What is the decommissioning plan? (Explained the decommissioning bond is a "insurance policy" in the event the project becomes inoperable and the landowner and company do not decommission the project. The town board and the company work together to come to an agreement on the bond. Reevaluate the project and bond cost every 5 years.)

Tom Bowden- Where is the project and what is the process? (The project has not been voted on and the process of what the planning board goes through was explained.)

Is there a way to find out how many people in the community are for/against solar? (Explained the process of updating the comprehensive plan and how we are always looking to get more community involvement.)

Keith Mann Jr- How many test holes were dug throughout the site and where are they located on the property? (Advised to look at the soils report in the DEIS)

Keith Mann- Ambien temperature is said to raise the temperature 7%, will this raise the temperature? (No, the heat from the panels will not affect anyone's house temp. global warming has more effect)

Gary Wager- When.if the panel selection is made, can landowners be made aware? (Yes)

Tom Bowden- Where are the panels made? (For this project they have not been selected, but most panels are made in Asia).

Cindi Steffen- The viewshed and buffer are the biggest concern as I have a direct view. Julia Stahl has been to meet with her on a few occasions and she appreciates this, but would like to make sure if the project goes through that her parcel has an acceptable plan protecting her view.

Bob Carr- I live on Ashdown Way, will the current buffer and tree line be impacted? (No, that area will be left as is.)

Mike Leone- What are the setback requirements? (There is a 50' setback from the property lines). Will the ponds on Tracy's parcel have a 50 or 100' setback? (They are actually farm ponds that are not used and will be filled in.)

Keith Mann Sr.- What is a safe distance to live from a large solar farm? The answer he found was at least 1.2 miles. (The article was requested but to date has not been received). The large solar project will also impact the wildlife in the area. Large solar projects can impact the ecosystem in the area. Solar farms require a large amount of land to be built on, which can lead to deforestation, destruction of wildlife habitats, and disruption of ecosystems. In addition, solar farms often require the use of chemicals and pesticides to maintain the cleanliness of the panels. These chemicals can have a detrimental effect on the surrounding environment. The truth is, solar energy is not without its risks. In fact, some of the side effects of solar energy production can be quite serious. Here are a few of the less well-known dangers of solar energy: Environmental Concerns, Fire Hazards, Electromagnetic Fields, Bird Deaths, Wild and local pets. *attached is a copy of his letter which contains his comments.

Secretary Skiff asked what they classified as a large solar project?

The property 3-4' down is nothing but clay and with large rainfalls it then runs by homes as you can see visibly currently. Wells are shallow in the area.

Keith Mann Jr.- When we are trying to classify what is a large or small solar farm, is the density of the solar panels on the parcels being considered. (The current projected distance at this time is expected to be 20-25' apart as they will be a tilt panel).

David Ashdown- Bond question- what happens down the road if the company no longer exists? (The bond the town holds is through a company not the solar company and as long as the solar project is existing the bond exists. The bond is based on a decommissioning estimate that the engineers come up with and it is reevaluated every 5 years.

Keith Mann Jr.- How does the bond transfer with the sale of the land? (The bond stays with the town for the duration of the project).

farmhouse is inhabitable. Skiff asked if the whole parcel would need to be surveyed due to there being no current map? The PB felt the only section that needs to be surveyed would be the lands that will be removed. In 1987 Ryan subdivided a lot, it is the lot across County Rt 74, tax parcel #245.-1-13.1- 20.429 acres.

OTHER:

Secretary Skiff attended the last Town Board meeting to discuss the Renewable Energy Law. There was a petition filed by Ethan to enact a moratorium while the planning board continues to work on the comprehensive plan and enact a green energy law. The town board took no action and tabled it until the November meeting. There was a lot of discussion at the town board meeting regarding the Easton Solar project.

Skiff wanted to discuss and get clarification regarding the validity of our comprehensive plan and local law. In the past the advice from the attorney was that due to the age of our comprehensive plan, that if an action was denied and only cited from the comp plan, it would not necessarily hold up in court, while other PB members feel it would. There was discussion among the PB and it was agreed that we need to get clarification on this area. The other area Skiff mentioned was if the application is denied and an Article 78 is filed, will the PB be liable due to PB members filing a petition with the town board, during and before the vote of an existing solar project? Fruchtner gave some insight from the past case that he reviewed in which the judge filed in favor of the PB, which stated the planning board followed the comp plan and local law.

Skiff will reach out to NYPF and see if Claudia Braymer is still practicing as she supported the town in the past.

Skiff also received notification from LaBarge regarding a cost for the Renewable Energy Law. The cost to write the law, complete the SEQR and file with the state would be $17,000.00. The process would take between 3-6 months.

Motion by Quinn to adjourn, 2nd by Skiff, all in favor, carried, resolution 3395.