PRELIMINARY SCOPING STATEMENT

Case 17-F-0655: Riverhead Solar 2 Project

Town of Riverhead, Suffolk County, New York

Prepared For:

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COMMONLY USED ACRONYMS AND ABBREVIATIONS

Applicant	Riverhead Solar 2, LLC, an indirect subsidiary of FTP Power, LLC ("sPower")
BBA	Breeding Bird Atlas (New York State)
CEF	Clean Energy Fund
CES	Clean Energy Standard
DEIS	Draft Environmental Impact Statement
FEIS	Final Environmental Impact Statement
GHG	greenhouse gas
GIS	geographic information system
MW	Megawatt
NYNHP	New York Natural Heritage Program
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NYSA&M	New York State Department of Agriculture and Markets
NYSERDA	New York State Energy Research and Development Authority
NYSOPRHP	New York State Office of Parks, Recreation, and Historic Preservation
NYSORPS	New York Office of Real Property Services
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PILOT	payment in lieu of taxes
PIP	Public Involvement Program
POI	point of interconnection
PSL	Public Service Law
PSS	Preliminary Scoping Statement
REV	Reforming the Energy Vision
Siting Board	New York State Board on Electric Generation Siting and the Environment
SPCC	Spill Prevention, Control, and Countermeasure
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
VIA	Visual Impact Assessment

1.0 INTRODUCTION

Riverhead Solar 2, LLC (Riverhead Solar 2 or the Applicant), a subsidiary of FTP Power, LLC (sPower) is proposing to submit an Application to construct a major electric generating facility (the Facility) under Article 10 of the Public Service Law (PSL) (the Riverhead Solar 2 Project or the Facility). Pursuant to the rules of the New York State Board on Electric Generation Siting and the Environment (Siting Board), not less than 90 days before the date on which an applicant file an Application to construct a major electric generating facility under Article 10, the applicant must submit a Preliminary Scoping Statement (PSS). In addition, under 16 NYCRR § 1000.5(c), an applicant can file a PSS with the Siting Board no earlier than 150 days following the submission of a Public Involvement Program (PIP) Plan. The initial PIP for the Facility was filed on October 20, 2017, and after receipt of comments from the New York State Department of Public Service (DPS) staff, a Final PIP was filed on December 20, 2017. This PSS for the Riverhead Solar Project is intended to satisfy the filing requirements set forth by 16 NYCRR § 1000.5(c). Pursuant to 16 NYCRR 1000.5(g), within 21 days after the filing of this PSS, any person, agency, or municipality may submit comments on this PSS by serving such comments on the Applicant and filing a copy with the Secretary to the Siting Board. Further details for filing comments on this PSS are provided in the Notice, included in Appendix A of this PSS.

1.1 FACILITY DESCRIPTION

The Riverhead Solar 2 Project is a proposed 36 megawatt (MW) photovoltaic (PV) solar energy generating development located within the Town of Riverhead, Suffolk County, New York. The Facility will be located adjacent to another locally-permitted solar facility, Riverhead Solar 1, and in the vicinity of the existing Sutter and Sterling solar facilities. These surrounding facilities are all owned and operated by sPower; the Riverhead Solar 1 facility's Final Site Plan was recently approved by the Town of Riverhead Planning Board.

The regional Facility location and Facility Site are depicted on Figures 1 and 2, respectively. The lands being evaluated to host the Facility (Facility Site) are rural in nature. Not all land included in Facility Site will ultimately be developed as part of the project. The Facility Site includes approximately 290 acres of leased private land, which consists primarily of agricultural land. The Applicant is leasing land from private landowners, which will provide a stable and predictable revenue stream to these landowners. The location of the Facility Site and Facility components will be identified in detail in the Article 10 Application. However, in accordance with 16 NYCRR § 1000.5(l)(1), a preliminary layout of potential solar generating site locations is depicted on Figure 3. The preliminary layout depicted on Figure 3 essentially represents the maximum build-out scenario, which has not yet fully considered avoidance and minimization of impacts to the various sensitive resources. The layout to be presented in the Article 10 Application will be reflective of such avoidance and minimization efforts.

The proposed Facility consists of the construction and operation of a commercial-scale solar energy project, including:

- A solar field of PV panels producing direct current (DC) electricity mounted on single-axis tracking structures, no more than 8 feet in height, that will follow the sun throughout the day;
- Internal infrastructure including access roads and fencing;
- Inverters placed throughout the Facility (internal to the panel arrays) to convert DC electricity to alternating current (AC) electricity.
- A medium voltage collection system that will aggregate the AC output from the inverters;
- A 34.5 kV generation tie line (gen-tie) that will connect the Facility to an existing collection substation;
- Additional equipment added to an existing collection substation (i.e., no footprint expansion of substation needed) where the Facility's electrical output voltage will be combined, and its voltage increased to the transmission line voltage of 138 kV via step-up transformers;
- A short underground 138 kV line connecting the new equipment from the collection substation to the existing Edwards Substation; and
- Temporary laydown areas for equipment staging during construction.

To deliver power to the New York State power grid, the Applicant proposes to interconnect with the existing PSEG Long Island Edwards Substation. This substation is located along Edwards Avenue, just southeast of the Facility Site but is not included as part of the Facility. Please note that the relationship between the existing Edwards Substation, the collection substation to be constructed for the Riverhead Solar 1 project, and the new equipment to be added to the collection substation for the Facility is depicted on the substation Key Plan (Sheet Number P100.0) included as Appendix B.

The Riverhead Solar 2 Project will have a nameplate capacity of 36 MW and is expected to generate approximately 72,345 MWh of energy for year one of operation. This will be enough electricity to meet the average annual consumption of over 6,500 households, based on average annual electric consumption of 10.77 MWh for New York State (EIA, 2017). Solar energy is most beneficial during the summer demand to meet air conditioning loads. Avoiding the use of fuel offsets additional air pollution from burning fossil fuels and dampens the cost of power at this time of peak conventional power cost. Solar modules have followed the same cost pattern as many other electrical devices. Module costs have fallen significantly over the last 5 years, dramatically changing their role in wholesale power supply.

1.2 FACILITY BENEFITS

New York has adopted strongly proactive policies to combat climate change and modernize the electric system to improve the efficiency, affordability, resiliency, and sustainability of the system most notably reflected in the 2015 State Energy Plan (SEP), issued June 25, 2015, by the New York State Energy Planning Board. The SEP recognizes the importance of ensuring that New York's power system is modern, clean, and diverse and that "renewable resources will . . . play a significant role in shaping New York's energy future, providing resilient power, reducing fuel cost volatility, and lowering [Greenhouse Gas (GHG)] emissions." The SEP describes the State's energy future through a series of goals such as a 40% reduction in GHG emissions from 1990 levels, procurement of 50% of electricity generation from renewable energy sources by 2030.[1]

On August 1, 2016, in accordance with the statutory obligation that agency actions must be reasonably consistent with the most recent SEP, the Commission approved the Clean Energy Standard (CES), which formally adopts the SEP's goals that 50% of New York's electricity is to be generated through renewable sources by 2030. This goal is part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030.

The proposed Facility will improve fuel diversity within the State by increasing the amount of electricity produced by non-fuel dependent solar power. Consequently, there will be no adverse impact on fuel delivery constraints. Rather, by generating electricity without the need for fuel delivery and displacing facilities that rely on fuel for generation, it is expected that the Facility will contribute toward reducing the demand for fuel thereby alleviating fuel delivery constraints. The Article 10 Application will contain an analysis of the Facility's impact on fuel delivery constraints.

The goals contained in the SEP and CES program are ambitious and require grid-scale solar projects, like the Facility, to achieve targeted levels of new renewable generation. At an anticipated size of 36 MW, the Project will contribute to the State's clean energy goals.

Further, it is anticipated that the proposed Facility will have positive impacts on socioeconomics in the area through employment opportunities, specifically by generating temporary construction employment. Local construction employment will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. In addition, Facility operation will generate part-time employment and contracting service opportunities for electricians, operations managers, laborers and fencing contractors, and landscaping maintenance

[1] By Executive Order, it is also a goal of the State of New York to reduce current greenhouse gas emissions from all sources within the State 80% below levels emitted in the year 1990 by the year 2050. Executive Order No. 24 (2009) [9 N.Y.C.R.R. 7.24; continued, Executive Order No. 2 (2011) 9 N.Y.C.R.R. 8.2].

crews. The Facility will also result in increased revenues to county and local municipality tax bases, purchase of local supplies and goods, and lease revenue to participating landowners.

1.3 SUMMARY OF PRE-APPLICATION ACTIVITIES

Prior to this PSS, the Applicant prepared a PIP plan in accordance with 16 NYCRR § 1000.4, which was filed with the Siting Board, and the Facility was assigned a case number (Case No. 17-F-0655). The initial draft of the PIP was submitted to the Siting Board on October 20, 2017, comments on the PIP were received from the New York State Department of Public Service (DPS) on November 20, 2017, and the PIP was updated, finalized and filed by the Applicant on December 20, 2017. The PIP can be accessed, viewed and downloaded on the online case record maintained by the Siting Board on its Document Matter Management Website: (http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=54735&MNO=17-F-0655) and on the Facility-specific website maintained by the Applicant (http://riverheadsolar2.com/).

According to 16 NYCRR § 1000.4(c), a PIP plan must include: (1) consultation with the affected agencies and other stakeholders; (2) pre-application activities to encourage stakeholders to participate at the earliest opportunity; (3) activities designed to educate the public as to the specific proposal and the Article 10 review process, including the availability of funding for municipal and local parties; (4) the establishment of a website to disseminate information to the public; (5) notifications; and (6) activities designed to encourage participation by stakeholders in the certification and compliance process. It is anticipated that this will be an ongoing, evolving process throughout all phases of the Article 10 review process (pre-application phase, application phase, hearing and decision phase, and post-certification phase) intended to disseminate information regarding the Facility to stakeholders, solicit information from those stakeholders during public outreach events and generally foster participation in the Article 10 review.

The Applicant has established the following contacts and document repositories that will be available through the duration of the Article 10 Process:

- Public Contact Information (for the public stakeholders to contact with questions, concerns, etc.):
  Ryan Galeria, Project Manager
  Nancy Hsu, Permitting Manager
  2180 South 1300 East, Suite 600
  Salt Lake City, UT 84106
  (855) 561-6212
  Fax 562-348-1113
  info@riverheadsolar2.com

- Local Document Repositories:
  Riverhead Free Library
  330 Court Street
  Riverhead, NY 11901

In support of this PSS, the Applicant has consulted with the public, affected agencies and other stakeholders, as required by 16 NYCRR § 1000.5(b). All such consultations have been documented in a Meeting Log maintained by the Applicant, which will be updated and submitted to the Siting Board on a regular basis (also available on the case record website referenced above). The most recent Meeting Log is included with this PSS as Appendix C. The Applicant will continue to prepare and file a Facility-specific Meeting Log on a regular basis throughout the duration of the Article 10 review process. Additional details regarding PIP implementation and outreach to stakeholders is provided in Section 2.2 of this PSS.

1.4 POTENTIAL IMPACTS

The following information regarding potential impacts associated with solar powered electric generating facilities is provided in accordance with 16 NYCRR § 1000.5(l)(2)(ii):

Relative to conventional energy generation methods of a similar scale, solar facilities result in minimal impacts to the environment. Conventional electrical generation facilities such as coal and natural gas create atmospheric emissions which contribute to climate change which create negative consequences on public health (Confalonieri, et al. 2007). The Facility will aid in decreasing dependency on fossil fuels and will contribute to a more sustainable and forward-thinking energy generating system in New York State.

Potentially positive impacts to the local community resulting from development of the Facility include significant long-term economic benefits to participating landowners, as well as to the Town of Riverhead, the local school district, and Suffolk County. When fully operational, the Facility will provide up to 36 MW of electric power generation with no emissions of pollutants or greenhouse gases to the atmosphere and without the need for the use of significant quantities of water. These potentially beneficial impacts will be assessed in the Article 10 Application by, among other things, a socioeconomic study analyzing the potential positive economic benefits of the Facility's operation and construction. In addition, the positive environmental and health impacts associated with generating electricity from a renewable resource such as solar energy rather than other fuel sources will be addressed in the Article 10 Application based on a review of recent State policy determinations and assessments and a review of State energy planning objectives.

Over approximately the last 5 years, approximately 665 MW of solar capacity has been developed in New York State (NYSUN, 2017). These projects have returned important insights and information regarding the potentially adverse environmental impacts to be assessed and studied related to the operation and construction of a solar generating facility. Despite the minimal impacts anticipated as a result of the construction and operation of the Facility, its construction and operation will necessarily result in certain unavoidable and potentially significant adverse impacts to the environment.

Impacts from the construction and operation of solar generation are largely the result of the fact that utility-scale solar energy facilities require a large contiguous area for the collection and distribution of energy. The Applicant has sited the Facility in a rural agricultural region in effort to minimize the need for land clearing and typical construction processes such as surface grading, and soil compaction. The Applicant is also choosing the least intrusive PV panel mounting systems available to minimize soil disturbance so that the land can return to its current agricultural use following the decommissioning of the Facility.

There are approximately 45,180 acres of farmland in Suffolk County, which is approximately 8% of the total overall land area within the county. The Applicant's preliminary estimates indicate that up to 159 acres of agricultural land will be required to develop the Facility; which is approximately 0.3% of the land currently dedicated to agriculture in Suffolk County. However, construction of the Facility will not permanently remove these lands from future use for agriculture. Construction of solar energy projects does not typically require significant soil disturbance. Solar panels will be installed on a low-profile racking system, which typically consists of small I-beam posts driven into the ground, without the need for excavation, concrete, or other foundations. Limited grading may be necessary in some areas. In those limited areas where soil disturbance is necessary, topsoil will be stripped and stockpiled for restoration purposes. Following construction, any disturbed areas will be restored with topsoil, and a cover of native grass species will be established underneath and around the solar panels. In addition, during operation of the Facility, the soils within the Project Site will not be treated with fertilizers, herbicides or pesticides as routine practice. However, treatments may be required from time to time based on changing conditions. Allowing the on-site soils to "rest" over the life of the Facility will result in an added benefit of restoring nutrients and productivity to the soils. Because construction of the Facility will require minimal soil disturbance, the land will remain available to revert to agricultural use following decommissioning of the Facility.

Facility construction will also result in impacts to vegetation and wildlife habitat. However, the siting of Facility components has been designed to minimize impacts to undisturbed habitat by utilizing previously disturbed areas and avoiding forest and shrubland communities to the extent possible. The Facility is being designed to avoid or minimize the need for tree-clearing to the greatest extent practicable. Construction-related impacts to vegetation may include

cutting/clearing, removal of stumps and root systems, and increased exposure/disturbance of soil. These impacts can result in a loss of wildlife food and cover, potential increased soil erosion and sedimentation, a disruption of normal nutrient cycling, and the introduction or spread of invasive plant species. These potential impacts will be addressed in consultation with appropriate agencies (e.g., the New York State Department of Environmental Conservation [NYSDEC]) to assess potential impacts to wildlife and terrestrial habitats associated with the construction of the Facility (see Section 2.22 of the PSS for additional information). These potential impacts are discussed in more detail in this PSS, and will be fully addressed in the forthcoming Article 10 Application.

During construction, permanent or temporary impacts to wetlands and surface waters may also occur. The Applicant has already conducted wetland delineations to facilitate a project design that will avoid or minimize wetland impacts to the greatest extent practicable (see Section 2.22 of this PSS). The extent of these impacts will be assessed following completion of the Facility's preliminary design and will be presented in the Article 10 Application. Potential conversion of wetland communities as a result of construction activities (e.g. forested to scrub-shrub), and soil disturbance from burial of the electrical 34.5 kV collector lines may occur. Indirect impacts to wetlands and surface waters may result from sedimentation and erosion caused by adjacent construction activities (e.g., removal of vegetation and soil disturbance).

Solar energy projects do not result in the visual impacts comparable to other large-scale energy projects that require tall structures, smokestacks, or generate plumes, such as wind energy projects and natural gas-fired power plants. Photovoltaic panels have a low-profile (i.e., typically lower than 10 feet in height), which limits their visibility and potential visual effect in terms of the distance from which the panels will be visible. However, the large areas required to achieve the necessary scale of electrical production for utility-scale solar projects can result in visual impacts for viewers located in areas immediately adjacent to the project. In addition, glare is frequently raised as a possible concern for solar PV installations. PV panels are designed to absorb as much of the solar spectrum as possible to maximize efficiency. The potential for reflectivity or glare from a given PV system is decisively lower than the glare and reflectance generated by common reflective surfaces in the environments surrounding the given PV system. There is an inverse correlation between light absorption and reflection. Consequently, virtually all PV panels installed in recent years have at least one anti-reflective coating to minimize reflection and maximize absorption. Therefore, although frequently raised as a concern, PV panels do not typically produce glare. In addition, Riverhead Solar 2 intends to use single-axis trackers, which direct the panels at the sun for optimal energy production. An added benefit of the use of trackers is that any glare, however small, that might be generated is reflected directly back at the sun, therefore essentially eliminating any glare available to observers (see Section 2.24 of this PSS for additional information).

Similarly, solar projects do not produce noise that results in significant impacts or annoyance to neighboring residences, wildlife, or other sensitive receptors. The primary source of noise from the operation of solar projects will be inverter hum during the day when the solar arrays are generating electricity. However, this noise is generally inaudible at distances greater than 150 feet from the inverter, which are typically sited within the interior of a given solar project. Typically, sound from the photovoltaic array and associated equipment is inaudible at distances greater than 50 to 150 feet from the fenced boundary of a given project. The additional equipment added to the existing collection substation will also represent a new sound source in the study area. The step-up transformer will be the primary source of sound associated with this additional equipment. In addition, noise will be generated during project construction and maintenance, primarily from vehicles and equipment operating along access routes and at work areas. However, these are temporary activities that will not typically generate sounds louder than routine noise sources such as farm equipment and vehicles passing on the road.

Additional information regarding potential environmental impacts that could result from construction or operation of the Facility is included in Section 2.0 below. Potential impacts to wetlands, wildlife, cultural (i.e., historic and archeological) resources, and visual impacts will be evaluated through project/site-specific studies that are described in this PSS, and the results of the studies will be provided in the Application.

With careful planning and design, many of the potential impacts associated with solar facilities can be completely avoided or minimized to be compatible with the surrounding areas. At this time, because the studies characterizing these impacts have not yet been completed, and/or the results of such studies are being used to support the preliminary layout and design of the Facility, many specific avoidance, minimization, and mitigation measures cannot be identified. However, the studies conducted in furtherance of the Article 10 Application (the scope and methodologies of which are detailed in this PSS), will identify measures taken by the Applicant to avoid potential impacts as well as minimization and mitigation measures that will reduce impacts to the extent practicable.

1.5 IMPACT AVOIDANCE MEASURES

Compliance with the Conditions of the Article 10 Certificate, and various federal regulations, as well as certain applicable local regulations governing the development, design, construction and operation of the proposed Facility, will serve to avoid and minimize adverse impacts. Despite the fact that a final Facility layout and design has not yet been completed, based on the historical information regarding typical impact avoidance, minimization and mitigation measures for solar-powered electric generation projects, the following information is provided in accordance with 16 NYCRR § 1000.5(l)(2)(v) and (vi):

Proper siting considerations for solar projects include avoidance of areas with significant aesthetic or scenic resources and selection of sites that are not used by the public for recreation. Siting a project in open fields minimizes the potential need for tree clearing and associated visual impacts, and the network or existing woodlots and hedgerows around agricultural fields serve to minimize project visibility from nearby areas. In addition, collocating electrical facilities (such as the substation) with existing electrical infrastructure minimizes visual impacts. The Facility has been sited in a relatively flat, open, agricultural area, adjacent to other solar facilities. It is anticipated the land within the Facility Site that will host the equipment will require relatively little work to prepare it for construction. The solar fields will be designed to minimize the need to remove trees in the Facility Site, particularly those associated with wetlands or containing potential wildlife habitat. Specific methods to be used to remove trees and vegetation and perform minimal grading have not been determined but are anticipated to be standard for the commercial construction industry. Most of the land surface within each solar field, including almost all of the area below the arrays themselves, will be planted with a robust, low-growing seed mix, primarily native grasses and other low-maintenance varieties.

Construction activities and Facility engineering will be in compliance with applicable state and local building codes and federal Occupational Safety and Health Administration (OSHA) guidelines to protect the safety of workers and the public. Federal and state permitting typically required by the United States Army Corps of Engineers (USACE) and/or the NYSDEC, and associated avoidance and minimization measures, will serve to protect water resources, along with implementation of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with a state-approved State Pollutant Discharge Elimination System (SPDES) permit. Coordination between the Applicant and state and federal agencies will ensure that natural resource impacts are avoided to the extent practicable and that minimization and mitigation programs are in place to monitor potential impacts and ensure effective mitigation is in place. Consultation with the necessary local, county, and state highway entities will assure that safety is maintained, and that congestion, and damage to highways in the area is avoided or minimized. In addition, the final Facility layout will be in accordance with various siting criteria, guidelines, and design standards that serve to avoid or minimize adverse environmental impacts. These include:

- Minimizing the number of stream and wetland crossings.
- Designing all electrical lines in a manner that minimizes any possibility of stray voltage.
- Siting PV panels (where feasible) in open field areas to minimize forest clearing and impacts to habitat.
- Construction procedures will follow Best Management Practices for sediment and erosion control.
- Designing, engineering, and constructing the Facility in compliance with various codes and industry standards to assure safety and reliability.
- Utilizing the New York State Department of Agriculture and Markets (NYSA&M) guidelines to minimize impacts on agricultural land and farming practices.

There are a variety of visual mitigation options that have been or could be applied to solar projects. For a given project, visual mitigation options are typically evaluated based on the existing visual character, aesthetic features, vegetation, and visual sensitivity of a given project setting. Appropriate setback distances should be determined based on the sensitivity of the adjacent uses. For instance, smaller setbacks may be appropriate for limited use county roads than for more highly used roadways. Larger setbacks may be appropriate for areas adjacent to residences or public recreational areas, but smaller setbacks would be acceptable in areas adjacent to agricultural, industrial, forest, or vacant land. Security fencing can result in a significant visual impact for solar projects sited in rural areas. It is important to understand that security fencing is required for solar projects for safety and security purposes. However, specific vernacular fence styles in selected locations can be considered if there are specific existing styles, materials, or designs that relate to existing features in the landscape of a given project area. In these cases, selection of fence styles is typically based on precedent examples on adjacent properties or within the local community so that when installed the project would better blend into the existing visual setting. Visual screening can include use of earthen structures (i.e., berms) or planting of vegetation intended to block or soften views of the project. Common approaches to visual screening include:

- *Earthworks/berms*: In select locations altering the topography to aid in the screening of a project from adjacent areas and/or sensitive sites can be a viable option. However, in many areas (such as relatively undeveloped agricultural areas) the introduction of earthen berms (or other earthworks) would result in new visual elements that are not in keeping with the existing landscape and would not be appropriate.
- *Evergreen Hedges*: Use of vegetation for mitigation can include installing a screening hedge made up of evergreen trees and shrubs along roadways and/or selected portions of the exterior fence line of the project. This approach is effective and commonly implemented in urban and suburban settings, however, it may not be appropriate in some settings (such as relatively undeveloped agricultural areas) where the introduction of evergreen hedges would be inconsistent with the existing visual setting.
- *Native Shrubs and Plantings*: An alternative to evergreen hedges, which may not appear naturalized or appropriate in many settings, is use of native shrubs and plantings along road frontages and/or selected portions of the exterior fence line of a project. This approach does not typically result in plantings that completely screen views of the project, but instead serve to soften the overall visual effect of the project and can help to better integrate the project into the surrounding landscape. Plantings should be selected based on aesthetic properties, to match with existing vegetation in the project vicinity, and the ability to grow in the specific conditions of a project area. In addition to helping to blend the project into the surrounding landscape, use of native plant species will also provide environmental benefits to the local animal and insect communities.

- *Pollinator-Friendly Grasses and Wildflowers*: In many agricultural areas, installation of hedges or shrubs may not be in keeping with the existing visual setting, which is typically characterized by open fields backed by occasional hedgerows or woodlots. Trees, shrubs, or tall vegetation along roadsides are often atypical in these settings. An alternative form of vegetative screening that may be appropriate in these areas is use of tall native grasses and wildflowers along selected roadsides and other fence lines to soften the appearance of the project and better integrate the project into the landscape. Regionally appropriate plantings can also provide habitat for pollinator species when planted around the periphery of the site and/or in locations on site where mowing can be restricted during the summer months. Leaving the taller plants un-mowed during the summer provides benefits to pollinators, habitat to ground nesting/feeding birds and cover for small mammals, in addition to softening the appearance of the project. Following this approach, low growing/groundcover native species should be planted under the solar panels and between arrays.

Facility development, construction and operation will also include specific measures to mitigate potential impacts to specific resources, which could include the following types of measures:

- Developing and implementing various plans to minimize adverse impacts to air, soil, and water resources, including a dust control plan, sediment and erosion control plan, and Spill Prevention, Control, and Countermeasure (SPCC) plan.
- Employing an environmental monitor/inspector to ensure compliance with all certificate and permit conditions, including practices to be employed at sensitive areas such as stream and wetland crossings.
- Implementing an Invasive Species Control Plan.
- Developing and implementing a Complaint Resolution Plan to address local landowner concerns throughout Facility construction and operation.
- Preparing a historic resource mitigation program, if needed, to be developed in consultation with the State Historic Preservation Office (SHPO).
- Preparing a compensatory wetland mitigation plan, if needed, to mitigate impacts to streams and wetlands.
- Entering into a payment in lieu of taxes (PILOT) agreement with the local taxing jurisdictions to provide a significant and predictable level of funding for the towns, County, and school districts.
- Developing a preliminary Operations and Maintenance Plan
- Developing a preliminary Health and Safety Plan
- Developing a preliminary Site Security Plan
- Developing an Emergency and Fire Response Plan with local first responders.
- Implementing a Decommissioning Plan.

It should be noted that sPower is a leading US developer of renewable energy projects, with a primary focus on solar energy facilities. Founded in 2012, sPower operates over 150 utility and distributed electrical generation systems, totaling approximately 13 gigawatts (13,000 MWs). Previous solar energy development experience has given sPower a strong understanding of how to effectively minimize and mitigate impacts that can result from the development of a solar generating facility.

1.6 ORGANIZATION OF THE PSS

To facilitate an understanding of the intended content and organization of the pending Article 10 Application, and to identify the proposed methodology or scope of the studies to be conducted in support of the Application, this PSS has been organized in accordance with 16 NYCRR § 1001 (Content of an Application). Specifically, all sub-sections of Section 2.0 (Content of the Application) of this PSS correspond directly to each Exhibit that will be included in the Application as set forth in 16 NYCRR § 1001 (e.g., Section 2.1 corresponds to 16 NYCRR § 1001.1, Section 2.2 corresponds to 16 NYCRR § 1001.2, etc.). As a result of this organization, Exhibits that are not necessarily applicable to the Facility have been included as individual PSS sections in order to maintain consistency. However, Exhibits that are not applicable to this Facility (e.g., Natural Gas Power Facilities, Nuclear Facilities) have been identified in the corresponding PSS section as Not Applicable.

With respect to the remaining PSS requirements set forth at 16NYCRR § 1000.5(l), a content matrix is provided in Section 3.0 (Summary and Conclusions) of this PSS, which cross-references the requirements of 16 NYCRR § 1000.5(l) with sections of this PSS that provide the required information.

2.0 CONTENT OF APPLICATION

2.1 GENERAL REQUIREMENTS

(1) Applicant Information

The Applicant is Riverhead Solar 2, LLC (Riverhead Solar 2), an indirect subsidiary of FTP Power, LLC ("sPower") sPower's business address is 2180 South 1300 East, Suite 600, Salt Lake City, Utah 84106.

(2) Facility Website

The Project Website can be found at: http://riverheadsolar2.com.

(3) Public Contact

The Project's public contact is Ryan Galeria, Project Manager and Nancy Hsu, Permitting Manager. Their contact information is:

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

(855) 561-6212

Fax 562-348-1113

info@riverheadsolar2.com

(4) Principal Officer

Riverhead Solar 2, LLC is a Delaware limited liability company. Its managing member is sPower Development Company, LLC. The principal officer is Sean McBride, 2180 South 1330 East, Suite 600, Salt Lake City, UT 84106.

Fax 562-348-1113

info@riverheadsolar2.com

(5) Document Service

Comments or questions about the Facility should be directed to Ryan Galeria, Project Manager and Nancy Hsu, Permitting Manager. Their contact information is:

2180 South 1300 East, Suite 600

Salt Lake City, UT 84106

(855) 561-6212

Fax 562-348-1113
info@riverheadsolar2.com

(6) Type of Business

Riverhead Solar 2, LLC is a Delaware limited liability company.

(7) Documents of Formation

The Facility will be owned by Riverhead Solar 2, LLC (Riverhead Solar 2) and the certificate of formation for is included as Appendix D to this PSS.

2.2 OVERVIEW AND PUBLIC INVOLVEMENT SUMMARY

(a) Brief Description of the Proposed Facility

The proposed Facility is a utility-scale solar project located in the Town of Riverhead, Suffolk County, New York. The regional Facility location and general Facility Site is depicted on Figures 1 and 2, respectively. The Facility will be located on purchased and/or leased private land that is primarily agricultural (sod farm) and fallow/abandoned agricultural land. The actual footprint of the proposed Facility components will encompass approximately 290 acres within the Facility Site, which will be located on purchased and/or leased land, and will enable farmers and landowners to return to farming operations or other current land uses following the Facility's decommissioning.

The Facility will consist of up to 130,000 utility-scale solar panels (assuming a 375 watt polycrystalline module). However, if a 395 watt module is used, then the Facility will consist of approximately 119,000 panels. The total size of the Facility will be up to 36 MW alternating current (AC). Proposed components will include: PV panels, mounting systems, collection lines, inverters, a step-up substation, gravel access roads, fencing, and one temporary laydown/construction area. The Facility is not expected to include an O&M building as it will be remotely monitored.

Power generated at the Facility will be stepped up to the interconnection voltage (138 kV) through additional equipment to be added to the existing collection substation (which will be existing by the time Riverhead Solar 2 is constructed as the collection substation will be constructed for the Riverhead Solar 1 project), which will connect with the presently existing Edwards Substation 138 kV bus. Please see Appendix B for a depiction of the relationship between Edwards Substation, the collection substation to be built for the Riverhead Solar 1 project, and the additional equipment to be added to the collection substation for the Facility.

The Article 10 Application will clearly depict all proposed and alternative PV panel locations, along with the proposed footprint of all Facility components. The linear distances of all components will be updated in the Article 10 Application based on the actual footprint that will be presented and analyzed.

(b) Brief Summary of the Application Contents

The Article 10 Application will contain a complete analysis of all exhibits required under Part 1001 Content of an Application except the following that do not apply to the proposed Facility:

- Exhibit 6: Wind Power Facilities
- Exhibit 7: Natural Gas Power Facilities
- Exhibit 16: Pollution Control Facilities
- Exhibit 30: Nuclear Facilities
- Exhibit 36: Gas Interconnection
- Exhibit 37: Back-up Fuel
- Exhibit 41: Application to Modify or Build Adjacent

With regards to Exhibits 38 and 39, permitting for well or septic installation is generally a locally administered action and not considered a New York State procedural permit. No water or wastewater connections are anticipated to be necessary as part of the project.

(c) Brief Description of the Public Involvement Program before Submission of Application

The initial draft of the PIP was submitted to the Siting Board on October 20, 2017; comments on the PIP were received from the DPS on November 20, 2017; and the PIP was updated, finalized and filed by the Applicant on December 20, 2017.

The first goal of the PIP is to identify affected stakeholders and other interested parties. The PIP presented this information in Exhibit A – Master List of Stakeholders. Since the PIP's final submission, that master list has been updated based on the Applicant's consultations and meetings with stakeholders. An updated Master List of Stakeholders is presented in Appendix E of this PSS. The next step required for PIP implementation is consultation with stakeholders to disseminate information about the project and to identify local resources and issues of concern. The Applicant has initiated consultations, and the results and summary of these meetings/consultations are in the Meeting Log, which is presented in Appendix C of this PSS. The Meeting Log will continue to be updated and filed on the DPS website through the entire PSS and Article 10 Application process.

On March 14, 2018, the Applicant held a public Open House at the Residence Inn Long Island East End, 2012 Old Country Road, Riverhead, NY 11901 to introduce the community to the proposed Project. Two sessions were offered, one in the afternoon from 1 p.m. to 3 p.m., and a second in the evening from 5 p.m. to 7 p.m. The Applicant and its consultants were available in person to answer questions, as well as to provide maps and overviews of pertinent project information. Notice of this Open House was posted to the Project Website (http://riverheadsolar2.com/) approximately one month before the event, and published in *Newsday* on February 25, 2018 and in the *Riverhead News Review* on March 1, 2018. Approximately 20 people attended the event, and asked questions regarding property value, location of the Project site, anticipated start of construction, biological/environmental resources on site, visual impact, and alternatives. Affidavits of publication for the Open House notices are included here at Appendix F.

The Applicant is committed to transparent, thorough and responsible distribution of Project information to and from stakeholders and has a Facility specific website (http://riverheadsolar2.com/) which stakeholders and the public can submit comments and questions, along with a phone number (855-562-6212) to call with any questions and comments. Electronic copies of significant Facility documents (i.e., PIP, PSS, Stipulations, Article 10 Application) are or will be posted on the Applicant's website, and all documents and filings are on the Facility-specific DMM website maintained by the Siting Board: http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=17-F-0655&submit=Search

Paper copies of all documents presented are now available at the following repositories:

- Riverhead Free Library; 330 Court Street, Riverhead, NY 11901

During the time before the submission of the Article 10 Application, the Applicant intends to continue stakeholder outreach. The Applicant will do a mass mailing to all stakeholders just prior to the submission of the PSS to provide an update on the Facility and invite comments and remind the stakeholders of the comment period timeframe. The Applicant will continue to attend municipal meetings and will hold at least one additional open house prior to submitting the Article 10 Application. Finally, the Applicant will also attempt to identify additional community events in which it would participate. All outreach efforts will be tracked in the meeting logs.

(d) Brief Description of the Public Involvement Program after Submission of Application

The Applicant will continue to engage stakeholders following submission of the Article 10 Application. A summary of the anticipated post-application PIP activities will be included in the Article 10 Application. The Applicant will continue

to attend the Town of Riverhead board meetings. In addition, the Applicant will continue to meet with other local public stakeholders such as the Town and County highway departments as needed.

All of the above continued PIP activities will continue to be tracked and filed in the tracking logs. The Applicant will respond to suggestions and comments through a detailed response to the commenter and will summarize the response in the tracking report. To date, there have not been any written or oral comments provided to the Applicant.

(e) Brief Overall Analysis

This section of the Article 10 Application will provide an overall analysis that assembled and presents the relevant and material facts, together with the information and analysis from the studies conducted in support of the Article 10 Application, which will provide a basis for the Siting Board to make the required Findings on the proposed Facility and a decision to grant the Certificate in accordance with Public Service Law (PSL) Section 168. This section will summarize the facts in the Application which will provide the Siting Board with the information required to make its explicit findings regarding the nature of the probable environmental impacts of the construction and operation of the Facility on (a) ecology, air, ground and surface water, and wildlife and habitat (b) public health and safety (c) cultural, historic and recreational resources and (d) transportation, communications, utilities and other infrastructure, as required by Article 10.

In addition, this section will summarize the facts in the Article 10 Application that will provide the Siting Board with the information needed to determine: (a) that the Facility is a beneficial addition or substitution for electric generation capacity of the State, (b) the construction and operation of the Facility will serve the public interest, (c) that the adverse environmental effects of the construction and operation of the Facility will be minimized or avoided to the maximum extent practicable, d) if the Facility results in or contributes to a significant and adverse disproportionate environmental impact in the community in which the Facility would be located, that the Applicant will avoid, offset or minimize impacts caused by the Facility upon the local community for the duration of certificate to the maximum extent practicable using verifiable measures; (e) and that the Facility is designed to operate in compliance with applicable state and local laws and regulations, unless the Siting Board finds that such laws and regulations as applied to the Facility are unreasonably burdensome and therefore not applicable.

2.3 LOCATION OF FACILITIES

(a) Topographic Maps

Mapping/figures in the Article 10 Application will show the location of the components of the major electric generation and interconnection facilities associated with the proposed Riverhead Solar 2 Project including the PV panels, access

roads, electrical collection system, collection substation, and staging/laydown area. These components, collectively referred to as the "Facility", will be mapped on the U.S. Geological Survey "(USGS) Topo" topographic tile cache base map service displayed at a scale of 1:24,000 or greater. This map service combines the most current data (Boundaries, Elevation, Geographic Names, Hydrography, Land Cover, Structures, Transportation, and other themes) that make up The National Map (USGS, 2017). The National Map is a collaborative effort between the USGS and other Federal, State, and local partners to improve and deliver topographic information for the United States (USGS, 2018). The "USGS Topo" map service is designed to provide a seamless view of the data in a geographic information system (GIS) accessible format and depicts information consistent with the USGS 7.5-minute (1:24,000) quadrangle topographic maps at large scales (USGS, 2017).

(1) Proposed Major Electric Generating Facility Locations

In the Article 10 Application, the Facility Site is defined as those parcels currently under or being pursued for lease (or other real property interests) with the Applicant for the location of all Facility components. Mapping/figures in the Article 10 Application will depict the location of all Facility components within the Facility Site displayed at a scale of 1:24,000 or greater, including the following:

- PV panels
- access roads
- buried electrical collection
- laydown area
- collection substation
- existing Edwards Avenue substation

There could be permanent stormwater devices of a significant nature (e.g., large detention basin) that could be utilized during construction and operation of the Facility. Catch basins or dry wells may be utilized throughout the site.

Although unlikely, to the extent any information is known at the time of the submission of the Article 10 Application regarding potential locations of permanent mitigation/offset sites for wetlands or historic resources, such locations will also be mapped.

(2) Interconnection Location

All Facility components, including the interconnection facilities, will be located within the defined Facility Site and therefore will be mapped as indicated in Section 3(a)(1), above.

(3) Location of Ancillary Features

It is anticipated that the only off-site ancillary features associated with the Facility are temporary public road improvements, if needed. These features will be depicted on mapping/figures in the Article 10 Application.

(4) Location of Article VII Transmission Lines Not Subject to Article 10

The Facility does not include any components that are subject to Article VII of the PSL.

(5) Study Area

As described in the Public Involvement Program (PIP) Plan a 1-mile study area has generally been established for the Facility, which is based on the results of a preliminary viewshed analysis and limited visibility (as indicated in Section 2.3 of the PIP, "…*calculations based on the results of the preliminary viewshed analysis indicate approximately 12% of the 1-mile study area would have potential visibility of the proposed Facility. Further review of the results indicates that only 0.1% of the area between 1 mile and 2 miles of the Facility would have potential visibility. These results suggest the 1-mile Study Area is adequate to address all necessary impacts and concerns related to the visibility of the proposed Facility.*"). However, a single, universal, 1-mile study area will not be used for all studies/analyses. The following represents a summary of the anticipated study areas for the various resource studies to be conducted and included in the Application:

- Land Use: Various aspects of land use such as zoning, land use classification, and existing transmission facilities will be characterized within a 1-mile radius of the Facility.
- Noise: The potential for noise impacts resulting from the construction and operation of the proposed Facility will be assessed for the nearest sensitive receptors located within 1 mile of the Facility.
- Archaeological Area of Potential Effect: Archaeological investigations conducted within all areas of soil disturbance associated with proposed PV arrays, inverter pads, access roads, buried collection lines, and laydown area.
- Architectural Survey Area: Survey conducted to assess if historic properties are located within the 2-Mile Study Area for indirect (visual) effects, and assess the potential effect of the Facility on those resources

- Wetland/Stream Survey Area: Wetland and stream investigations/delineations conducted within the entirety of the parcels hosting Facility components.
- Visual Study Area: The study area to be utilized to conduct visual impact assessments for the proposed Facility will be a 1-mile radius around the Facility Site.
- Transportation: The study area to be utilized to assess potential impacts resulting from the transportation needs for the construction and operation of the proposed Facility will be those potential transportation routes beginning at the intersection of I-495 and Route 25 and ending at the Facility access roads off of Edwards Road and Middle County Road.
- Communications: The study area for communications facilities differs depending on the particular communications system under review (radio, television, phone, radar, etc.), if any. Further information will be provided in the Application.
- Environmental Justice Study Area: The study area to be utilized to assess the potential impact of the Facility on environmental justice (EJ) communities is defined as a half-mile radius around each of the Facility components, consistent with the criteria set forth in 6 NYCRR 487.4.
- Electric and Magnetic Fields Study Area: The study area to be utilized to conduct electric and magnetic field calculations was defined as the right of way associated with underground collection lines (approximately 3 feet below grade). Note: some lines may run further than 4 feet underground to avoid any existing conductors.

(b) Municipal Boundary Maps

Mapping/figures in the Article 10 Application will depict the location of the proposed Facility with respect to village, town, county, and school district boundaries.

(c) Description of Proposed Facility Locations

The locational relationship of the Facility to village, town, county, and school districts will be described in the Article 10 Application.

(d) Facility Shapefiles

GIS shapefiles used in development of the Application will be provided to requesting parties, to support the information and analyses in the Application. GIS shapefiles of all Project and resource locational information, analyses and graphic exhibit preparation will be provided directly to DPS Staff on CD-ROM along with paper copies of the Application.

The Applicant will be seeking confidential information protection for shapefiles for all Facility components, and will submit the shapefiles under separate and confidential cover, seeking the requisite protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.4 LAND USE

As previously discussed, the proposed Riverhead Solar 2 Facility is immediately adjacent to the 20 MW Calverton Solar Energy Facility[2], which was subject to a full SEQRA evaluation that concluded with the issuance of the Findings Statement on October 19, 2017. Figure 4 depicts the locations of both the Riverhead Solar 2 Facility and the Calverton/Riverhead Solar 1 facility, as well as the nearby Sutter and Sterlington solar facilities. As a result of the SEQRA record, land use is well known in the area. Specifically, the Calverton/Riverhead Solar 1 DEIS (VHB, 2017) addressed land use of the respective subject properties and within a 0.25-mile study area established for the purposes of land use analysis in the SEQRA record. Land uses were established based on field survey and the DEIS states, "*land uses within an approximate one-quarter-mile radius of the subject property (the 'study area') include a mixture of sod farms, other agricultural operations, and vacant land, and industrial, religions, commercial and single-family residential uses. However, sod farms and other agricultural uses are the predominant land use within the area. The generally agricultural land use pattern is often interrupted by several existing residential, commercial and light industrial uses, as well as the existing solar facility.*" (VHB, 2017). The Riverhead Solar 1 DEIS mapped existing land use and included representative photographs, which are included in Appendix G of this PSS. The Riverhead Solar 1 DEIS also describes general land use outside the study area, summarized as follows:

> North of Calverton DEIS subject property: Agricultural uses represent the predominant land use to the north of the subject property. A commercial use (i.e., a Citgo gasoline service station) and a single-family residence are located immediately north of the subdivision property. Also present is a large materials mining/processing and hauling facility, screened from the Middle Country Road/NYS Route 25 corridor, as well as other industrial uses, vacant parcels, and single-family residences scattered throughout the northern portion of the study area.
>
> East of Calverton DEIS subject property: To the east of the proposed subdivision property are alternating agricultural uses, single family residences, and commercial and industrial uses (e.g., a liquefied petroleum gas depot, equipment sales and service), and a religious/cemetery use. There are also scattered single-family residences on agricultural land along Edwards Avenue, as well as a DeLalio sod farm along the east side of

[2] This project was also referred to as the "Riverhead Solar 1" facility in the Applicant's Public Involvement Program (PIP) Plan and throughout this PSS.

Edwards Avenue. Additionally, there is a solar facility (owned by others) beyond the DeLalio sod farm, within the eastern portion of the one-quarter mile radius area.

South of Calverton DEIS subject property: The area south of the subdivision property consists of undeveloped wooded land associated with Calverton Executive Airpark (former Naval Weapons Industrial Reserve Plant) and EPCAL. Uses to the south of the easement property include a recreational facility (former golf course, currently used for paintball), a tree farm, and an existing sPower solar facility. Additional uses south of the easement property include transportation (i.e., Hampton Jitney bus terminal and LIRR tracks), industrial, commercial, agricultural, and public utility (i.e., LIPA substation) uses. South of the LIRR train tracks, within the southeastern portion of the one quarter mile radius study area, are single-family residences, vacant land, and an agricultural use.

West of Calverton DEIS subject property: West of the project area (i.e., immediately west of the subdivision property) is a light industrial trucking facility, single-family residences, agricultural uses, and undeveloped wooded land associated with Calverton Executive Airpark. In addition, there are scattered single-family residences on agricultural land along the south side of Middle Country Road/NYS Route 25.

(a) Map of Existing Land Uses

Existing land uses associated with the properties containing any component of the Facility, and all properties adjoining such properties, will be mapped and described based on on-site observations. Between these properties and the 1–mile Study Area, existing land use will be mapped using publicly available data, including the classification codes of the New York Office of Real Property Services (NYSORPS). It is anticipated that the following land uses will occur within the Facility Site: 100 – Agricultural; 200 – Residential; 300 – Vacant Land; 400 – Commercial; 500 – Recreation and Entertainment; 600 – Community Services. This existing land use mapping will also depict existing solar facilities, cemeteries, airports, and private campgrounds (if applicable) within the 1-mile radius Study Area.

(b) Transmission Facilities Map

Existing overhead and underground major facilities for electric, gas, and telecommunications within a 1-mile radius of the Facility will be identified and mapped (to the extent known by the Applicant). This information will be based on publicly available data sources and on-site observations. The Applicant will also coordinate with public (i.e., NYSDPS) and private (i.e., National Grid, GeoTel Communications, LLC) entities regarding other available underground major utilities. For purposes of this section a “major facility” for electric, or gas is considered a facility of sufficient size that it

would be reviewed and approved under Article VII of the Public Service Law, as well as major telecommunications trunk lines, if applicable.

(c) Tax Parcel Map

A map of all tax parcels containing any component of the Facility, and all tax parcels adjoining such properties, will be provided in the Article 10 Application. This map(s) will show current land use, tax parcel number, and owner of record of each property, and any publicly known proposed land use plans for any of these parcels. Parcel and land use data will be obtained from the Suffolk County GIS Department and through consultations with the Towns of Riverhead and will be further refined based on on-site observations.

(d) Zoning District Map

Existing and proposed zoning districts within a 1–mile radius of the Facility, based on data obtained from local governments, are depicted in Figure 5 in the Article 10 Application. As described in section 2.31 of this PSS, the Applicant will review zoning regulations for each of the towns and villages within 1-mile of the proposed Facility, and a summary of the zoning regulations will be presented in the Article 10 Application, with a focus on the permitted and prohibited uses within each zoning district where Facility components will be located.

(e) Comprehensive Plan

The proposed Facility is located in the Town of Riverhead in Suffolk County, New York. The Town of Riverhead has adopted a Comprehensive Plan in 2003, which can be found at the following website:
https://www.townofriverheadny.gov/pview.aspx?id=18809&catID=118

In addition, Suffolk County adopted a 2035 Comprehensive Master Plan (Suffolk 2035 Plan) in 2015, which can be found at the following website:
http://www.suffolkcountyny.gov/Portals/0/planning/CompPlan/Comp%20Master%20Plan%202035/ADASuffolkCounty_MasterPlanFINAL_07282015.pdf

The Article 10 Application will include a review of these comprehensive plans, and will discuss whether the proposed Facility is consistent with these Plans. The Application will also review the Suffolk County Agriculture and Farmland Protection Plan (December 2015). As noted in Section 1 of this PSS, the Applicant performed an analysis of proposed solar development in the Town of Riverhead and concluded that, considering all available farmland in the Town, solar development is proposed for only 0.3 percent of the agricultural lands available (VHB, 2017). The Application will discuss these issues, and the Project's consistency with local planning documents.

(f) Map of Proposed Land Uses

The Applicant will gather information about proposed land uses within the 1-mile Study Area from discussions with local planning officials, open houses, the PIP implementation/PSS development process, and other sources. Any information gathered will be mapped in the Article 10 Application.

(g) Map of Specially Designated Areas

Designated coastal areas, inland waterways, agricultural districts, special flood hazard areas, Local Waterfront Revitalization Program (LWRP) communities, and other specially designated areas potentially occurring within a 1–mile radius of the Facility have been mapped and are depicted in Figure 6. There are designated Critical Environmental Areas (CEAs) in Suffolk County and the Peconic River is within the FEMA 100-year floodplain.

(h) Map of Recreational Areas and Other Sensitive Land Uses

As indicated in the 1001.4(h), the Application shall include "maps showing recreational or other land uses within the study area that might be effected by the sight, sound or odor of the construction or operation of the facility, interconnections and related facilities." Recreation areas and other sensitive land uses known to the Applicant within a 1–mile radius of the Facility have been mapped and are depicted in Figure 7.

The Article 10 Application will address the potential for the Facility to have a direct impact on the recreational resources and other sensitive areas identified.

(i) Compatibility of the Facility with Existing and Proposed Land Uses

The Article 10 Application will present, in acres, the permanent (if any) and temporary impacts to each of the existing and proposed land use classes to be physically affected by the Facility. In addition, the Article 10 Application will identify nearby land uses of particular concern to the communities, and will address the land use impacts of the Facility on residential areas, schools, civic facilities, recreational facilities and commercial areas, if any.

The Facility's consistency with the host Town's Comprehensive Plan and other regional plans within a 1-mile radius of the Facility Site will be addressed in the Article 10 Application. The following Plans, in effect as of the date of this PSS, will be evaluated:

- Town of Riverhead Comprehensive Plan,
- Town of Brookhaven Comprehensive Land Use Plan,

- Suffolk County Comprehensive Master Plan 2035,
- Suffolk County Agricultural & Farmland Protection Plan.

(j) Compatibility of Above-Ground Interconnection with Existing and Proposed Land Uses

The proposed Facility will have a short overhead 138 kV line from the Point of Change of Ownership at the riser structure inside Edwards Substation to the Point of Interconnection (POI) at the substation's 138 kV bus.

(k) Compatibility of Underground Interconnections with Existing and Proposed Land Uses

The Facility's proposed underground collection lines will not prohibit the continued use of the land as the impact will only be a temporary disturbance. In addition, to the extent practicable, underground collection lines will be collocated or immediately adjacent to lines for Riverhead Solar 1 thereby requiring less clearing and/or ground disturbance. Compatibility of proposed underground interconnections and temporary disturbances associated with construction will be addressed in the Article 10 Application.

(l) Conformance with the Coastal Zone Management Act

The Facility Site is not located within a designated coastal area or in direct proximity of a designated inland waterway. Therefore, conformance with the Coastal Zone Management Act is not applicable.

(m) Aerial Photographs

Aerial photographs within a 1-mile radius of the Facility will be included with the Article 10 Application. This mapping will likely be prepared using 1-meter resolution natural color orthoimagery from the USDA's National Agriculture Imagery Program (NAIP) captured during the 2017 growing season.

(n) Aerial Photograph Overlays

The Article 10 Application will map Facility components overlaid on aerial photographs at a readable scale. These maps will be created using ArcGIS software. Line symbols will be used to depict the centerlines of proposed access roads and electrical collection lines; point symbols to depict panel locations; and polygon symbols to depict the substation, operation and maintenance buildings, and, if necessary, construction laydown areas. Buffers around each Facility component will show the limits of clearing and disturbance required (e.g., 20-foot permanent width and 50-foot temporary width for access roads). This mapping will likely be prepared using 1-meter resolution natural color orthoimagery from the USDA's NAIP captured during the 2017 growing season.

(o) Source of Aerial Photographs

It is anticipated that mapping associated with (n) above will be prepared using 1-meter resolution natural color orthoimagery from the USDA's NAIP captured during the 2017 growing season. The ultimate source will be identified in the Article 10 Application.

(p) Community Character

The Facility is proposed to be located in a rural portion of Suffolk County, which is characterized by a mix of agricultural and industrial land, with sod farms being the predominant use in the Facility Site. Other uses in the area consist of residential, commercial, and vacant lands. Across from the proposed Facility is an agricultural protection zone. The Town of Riverhead 2003 Comprehensive Plan and the 2015 Suffolk County Agricultural and Farmland Protection Plan (SCAFPP) both work to preserve existing farmland, encourage the agricultural economy, and maintain the rural character of the Town. According to the 2003 Comprehensive Plan, the Town's agricultural products traditionally consisted of vegetable and fruit products, with sod farms being a more recent agricultural trend. The 2015 SCAFPP points out that Suffolk County, based on the 2012 Census of Agriculture, was ranked third out of the 62 counties in NYS regarding the value of agricultural production. The 2015 SCAFPP crafts an overall vision for the County: "Foster adaptable public policy along with the commitment and support of the farming community to protect, encourage and sustain agriculture as an industry for future generations in Suffolk County."

Relatedly, the region has also established county-wide initiatives to reduce the level of fertilizer usage, particularly fertilizer which causes nitrogen pollution, in agricultural operations, golf courses, and other land uses. While agricultural usage is highlighted as a priority, the community is also looking for ways to reduce the impacts of intensive agricultural land uses on local aquifers and water bodies. This creates a unique opportunity for the proposed Facility, which can aid in offsetting fertilizer usage in the proposed Facility Site for the useful life of the project, while allowing the landowner the option to return the land to agricultural use after the project is decommissioned.

The proposed Facility is situated within the Town of Riverhead Industrial A and C zoning districts, which pursuant to §301-281(B) of the Town Code, is a permitted use within several zoning districts, including the Industrial A district, and by special permit in the Industrial C zoning district. The Facility will introduce additional visible elements (i.e., PV panels) into the existing landscape, which could be considered a change in community character in some instances. However, utility-scale solar is an existing and allowable use near the Facility. The Article 10 Application will include an analysis of impacts from the Facility on community character and identify avoidance, minimization and/or mitigation measures to address potential adverse impacts on community character. This analysis will provide additional description and

detail of community character that includes defining features and interactions of the natural, built, and social environment, and takes into account local land use and zoning.

2.5 ELECTRIC SYSTEM EFFECTS

(a) System Reliability Impact Study

A System Reliability Impact Study (SRIS) will be prepared for the Facility on behalf of the New York Independent System Operator (NYISO). The SRIS is scheduled to be completed in 2018. The SRIS will be included with the Article 10 Application, but will be filed separately under confidential cover, as NYISO requires the SRIS to remain confidential due to Critical Energy Infrastructure Information (CEII) Regulations.

(b) Potential Reliability Impacts

Based on NYISO scope, the SRIS will be performed for Summer Peak, Winter Peak and Light Load system conditions. The study system includes the Long Island Zone (Zone K) in the NYISO system. The Article 10 Application will describe the impact of the proposed Facility and interconnection on transmission system reliability in the State in detail.

(c) Benefits and Detriments of the Facility on Ancillary Services

The Article 10 Application will provide greater detail on benefits and detriments of the Facility on ancillary services and the electric transmission system, including impacts associated with reinforcements and new construction necessary as a result of the Facility.

(d) Reasonable Alternatives to Mitigate Adverse Reliability Impacts

The SRIS will evaluate alternatives to eliminate adverse reliability impacts, if any. The results of the alternatives evaluation will be presented in the Article 10 Application.

(e) Estimated Change in Total Transfer Capacity

The Article 10 Application will provide an estimate of the increase or decrease in the total transfer capacity across each affected interface. If a forecasted reduction in transfer capability across affected interfaces violates reliability requirements, the discussion will include an evaluation of reasonable corrective measures that could be employed to mitigation or eliminate said reduction.

(f) Criteria, Plans, and Protocols

(1) Applicable Engineering Codes, Standards, Guidelines, and Practices

The Facility will be designed in accordance with applicable standards, codes, and guidelines. For portions owned by the Applicant (e.g., collection system), best industry practices will be used, along with any standards/preferences set by the companies designing the Facility. For the POI substation, PSEG Long Island, LIPA, and NPCC requirements will be followed, along with prudent industry standards established in the IEEE, NESC, NEC, and ANSI codes. Some of the applicable codes that will be used for the substation equipment will be the following:

- IEEE 80 - Guide for safety in AC substation grounding
- IEEE C37.2 - IEEE standard electrical power system device function numbers and contact designation
- IEEE C37.90 - IEEE standard for relays, relay systems and associated with electrical power apparatus
- IEEE C37.110 - Guide for the application of current transformers used for protective relaying purposes
- IEEE C57.13 - IEEE standard requirement for instrument transformers
- IEEE C57.12.10 - American National Standards for Transformers
- IEEE 485 - IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications
- IEEE C57.12.10 - American national standards for transformers
- IEEE 998 - IEEE Guide for direct stroke shielding of lightning for substations
- IEEE C37.119 - IEEE Guide for Breaker Failure Protection of Power Circuit Breakers
- IEEE C37.605 - IEEE Guide for Design of Substation Rigid-Bus Structures
- IEEE 605 - Guide for Design of substation rigid-bus structures
- IEEE 693 - IEEE Recommended practices for seismic design of substation
- IEEE 980 - IEEE Guide for Containment and control of spills in substations
- NEMA - National Electrical Manufacturer's Association
- NESC - National Electric Safety Code.
- NFPA 70 - National Electric Code (NEC)
- NFPA 70 - National Fire Protection Association - National Electric Code
- NFPA 850 - National Fire Protection Association – Recommended Practice for Fire Protection for Electric
- OSHA – Occupational Safety and Health Administration

- RUS Bulletin 1724E-200
- TIA/EIA - Telecommunications Industry Association/Electric Industry Alliance

The design collection lines shall incorporate, but is not limited to, the following standards and codes when applicable:

- ACI - American Concrete Institute
- ANSI - American National Standards Institute
- ASCE – American Society of Civil Engineers
- ASTM - American Society for Testing and Materials
- IBC - International Building Code
- IEEE – Institute of Electrical and Electronic Engineers
    - IEEE 48 - Standard Test Procedures and Requirements for Alternating-Current Cable Terminations 2.5 kV through 765 kV
    - IEEE 400 - Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems
    - IEEE 400.1 - Guide for Field Testing of Laminated Dielectric, Shielded Power Cable Systems Rated 5kV and Above with High Direct Current Voltage
    - IEEE 400.3 - Guide for Partial Discharge Testing of Shielded Power Cable Systems in a Field Environment
    - IEEE C2 - National Electric Safety Code (NESC)

The Article 10 Application will provide additional detail on the Facility's electric system codes, standards, guidelines, and practices.

(2) Generation Facility Type Certification

The Article 10 Application will provide a type certification for one of the PV solar panels types under consideration for the proposed Facility (assuming one is available at the time of application). The third-party type certificate, if provided, will be filed separately under confidential cover. The Applicant will ultimately select a technology that has achieved the necessary third-party certification, and proposes to submit this information to the Siting Board as a post-Certification compliance filing.

(3) Procedures and Controls for Inspection, Testing, and Commissioning

The various aspects of the Facility will have a written inspection, testing and commissioning plan, as briefly summarized below, that is adhered to during all stages of construction as well as a post-construction inspection and testing phase. When completed, all documentation will be provided to the Siting Board and stored at the Facility Site for easy review/access in the future.

34.5 kV Underground Collection System

The collection system will be inspected, tested and commissioned in accordance with various ANSI, IEEE, NFPA, IETA, ASTM, NESC, NEC, etc. requirements, as necessary. All tests shall be performed with the equipment de-energized, except where specifically required for it to be energized for functional testing.

Underground cables systems have comparatively less components than overhead lines or substations. All material received for construction of the underground lines will be visually inspected for defects and compatibility with the design/specifications. This includes, but is not limited to, cables, fiber, splices/junction boxes and grounding material.

34.5 kV Overhead Collection System

It is anticipated that all collection systems for the Facility will be buried underground. However, in the event that overhead lines are necessary in some areas, the overhead lines will be inspected, tested and commissioned in accordance with various ANSI, IEEE, NFPA, IETA, ASTM, NESC, NEC, etc. requirements, as necessary. All tests will be performed with the line de-energized, except where specifically required for it to be energized for functional testing.

All material received for construction of potential overhead lines will be visually inspected for defects and compatibility with the design/specifications. This includes, but is not limited to anchors, poles, conductor, fiber, insulators, hardware, and grounding material.

Collection Substation

The procedures and controls for inspection, testing and commissioning for the Facility's collection substation will be detailed in the Article 10 Application. The substation will be inspected, tested and commissioned in accordance with various ANSI, IEEE, NFPA, IETA, ASTM, NESC, NEC etc. requirements, as necessary. All tests shall be performed with the equipment de-energized, except where specifically required for it to be energized for functional testing.

All material received for construction of the substation will be visually inspected for defects and compatibility with the design/specifications. Various industry standard electrical and mechanical tests (as per NETA requirements) are performed on equipment before leaving the manufacturers' facilities. Some tests are performed on a "class" of equipment, such that the passing tests results apply to all specific equipment produced. Other tests are required to be performed on each individual piece of equipment. Additional tests will be performed on specific equipment after installation at the Facility site to ensure that there was no damage during handling including, but not limited to:

- Main transformer
- High/medium voltage circuit breakers
- Disconnect switches
- Instrument transformers (current transformer, voltage transformer, etc.)
- Surge arresters
- Station service transformer
- High/medium voltage cables
- Capacitor bank or reactor banks
- DC battery bank and charger

PV Panels

Best industry practices will be followed for inspecting, testing, and commissioning of PV panels. When delivered to the site, the boxes of modules on pallets will be visually inspected for any damages during transportation and off-loading. Further, each PV panel will be inspected for any damage prior to installation. Visual inspection includes looking for any visible damage to the frame, scratches, and micro-cracking glass of the panels. Panels will be verified against specification sheet and design documents for model number, quantity, electrical wiring including size and connections.

Each PV string of modules will be tested for short circuit current and open circuit voltage in the field. The I-V characteristics of each string will be tested and the results will be recorded at a suitable irradiance level and other meteorological conditions that may impact the test results. The results will be compared against factory test data available for the modules. Any strings with results not in accordance with expectations will be retested, troubleshooted and panels replaced as necessary.

(4) Maintenance and Management Plans, Procedures, and Criteria

The Applicant will prepare a Preliminary Operations and Maintenance Plan (O&M Plan), which will be included in the Application. This plan is intended to be the foundation of the Final O&M Plan that will be implemented at the Facility once it becomes operational, and will be based on the Applicant's experience and typical O&M maintenance requirements for solar power projects. It should be noted that an O&M facility will not be constructed for this Project. Ultimately the Applicant, who will own the Facility, will be responsible for the O&M Plan's implementation. The objective of the O&M Plan is to optimize the Facility's operational capacity and availability through best in class maintenance guidelines and inspections that are designed to pro-actively detect any significant safety or maintenance issues.

Detailed operations and maintenance plans, procedures, and criteria related to the Facility's electrical components will be presented in the Application.

(g) Heat Balance Diagrams

Since there will be no thermal component to the Facility, this requirement is not applicable to the proposed Facility.

(h) Interconnection Substation Transfer Information

(1) Description of Substation Facilities to be Transferred and Timetable for Transfer

PSEG Long Island is the Connecting Transmission Owner for this Facility. The Facility will interconnect with the NYISO's grid via the POI at the PSEG Long Island-owned Edwards Substation's 138 kV bus. The Article 10 Application will include a general arrangement plan view drawing of the POI substation. The exact future transaction and timetable to transfer the generation delivered to the POI substation to NYSEG will not be known until the Facilities Study is complete.

(2) Transmission Owner's Requirements

The Article 10 Application will describe how the substation-interconnection design meets the transmission owner's requirement. In summary, the POI substation will be designed to PSEG Long Island standards (i.e., the transmission owner), and will be in accordance with their requirements.

(3) Operational and Maintenance Responsibilities

PSEG Long Island, as the transmission owner, will define the operational and maintenance responsibilities for the POI substation. The Applicant will assume such responsibilities, to be implemented in accordance with the transmission owner's standards, as directed by PSEG Long Island.

(i) Facility Maintenance and Management Plans

The Applicant will be responsible for the operation, inspection, and maintenance requirements of all Facility components, except for the POI substation. These activities can generally be classified as scheduled inspection/maintenance, unscheduled maintenance/repairs, or electrical system inspection/maintenance. Each of these are briefly described below.

(1) Electric Transmission and Collection Line Inspections

(i) Vegetation Clearance Requirements

It is anticipated that all collection systems for the Facility will be buried underground. However, in the event that overhead lines are necessary in some areas, the requirements for clearing vegetation around the overhead 34.5 kV lines will be illustrated in the Application. All vegetation within the clear-cut boundary, with the exception of low lying growth, will be cleared. In addition, vegetation extending above the danger tree clearance line (outside of the clear-cut boundary) will be cleared to prevent a potential tree from falling into the line.

(ii) Vegetation Management Plans and Procedures

The Article 10 Application will include a vegetation management plan and describe measures that will be used to maintain vegetation throughout the Facility Site.

(iii) Inspection and Maintenance Schedules

The Article 10 Application will describe the inspection and maintenance procedures that will be implemented during operation of the Facility.

(iv) Notifications and Public Relations for Work in Public Rights-of-Way

If work is to be performed in a public right-of-way, notification and any permit(s) to conduct such work will be addressed with the appropriate agencies prior to starting the work.

(v) Minimization of Interference with Distribution Systems

The Article 10 Application will describe measures that will be used to minimize interference with existing distribution systems.

(j) Vegetation Management Practices for Collection Substation Yard

Within the substation fence, and immediately surrounding, it is important to eliminate all above-ground growth. Vegetation in this area could come in contact with the substation's below grade grounding grid. If the vegetation extends above ground, coming in contact with a person could put them in danger in the event of an electrical system ground fault, which energizes the below grade grounding grid with high voltages and currents. Normally, a person is protected by the crushed stone on the surface of the station, but the vegetation could bridge the safety gap created by the stone. Pre-emergent herbicide is preferred to prevent vegetation from becoming established, but post-emergent herbicide and/or manual weed removal will be used in the event vegetation does begin to show.

(k) Criteria and Procedures for Sharing Facilities with Other Utilities

The Applicant does not anticipate sharing facilities with other utilities at this time.

(l) Availability and Expected Delivery Dates for Major Components

The Article 10 Application will provide an assessment of equipment availability and expected delivery dates for major Facility components.

(m) Blackstart Capabilities

Black start is not applicable to PV systems as the inverters are compliant to UL1741 and IEEE 1547 standards that prevent them from generation in the absence of grid. Backup power can be made available for communications as required.

(n) Identification and Demonstration of Compliance with Relevant Reliability Criteria

Reliability criteria are identified in the SRIS. In addition, the Applicant will consult with DPS regarding reliability criteria to confirm that consultation completed through the SRIS will be sufficient for compliance with relevant reliability criteria.

2.6 WIND POWER FACILITIES

The proposed Facility is not a wind power facility, and as such, the requirements of 1001.6 are not applicable and will not be included in the Article 10 Application.

2.7 NATURAL GAS POWER FACILITIES

The proposed Facility is not a natural gas power facility, and as such, the requirements of 1001.7 are not applicable and will not be included in the Article 10 Application.

2.8 ELECTRIC SYSTEM PRODUCTION MODELING

(a) Computer-based Modeling Tool

The analyses to be presented in Exhibit 8 of the Article 10 Application will be developed using GEMAPS, PROMOD, or a similar computer-based modeling tool such as PVSyst. The Applicant will consult with the NYSDPS and NYSDEC immediately following submission of this PSS to develop an acceptable input data set to be used in the simulation analyses, including modeling for the Applicant's proposed Facility and inputs for the emissions analysis. Portions of the data to be provided are proprietary and/or Critical Energy Infrastructure (CEII) and will be filed under a protective agreement. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

(1) Estimated Statewide Levels of Greenhouse Gas Emissions

The Article 10 Application will list the estimated statewide levels of SO_2, NOx, and CO_2 emissions, in short tons, with and without the Facility for the expected service year.

(2) Estimated Prices Representative of all NYISO Zones

The Article 10 Application will list the estimated minimum, maximum, and average annual spot prices representative of the NYISO Zones within the New York Control Area, both with and without the proposed Facility.

(3) Estimated Capacity Factor

An 8,760 hourly generation profile will be developed. Energy production will be forecasted, based on certain user inputs, utilizing the computer simulation program PVsyst®, using the appropriate solar resource data based on an analysis of the SolarAnywhere® satellite-derived dataset from which a typical direct-normal irradiance year ("TGY") is generated.

(4) Estimated Annual and Monthly Output Capability Factors

The Article 10 Application will provide monthly and for the first full year of operation (2022) the on-peak and off-peak MWh output capacity factors for the proposed Facility.

The gross average energy yield for each month will be determined from the validated data described in (3) above with each monthly dataset adjusted to the monthly long-term. From this the monthly gross energy distribution for the year will be determined. The net long-term energy yield for each month will be estimated by applying monthly specific loss assumptions to include availability and environmental factors. The monthly net capacity factor is calculated based on the number of days in each month, and overall annual net capacity factor from the sum of all monthly net energy yields and the total per year.

(5) Estimated Annual and Monthly Production Output

The Article 10 Application will provide the monthly net production output of the proposed Facility in MWh as well as the total annual MWh production to be presented in the Article 10 application.

Monthly energy yield averages will be determined from the observed solar production profile data in each specific month and long-term adjustments will be made to the monthly data set. Based on the long-term adjusted average energy yield for each month, a gross monthly energy distribution for the year can be determined. Monthly specific loss assumptions for availability and environmental factors will be taken from the gross monthly production distribution to yield the 12 estimated monthly productions in MWh. An annual production output will be determined from the sum of all monthly net energy yields in MWh.

(6) Estimated Production Curve Over an Average Year

Hourly production of the Facility will be calculated using GEMAPS (or similar) and 8,760 hours of solar production profile data provided by the Applicant. Estimates of hourly production and scheduled hourly production will be

provided in tabular and graphical formats (based on one PV panel model). However, this information will be filed separately under confidential cover. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

(7) Estimated Production Duration Curve Over an Average Year

The Article 10 Application will provide the hourly production of the Facility, the hours count for milestones production (production duration only), and a graph that shows the production duration curve for the Facility.

(8) Effect of the Facility on the Energy Dispatch of Existing Must-run Resources

In order to assess the estimated effects of the proposed Facility on the energy dispatch of existing must-run resources (which includes existing wind, hydroelectric, and nuclear facilities, as well as co-generation facilities to the extent they are obligated to output their available energy because of their steam hosts), a Generation Dispatch Forecasting Analysis will be prepared based on one PV panel technology. However, this analysis will be filed separately under confidential cover.

To conduct the analysis, the NYISO 2018 system will be modeled to the extent that information is available, with and without the proposed Facility, and compared the generation dispatch of must run resources with the NYISO service territory between the two scenarios. This comparison will be performed using GE's Multi-Area Production Simulation (MAPS) and PowerWorld Corp. Simulator software which is heavily utilized for market studies within the NYISO service territory. The first step in the analysis will be to complete a powerflow study to identify any critical constraints in the vicinity of the proposed Facility, followed by conducting a generation and transmission nodal market study based on 8,760 hours-per-year simulation for the estimated study year determined with the DPS, while taking into consideration system constraints including the critical constraints identified in the powerflow calculations. The analysis will simulate the effect of energy schedules from energy resources on must run resources redispatching to reliably serve the grid and avoid curtailment.

The Article 10 Application will present the annual MWh dispatch of the must run resources for the study year to be determined in coordination with the DPS, in the two scenarios (with and without the proposed Facility).

(b) Digital Copies of Inputs Used in the Above Simulations

The Article 10 Application will provide digital copies of all inputs used in the simulations required in subdivision (a) of this section. The Applicant will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.9 ALTERNATIVES

(a) Description of Reasonable Alternative Location Sites

The Applicant does not have and does not anticipate seeking eminent domain authority. The Article 10 regulations permit applicants to limit the identification and description of siting alternatives to those sites owned by, or under option to, the applicant or its affiliates. Therefore, the identification and description of reasonable and available siting alternatives to be addressed in the Application will be limited to lands actually owned by or under contract/option to the Applicant.

(b) Comparison of Advantages and Disadvantages of Proposed and Alternative Locations

Given the limitations faced by a private Facility Applicant, as described above in (a), the Applicant is not providing an evaluation of comparative advantages and disadvantages of alternate locations. The Siting Board's regulations (16 NYCRR 1001.9) recognize that it is not practicable to procure land contracts, perform environmental and engineering due diligence studies, enter into and progress through multiple interconnection permit processes, and conduct community outreach for alternative locations. Rather, the Siting Board's regulations provide that an applicant need only identify and describe alternative sites owned by, or under option to, the applicant or its affiliates.

(c) Description of Reasonable Alternatives to the Proposed Facility at the Proposed Location

The Article 10 Application will address alternate scale and magnitude of the Facility in the context of the interconnection agreement and power purchase contracts (i.e., a 36 MW Facility), which eliminates the Applicant's ability to develop a viable project that generates less than 36 MW. Therefore, alternatives to be evaluated will be limited to alternate panel configurations that generate at least 36 MW. With respect to the proposed gen-tie line, because this component will be sited within an existing gen-tie corridor (associated with the Calverton/Riverhead Solar 1 Facility), alternate locations will not be addressed in the Application.

(d) Why the Proposed Location Best Promotes Public Health and Welfare

Given the limitations faced by a private Facility Applicant, as described above in (a), the Application will not describe why the proposed location best promotes public health and welfare.

(e) Why the Proposed Facility Best Promotes Public Health and Welfare

The benefits of the Facility are anticipated to include positive impacts on socioeconomics (e.g., a substantial number of construction jobs, increased revenues to local municipalities, taxes for the Town, and lease revenues and/or purchase revenues to participating landowners), air quality (through reduction of emissions from fossil fuel-burning power plants), and climate (reduction of greenhouse gases that contribute to climate change). By eliminating pollutants and greenhouse gases, the Facility will also benefit ecological and aquatic resources and human health. Appropriate setbacks and other protective measures will be employed to assure public health and safety during construction and operation of the Facility. The Article 10 Application will include a statement of the reasons why the proposed technology, scale, and timing of the Facility are best suited to promote public health and welfare.

(f) No Action Alternative

The No Action Alternative assumes that the Facility Site would continue to exist as is, or without proposed the solar facility. This no action alternative would not beneficially nor adversely affect current land use, ambient noise conditions, traffic or public road conditions, television/communication systems, and would maintain the area's current community character, socioeconomic, and energy-generating conditions as they currently exist. The no-action alternative would, however, deprive the state and region of a significant source of clean, pollutant-free electricity and a significant, new revenue stream for host. The Article 10 Application will further discuss why the no-action alternative to the Facility is not the preferred alternative.

(g) Energy Supply Source Alternatives

One of the advantages of solar is that the energy supply source is available and not subject to commodity price fluctuations. Therefore, this subsection does not apply and will not be evaluated in the Article 10 Application.

(h) Source and Demand-Reducing Alternatives Comparison of Advantages and Disadvantages of Proposed and Alternative Energy Sources

Per (g) above, source and demand-reducing alternatives will not be identified in the Article 10 Application. Therefore, this subsection does not apply and will not be evaluated in the Article 10 Application.

(i) Why the Proposed Project Best Promotes Public Health and Welfare

As previously described in (d) and (e) above, the Article 10 Application will include a statement of the reasons why the proposed Facility is best suited to promote public health and welfare.

2.10 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

(a) Consistency with State Energy Plan

New York has adopted strongly proactive policies to combat climate change and modernize the electric system to improve the efficiency, affordability, resiliency, and sustainability of the system, most notably reflected in the 2015 State Energy Plan ("SEP"), issued June 25, 2015, by the New York State Energy Planning Board. The SEP recognizes the importance of ensuring that New York's power system is modern, clean, and diverse and that "renewable resources will . . . play a significant role in shaping New York's energy future, providing resilient power, reducing fuel cost volatility, and lowering [Greenhouse Gas ("GHG")] emissions." The SEP describes the State's energy future through a series of goals such as a 40% reduction in GHG emissions from 1990 levels, procurement of 50% of electricity generation from renewable energy sources by 2030.[3] The goals directed in the SEP are ambitious and require grid-scale solar projects, such as the Facility, to achieve targeted levels of new renewable generation. At an anticipated size of 36 MW, the Project will contribute significantly to the State's clean energy generation and GHG emissions reduction goals.

On August 1, 2016, the Commission adopted the SEP's goals that 50% of New York's electricity is to be generated by renewable sources by 2030 as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030 and approved the Clean Energy Standard ("CES").

The Article 10 Application will explain how the Facility advances the objectives of the State Energy Plan and the CES, and assists the State in achieving the renewable energy generation objectives.

(b) Impact on Reliability

A System Reliability Impact Study (SRIS) is expected to be completed for the Facility on behalf of the New York Independent System Operator (NYISO) in 2018, and the results will be presented in Exhibits 5 and 8 of the Article 10 Application, with certain issues such as reliability addressed in greater detail in Exhibit 10. The objectives of the SRIS are to: (1) confirm that the proposed new or modified facilities associated with the project comply with applicable

[3] By Executive Order, it is also a goal of the State of New York to reduce current greenhouse gas emissions from all sources within the State 80% below levels emitted in the year 1990 by the year 2050. Executive Order No. 24 (2009) [9 N.Y.C.R.R. 7.24; continued, Executive Order No. 2 (2011) 9 N.Y.C.R.R. 8.2].

reliability standards, (2) assess the impact of the proposed project on the reliability of the pre-existing power system, (3) evaluate alternatives to eliminate adverse reliability impacts, if any, resulting from the proposed interconnection, and (4) assess the impact of the proposed project on transmission transfer limits, considering thermal, voltage and stability limitations, and estimate the increase or decrease in the Transfer Capability of affected transmission interfaces. The scope and methodology of the SRIS is set by the NYISO, and is uniform across projects of this nature. A number of power flow base cases will be evaluated both with and without the proposed Facility in service, including 2018 summer peak, winter peak, and light load. The Article 10 Application will contain an analysis of the impact of the proposed Facility on electrical system reliability based on the results of the SRIS and subsequent studies/analyses conducted by/with the NYISO. The SRIS will be appended to Exhibit 5 of the Article 10 Application.

(c) Impact on Fuel Diversity

The proposed Facility will improve fuel diversity within the State by increasing the amount of electricity produced by non-fossil fuel dependent solar power. In 2008, the NYISO found that New York's electric utility system relies on supply from numerous fuel sources, including coal, water, wind, nuclear and natural gas, as well as interconnections with its neighbors and demand-response resources. According to the NYISO, "[m]aintaining and improving fuel diversity in New York will lead to less volatile electric prices, improved reliability, and positive environmental impacts."[4] State regulators have raised concerns in recent years that New York may suffer from an over-reliance on natural gas, which results in price volatility and market fluctuation. By 2013, the NYISO determined that "gas has effectively displaced both coal and oil,"[5] and, since 2000, approximately 2,000 megawatts of generation fueled by coal have retired or suspended operation, while Governor Andrew Cuomo has vowed to shutter all of New York's coal-fired electric generation by 2020.[6] Accordingly, the disappearance of coal and large nuclear power sources such as Indian Point[7] make the need for alternative, non-gas forms of electric generation such as solar increasingly important to maintain fuel diversity in New York. The Article 10 Application will include discussion of the current electric generation capacity by fuel type to demonstrate that the addition of the Facility will contribute to fuel diversity.

[4] NYISO: Fuel Diversity in the New York Electric Market, A NYISO White Paper (2008), available at: http://www.nyiso.com/public/webdocs/media_room/publications_presentations/White_Papers/White_Papers/fuel_diversity_11202008.pdf.
[5] NYISO, WHAT WILL FUEL DIVERSITY LOOK LIKE IN 2022, November 15, 2013, available at: http://www.nyiso.com/public/webdocs/markets_operations/committees/environmental_advisory_council/meeting_materials/2013-15-11/Cap_Energy_Changes_P_Carney.pdf.
[6] In the 2018 State of the State, Governor Cuomo called for the adoption of regulations that would end the use of coal in New York's power plants by 2020. See https://www.governor.ny.gov/news/governor-cuomo-unveils-20th-proposal-2018-state-state-new-yorks-clean-energy-jobs-and-climate.
[7] The Indian Point Nuclear Plant in Buchanan, New York, is scheduled to close by 2021. See https://www.nytimes.com/2017/01/09/nyregion/cuomo-indian-point-nuclear-plant.html.

(d) Impact on Regional Requirements for Capacity

Since 2000, private power producers and public power authorities have added more than 11,655 megawatts of new generating capacity in New York State. This additional generation represents approximately 30 percent of New York's current generating capacity. Over 80 percent of that new generation is located in the eastern and southern regions of New York (Zones F-K) -- where power demand is greatest. New York's wholesale electricity market design, which includes locational-based pricing and regional capacity requirements, encourages investment in areas where the demand for electricity is the highest. Other additions to New York's power-producing resources resulted from upgrades to existing power plants in upstate regions, or were largely influenced by physical factors, such as the suitability of wind conditions in the northern and western regions of the state, and with respect to solar, availability of sufficient and unutilized land to site grid-scale projects. In the Article 10 Application, the Applicant will describe in detail how the Facility impacts regional electricity and capacity demands given taking into consideration also the need for additional renewable generation and locational constraints.

(e) Impact on Electric Transmission Constraints

New York State has a diverse mix of generation resources compared to many other states. However, much of the renewable power is provided by hydroelectric projects and wind farms located in the western and northern portion of the State, while the southeastern region hosts power plants fueled primarily by natural gas. Taking full advantage of statewide fuel diversity will require upgrades and enhancements of the transmission system (NYISO, 2014). These transmission enhancements will help transfer energy from upstate regions with a surplus of generating capacity to more populous areas with higher power demands, such as the Hudson Valley, New York City, and Long Island (NYISO, 2014). The Article 10 Application will discuss Facility impacts on electric transmission constraints, based on the *New York State Transmission Assessment and Reliability Study* and other NYISO reports/data.

(f) Impact on Fuel Delivery Constraints

The proposed Facility will generate electricity without the use of fuel. Consequently, there will be no adverse impact on fuel delivery constraints. Rather, by generating electricity without the need for fuel delivery and displacing facilities that rely on fuel for generation, it is expected that the Facility will contribute toward reducing the demand for fuel thereby alleviating fuel delivery constraints. The Article 10 Application will contain an analysis of the Facility's impact on fuel delivery constraints.

(g) Impact on Energy Policy

The need for additional renewable generation and a decreased reliance on fossil-fueled generation has been a mainstay of New York Energy policy for almost two decades. Notably, in 2004, the Public Service Commission

implemented the Renewable Portfolio Standard ("RPS") program to facilitate investment in renewable generation. The RPS program initially envisioned an increase in renewable energy production in the State by 25% by the year 2013. In 2010, the PSC expanded the RPS target from 25% to 30% and extended the target date from 2013 to 2015. Renewable projects approved under the RPS are expected to reduce CO2 emissions by 50 million tons over the life of the projects. Recent policy initiatives also include a comprehensive Clean Energy Fund ("CEF") proposed by NYSERDA to ensure continuity of the State's clean energy programs after 2015. The CEF is one part of New York State's Reforming the Energy Vision ("REV") initiative, a program designed to support clean energy market development and innovation and to secure renewable energy resources as part of New York's clean energy future. Large-scale renewables ("LSR"), which are larger utility-scale renewable energy project developments, such as the Facility, are a key component of REV and the CES, which outline the issues and tasks to begin to resolve the technical, marketplace, and regulatory challenges necessary to achieve the REV plan and goals. REV recognizes that large-scale renewables, which require more capital and take more planning than other facilities, will be critically important to meeting greenhouse gas emissions reduction goals.

New York continues its drive toward increased renewable generation in the policies contained in the SEP and the Commission's CES program. In the SEP, New York seeks to achieve a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total carbon emissions 80% by 2050. In addition, the State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030. The CES program adopts these goals and provides the mechanisms for their achievement. The proposed Facility's consistency with and furtherance of these goals will be discussed in detail in the Article 10 Application.

(h) Comparison of Advantages and Disadvantages of Proposed and Alternative Locations

Given the unique nature and constraints associated with the siting of solar-powered electric generation facilities (i.e. adequate and unutilized land, willing land lease participants and host communities, and adequate access to the bulk power transmission system), a full comparison between the proposed Facility Location and alternative locations will not be contained in the Application. Instead, the Article 10 Application will focus on comparing alternative facility configurations within the proposed Facility Site. Such alternatives may include alternative project layouts and/or alternative project size and a no action alternative and as identified in Section 2.9.

(i) Why the Proposed Location and Source Best Promotes Public Health and Welfare

The Facility will have a positive impact on public health and welfare by producing electricity with zero emissions. Electricity delivered to the grid from solar energy projects can reduce the growth of existing conventional power plants. The Riverhead Solar 2 Facility will reduce New York's dependency on the combustion of fossil fuels (coal, petroleum,

and natural gas) which not only have negative consequences for public health but also the atmosphere (NYESEP, 2015). Natural gas is the most frequent marginal fuel unit in New York's power pool, or the one that is turned on or off as the load fluctuates (Patton et al., 2015). When the proposed Facility is generating power, electricity generation from natural gas would be reduced within the region, thereby eliminating the associated emissions.

2.11 PRELIMINARY DESIGN DRAWINGS

The Preliminary Design Drawings prepared in support of Exhibit 11 of the Article 10 Application will be prepared using computer software (i.e., AutoCAD), and these drawings will be labeled "for permitting only, not for construction". The Preliminary Design Drawings will be prepared under the direction of a professional engineer, landscape architect or architect who is licensed and registered in New York State.

(a) Site Plan

The Preliminary Design Drawings will constitute the site plan for the Facility and likely will be prepared at a scale of 1" = 100'. This set of drawings will depict all Facility components including:

- Solar Panels and associated mounting features (concrete pads, foundations, etc.);
- Access road travel lanes (temporary and permanent);
- Turn-around areas to be used during construction deliveries;
- Proposed grading (temporary grading for construction purposes and permanent contours for final grading);
- Electric collection lines – the required number of circuits will be indicated on the site plans; also, overhead and underground cable routes will be differentiated with specific line-types;
- Generator lead line (if applicable);
- Approximate limits of disturbance for all project components (panels, access roads, buildings, electric lines, substation, etc.);
- Clearing limits for all project components (panels, access roads, buildings, electric lines, etc.);
- Indication of permanent ROW for all electric cable installations;
- Collection substation outline, including access driveway, setbacks, and fence line;
- Proposed locations that will utilize trenchless methods of electric cable installations for crossing of streams, waterbodies, roads, etc. (including laydown area and approximate trenchless installation distances);
- Operations and Maintenance including access, parking areas and setbacks, and any proposed septic system(s);
- Laydown, staging, and equipment storage areas;
- Back-up generators and fuel storage areas; and

- Outline of the switchyard area, including access driveway, setbacks, and fence line; and location of related transmission facilities.

(b) Construction Operations Plan

The Preliminary Design Drawings will depict the location of all anticipated construction staging/material laydown areas, which is where the contractor trailers/offices and parking areas will be located during construction. With respect to notable excavations associated with the Facility, the Preliminary Design Drawings will include plan and profile sheets, each of which will indicate the anticipated cut and fill associated with notable Facility construction activities. Excess soil will be stockpiled along the construction corridors and used in site restoration or the site will be balanced.

(c) Grading and Erosion Control Plans

The footprint of a solar generating facility is generally a large tract of contiguous area with compact rows of arrays sited to fit within the existing landscape without the need for extensive grading. An erosion control plan will be presented in the Article 10 Application consistent with the requirements of 16 NYCRR 1001.11(c). Two-foot contour data will be utilized for engineering and design purposes. Existing and proposed contours (two-foot intervals) will be depicted on the plan view sheets of the Preliminary Design Drawings. In addition, a soils type map will be included with the drawing set. Exhibit 21 of the Article 10 Application will provide more detailed information such preliminary cut and fill calculations, and a summary of test borings to be conducted at a sub-set of panel locations and substation locations.

(d) Landscaping Plan

The Article 10 Application will include a landscaping plan that will include the locations of security fencing, gates, and any other necessary ancillary infrastructure. The landscaping plan will include any plantings along the fence line of the Facility that may be required as part of visual mitigation.

With respect to those areas where trees may be removed due to Facility construction and operation (which is anticipated to be minimal), the Preliminary Design Drawings will depict the Facility footprint using recent aerial imagery. With respect to the anticipated acreage of tree removal, this will be quantified and discussed in Exhibit 22 of the Article 10 Application. However, an on-site survey of all trees to be removed will not be included in the Article 10 Application.

(e) Lighting Plan

The Article 10 Application will provide details of lighting associated with the PV panels and Collector Substation.

(f) Architectural Drawings

The Facility will not require the construction of any structures that would necessitate architectural drawings, and the Applicant will therefore not submit architectural drawings in the Article 10 Application.

(g) Typical Design Detail Drawings

The Preliminary Design Drawings and various appendices of the Application will contain typical design details associated with the Facility. There are anticipated to include:

- Access roads
- Construction areas
- Horizontal directional drilling and/or lateral drilling
- Buried and above-ground collection lines
- PV Panel Mounts
- Inverter Housing
- Collector Substation Layout

(h) Interconnection Facility Drawings

A single line drawing of the POI substation will be included in the System Reliability Impact Study ("SRIS"), which will be appended to the Article 10 Application. However, the SRIS will be filed separately under confidential cover. Additional details on the POI substation will be available once the facilities study is complete. However, the facilities study will not be completed until 2018. The general arrangement of the POI substation will also be included with the Article 10 Application.

(i) Engineering Codes, Standards, Guidelines, and Practices

The Article 10 Application will provide as a representative list of applicable codes and standards, which will be updated following Certification.

2.12 CONSTRUCTION

The methods that will be used to construct the Facility will be similar to those generally used in the U.S. to construct utility-scale, ground-mounted PV solar facilities generating wholesale power. These methods are much less invasive than construction methods associated with most conventional energy generating facilities. The primary steps for

Facility construction will be the following: (1) securing of the perimeter of each of the areas in which construction will occur; (2) installation of storm-water and erosion management controls; (3) clearing vegetation, if any; (4) minor grading, if any; (5) construction of access roads; and (6) installation of equipment (racking, panels, buried electric and communication lines, inverters, pyranometers, the substation and permanent fencing).

The PV panels will be secured on a racking system supported by metal piers driven or screwed into the ground by a pile-driving machine to a depth of approximately 5 to 8 feet. Since the majority of the site is relatively flat, very little grading is anticipated for the Facility. The racking system for the PV panels will be mounted on a single-axis tracking system. Single-axis tracker designs vary by manufacturer, but generally consist of a series of mechanically linked horizontal steel support beams known as torque tubes, with a drive train system usually located in the center of the rows, dividing the array into two sides. The number of rows within a tracker block is typically limited by the drive system's ability to move multiple torque tube assemblies. This row design is also determined by the amount of the desired solar output to the inverters. The preliminary design specifies that the distance between rows of solar panels would be between 10 and 20 feet, and a row length of approximately 105 feet on each side of the drive arm assembly. Rows would be aligned north to south and the PV panels would pivot, tracking the sun's motion from east to west. The PV panels would have a typical height of approximately up to 8 to 10 feet above the ground at their highest point when tracking fully-East or fully-West. The PV array panels would be uniform in height and width, although actual height would vary due to ground elevations.

Within each solar field, a network of electric lines and associated communication lines will collect the electric power from different groups of arrays and transmit it to a central location ("DC Collector System"). Solar panels will be grouped into series of circuits that are routed, to combiner boxes. Power from one or more of the combiner boxes then will be transmitted to a group of related components: a DC-to-AC inverter, a step-up transformer that converts the voltage to 34.5 kV, and a cabinet containing power control electronics ("Inverter"). The equipment comprising each Inverter will be mounted on a foundation such as a metal skid or a concrete block.

The Facility will also necessitate the installation of medium voltage collection lines, which will aggregate the power from the inverters and carry it to the collection substation. The majority of the collection system will be buried to a depth of approximately 3.5 feet 4 feet utilizing a trenching method, although overhead cables may also be used where underground installation is not practicable due to environmental constraints (such as steep slopes, rivers, streams or creek crossings, bedrock etc.) and/or cost considerations.

The collection substation will be existing at the time of construction for the Facility (to be built in support of the Riverhead Solar 1 project), will be located on parcel of land immediately adjacent to the interconnection switchyard (existing

Edwards substation). Additional equipment will be added to the collection substation to support interconnection of the Facility, and among the major components of the additional equipment will be the following: (1) collection line feeders and breakers; (2) 34.5 kV bus; (3) main power transformer (to increase the voltage from 34.5 kV to 138 kV); (4) high-voltage breaker; (5) metering/relaying transformers; (6) disconnect switches; (7) equipment enclosure containing power control electronics; and (8) a lightning mast. Each of the equipment at the collection substation will be constructed on concrete foundations following prudent industry standards and connecting each component of the equipment to the overall substation grounding system. For equipment security and public safety, a fence with a locked access gate will be installed around the perimeter.

The Facility will also involve the construction of a network of access roads, which will allow for delivery of Facility components during construction, and access to Facility components for maintenance purposes during operation. The access roads for the Facility are anticipated to be surfaced with gravel, and to be approximately 15 feet wide.

(a) Preliminary Quality Assurance and Control Plan

It is typically the responsibility of the Balance of Plant (BOP) contractor, who is responsible for the construction of the Facility, to develop and implement the Quality Assurance and Control Plan. The Applicant will require the BOP to provide a final Quality Assurance and Control Plan prior to starting construction. All sub-contractors will be required to follow the Quality Assurance and Control Plan. The Quality Assurance and Control Plan is site specific and therefore not developed until the BOP has been selected and the Facility is proceeding with construction. The Applicant will submit the final Quality Assurance and Control Plan to the Siting Board prior to the start of construction.

The Preliminary Quality Assurance and Control Plan to be included with the Article 10 Application will include the following components.

1. Statement of Authority and Responsibility
2. Organization
3. Safety
4. Quality Assurance Program
5. Facility Communication
6. Document Control
7. Control of Client/Customer Supplied Material and Services
8. Inspections and Test Control
9. Non-conformance reporting
10. Corrective and Preventive Action & Continual Improvement

11. Documentation
12. Field Audits and Surveillances
13. Security
14. Identification of applicable construction codes

In addition, to assure compliance with various environmental protection commitments and permit conditions, the Applicant will provide funding for an independent, third party Environmental Monitor to oversee Facility construction and to ensure compliance with all applicable environmental conditions. The reporting procedures for the Environmental Monitor will be described in the Article 10 Application.

(b) Conformance with Public Service Commission Requirements

(1) Protection of Underground Facilities

The Applicant will require its contractors to conform to the requirements of the Public Service Commission's regulations regarding the protection of underground facilities (16 NYCRR Part 753) and that the Applicant will become a member of Dig Safely New York. The Applicant will require all contractors, excavators and operators associated with its facilities to comply with these requirements and comply with all requirements of the Commission's regulations regarding identification and numbering of above ground utility poles (16 NYCRR Part 217).

(2) Pole Numbering and Marking Requirements

Although the construction of poles is unanticipated, the Applicant will comply with pole number and marking requirements, as implemented by 16 NYCRR Part 217.

(c) Plans to Avoid Interference with Existing Utility Systems

The first step in avoidance of interference with existing utility systems is to identify those entities that have utilities within the Facility Site. The Applicant has a significant amount of experience in this portion in the Town of Riverhead through the development of currently operating and approved solar projects. Based on this experience, the Applicant believes there are existing utilities in the Facility Site. However, this will be confirmed or updated in the Article 10 Application. Known utilities with assets within the Facility Site have been included in the stakeholder list for the Public Involvement Program. These utilities have received and will continue to receive updates and notifications on the Facility. The Applicant also talks to landowners regarding utilities located on their properties. This information on utilities will be taken into account during Facility component siting in order to avoid and minimize conflicts with utilities.

The Applicant will provide the results of any PIP and landowner utility contacts and information to the BOP. Prior to construction, the BOP will be required to conduct a one-call service to verify the extent and known location of all utilities. This effort will include a confirmation of utility response through the Dig Safely New York system. The BOP will also be required to mark out any locations of planned excavating. This will ensure that both the Facility excavation and existing utilities are marked to determine any conflicts.

The Article 10 Application will include a map of all existing utility systems known at that time. This map will not be comprehensive but will establish what has been identified to date and the plan for continuing to identify existing utilities. It is not appropriate to do a comprehensive utility-locating effort prior to construction, i.e. one-call, because utilities typically prefer to mark out their facilities once and there may be changes to utilities between the time the Facility is certificated and the initiation of construction. In addition, the Article 10 Application will provide a discussion of setback distances from existing utilities that the Facility will adhere to.

Post-construction the Applicant will register with one-call to ensure that its utilities and any underground collection lines are registered so that they are not impacted by future earth work.

(d) Procedures for Addressing Public Complaints and Disputes

The Applicant will develop a Complaint Resolution Plan that will be provided in the Article 10 Application. The Complaint Resolution Plan will discuss specifically how public complaints and disputes should be raised, documented and resolved during construction and operation. The Complaint Resolution Plan will also include protocols for notifying the public of the complaint procedures as well as steps to be taken when complaints cannot be resolved by the Applicant. In addition, the Applicant will include a procedure for review and transmittal of complaints, updates, and plans for resolution to DPS Staff. The Article 10 Application will describe each of these steps in the Complaint Resolution Plan in detail.

2.13 REAL PROPERTY

(a) Real Property Map of Generating Site

The Article 10 Application will include a survey of the Facility showing property boundaries with tax map sheet, block and lot numbers, the owner of record of all parcels included in the Facility Site and for all adjacent properties, easements, grants and related encumbrances on the Facility Site, public and private roads on or adjoining or planned for use as access to the Facility, and zoning and related designations applicable to the Facility and adjoining properties.

(b) Real Property Map of Interconnection Facilities

Using the data referenced above, maps showing all proposed interconnection facilities and associated access areas will be prepared and included in the Article 10 Application.

(c) Demonstration that the Applicant Has Obtained Title or Lease Interest in Facility Area

The Article 10 Application will provide a description of the agreements for parcels that are secured or under option for the Facility, including ingress/egress access to public roads, easements for transmission and collections lines, as well as easement agreements for crossing existing natural gas and transmission lines, and will provide a statement that the Applicant has or will obtain the necessary real property rights for all parcels needed for the Facility. The Applicant will continue its internal due diligence to assure that the Facility parcels are not encumbered in a manner that is inconsistent with future solar power use. The Applicant will continue to work towards securing all land necessary to construct and operate the Facility.

(d) Demonstration that the Applicant Has Obtained Property Rights to Interconnection Site

The Article 10 Application will provide a statement that the Applicant has or will obtain the necessary property rights for the Facility interconnects.

(e) Improvement District Extensions

Based on preliminary discussion with local municipal representatives, the Facility will not need any improvement district extensions, and therefore demonstration that the Applicant can obtain such extensions is not anticipated to be needed.

2.14 COST OF FACILITIES

(a) Total Capital Costs

Capital costs will be presented in the Article 10 Application and will include development costs, construction design and planning, equipment costs, and construction costs, and will be broken down by:

- PV Modules/Equipment
- Engineering
- Construction (including contingency)
- Insurance
- Development (including contingency)

(b) Source of Cost Estimates

The basis for the Project's cost estimate will be presented in the Article 10 Application and is anticipated to be based on the following sources:

- Industry standards
- Applicant experience
- Historical and current price quotes

(c) Work Papers

The Applicant will provide an internal work paper that describes the assumptions in estimating the total capital costs as described above in (a). However, this information is proprietary, confidential and consists of Company trade secrets that are not provided to the public. Therefore, the Applicant will submit this under separate and confidential cover and will seek the requisite trade secret protection for this information pursuant to NY Public Officer's Law Section 87(2)(d) and 16 NYCRR 6-1.4.

2.15 PUBLIC HEALTH AND SAFETY

Solar generated power is unlike conventional power generating facilities, in that solar farms produce energy without emitting pollutants that decrease air quality. This is a major public health benefit since, as has been well-established in scientific research and literature, air pollution has significant negative impacts on human health and the environment.

New York State's 2015 State Energy Plan calls for the reduction in Greenhouse Gas (GHG) emissions from the energy sector, highlighting those efforts as critical to protecting the health and welfare of New York residents. New York's energy system is the source of many benefits for the State; however, it is also the cause of significant impacts on the State's natural resources and public health, principally because of emissions of a variety of substances, some of which find their way into water and other resources. Air pollutants emitted when carbon-based fuels are burned are associated with serious health conditions and contribute to climate change that threatens New York's residents and natural resources. Combustion of fossil fuels is the dominant source of energy-related emissions in the State. Renewables such as solar, wind and hydroelectric energy do not create the kinds of health risks associated with the combustion of carbon-based fuels. While the use of these means of producing electric power is not risk-free, increasing the proportion of New York's electricity needs met by solar, wind, and water will, in general, decrease health risks associated with electricity production. The recognition of the public health and environmental benefits of renewable energy has been a major driver in New York's nation-leading commitment to renewable energy development through the Clean Energy

Standard and is a leading reason for New York establishing the 50% by 2030 goal set forth in the New York State Energy Plan.

The Article 10 regulations require the assessment of potential risks associated with the construction and operation of the Facility. Public health issues associated with the construction of a solar facility are similar to risks associated with commercial construction projects. Exhibit 15 of the Article 10 Application will demonstrate that the aforementioned risks have been identified and evaluated for the proposed Facility, and that potential impacts to public health and safety have been avoided, minimized, and/or mitigated to the extent practicable.

(a) Gaseous, Liquid, and Solid Wastes to be Produced During Construction and Operation

With respect to construction, the generation of waste is primarily limited to byproducts and wastes from standard construction procedures and equipment and will be handled by the BOP contractor in accordance with all applicable laws and regulations pertaining to such wastes. Facility construction will generate minor amounts of solid waste, primarily, plastic, wood, cardboard and metal packing/packaging materials, construction scrap and general refuse. This construction material will be collected from work areas and disposed of at a licensed solid waste disposal facility. The Article 10 Application will provide additional information regarding construction-generated wastes, including sanitary facilities and cleared vegetation. The materials would be collected and separated for recycling, wherever possible. Any defective or broken solar modules would be returned to the manufacturer for proper disposal in accordance with federal and state law.

O&M activities would consist of routine maintenance and emergency work at the Facility. These activities would generate minimal solid waste. With respect to operations, the generation of waste is primarily limited to cardboard packaging and vegetation from maintenance.

One of the advantages of producing electricity from solar is that it does not produce gaseous wastes during operation, and a minimal amount of liquid and solid wastes during construction.

(b) Anticipated Volumes of Wastes to be Released to the Environment

This is not applicable to solar power facilities.

(c) Treatment Processes to Minimize Wastes Released to the Environment

This is not applicable to solar power facilities.

(d) Procedures for Collection, Handling, Storage, Transport, and Disposal of Wastes

This is not applicable to solar power facilities.

(e) Wind Power Facility Impacts

This is not applicable to solar power facilities.

(f) Public Health and Safety Maps

See Figure 8 for Public Health and Safety maps, which depict publicly available data within a 1-mile radius (and slightly beyond) of the Facility, including:

- Known public water supplies
- Fire/police/EMS stations
- Hospitals and emergency medical facilities
- Emergency services mobile land sites
- U.S. Environmental Protection Agency-regulated facilities
- Bridges
- Regulated dams
- Existing known hazard risks (flood hazard zones, storm surge zones, areas of coastal erosion hazard, landslide hazard areas, areas of geologic, geomorphic or hydrologic hazard)

The map was prepared using NYS GIS Clearinghouse, Federal Emergency Management Agency (FEMA), local municipalities, NYSDEC, NYSDOH, and the USGS, as well as local sources for emergency response resources.

(g) Significant Impacts on the Environment, Public Health, and Safety

As indicated above in subsections (a) through (d), the Facility is not expected to result in any significant environmental, public health or safety concerns. Solar energy facilities are safer than conventional forms of energy production, since significant use and storage of combustible fuels are not required.

(h) Unavoidable Adverse Impacts and Appropriate Mitigation/Monitoring Measures

The Article 10 Application will address all potential adverse impacts on the environment, public health, and safety that cannot be reasonably avoided, and measures for monitoring and mitigating such impacts.

(i) Irreversible and Irretrievable Commitment of Resources

The proposed Facility will require the irreversible and irretrievable commitment of certain human, material, environmental and financial resources. Human and financial resources will be expended by numerous entities including the Applicant, the State of New York (i.e., various state agencies), Suffolk County, and the Town of Riverhead for the planning and review of the Facility. The expenditure of funds and human resources will continue throughout the permitting and construction phases of the Facility. To help offset the financial resources required of local stakeholders, the Applicant will contribute money toward an intervenor fund at this PSS stage, and again at the Applicant phase, which can be used to defray the costs of participation in the Article 10 process and review of the proposed project.

The Facility requires a commitment of land throughout its operational life, which is expected to be up to 40 years, (e.g., the land to be allocated for PV arrays, access roads, collection lines, collection substation and the point of interconnect facility). However, because the PV modules and mounting posts may be removed at the end of their useful life, the commitment of this land to the Facility is not irreversible or irretrievable.

Various types of manufacturing and construction materials and building supplies will be committed to the Facility. The use of these materials, such as gravel, concrete, reinforcement steel, cables etc., will represent a long-term commitment of these resources, which will not be available for other projects. However, some of these materials (e.g., steel, gravel) may be retrievable following the operational life of the Facility.

The Article 10 Application will provide additional detail regarding the Facility's irreversible and irretrievable commitment of resources.

(j) Impact Minimization Measures

The Article 10 Application will provide additional detail regarding any measures proposed by the Applicant to minimize public health and safety impacts, if any.

(k) Mitigation Measures

In the Applicant's experience, when a project, such as the Facility, is properly sited and designed, mitigation measures are generally not necessary because significant impacts to public health and safety typically do not occur.

In addition, as further discussed in Section 2.12, the Applicant will implement a Complaint Resolution Plan, which include the following:

- Communications protocol and contacts for construction and operation

- Registering a complaint
- Process for gathering and analyzing information regarding the complaint
- Complaint Response and Tracking
- Complaint Response follow up

The Application will describe each of these steps in the Complaint Resolution Plan in significant detail, and will identify any other measures proposed by the Applicant to mitigate such impacts. The Article 10 Application will incorporate mitigation measures, where feasible, to meet the impact standards and Facility goals.

(l) Proposed Monitoring

The Applicant is committed to develop and operate its projects in a safe and environmentally responsible manner. The Facility will be constructed in accordance with applicable health and safety standards. No additional monitoring specific to public health and safety is anticipated.

2.16 POLLUTION CONTROL FACILITIES

The proposed Facility will not require pollution control facilities, and as such, the requirements of 1001.16 are not applicable and will not be included in the Article 10 Application. Please see Section 2.17 of this PSS for information on temporary emissions during construction, and Section 2.23 for information on the Facility's State Pollution Discharge Elimination System ("SPDES") General Permit for construction.

2.17 AIR EMISSIONS

Once constructed, the Facility will produce electricity without generating any air emissions, and will contribute to New York's efforts to reduce greenhouse gas ("GHG") emissions and combat global climate change. Climate change has been recognized as one of the most important environmental challenges of our time (NYSCAC, 2010; NYSDEC, 2009, 2010). There is scientific consensus that human activity is increasing the concentration of GHGs in the atmosphere and that this, in turn, is leading to serious climate change. By its nature, climate change will continue to impact the environment and natural resources of the State of New York (NYSDEC, 2009a). Historically, New York State has been proactive in establishing goals to reduce GHG emissions, including Executive Order 24, which sought to reduce GHG emissions by 80% by the year 2050 and also included a goal to meet 45% of New York's electricity needs through improved energy efficiency and clean renewable energy by 2015 (Paterson, 2009). Fuel combustion accounts for approximately 89% of total GHG emissions in New York State (NYSDEC, 2009a), and electric generation which relies on fossil fuel combustion creates emission of dangerous air pollutants which are harmful to human health and the environment.

The State's most recent emissions reductions goals are contained in the 2015 State Energy Plan ("SEP"), issued June 25, 2015, by the New York State Energy Planning Board. The SEP recognizes the importance of ensuring that New York's power system is modern, clean, and diverse and that "renewable resources will . . . play a significant role in shaping New York's energy future, providing resilient power, reducing fuel cost volatility, and lowering [GHG] emissions." The SEP describes the State's energy future through a series of goals such as a 40% reduction in GHG emissions from 1990 levels, procurement of 50% of electricity generation from renewable energy sources by 2030.[8] In addition, on August 1, 2016, in accordance with the statutory obligation that agency actions must be reasonably consistent with the most recent SEP, the Public Service Commission adopted the SEP's goals that 50% of New York's electricity is to be generated by renewable sources by 2030 as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030 and approved the Clean Energy Standard ("CES").

The proposed Facility would add 36 MW of clean, renewable solar electric generation capacity to New York State, aiding in the State's efforts to offset carbon-intensive fossil fuel generation with clean, renewable energy sources which do not emit harmful air pollutants or GHGs.

(a) Compliance with Applicable Federal, State, and Local Regulatory Requirements

In accordance with Section 111 of the Clean Air Act Extension of 1970, the U.S. Environmental Protection Agency ("EPA") established New Source Performance Standards ("NSPSs") to regulate emissions of air pollutants from new stationary sources. These standards apply to a variety of facilities including landfills, boilers, cement plants, and electric generating units fired by fossil fuels. The NYSDEC Division of Air Resources administers an air permitting program as required by the Clean Air Act and 6 NYCRR Part 201. The two most common types of permit for air contamination sources are State facility and Title V facility permits. Since solar facilities generate electricity without releasing pollutants into the atmosphere, the proposed facility will not be subject to NSPSs, and will not require air pollution control permits under the Clean Air Act or New York State law or regulation.

The 1984 State Acid Deposition Control Act required the reduction of sulfur dioxide ("SO_2") emissions from existing sources and nitrogen oxides ("NOx") emission controls on new sources in New York State. SO_2 and NOx in the atmosphere are the primary causes of acid rain. The Acid Rain Program was created under Title IV of the 1990 Clean Air Act Amendments, with the goal of reducing emissions of SO_2 and NOx for environmental and public health benefits.

[8] By Executive Order, it is also a goal of the State of New York to reduce current greenhouse gas emissions from all sources within the State 80% below levels emitted in the year 1990 by the year 2050. Executive Order No. 24 (2009) [9 N.Y.C.R.R. 7.24; continued, Executive Order No. 2 (2011) 9 N.Y.C.R.R. 8.2].

These regulations are also not applicable to the Facility because it will generate electricity without releasing SO_2 or NOx.

(b) Assessment of Existing Ambient Air Quality Levels and Trends in the Region

The NYSDEC Division of Air Resources publishes air quality data for New York State annually. The most recent summary of air quality data available for the state is the New York State Air Quality Report for 2017 (NYSDEC, n.d.). Included in this report are the most recent ambient air quality data, as well as long-term air quality trends derived from data that have been collected and compiled from numerous state and private (e.g., industrial, utility) monitoring stations across the state. These trends are assessed and reported by NYSDEC regions. The proposed facility is located in NYSDEC Region 1, which encompasses Nassau and Suffolk Counties. There are four monitoring stations in Region 1, three are within Suffolk County, in Babylon, Holtsville and Riverhead. The fourth station is located within Nassau County, in Eisenhower Park. The Eisenhower Park and Holtsville Stations measure sulfur dioxide (SO_2), the Babylon, Holtsville and Riverhead Stations measure ozone (O_3), and the Babylon, Eisenhower Park and Holtsville Stations measure inhalable particulate matter ($PM_{2.5}$).

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards ("NAAQS") for pollutants considered harmful to public health and the environment. In 2017, Region 1 sampling points for SO_2 and $PM_{2.5}$ were within the acceptable levels established by the NAAQS for all tested parameters. However, Region 1 sampling points for O_3 exceeded the fourth-highest daily maximum 8-hour average ozone concentration level of 0.070 parts per million (ppm), a standard set by the Environmental Protection agency (EPA) in 2015. The Babylon and Riverhead Stations averaged 0.076+ ppm and 0.077+ ppm, respectively, from 2015-2017. The Holtsville Station O_3 level measured 0.069 ppm, which is just below the NAAQS acceptable level (NYSDEC, n.d.). No other local air monitoring data is available to further characterize air quality in the immediate vicinity of the proposed Facility.

(c) Emissions by Combustion Sources Table

Solar generation facilities generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, the table required by 1001.17(c) summarizing the rate and amount of emissions is not applicable to the Facility and will not be included in the Article 10 Application.

(d) Potential Impacts to Ambient Air Quality

The Article 10 Application will include a discussion of the potential impacts to air quality that may be expected from Facility construction and operation. Since solar facilities generate electricity without combusting fuel or releasing

pollutants into the atmosphere, the specific requirements of 1001.17(d) pertaining to pollutant emissions are not applicable to the proposed Facility and will not be included in the Article 10 Application.

The operation of this Facility is anticipated to have an overall positive impact on air quality by producing electricity with zero emissions (except for negligible emissions from vehicles that may periodically service the Facility). In fact, the operation of the Facility will offset air emissions from other sources of electrical generation such as fossil fuel powered generation plants. The Article 10 Application will evaluate the estimated annual displacements resulting from Facility operation.

Potential impacts to ambient air quality resulting from the construction of the Facility will be discussed in the Article 10 Application. Such impacts could occur on a temporary basis as a result of emissions from engine exhaust and from the generation of fugitive dust during earth moving activities and travel on unpaved roads. The increased dust and emissions will not be of a magnitude or duration that will significantly impact local air quality. Dust control procedures will be implemented to minimize the amount of dust generated by construction activities in a manner consistent with the Standards and Specifications for Dust Control, as outlined in the New York State Standards and Specifications for Erosion and Sediment Controls (NYSDEC, 2016b).

(e) Offsite Consequence Analysis for Ammonia Stored Onsite

No ammonia will be stored onsite during Facility construction or operation. Therefore, the offsite consequence analysis required by 1001.17(e) is not applicable to the Facility and will not be included in the Article 10 Application.

2.18 SAFETY AND SECURITY

Overall safety and security risks associated with the Facility are anticipated to be minimal. The Applicant will develop, based on its experience with other solar projects and reasonable expectations associated with the Facility, preliminary site security, health and safety, and emergency action plans. The Applicant will coordinate with the County emergency department, local first responders, and the New York State Division of Homeland Security and Emergency Services to ensure appropriate actions are taken in the event of an emergency.

(a) Preliminary Plans for Site Security During Facility Construction

To reduce safety and security concerns, public access to the Facility shall be limited. The General Contractor and all subcontractors will be required to abide by a final site security plan for Facility construction, which will be developed by the General Contractor or Engineering and Procurement Contractor (EPC) prior to construction of the Facility will be

provided to the Siting Board upon completion. The Application will provide preliminary provisions for security during construction in the Health and Safety Plan, which will include the following:

(1) Access Controls

The PV panels, inverters, and substation will be contained within perimeter fencing with locked gates. The general public would not be allowed on the construction site and vehicular access would be blocked by fencing and locked gates.

(2) Electronic Security and Surveillance Facilities

Trespassing is generally not an issue during construction and operation of solar facilities. However, if problems arise, security staff, video cameras and/or other surveillance technology may be set up to monitor activity.

(3) Security Lighting

Security lighting activities associated with Facility construction will include lighting of the substation. Lighting will be directed downward where possible to minimize the effects of light pollution and will be minimized to the extent practical in order to reduce potential wildlife attraction. The Article 10 Application will include a discussion on additional security lighting considerations such as task lighting and full cut-off fixtures, both in Exhibit 18 on safety and security and in Exhibit 24 on potential visual impacts.

(4) Setback Considerations

Although no setback-related hazards are expected, the Article 10 Application will provide a detailed outline of setbacks to address related safety concerns, if any.

(b) Preliminary Plans for Site Security During Facility Operation

It is anticipated that the Applicant will own and operate the Facility. Therefore, the Applicant will be responsible for site safety and security during operation and preparation of the associated plan. The Article 10 Application will contain a preliminary site security plan for operation, which will likely include the following:

(1) Access Controls

Access roads will have gates that are kept locked to keep the general public out. All Facility components including PV arrays, inverters, and substation will be fenced, gated, and locked at all times. In the Applicant's experience,

fencing and locked gates have proven to be sufficient to prevent access by unauthorized personnel. However, if trespassing becomes a problem, intrusion detection can be added as needed.

(2) Electronic Security and Surveillance Facilities

Exhibit 18 of the Application will provide a detailed discussion of Facility security and surveillance Facilities.

(3) Security Lighting

The Article 10 Application will provide a detailed description of security lighting activities associated with the Facility, including additional considerations such as task lighting and full-cutoff fixtures.

(4) Aircraft Safety Lighting

Given the low profile of solar generating facilities, aircraft safety lighting is not required and will not be included in the Article 10 Application.

(5) Setback Considerations

Although no setback-related hazards are expected, the Article 10 Application will provide a detailed outline of setbacks to address related safety concerns, if any.

(6) Cyber Security Program

The Article 10 Application will provide a discussion on how the Applicant will comply with the North American Electric Corporations ("NERC's") CIP standards. These mandatory Reliability Standards include CIP standards 001 through 009, which address the security of cyber assets essential to the reliable operation of the electric grid. To date, these standards (and those promulgated by the Nuclear Regulatory Commission) are the only mandatory cybersecurity standards in place across the critical infrastructures of the United States. Subject to FERC oversight, NERC and its Regional Entity partners enforce these standards, which are developed with substantial input from industry and approved by FERC, to accomplish NERC's mission of ensuring the security and reliability of the electric grid (NERC 2013).

The Applicant is compliant with the necessary NERC CIP standards. All firewalls and servers are monitored 24 hours/day, 7 days/week by a Security Operations Center.

(c) Preliminary Safety Response Plan

A Preliminary Emergency Action Plan ("EAP") will outline the safety plans of the Facility throughout its lifecycle, and will be developed by the Applicant and provided with the Article 10 Application. The information contained in the EAP will be developed in conjunction with local emergency service providers, and will be made available to all employees of the General Contractor and all subcontractors or authorized visitors to the Facility Site and will outline the procedures to follow in the event of an emergency. In addition to identifying specific emergencies that could arise at the Facility, the EAP will also:

- Identify alarm and emergency evacuation procedures;
- Identify procedures to be followed by site personnel who operate critical operations before they evacuate;
- Identify rescue and medical duties for all on-site personnel of Applicant, the General Contractor and its subcontractors following emergency evacuation;
- Identify persons who can be contacted for further information or explanation of duties under this plan; and
- Establish training guidelines for site personnel regarding this plan to support safe practices in the event of an emergency.

(1) Identification of Contingencies that Would Constitute an Emergency

The EAP as described above will outline the contingencies that would constitute a safety or security emergency.

(2) Emergency Response Measures by Contingency

In the event an emergency response measure is necessary the EAP described above will provide detailed instructions to site personnel, the general public, and emergency responders.

(3) Evacuation Control Measures by Contingency

Unlike a nuclear or fossil fuel facility, a solar power project does not create safety concerns of a magnitude that would necessitate an evacuation. Therefore, Facility-related operations are not anticipated to require evacuation. Although unlikely, natural disasters (e.g., hurricanes) represent the only possible circumstances that may require evacuation. However, in the event an evacuation from the Facility Site is necessary, the EAP described above will provide detailed instructions to Control Center and off-site operations personnel affiliated with the Applicant, the General Contractor and its subcontractors, the general public, and emergency responders. The Facility will post a sign with the emergency contact information, and will provide emergency contact information to the host municipality, local emergency responders, and relevant utilities, such as PSEG Long Island.

(4) Community Notification Procedures by Contingency

The EAP as described above will outline the community notification procedures should an emergency situation occur.

(d) Provision of Security and Safety Plans to NYS Division of Homeland Security

The Application will include documentation of submittal of the preliminary Security and EAP to the New York State Division of Homeland Security and Emergency Services.

(e) Provision of Security and Safety Plans to Local Office of Emergency Management

The Facility Site is not located within any part of a city that has a population of over one million and therefore a review by the local office of emergency management is not required. However, the Applicant will coordinate with the Suffolk County Office of Emergency Management and the Town of Riverhead and provide a copy of the Emergency Action Plan to each of them.

(f) Onsite Equipment to Respond to Fire Emergencies or Hazardous Substance Incidences

The EAP, as described above, will include a detailed list of all equipment available for responding to fire emergencies or hazardous substance incidences.

(g) Contingency Plans for Fire Emergencies or Hazardous Substance Incidences

The EAP will contain a section describing actions that would be implemented in the event a fire emergency or hazardous substance incident occurs. Specific care will be taken to ensure fire fighters have access to the Facility in addition to adequate roads to respond to emergencies. In addition, a Spill Prevention, Control and Countermeasure ("SPCC") plan will be prepared, and implemented, for both the construction and operation phases of the Facility. The SPCC plans will provide a detailed assessment of potential hazardous substances that could be utilized during the construction, operation or maintenance of the Facility. Typically, potential hazardous substances would consist of oils such as fuel oil, hydraulic oil, mineral oil, and lubricating oil.

(h) Provision of Security and Safety Plans to Local Emergency First Responders

The EAP, as described above, will be provided to the local emergency first responders that serve the Facility prior to Application submission, and such consultation will be documented in the Article 10 Application.

2.19 NOISE AND VIBRATION

Exhibit 19 shall contain all of the relevant and applicable components of 16 NYCRR § 1001.19, including an assessment of potential vibration associated with construction activities (e.g., driving piles), if applicable.

Given that solar generating facilities themselves are not anticipated to produce significant noise during operation, the only components which may potentially create operational noise impacts are the inverters and substation associated with the Facility. The Article 10 Application will explain why noise from solar panels and other components is not anticipated, and will include a Noise Impact Assessment, as outlined below, for purposes of anticipating potential impacts from noise-producing equipment, such as inverters and the substation. Potential construction noise impacts also will be discussed in Exhibit 19.

A noise impact assessment, as outlined below, will be carried out to evaluate the projected sound emissions from the proposed solar power generation facility.

(a) Sensitive Sound Receptor Map

The Applicant will prepare and submit a map showing the project location in relation to the nearest potentially sensitive sound receptors (residences, outdoor public facilities, hospitals, etc.) within the Facility Study Area. The nearest sensitive receptors shall be identified as design points for both ambient sound monitoring and noise modeling purposes.

(b) Ambient Pre-Construction Baseline Noise Surveys

The map referred to above will be included in the Article 10 Application, and will include three design points (DP's) and one control position, briefly described as follows:

- DP-1: Represents the nearest residence to the existing substation, which is 450 ft. to the south. Since it was not possible to measure at or near the actual residence, the monitoring point was located 450 ft. to the east of the acoustic center of the substation. An additional control monitoring position was located at the southern fence line of the substation midway between the two existing transformers. The objective of these two monitoring positions was to quantify and document the potentially tonal sound emissions from the existing substation as a baseline against which to examine potentially similar sound emissions from the new equipment to be added to the collection substation for this Facility.
- DP-2: Represents the general ambient sound level experienced at several residences on Edwards Avenue near the planned Facility.

- DP-3: Represents the general ambient sound level experienced at various residences/farms along Route 25 near the north end of the planned Facility.

Two field sound surveys, both one week in duration, have already been carried at the above monitoring locations; one under wintertime conditions in February of 2018 and the other during early summer/leaf-on conditions in May of 2018. ANSI S1.4 Type 1 precision frequency analyzers were used to measure the 1/1 and 1/3 octave band spectra on a continuous 10 minute time resolution over both periods. The overall LA90 results from both seasonal surveys are illustrated below for the positions near the existing/planned substations and for the two locations representing the general community ambient near the panel arrays.

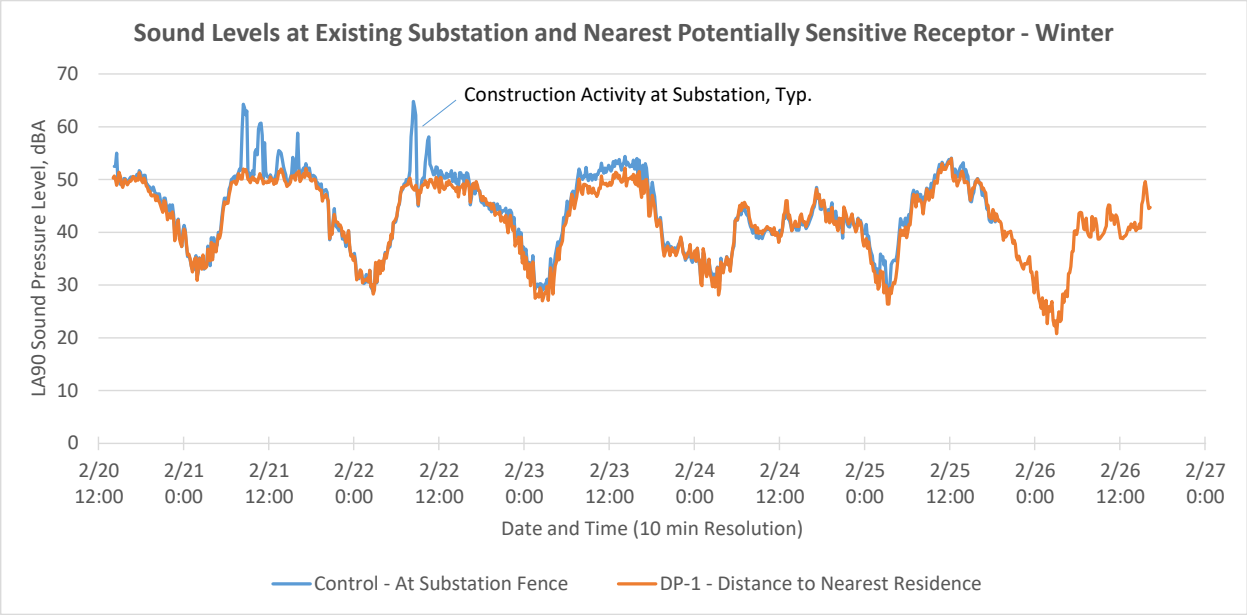

Illustration 1

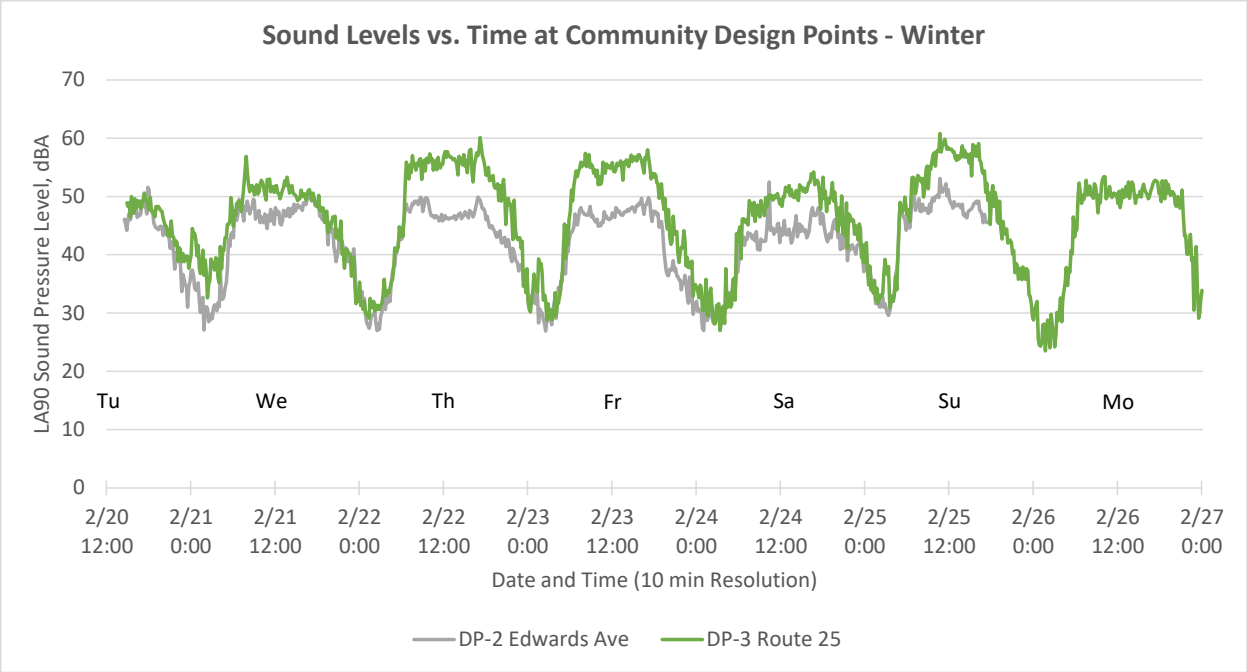

Illustration 2

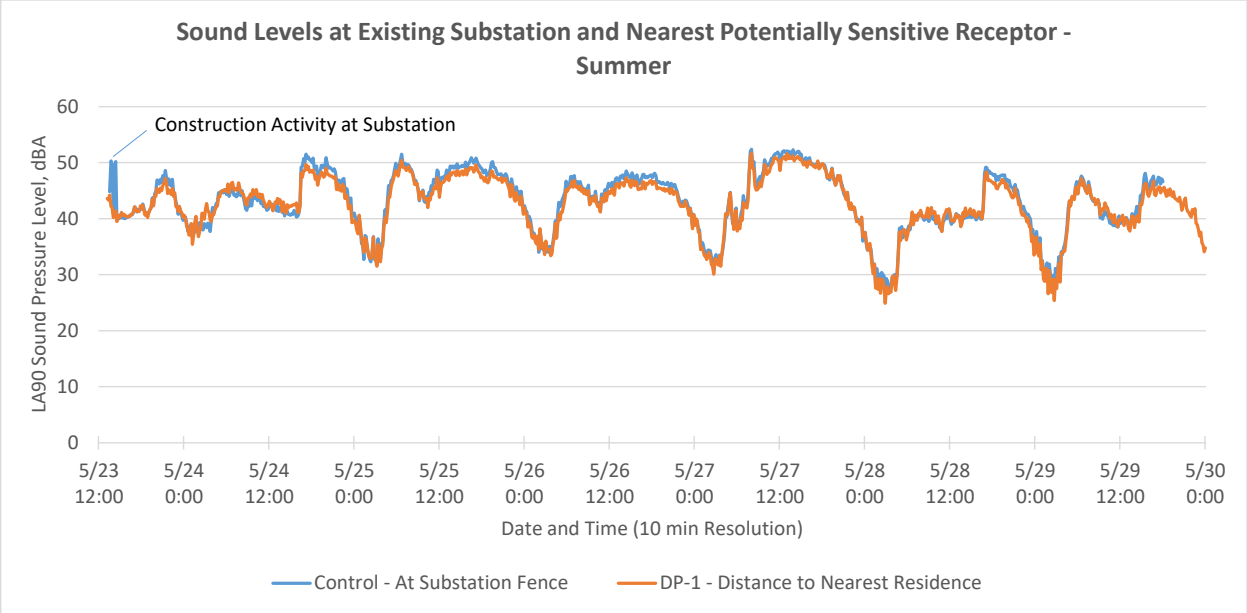

Illustration 3

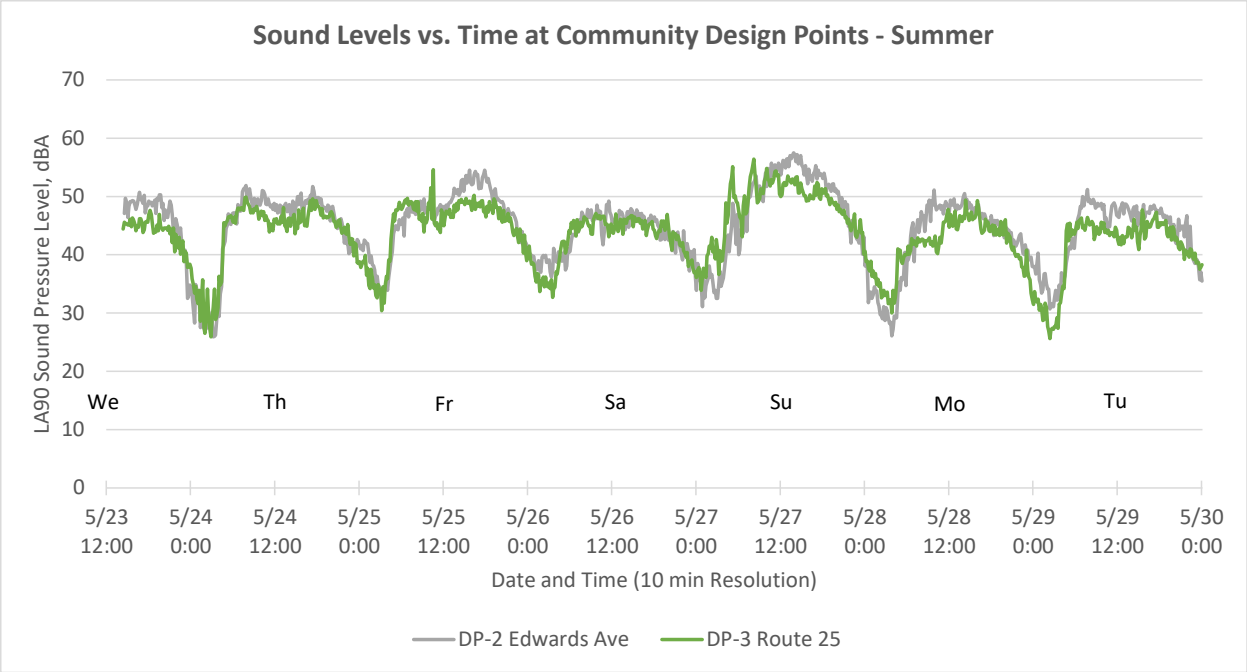

Illustration 4

Further frequency analysis will be carried out to evaluate any existing tonal characteristics associated with the current substation that may or may not be present at the nearest residence per Annex K *Objective method for assessing the audibility of tones in noise* of ISO 1996-2:2017(E) "Acoustics – Description, measurement and assessment of environmental noise", 2017. This method defines prominent discrete tones in terms of the prominence of the 1/3 octave band containing the suspected tone above the average of the neighboring 1/3 octave bands. Prominence/perceptibility is frequency dependent and the thresholds are generally taken as 15 dB for tones below 250 Hz, 8 dB for tones between 250 and 400 Hz and 5 dB for all higher frequencies. More generally, the data will be used to establish the baseline octave band background level at each design point for a modified CNR assessment of the proposed Project.

(c) Construction Noise Analysis

The Application will include an assessment of the projected sound emissions from the site during construction and their anticipated impact at the design points. Options for mitigating construction noise at potentially sensitive receptors will also be discussed.

(d) Modeling of Operational Sound Levels

A noise model of the proposed facility (effectively the substation transformer and inverters) will be developed using Cadna/A® software. The input octave band sound power level for the transformer will be conservatively estimated using the empirical algorithms given in the Edison Electric Institute's "Power Plant Environmental Noise Guide" and/or

the manufacturer's sound information or guarantees. The sound emissions from the DC to AC inverters will be based on first-hand field measurements of similar or representative equipment.

A baseline model will first be developed assuming standard equipment and the resulting design point sound levels will be compared to the winter and summer ambient-based design goals developed from the field surveys, whether in terms of overall A-weighted sound levels, octave band CNR limits, local noise regulations, or all three. If required, the model will be used to determine what noise abatement measures, if any, might need to be incorporated into the facility design to meet the far field design targets. The design analysis will include an assessment of possible tonal noise from the facility and what steps might need to be implemented to prevent potential adverse community impact from these sounds.

Results of the modeling will be presented in tabular format for noise sensitive receptors and in graphical format for property lines.

(e) Local Laws, Ordinances and Regulations

The Town of Riverhead has a local noise ordinance, codified in Chapter 251 of the Town Code, which includes a table of maximum permissible A-weighted sound pressure levels by receiving property category, broken down by time of day (Riverhead Town Code Chapter 251, Attachment 1). The noise ordinance can be found at: https://ecode360.com/29709499.

Generally, the Town's laws set a non-construction operational noise limit of 65 dBA during the daytime (7 a.m. to 8 p.m.) and 50 dBA during the nighttime (8 p.m. to 7 a.m.) measured at residential receptor property lines; 65 dBA at all times at commercial receptor property lines; and 75 dBA at all times at industrial receptor property lines.

Construction activity is expressly exempted from these limitations. Riverhead Town Code § 251-4(C)(3). Noise limitations from construction activity are covered by Riverhead Town Code § 251-5(K)(1).

A review shall be conducted to determine if any other local laws or ordinances related to noise apply to the Facility and will be incorporated into the determination of design goals for the facility.

(f) Other Potential Noise Impacts

As outlined in the Article 10, Exhibit 19 guidelines, any potential for hearing damage; indoor and outdoor speech interference; interference in the use of outdoor public facilities and areas; community complaints; structural damage;

and interference with technological, industrial and medical activities that might be sensitive to noise and vibration will be evaluated in the Application.

(g) Post-Construction Testing

The assessment will outline a test methodology for evaluating the sound emissions from the facility once it becomes operational to verify compliance with the project design goals and regulatory noise limits at all design points.

(h) Avoidance, Minimization and Mitigation of Noise Impacts

As a part of modeling and design analysis, any potential retrofits, alternative technologies, designs and Facility arrangements, and/or post-construction operational controls that could conceivably be needed to reduce noise from the facility if it were to exceed the design goal(s) and generate complaints at any design point will be included in the Application.

Generally, the Application will discuss practicable avoidance, minimization and mitigation measures to address potential noise and vibration impacts from the Facility. The Facility's Complaint Resolution Plan will include a discussion of measures to address reasonable complaints, including a complaint-handling procedure and documentation method, related to noise or vibration impacts from the Facility, during construction and operation.

2.20 CULTURAL RESOURCES

The Applicant has initiated consultation with the NYSOPRHP to develop the scope and methodology for cultural resources studies for the Facility. To date, formal consultation with NYSOPRHP has included initiating Facility review and consultation through NYSOPRHP's Cultural Resources Information System (CRIS) website[9] and submission of technical reports/work plans.

(a) Archaeological Resources

The Article 10 Application will contain a full analysis of the potential impacts of the construction and operation of the Facility on archaeological resources. The development of utility-scale solar Facilities involves relatively minimal ground disturbance (and therefore, risk to archaeological resources) relative to other types of energy development. Therefore, for recent solar facilities reviewed under Article 10,[10] the NYSORPHP has indicated the following:

[9] NYSORPHP's Cultural Resources Information System is accessible at: http://www.nysparks.com/shpo/online-tools/.
[10] The Minisink Solar Project (17PR04137) in the Town of Minisink, Orange County, New York..

- The installation of posts (by pile-driver or similar device) for PV panel supports or fencing, or the installation of buried cables via cable plow (in a trench less than 1 foot [0.3 meter] wide) are not considered to constitute a significant ground disturbance with a potential adverse impact to archaeological resources. Therefore, no Phase IB archaeological survey is necessary for these areas, due to the minimal ground disturbance required for construction of the Facility.

- Phase IB survey is necessary only for those areas of significant proposed ground disturbance. This is defined as any excavation or grading associated with the construction of access roads, inverter pads, and the substation, as well as any buried collection lines installed via an open trench greater than 1 foot (0.3 meter) wide, and any construction staging areas which require grading, paving, and/or the installation of crushed stone.

(1) Summary of Impacts and Avoidance Measures

The Applicant will seek to avoid impacts to archaeological sites identified within the Facility Site. As discussed above and described herein, development of the proposed Facility presents relatively minimal risk to archaeological resources (as compared with other types of energy development). A Phase IB archaeological survey will be conducted and any archaeological resource identified through Phase IB fieldwork will be summarized, along with potential impacts to such resources and proposed avoidance measures, in the Article 10 Application. It is expected that once identified, archaeological resources will be avoided by all Facility components with the potential to cause adverse impacts (see discussion of adverse impacts above). The Article 10 Application will include summary of potential impacts as well as potential impact avoidance and minimization measures.

(2) Phase IA Cultural Resources Study

The Applicant prepared a *Phase IA Cultural Resources Survey*, which is included as Appendix H of this PSS and was submitted through the CRIS website on September 10, 2018. This report is summarized below and addressed both archaeological resources and historic properties. However, relative to archaeological resources, the purpose of the *Phase IA Cultural Resources Survey* was to: 1) define the Facility's area of potential effect (APE) relative to archaeological resources (the APE for Direct Effects) based on the anticipated area of disturbance for Facility components; 2) determine whether previously identified archaeological resources are located in the APE; and, 3) propose a methodology to identify additional archaeological resources within the APE, evaluate their eligibility for the State/National Register of Historic Places (S/NRHP), and assess the potential effect of the Facility on those resources. Following review and approval of this work plan by NYSOPRHP, Phase IB archaeological survey fieldwork will be conducted. The Phase IA report was prepared by professionals who satisfy the qualification criteria

per the Secretary of the Interior's Standards for archaeology (36 CFR 61) and in accordance with applicable portions of NYSOPRHP's *Phase I Archaeological Report Format Requirements* (NYSOPRHP, 2005).

Relative to the potential for archaeological sites to be located in the Facility, the results of the *Phase IA Cultural Resources Survey* for the proposed Facility can be summarized as follows:

- Twelve previously recorded archaeological sites are located within approximately 1 mile (1.6 km) of the Facility Site. None of the sites occur within the Facility Site.
- The majority of the Facility Site (184 acres or 63%) is significantly disturbed. Sources of previous disturbance include the following:
    - Sod Farms (108 acres/37% of Facility Site): Farming is not typically considered significant in terms of its potential to affect the integrity of archaeological resources (NYAC, 1994; NYSOPRHP, 2005); however, sod farming involves different methods than typical crop or hay farming. Ground disturbance associated with sod farming includes the removal of rocks, leveling of the land and the installation of buried drainage and irrigation systems. Additionally, due to the nature of sod farming, the upper 1-2 inches of soil are removed from the site every 18-24 months when sod is harvested. Typically, no new topsoil is imported to the sod fields, so the sod farming process consists of a gradual removal of the upper portion of the soil column over time. In the Facility Site, several of the sod fields are depressed at least 2 feet below the level of the ground surface in the surrounding woodland, indicating that 2 feet or more of soil has been removed over the years. Based on interviews conducted as part of the Phase I Environmental Site Assessment, it appears that many of the parcels currently in use as sod farms were in use as potato and/or vegetable fields approximately 20 years ago (Terracon Consultants, Inc., 2017).
    - Former Golf Course (55 acres/19% of Facility Site): the Calverton Links Golf Course opened in 1992 and closed in 2013. Based on a review of Google Earth aerial imagery, the initial phase of golf course construction occurred in 1992 but the portion of the course located within the Facility Site (i.e., the northwest portion of the course), was constructed between 1994 and 2001 (Google Earth, 1994; 2001). Aerial photography of the area from 1930, 1947, 1962, 1978, and 1984 (Suffolk County, 2018) documents that the majority of the area where the golf course was constructed was historically agricultural fields. The former golf course contains gently rolling topography common at many golf courses. Golf course construction typically involves significant ground disturbance as rolling fairways, leveled greens, and depressed bunkers and water hazards, as well as the associated surface and subsurface drainage structures, are all created

by reworking the natural ground surface with heavy equipment. Therefore, the area experienced significant cut and fill disturbance during golf course construction between 1994 and 2000. Evidence of disturbance is present in the form of sandy patches of bare ground and clearly manipulated topography.

  - Other areas of significant previous ground disturbance (22 acres/8% of Facility Site): include paved roadways, commercial development, residential development, parking lots, an existing electrical substation, and disturbed soil stockpiles.
  - Cut-and-Fill Land (0.7 acre/<1% of Facility Site): mapped by Environmental Systems Research Institute and the Natural Resources Conservation Service (2018), this area is indicative of significant previous ground disturbance.

- The previous ground disturbance in these areas is sufficient that they have no potential to contain significant intact buried cultural materials. Therefore, the potential need for Phase IB archaeological survey for the proposed Facility is limited to the remaining areas (approximately 37%) of the Facility Site where there is no clear evidence for prior ground disturbance.

In addition, the *Phase IA Cultural Resources Survey* acknowledges that certain elements of the proposed construction of the Facility will include ground disturbing activities that have the potential to adversely impact archaeological resources (see discussion of NYSOPRHP consultation above). The APE for Direct Effects (i.e., archaeological resources) includes all areas of soil disturbance associated with proposed PV arrays, inverter pads, access roads, buried collection lines, laydown and staging areas, and substations. However, as discussed above, the installation of posts/supports for PV panel arrays and fences, as well as the installation of buried collection lines with a cable plow in a trench less than 1 foot (0.3 meters) wide, do not have the potential to adversely impact archaeological resources. Any archaeological sites located within the Facility Site but that are not within the limits of disturbance for the proposed Facility will not be affected by the Facility.

(3) Phase IB Cultural Resources Study

A Phase IB Archaeological Survey will be conducted to determine whether archaeological sites are located in the areas of significant proposed ground disturbance for the Facility. The Phase IB survey will be conducted under the supervision of a Registered Professional Archaeologist (RPA) in a manner consistent with the NYSOPRHP *Phase I Archaeological Report Format Requirements* (NYSOPRHP, 2005) and the New York Archaeological Council (NYAC) *Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York*

State (the NYAC *Standards*) (NYAC, 1994). This report will be summarized in the Article 10 Application and appended to Exhibit 20.

The scope and methodology for Phase IB Archaeological Survey are proposed in the *Phase IA Cultural Resources Survey*, which was submitted to NYSOPRHP on September 10, 2018. The proposed Phase IB methodology is based on previous experience conducting archaeological surveys for solar facilities in New York State and responsive to the relatively minimal ground disturbance necessary to construct the Facility, as well as the extent of previous disturbance within the Facility Site.

As noted above, approximately 184 acres (63%) of the Facility Site are significantly disturbed by sod farming, golf course construction, paved roadways, commercial development, residential development, parking lots, an existing electrical substation, and disturbed soil stockpiles. No Phase IB archaeological survey is proposed in these areas because the extent of previous ground disturbance means that there is no chance for significant buried cultural material to be encountered in these areas at depths to be disturbed during project construction. The remainder of the Facility Site will be subject to Phase IB archaeological survey following the methods described below.

The primary methods used during archaeological survey will include pedestrian surface surveys (in active agricultural settings where ground-surface visibility is greater than 70%) and the excavation of shovel tests (in agricultural fields, forest, and shrubland areas where ground-visibility is less than 70%). The locations of shovel testing and pedestrian surface survey will be selected as follows:

- All areas where Facility-related impacts involve *significant* ground disturbance (i.e., trenching wider than 1 foot (0.3 meter), or any excavation, grading, paving, and/or spreading of significant quantities of crushed-stone) will be subjected to Phase IB archaeological survey in the form of either shovel testing or pedestrian surface survey, depending on the ground surface visibility. Areas of *significant* ground disturbance are anticipated to include:
    - All proposed inverter pads;
    - All proposed access roads;
    - All impacts associated with the proposed substations;
    - Any buried collection lines installed in a trench greater than 1 foot (0.3 meter) wide;
    - Any construction staging areas that require grading, paving, and/or spreading of significant quantities of crushed-stone; and,
    - Any other areas where Facility-related impacts include earth disturbance beyond the installation of small posts or I-beams or the excavation of a less than 1-foot (0.3-meter) wide trench.

It is important to note that in forested areas, if tree clearing and stump removal is proposed, these activities have the potential to adversely impact archaeological resources. Therefore, in all areas of proposed tree clearing and stump removal, Phase IB archaeological survey is also recommended.

A Preliminary Facility Layout has been developed and Facility design and layout is currently ongoing. In the event that a potentially significant archaeological resource is identified within the Facility Site, and Facility components cannot be relocated to avoid impacts to the resource, then a Phase II archaeological site investigation (in consultation with NYSOPRHP) will be conducted, as discussed in more detail below in subsection (a)(4). However, the Facility layout is being intentionally sited to avoid archaeological resources; therefore, no Phase II site investigations are anticipated to be necessary.

The *Phase IA Cultural Resources Survey* was submitted to NYSOPRHP September 10, 2018 to confirm the proposed Phase IB archaeological fieldwork plan for the Facility and to ensure that the proposed scope of the survey is consistent with NYSOPRHP's expectations. The completed Phase IB Archaeological Survey Report will be submitted as part of the Article 10 Application.

(4) Phase II Study

In the event that a potentially significant archaeological resource is identified within the Facility Site, and Facility components cannot be relocated to avoid impacts to the resource, then a Phase II archaeological site investigation (in consultation with NYSOPRHP) will be conducted. However, the Facility layout is being intentionally sited to avoid archaeological resources; therefore, no Phase II site investigations are anticipated to be necessary. If recommended avoidance measures (e.g., such as removing or re-locating Facility components away from identified archaeological sites) are insufficient to avoid adverse impacts, then Phase II archaeological investigations may be conducted to assess the boundaries, integrity and significance of cultural resources identified during the Phase IB archaeological survey. If warranted based on Phase IB study results, as determined in consultation with NYSOPRHP, any necessary Phase II studies would be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential eligibility for listing on the S/NRHP. The need for and scope of work for such investigations would be determined in consultation with NYSOPRHP and DPS upon completion and review of the Phase IB survey report.

(5) Archaeological Material Recovered During Cultural Resources Studies

In the event that any artifacts are recovered during the cultural resources studies for the Facility, archaeologists will record standard provenience information in the field and collect each artifact in sealed plastic bags per standard archaeological field practices. All recovered materials will be washed, dried, and cataloged per standard archaeological laboratory procedures. Recovered artifacts will be described to a level of detail sufficient to prepare an artifact inventory for inclusion in Phase IB and/or Phase II archaeological reports, which will include descriptions of each artifact's material, temporal or cultural/chronological associations, style, and function. In addition, it is anticipated that a selection of representative artifacts will be photographed for inclusion in the reports, but complete photo documentation of all recovered materials is not anticipated. The Applicant understands that all artifacts recovered during this contract will be the property of the landowner from whose lands the artifacts were recovered. The Applicant also anticipates that the Facility's cultural resources consultant will identify appropriate local repositories (such as local historical societies or archaeological museums) for disposition of recovered artifacts so that artifact assemblages remain available and accessible to local and regional researchers and interested members of the public. It is anticipated that all artifacts will be processed in a manner consistent with professional standards, such as the NYAC *Standards (*NYAC, 1994), and suitable for accessioning to the New York State Museum (Albany), in the event that appropriate local repositories cannot be identified.

A complete listing of all recovered artifacts will be included in the Phase IB Archaeological Survey Report, to be submitted with the Article 10 Application.

(6) Unanticipated Discovery Plan

The Article 10 Application will include an Unanticipated Discovery Plan that identifies the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance or human remains are encountered during Facility construction. The plan will include a provision for work stoppage upon the discovery of possible archaeological or human remains. Evaluation of such discoveries, if warranted, will be conducted by a professional archaeologist, qualified according to the NYAC *Standards* (NYAC, 1994). The Unanticipated Discovery Plan will specify the degree to which the methodology used to assess any discoveries follows the NYAC *Standards*.

(b) Historic Resources

(1) A complete Historic Architectural Survey

As discussed above, the Applicant prepared a *Phase IA Cultural Resources Survey,* which was submitted through the CRIS website on September 10, 2018 (see Appendix H). Relative to aboveground historic resources, the *Phase IA Cultural Resources Survey* was undertaken to define the Facility's APE relative to historic architectural resources within a 2-Mile Study Area, conduct a field review of previously identified historic resources located in the APE as well as their visual setting, assess if additional historic properties are located within the 2-Mile Study Area and APE for indirect (visual) effects, and assess the potential effect of the Facility on those resources.

Area of Potential Effect Relative to Historic Resources

The Facility will have no physical impacts to historic resources (i.e., no historic structures will be damaged or removed). The Facility's potential effect on a given historic property would be a change (resulting from the introduction of PV panel arrays or other Facility components) in the property's visual setting. Therefore, the APE for visual effects on historic resources must include those areas where Facility components (including PV panel arrays) will be visible and where there is a potential for a significant visual effect. Per the requirements set forth in 16 NYCRR § 1000.2(ar), the study area to be used for analysis of major electric generating facilities is defined as:

(ar) Study Area: an area generally related to the nature of the technology and the setting of the proposed site. In highly urbanized areas, the study area may be limited to a one-mile radius from the property boundaries of the facility site, interconnections, and alternative location sites. For large facilities or wind power facilities with components spread across a rural landscape, the study area shall generally include the area within a radius of at least five miles from all generating facility components, interconnections and related facilities and alternative location sites. For facilities in areas of significant resource concerns, the size of a study area shall be configured to address specific features or resource issues.

For recent solar projects reviewed under Article 10[11] NYSOPRHP has indicated that a five-mile Study Area be established for assessing indirect effects of the Facility on historic resources. As described in Section 1.4 and depicted in Figure 3 of the attached *Phase IA Cultural Resources Survey* (Appendix H), a preliminary viewshed analysis for the proposed solar panels indicates that because of the Facility's low-profile, as well as screening afforded by vegetation and existing structures, visibility of the planned components is anticipated to be limited to the immediate vicinity of the Facility. Therefore, due to the nature of the technology and the setting specific to the

[11] The Mohawk Solar Project (17PR06371) in the Towns of Canajoharie and Minden, Montgomery County, New York.

Facility, the Applicant is proposing that the APE for Indirect Effects be defined as those areas of predicted visibility of the Facility (per the viewshed analysis) within a 2-mile (3.2-km) radius from (and including) all Facility components. The APE for Indirect Effects, as described herein, consists of all areas within a 2-mile radius of the Facility from which Facility components are predicted to be visible (see Appendix H, Figure 3).

Previously Identified Historic Resources Located in the Area of Potential Effect

EDR reviewed the CRIS website maintained by NYSOPRHP to identify significant historic buildings and/or districts located within the 2-Mile Study Area for the Facility. No resources listed on or determined eligible for listing on the S/NRHP are located within the Facility Site. A total of 17 previously identified historic resources are located within two miles of the Facility. Of these 17 resources, three have been determined by NYSOPRHP to be S/NRHP-eligible and 14 resources are identified in CRIS as having "undetermined" S/NRHP eligibility (i.e. they have not been formally evaluated by NYSOPRHP for S/NRHP eligibility). A list of all previously identified historic resources within 2 miles of the Facility Site, as well as representative photographs of the resources and their locations, is included in the *Phase IA Cultural Resources Survey* (Appendix H).

In addition, a local and state-designated "historic corridor," the Sound Avenue Historic Corridor, passes through the northern tip of the 2-Mile Study Area for the Facility. The Sound Avenue Historic Corridor extends from Wading River to Mattituck and has been called "one of the last purely rural corridors in all Long Island" (Suffolk Times, 2010). It was designated an historic corridor by the Town of Riverhead and New York State Legislature in 1975; however, the corridor is not a designated historic district, nor is a comprehensive inventory available of historic resources or other elements that contribute to the historic significance or scenic importance of the corridor, nor has any mapping been obtained depicting the limits of the corridor. However, the 2004 Town of Riverhead Comprehensive Plan acknowledges the importance of the historic corridor to the character of the Town, and the Town Planning Board has increased the regulation of development proposed within 500 feet of Sound Avenue (Wines, 2008; North Fork Environmental Council [NFEC], 2011; Riverhead Landmarks Preservation Commission [RLPC], 2017). The Application will discuss this feature, as well as potential impacts from the Facility on the corridor, if any.

Table 1. Previously Identified Historic Resources Located within the 2-Mile Study Area.

USN	Property Name and/or Description	Address	Municipality	County	S/NRHP Eligibility (NYSOPRHP Determined)	Distance from Facility (miles)	Potential Facility Visibility (based on viewshed)
10306.000424	Two-and-one-half-story vernacular residence with decorative shingles (Smith-Okula Farm)	3988 Middle Country Road (State Route 25)	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	<0.1	No
10306.000416	Two-story asbestos shingle-clad residence (Shaddock House)	2434 River Road	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.1	No
10306.000886	One-story concrete curtain wall storage facility (Satur Farms, LLC)	4195 Middle Country Road (State Route 25)	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.2	Yes
10306.000413	One-and-a-half story shingle-clad residence (Dickinson House)	2556 River Road	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.2	No
10306.000412	One-story shingle-clad former railroad depot circa 1880 (Lewin House/Former Calverton Long Island Railroad Station)	2648 River Road	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.3	No
10306.000425	Historic farmstead consisting of a frame residence and a gambrel roof barn (Boskowski Farm)	Middle Country Road (State Route 25), opposite Fresh Pond Road	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.6	No
10306.000409	Former blueberry farm on north side of River Road (Rychlinski Blueberry Farm)	North side of River Road, west of Railroad Avenue	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.6	No
10306.000421	Two-story Colonial Revival school building with wood shingles and a central belfry circa 1928 (former School No.4)	3685 Middle Country Road (State Route 25)	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.7	No
N/A	Approximately 0.3-acre cemetery with an estimated 28 headstones, circa 1839 (Wells Cemetery)	North side of River Road, east of Connecticut Avenue	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.8	No
10306.000426	Two-story shingle-clad residence (Moseley-Edwards Farm)	1 Twomey Avenue	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.8	No
10306.000419	Farm complex with a two-story residence and barn (Smith Farm)	3605 Middle Country Road (State Route 25)	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.9	No
10306.000417	Two-story shingle-clad residence and duck farm (Warners Duck Farm)	1963 River Road	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	0.9	No

USN	Property Name and/or Description	Address	Municipality	County	S/NRHP Eligibility (NYSOPRHP Determined)	Distance from Facility (miles)	Potential Facility Visibility (based on viewshed)
10306.000427	Historic farmstead consisting of a two-story vernacular residence and a barn (Riley-Fedun Farm)	317 Riley Avenue	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	1.2	No
10306.000795	Insulated steel waffle and frame aircraft radar testing site circa 1968 (Anechoic Chamber)	200 David Court	Town of Riverhead	Suffolk	S/NRHP-Eligible Resource (NYSOPRHP Determined)	1.5	No
10306.000794	Concrete curtain wall manufacturing facility (Grumman Plant 6)	317-391 Burman Boulevard	Town of Riverhead	Suffolk	S/NRHP-Eligible Resource (NYSOPRHP Determined)	1.7	No
10306.000793	Concrete curtain wall jet hangar and operations building (Grumman Plant 7)	901-931 Burman Boulevard	Town of Riverhead	Suffolk	S/NRHP-Eligible Resource (NYSOPRHP Determined)	1.7	No
10306.000406	Former Grumman Naval Weapons Industrial Reserve Plant District	South side of Middle Country Road/North side of Grumman Boulevard	Town of Riverhead	Suffolk	S/NRHP Eligibility Undetermined	1.7[12]	No

[12] The exact boundaries of the Grumman Naval Weapons Industrial Reserve Plant District are not defined in the 1977 NYSOPRHP Building Inventory Form or on the CRIS website, nor are the contributing resources to the district identified. Therefore, 1.7 miles is an approximate distance based on the other resources identified within the former Grumman Naval Weapons Industrial Reserve Plant District, although the limits of the plant extend farther east toward the Facility Area.

Methodology to Identify Historic Resources and Assess Potential Effects of the Facility

Historically significant properties are defined herein to include buildings, districts, objects, structures and/or sites that have been listed on the S/NRHP, as well as those properties that NYSOPRHP has formally determined are eligible for listing on the S/NRHP. Criteria set forth by the National Park Service (NPS) for evaluating historic properties (36 CFR 60.4) state that (per CFR, 2004; NPS, 1990):

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> (A) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> (B) that are associated with the lives of persons significant in our past; or
> (C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> (D) that have yielded, or may be likely to yield, information important in prehistory or history.

The previously identified historic properties within the 2-Mile study area include residences, former industrial/defense facilities, cemeteries, and a school. Numerous nineteenth- and early-twentieth-century structures (primarily residences and farmsteads) are located within the study area that have not been previously evaluated by NYSOPRHP to determine if they are S/NRHP-eligible. These types of resources are typically determined S/NRHP-eligible under NRHP Criterion C (i.e., they "embody the distinctive characteristics of a type, period, or method of construction" [CFR, 2004a), and often derive their significance from being representative examples of vernacular nineteenth-century architectural styles that retain their overall integrity of design and materials. The architectural integrity of historic resources throughout the Study Area is somewhat variable, with most properties over 50 years of age showing noticeable alteration to their materials or form.

(2) A summary of the nature of the probable impact of Facility construction and operation on any historic resources.

Construction of the Facility will not require the demolition or physical alteration of any buildings or other potential historic resources. No direct physical impacts to historic-architectural resources will occur as a result of the Facility.

The Facility's potential effect on historic resources may be a change (resulting from the introduction of visible components such as PV panel arrays) in the visual setting associated with a given historic resource. The potential effect of the Facility on the visual setting associated with historic resources is highly variable and is dependent on a number of factors including the distance to the project from a sensitive receptor, the number of visible PV panels, the extent to which the Facility is screened or partially screened by buildings, trees, or other objects, and the amount of existing visual clutter and/or modern intrusions in the view. It is also worth noting that visual setting may or may not be an important factor contributing to a given property's historical significance. Based on a review of NYSOPRHP Building Inventory Forms, scenic views and/or association with the landscape are not specifically identified as contributing to the significance of any of the previously identified historic resources in the Study Area. These impacts will be described in the Article 10 Application.

As part of the *Phase IA Cultural Resources Survey*, the Applicant evaluated the potential visual effect of the Facility on historic resources within the 2-Mile Study Area. Of the 17 previously identified historic properties within the 2-Mile Study Area, the viewshed analysis indicated that only one property (Satur Farms, LLC, NYSOPRHP USN 10306.000886) is anticipated to have potential views of the Facility; however, due to its relatively recent age (approximately 40-50 years old), lack of documented historic significance or architectural integrity, the Facility is not likely to impact any characteristics of the property that may make it eligible for listing in the NRHP (the property has not formally been evaluated for NRHP eligibility).

Field review of potential Facility visibility from historic properties conducted as part of the *Phase IA Cultural Resources Survey* confirmed the results of the viewshed, and potential views of the Facility are only likely to be available from areas along roadways or properties that are within or immediately adjacent to the Facility Site. From most locations, views of the proposed Facility Site are screened by existing vegetation and/or structures. Because of the low profile of the proposed PV panels (up to 8 feet in height), the Facility would not be visible from areas where vegetation and/or structures screen views of the existing fields where the PV panels would be built. Field review also indicated that views toward the Facility Site from the closest historic property (the Smith-Okula farm, NYSOPRHP USN 10306.000424) would be screened by existing vegetation. Therefore, it can be concluded that visibility within the Study Area is variable, and it is unlikely that any historic properties will be visually impacted by the Facility. In addition, the field review conducted as part of the *Phase IA Cultural Resources Survey* noted that no additional historic properties are located within the APE for indirect (visual) effects for the Facility. These matters will be discussed further, and the preliminary conclusions confirmed, in the Application.

Unlike a wind power project that contains wind turbines that may be 500 feet or more in height and which are visible from a relatively large surrounding area (e.g., five miles or more), a solar generating facility does not have

prominently visible components. The tallest components of the generating portion of the proposed Facility will be the PV panels and inverter equipment, which have a relatively low profile, and are not expected to be more than 8 feet above grade, less than a single-story residence. The nature of the technology is such that visibility is anticipated to be relatively limited to those areas located adjacent to the Facility.

The potential visual screening provided by mapped forest vegetation within the Study Area, which provides a conservative prediction of areas from which the Facility is anticipated to be visible, is depicted on Figure 4 of the Facility's Final PIP. The amount of the proposed PV panel array potentially visible from each historic property within the study area (considering screening provided by topography and mapped forest vegetation) and distance from each previously identified historic resource to the proposed PV panel array is listed in Table 1. It is important to note that because screening provided by buildings and street/yard trees, as well as characteristics of the proposed PV panel array that influence visibility (color, concentrated grouping of panels, distance from viewer, etc.), are not taken consideration in the viewshed analyses, being within the viewshed does not necessarily equate to actual Facility visibility. Field review of potential Facility visibility conducted as part of the historic resources survey for the Facility verified that visual screening provided by existing buildings, yard trees, and other objects may limit views of the Facility from many areas where viewshed mapping otherwise suggests the Facility is potentially visible.

Field review confirmed that the area with greatest potential Facility visibility occurs in open agricultural field and other open expanses within and adjacent to the Facility Site. Field review also indicated the Facility will generally be at least partially screened from most locations along major roads within the Facility Site by structures and trees. However, partial views of PV panels and the Facility may be available from some open areas along roads immediately adjacent to the Facility Site, particularly Edwards Avenue and New York State Route 25.

Based on the field review and preliminary viewshed analysis prepared as part of the *Phase IA Cultural Resources Survey* (Appendix H), it is anticipated that the Riverhead Solar 2 Project will not have a significant adverse visual impact on historic resources listed in or eligible for listing in the S/NRHP, and the Applicant recommends that no further historic resources survey should be necessary for review or the proposed Facility.

In addition, as further described in Section 2.24 of this PSS, 16 NYCRR § 1001.24 (Exhibit 24: Visual Impacts) describes the necessary components of a Visual Impact Assessment (VIA) that must be conducted as part of the Article 10 application, including assessment of potential visual impact on cultural resources. The VIA must include "identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), cumulative visual impact analysis, and proposed visual impact mitigation". 16

NYCRR § 1001.24 also requires that "the applicant shall confer with municipal planning representatives, DPS, DEC, OPRHP, and where appropriate, APA in its selection of important or representative viewpoints" (Article 10, Exhibit 24, Part 1001.24[b][4])[13]. A letter regarding the identification of visually sensitive resources, including historic properties, cemeteries, and other resources of local significance was sent to stakeholders including the NYSOPRHP and the Suffolk County Historical Society. Copies of the correspondence sent by the Applicant as part of this process, as well as responses received from stakeholders, are included as Appendix B of the *Phase IA Cultural Resources Survey*.

A full examination of visual impacts and potential mitigation options will be discussed in the VIA for the Facility as well as Exhibit 24 of the Article 10 application.

Relevant to noise and vibration impacts to S/NRHP-eligible cultural resources, the implementing regulations for New York State Parks, Recreation and Historic Preservation Law, Section 14.09 (9 NYCRR § 428.7) state:

a. In determining whether an undertaking will have an adverse impact on eligible or register property, the commissioner shall consider whether the undertaking is likely to cause:
    1. destruction or alteration of all or part of the property;
    2. isolation or alteration of the property's environment;
    3. *introduction of visual, audible or atmospheric elements which are out of character with the property or alter its setting;*
    4. neglect of the property resulting in its deterioration or destruction. [emphasis added] (9 NYCRR § 428.7))

The assessment of potential noise impacts from the Facility, including potential operational noise/vibration impacts to S/NRHP-eligible historic properties within the 2-Mile Study Area will be discussed in detail in Exhibit 19 of the Article 10 Application, and a Preconstruction Noise Impact Assessment (PNIA) will be included as an appendix to the Article 10 Application. Construction-related noise/vibration impacts are not considered because they will be short-term and temporary in nature.

Noise impacts to S/NRHP-eligible historic properties are anticipated to be relatively insignificant. Similar to visual impacts to historic properties, noise and vibration impacts are greatest at properties in closer in proximity to inverters, although impacts would be minimal. The closest properties determined to be eligible for the S/NRHP are

[13] Note: "DPS" is the New York State Department of Public Service, "DEC" is the New York State Department of Environmental Conservation, "OPRHP" is the New York State Office of Parks, Recreation, and Historic Preservation, and "APA" is the Adirondack Park Agency.

located approximately 1.7 miles from the Facility. Field review indicated that there would be no visibility from these properties toward the Facility, and the intervening distance as well as screening provided by buildings and vegetation (as well as fencing and vegetative screening that will be constructed as part of the Facility) will significantly diminish if not eliminate any potential noise impacts from the Facility. Therefore, the noise generated by the Facility is not anticipated to constitute a significant adverse impact to the setting of S/NRHP-eligible historic resources within the Study Area.

The Facility has been sited with PV panels and inverter equipment located primarily in undeveloped areas away from population centers, such as villages and town centers, in order to minimize visual and audio impacts to area residences and historic properties. Furthermore, ambient noise levels are expected to be slightly higher in more developed areas (i.e., villages and town centers) due to increased vehicle traffic and other noises associated with greater population density. Therefore, any potential noise impacts from the proposed Facility are not expected to be significant in these areas.

It is also worth noting that following construction, the Facility will be surrounded by fencing and that selected sections may include landscape buffering/vegetative screening outside the fence. The installation of this landscape buffering/vegetative screening further minimizes the potential for the Facility to affect the visual setting associated with historic resources. Additionally, the Facility will not generate air emissions and, as previously noted, will not generate noise audible outside the fence.

Based on the above analysis, potential noise and/or vibrations caused by the operation of the proposed Facility are not expected to significantly alter the character or setting of S/NRHP-eligible historic properties within the Study Area. Vibrations are not anticipated to impact any S/NRHP-eligible properties and noise-related impacts are anticipated to be relatively minimal, due in large part to the Facility's siting in remote rural areas away from areas of higher historic and modern population density. Any elevated noise and vibration levels related to Facility construction will be short-term and temporary in nature. Therefore, as will be discussed and demonstrated in the Application, permanent noise-related adverse impacts to S/NRHP-eligible properties are not anticipated to occur.

2.21 GEOLOGY, SEISMOLOGY, AND SOILS

As previously indicated, the proposed Facility is immediately adjacent to the approved 20 MW Riverhead Solar 1 Project, for which extensive environmental review, permitting, and engineering has occurred. A geotechnical engineering report has been prepared and completed for the adjacent Riverhead Solar 1 Project. The geotechnical scope of work included the advancement of 19 test borings to approximate depths of 17 to 52 feet below existing ground surface, two field electrical resistivity tests, three infiltration tests, pile load testing at 6 locations that includes

compression, tensile and lateral load tests, two laboratory thermal resistivity dry-out curves, laboratory testing on representative samples of the subsurface materials, engineering analyses, and development of engineering recommendations for design and construction of foundations and roadways.

Based upon the geotechnical engineering exploration performed, the engineer concluded that the Riverhead Solar 1 Project site appears suitable for construction based upon geotechnical conditions encountered in the test borings, and provided recommendations in a Geotechnical Engineering Report (see Appendix I for a copy of this report). Based on the information obtained from the engineering analyses of the field laboratory data, the following geotechnical information was provided for the Riverhead Solar 1 Project:

- The site subsurface conditions consists of about 2 feet of topsoil and organic subsoil underlain by loose to dense native sands. Groundwater was encountered at a depth of 20 to 48 feet below the ground surface in some of the test borings.

- Driven, steel W-section steel pile foundations are expected to be suitable for support of typical solar panel racking systems.

- The site appears suitable for the proposed construction of the transmission line and substation based upon geotechnical conditions encountered in the borings provided the recommendations contained in the Geotechnical Engineering Report are property implemented in the design and construction.

- The proposed transmission line poles may consist of direct embed poles or be supported on drilled shaft foundation systems. Substation structures should be supported on drilled shaft foundations. The recommended design parameters for direct embed poles and drilled shaft foundations for the transmission line poles and substation structures are presented in the Deep Foundations section of the Geotechnical Engineering Report. Groundwater was encountered at depths of 20 to 48 feet in some of the soil borings at the time of field exploration, depending upon the final foundation depths, groundwater may be encountered during construction of drilled shaft foundations.

- Mat foundations can be utilized for substation mounted equipment and invertors within the PV Array field. 12-inch thick layer of NFS, Crushed Stone, or Structural Fill is recommended beneath the mat foundation to provide a uniform bearing surface and a capillary break. Mat foundations will move due to freeze-thaw effects. NFS materials will need to be placed at least 36 inches deep to significantly reduce the effects of freeze-thaw. Alternatively, the slab could be designed to allow movement due to frost action. Design recommendations

and construction considerations for equipment slabs are presented in the Mat Foundation Design Recommendations section of the Geotechnical Engineering Report.

- The 2016 Uniform Fire Prevention and Building Code (the "Uniform Code") seismic Site Class is C.

The Applicant expects that the geological and seismological conditions found at the adjacent Riverhead Solar 1 site will be substantially similar, if not the same as, those to be found at Riverhead Solar 2's location. Thus, the Riverhead Solar 2 Application will include a discussion of the geotechnical investigations performed for the Riverhead Solar 1 project, and will rely on those investigations for purposes of providing required preliminary geotechnical information for the Riverhead Solar 2 Project Area. However, additional geotechnical investigations will be conducted at the Facility prior to construction and the Applicant will use this investigation to confirm the information presented in the Application.

(a) Existing Slopes Map

A map delineating existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, 35% and over) on and within the drainage area potentially influenced by the Facility Site and interconnections will be prepared using the USGS National Elevation Dataset. Digital Elevation Model (DEM) data will be processed using ESRI ArcGIS® Software to delineate a drainage area and develop slope mapping.

(b) Proposed Site Plan

Facility design and layout is currently ongoing. Preliminary design drawings showing existing and proposed contours at 2-foot intervals will be included in the Article 10 Application.

(c) Cut and Fill

The Article 10 Application will include preliminary and approximate cut and fill calculations, including separate approximations for topsoil, sub-soil and bedrock. A description of typical scenarios that would result in cut and fill necessary to construct the facility will also be included.

(d) Fill, Gravel, Asphalt, and Surface Treatment Material

A preliminary approximation of the amount of required fill, gravel, etc. based on the proposed array layout, access roads, collection lines, substation and all other Facility components and construction areas will be included with the Article 10 Application.

(e) Type and Amount of Materials to be Removed from the Facility

The Applicant does not anticipate removing materials from the site during construction. During excavations, topsoil will be segregated and maintained on-site. Stockpiled soils along the construction corridors will be used in site restoration, and such materials will be re-graded to approximate pre-construction contours. If, after Facility design is completed, it appears that materials would need to be removed from the Facility, Applicant will provide that information in the Application.

(f) Excavation Techniques to be Employed

The activities associated with constructing solar power projects in the Town of Riverhead are well understood, and therefore construction methodologies can be reasonably anticipated based on the Applicant's experience in this area and available site conditions data. The majority of excavation activities will be associated with the concrete pads and gen-tie lines, while additional excavations will likely be associated with other aspects of Facility construction in specific locations as needed. Excavation for the gen-tie line is not anticipated. It is anticipated that the majority of the Facility's buried electrical interconnect will be installed through use of lateral bore (which does not require excavation); however, in select locations a backhoe may excavate a trench for cable installation due to the subsurface characteristics.

The Applicant does not expect Facility-related excavation will result in adverse impacts to geology or soils. The Article 10 Application will provide a detailed description of construction methodologies and activities associated with the Facility, including the anticipated excavation techniques to be employed.

(g) Temporary Cut and Fill Storage Areas

The process of determining excavation locations will be described, and preliminary cut and fill locations will be described, in the Article 10 Application. Final cut and fill storage areas will be identified following Certification, and included in the final construction drawings.

(h) Suitability for Construction

As previously indicated, a Geotechnical Engineering Report was prepared for Riverhead Solar 1, which is included as Appendix I to this PSS. It is expected that all information necessary to comply with the Application content requirements set fort at 1001.21(h) will be obtained from this report. The Application will include a discussion of the characteristics and suitability for construction purposes of the material to be excavated for the facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics.

(i) Preliminary Blasting Plan

Based upon the Applicant's experience with solar facility construction in the Town of Riverhead, it is anticipated that no blasting will be required. The Geotechnical Engineering Report prepared for Riverhead Solar 1, and any Preliminary Geotechnical Investigations performed for Riverhead Solar 2, will provide the information necessary to confirm that no blasting is required, which will be discussed in further detail in the Article 10 Application.

(j) Potential Blasting Impacts

Blasting is not anticipated, and as indicated above the Article 10 Application will provide additional detail. With respect to water wells, please see Section 2.23 of this PSS for additional information. With respect to potential impacts on natural gas production, according to the NYSDEC (2018), the Facility Site does not contain any natural gas wells (producing wells, non-commercial wells, and plugged and abandoned wells).

(k) Mitigation Measures for Blasting Impacts

Blasting is not anticipated. However, should any blasting be required, it will be conducted in accordance with the Facility-specific blasting plan, and any necessary blasting will receive oversight by an Environmental Monitor. In addition, pre- and post-blasting surveys will be conducted as a groundwater well mitigation measure if blasting is needed. The Applicant will conduct structural, water quality, and water quantity inspections of any wells located within 500 feet of blasting activities before (to establish baseline quality and quantity) and after construction. Although not anticipated, any impacts identified through these inspections will be addressed on a case-by-case basis and appropriately mitigated.

(l) Regional Geology, Tectonic Setting, and Seismology

The Facility Site is located within the Atlantic Coastal Plain physiographic province of New York State (USGS, 2018). The Atlantic Plain is one of the largest and flattest physiographic provinces in eastern North America, spanning from Cape Cod, Massachusetts to the Mexican border and a portion of the Yucatan Peninsula. The coastal plain in Suffolk County is typical of the Atlantic Coastal Plain with low elevation ranging from sea level to 400 feet above mean sea level (USDA, 1975). The underlying bedrock is ancient metamporphic rock overlain with Cretaceous sediment from the Riritan and Magothy ormations (USDA, 1975). Soils in the region were derived from glacial till, lacustrine material, outwash and sand that were left behind as glaciers advanced and retreated.

Based on the 2014 Seismic Hazard Map of New York State (USGS 2014), the Facility Site is located in an area of moderately low seismic hazard, with a 10% or less chance that peak ground acceleration in a 50 year window is between 2% and 4% of standard gravity. Records show one 2.8 magnitude earthquake in Suffolk County in 1992 (DMA,

2014). The USGS Earthquake Hazards Program does not list any young faults, or faults that have had displacement in the Holocene epoch within the vicinity of the Facility Site.

(m) Facility Impacts on Regional Geology

The Facility is not anticipated to result in any significant impacts to geology. Earthwork is expected to include site grading, as necessary, to create finished grade slopes suitable for racking installation and storm water management improvements. Solar Facilities are less invasive in comparison to conventional energy production that require relatively more earth moving. Where earthwork may be required, it is anticipated to be minor and of limited extent. The impacts of the construction and operation of the Facility on regional geology will be evaluated in the Article 10 Application.

(n) Impacts of Seismic Activity on Facility Operation

The Facility is not anticipated to be impacted by seismic activity. As previously indicated, faults within the vicinity of the Facility are not associated with any historic earthquakes. In addition, the USGS Earthquakes Hazards Program does not identify any young faults within the vicinity of the Facility. Therefore, this topic will not be further addressed in the Article 10 Application.

(o) Soil Types Map

A map delineating soil types on the facility and interconnections sites will be prepared using data from the USDA NRCS Web Soil Survey. It is anticipated that soil data from this source will be categorized by mapping unit and hydric characteristics, at a minimum.

(p) Characteristics of Each Soil Type and Suitability for Construction

The characteristics of each soil type in the Facility Site and associated suitability for construction will be presented and evaluated in the Article 10 Application.

(q) Bedrock Analyses and Maps

Maps, figures, and analyses will be prepared using information obtained from the USGS Online Spatial Geology Data, the USDA NRCS Web Soil Survey, and the Geotechnical Engineering Report conducted for Riverhead Solar 1. These data will identify depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, and seasonal high groundwater, in relation to anticipated depths of excavation for the Facility, and any area to be disturbed for roadways to be constructed, and all off-site interconnections required to serve the Facility.

(r) Suitability for Construction Evaluation

(1) Preliminary Engineering Assessment

As previously indicated, a Geotechnical Engineering Report was prepared for Riverhead Solar 1, which is included as Appendix I to this PSS. It is expected that all information necessary to comply with the Application content requirements set fort at 1001.21(r)(1) will be obtained from this report.

(2) Pile Driving Assessment

The Geotechnical Engineering Report prepared for Riverhead Solar 1 included a section titled "Full-Scale Pile Load Testing (PLT) Program" (see Section 5 of the report in Appendix I). It is expected that this information will be used to conduct the pile driving assessment for the Facility's Article 10 Application.

(3) Mitigation Measures for Pile Driving Impacts

Due to the fact that large, sheet piling use is not anticipated for this Facility, the mitigation measures for such piling are not necessary. Solar array frames on piles will used and driven into site. The driven supports for the PV panels are dramatically smaller than standard sheet piling. Therefore, the potential negative effects of installation are also dramatically lower than those of standard sheet piling. However, the need for mitigation will be addressed in the Article 10 Application.

(s) Vulnerability to Earthquake and Tsunami Events

As previously indicated, the Facility appears to have minimal vulnerability associated with seismic events based on review of publicly available data. With respect to tsunami events, there have been 0 reported events from 1950 to present, therefore, there is no vulnerability to tsunami events (NOAA, 2018).

2.22 TERRESTRIAL ECOLOGY AND WETLANDS

Wetlands and terrestrial ecology within the Facility Site were identified and characterized during on-site field surveys during the summer of 2018.

(a) Plant Communities

The Facility Site encompasses approximately 290 acres, which primarily consist of mowed lawn (37%, associated with a turf/sod farm), forests (22%, including conifer plantations, pitch-pine-oak-heath woodlands, pitch-pine-oak forest, red maple-blackgum swamps, and successional forests), and successional old field (20%). The Facility Site also includes

10% or less of row crops, abandoned plant nursery, disturbed/developed land, and successional shrubland; and 1% or less of paved road, delineated wetland, and farm pond. As indicated above, plant/ecological communities, as summarized below in Table 2, were identified through on-site field investigation.

Table 2. Ecological Communities Found within the Facility Site

Ecological Community	Acres	Percent Cover (%)
Mowed Lawn	106.9	36.8
Successional Old Field	58.5	20.1
Pitch Pine-Oak-Heath Woodland	34.4	11.8
Disturbed/Developed Land	20.0	6.9
Abandoned Plant Nursery	15.9	5.5
Successional Shrubland	12.9	4.4
Successional Hardwoods	11.2	3.9
Pitch Pine-Oak Forest	10.5	3.6
Row Crops	6.6	2.3
Red Maple-Blackgum Swamp	4.4	1.5
Delineated Wetland	2.9	1.0
Paved Road	2.6	0.9
Pine Plantation	2.3	0.8
Spruce/Fir Plantation	1.4	0.5
Farm Pond	0.1	0.04
Total Forestland	64.2	22.1
Overall Total	290.7	100.0

Field Review

Plant communities were mapped for all land area within the Facility Site based on field studies and investigations. These plant/ecological communities are shown on Figure 9. Detailed descriptions of each community will be provided in Exhibit 22(a) of the Article 10 Application.

(b) Impact to Plant Communities

Facility-related impacts to all plant communities will be calculated in ArcGIS based on the design of the Facility as provided in the Article 10 Application. This will include temporary and permanent impacts based on the limits of construction disturbance and the footprint of the built Facility, as determined through preparation of the Preliminary Design Drawings to be included in the Application. Impacts will be presented in tabular format.

The Article 10 Application will include an Invasive Species Control Plan (ISCP), which will be based on the baseline invasive plant survey. The ISCP included in the Article 10 application will describe measures to control the spread of invasive species, including construction materials inspection; target species treatment and removal; construction equipment sanitation; and restoration. The ISCP will also outline post-construction monitoring to take place after the Facility is operational. The complete ISCP will be provided in the Article 10 Application.

(c) Measures To Avoid or Mitigate Plant Community Impacts

The Article 10 Application will include a description of measures that will be implemented to avoid or minimize any impacts to plant communities within the Facility Site, as necessary based on the preliminary Facility design to be presented in the Article 10 Application and associated impacts to plant communities.

(d) Vegetation, Wildlife, and Wildlife Habitats

Vegetation

See Plant Communities discussion above in Section (a).

Wildlife

Mammals

The occurrence of mammals will be documented and presented in the Article 10 Application through observations made during on-site field surveys for other studies, and through use of existing resources including *The Mammals of Long Island, New York* (Connor, 1971). Please note that the DEIS prepared for the Riverhead Solar 1 project evaluated the presence of mammals and indicated that small rodent mammals were located within the respective project area. However, due to their diminutive sizes and predominantly subterranean life histories, these species are not easily observed. Primarily nocturnal mammals such as raccoon and Virginia opossum are also expected to occur. Red fox is likely to be the top mammalian predator present at the project area. Whitetail deer, woodchuck, eastern cottontail, eastern gray squirrel, and eastern chipmunk are expected to be the most common mammal species within the gen-tie route and sod farm portions of project area (VHB, 2017). Similar species are expected within the Facility Site.

Birds

As discussed in Section 2.22(a) above, the majority of the Facility Site is comprised of agricultural land. However, the Facility Site also includes areas of grassland, early successional communities, wetland, shrubland, and forest. Consequently, it is anticipated that a variety of avian species utilize portions of the Facility Site.

The Article 10 Application will present information on birds from the New York State Breeding Bird Atlas (BBA), which is a comprehensive, statewide survey that indicates the distribution of breeding birds in the State. Point counts are conducted by volunteers within 5-km by 5-km survey blocks across the state (McGowan and Corwin, 2008). The DEIS for the adjacent Riverhead Solar 1 project (VHB, 2017) also presented information on avian species, summarized as follows:

> A total of 54 avian species were observed (i.e., seen or heard) at or over the project area during the 2014-2016 field surveys.
>
> In order to provide a detailed estimate of other avian species potentially utilizing the site, *The New York State Breeding Bird Atlas* (NYSBBA) was consulted. According to this resource, a total of 93 bird species were identified within the two survey blocks in which the project area is located (Blocks 6853C and 6853D) during the 2000-2005 breeding bird survey, which was administered by the NYSDEC. Of these species, 42 are confirmed as breeding, 37 are listed as probable breeders and 14 are listed as possibly breeding.
>
> It is noteworthy that Blocks 6853C and 6853D total 18 square miles in area and support a diverse range of habitats that are not supported within the project area (e.g., native grasslands, riverine corridors and open water lacustrine habitats). Specifically, portions of Block 6853C that are located over one mile west of the project area include the largest remaining native grassland habitat on Long Island (the former Natal Weapons Industrial Plant at Calverton). Similarly, both atlas blocks include the riverine and lacustrine habitats of the Peconic River system, located to the south of the project area. As such, some of the avian species recorded for Blocks 6853C and 6853D, including obligate grassland birds and various waterfowl, require breeding and non-breeding habitats that are not supported within the project area. Therefore, these birds are not expected to utilize the site, except perhaps as occasional transients.
>
> Based on the foregoing observations, the project area is best-suited for avian species that favor agricultural, early successional and forested habitats, including the species observed during the field surveys and other expected species noted during the NYSBBA survey.

Specific to the proposed Facility, the Applicant has initiated consultation with DEC staff regarding avian species within the Facility Site. Initial discussions took place during a meeting with DEC staff in Albany, and subsequent consultations have been/are being conducted with staff from the Region 1 office. The results of these consultations will be presented in the Article 10 Application.

Herpetofauna

The New York State Amphibians & Reptile Atlas Facility (Herp Atlas) was a survey conducted over ten years (1990-1999), that was designed to document the geographic distribution of New York State's herpetofauna. The USGS 7.5 minute topographic quadrangle is the unit of measurement for data collection for the Herp Atlas. Data from this survey will be queried, and information based on this query, as well as assessments of suitable habitat in the Facility Site and reptile and amphibian distribution ranges, will be included in the Article 10 Application.

Invertebrates

Publicly available data on terrestrial invertebrate species are generally not available for upstate New York. The New York Natural Heritage Program (NYNHP) is an interagency collaboration administered by the DEC that maintains data and facilitates conservation of rare, threatened, and endangered plant and animal species, as well as significant ecological communities in the State. NYNHP does track several invertebrate groups, although not all invertebrate groups are monitored (NYSDEC, undated). Multiple site-specific requests for data on rare wildlife species was submitted to NYNHP, and responses were received on December 21, 2017 and February 22, 2018 (Appendix J). These NYNHP responses did not identify any rare, threatened, or endangered invertebrates. The Article 10 Application will also provide information on major taxonomic groups of invertebrates likely to be found in the Facility Site, based on available habitat, but will not identify these invertebrates to the species or genus level.

Wildlife Habitat

The plant community types identified in 2.22(a) serve as habitat for various wildlife species, and these communities will be discussed in the context of wildlife habitat in Exhibit 22 (d) of the Article 10 Application.

As stated above, requests for data on occurrence of significant natural communities was submitted to NYNHP, and neither of the response identified any significant natural communities within the Facility Site (Appendix J).

The Article 10 Regulations state that Exhibit 22(d) shall include an identification and depiction of any Significant Coastal Fish and Wildlife Habitats (SCFWH) designated by the New York Department of State and NYSDEC. Although portions of the Town of Riverhead border the Long Island Sound and Flanders Bay, the Facility Site is located approximately 3 miles from the nearest coastal areas. Therefore, the Facility will not result in impacts to any SCFWH, and SCFWH will not be discussed in the Article 10 Application.

(e) Species List

A Plant Species Inventory and a Wildlife Species Inventory will be included in the Article 10 Application, both of which will be based on existing data, on-site surveys or observations, and/or the availability of suitable habitat, and will identify species that may occur in the Facility Site at some time during the year.

(f) Impacts to Vegetation, Wildlife, Wildlife Habitats, and Wildlife Travel Corridors

Any impacts to vegetation will be addressed in the Article 10 Application as described above in 1001.22(b).

With respect to wildlife and wildlife habitat impacts, the Article 10 Application will address any construction-related impacts that may occur, including incidental injury and mortality due to construction activity and vehicular movement, construction-related silt and sedimentation impacts on aquatic organisms, habitat disturbance/loss associated with clearing and earth-moving activities, and displacement of wildlife due to increased noise and human activities. Potential operational impacts, if any, will also be addressed, which may include minor loss of habitat, possible forest fragmentation, and wildlife impacts due to the presence of PV Panels. To the extent any documented wildlife travel corridors are identified within or adjacent to the Facility Site, impacts to such corridors will be addressed. With regard to State and Federal Threatened Endangered Species, please see Section (o) below.

(g) Measures to Avoid or Mitigate Impacts to Vegetation, Wildlife and Wildlife Habitat

With respect to measures to avoid or mitigate impacts to plant communities (including vegetation), please see 1001.22(c) above.

The Article 10 Application will include a description of measures to be implemented to avoid or mitigate impacts to wildlife and wildlife habitat within the Facility Site. It is anticipated such measures will include careful site design (e.g., utilizing or siting adjacent to existing disturbance [or previously permitted/pending disturbance], reasonable avoidance of impacts to sensitive habitat, and reasonable avoidance of tree clearing), adherence to designated construction limits and avoidance of off-limit sensitive areas, adhering to seasonal restrictions (e.g., tree clearing dates), and adhering to construction best management practices. With regard to State and Federal Threatened Endangered Species, please see Section (o) below.

(h) Avian and Bat Impact Analysis and Monitoring Program:

The proposed Facility is not a wind-powered facility, and therefore the requirements set forth in 1001.22(h) do not apply.

(i) Map Showing Delineated Wetland Boundaries

Wetland delineations have been completed for the entirety of the Facility Site by GEI Consultants, Inc., P.C. (GEI). Before a site visit was conducted, GEI reviewed several natural resource reference maps of the Facility Site. These included the USGS Topographic Map Series, the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetland Maps, U.S. Department of Agriculture (USDA) NRCS Soil Survey, and FEMA Floodplain Data. These maps identified potential wetlands, streams, and wetland soil units occurring on the Facility Site.

GEI walked the Facility Site to determine the extent and regulatory status of any waters of the United States (WOUS) including streams or wetlands present. Wetland areas were identified and delineated in accordance with the United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (Environmental Laboratory 1987) and the Northcentral and Northeast Regional Supplement (USACE 2012).

Soil sample points were recorded on Northcentral and Northeast Region Wetland Determination Data Forms. These data forms provide written documentation of how representative sample points meet or do not meet each of the wetland criteria. At each sample point, the vegetation, soils, and hydrology were observed and recorded to determine the potential presence of wetlands. If wetlands were present, GEI ecologists identified and recorded site conditions including dominant plant species, habitat types, and surrounding land use. The wetland boundary and sample points were then mapped with a Trimble R1 GNSS receiver to facilitate sub-meter accuracy. Representative photographs of the wetland (if present) and Facility Site were taken.

Vegetation was evaluated at each sample point to determine the presence of hydrophytic plant communities. Wetland indicator status was obtained for each plant species using the USACE North Central and Northeast 2016 Regional Wetland Plant List (Lichvar, et al. 2016). At each sample point, a soil pit at least 18 inches deep was dug to examine soils for hydric soil indicators. The soil lithology profile was described, and key characteristics including color and presence of redox concentrations were recorded. Soil colors were determined using Munsell Soil Color Charts (2000). In addition to wetland sample points, soil pits at least 18 inches deep were taken along a line perpendicular to the wetland's boundary, starting in the definite wetland area and moving towards the adjacent upland habitat. The number of soil borings in the transect were sufficient to represent the soil on the site. Soil boring characterizations are included on the Wetland Determination Data Forms for the soil sample pits representing each wetland and upland area.

Wetland hydrology indicators were also assessed at each sample point, including the presence of standing water, soil saturation within 12 inches of the surface, and/or evidence of past inundation. Direct observations and indicators of wetland hydrology were evaluated and recorded.

Please see Appendix K of this PSS for a complete copy of the Wetland Delineation Report prepared by GEI. A copy of this report, along with a request for jurisdictional determination (JD) was sent to the NYSDEC on July 31, 2018 and the USACE on August 3, 2018. A JD site visit with the NYSDEC took place on August 28, 2018. The Applicant has requested formal notification of the jurisdictional status of NYSDEC wetlands in order to consider state wetland jurisdiction during development of the Facility layout, and expects to receive the formal JD shortly.

(j) Description of Wetlands

Six wetlands were delineated on the Facility Site, labelled Areas A, D, E, F, G, and H. These delineated wetlands and soil sample points are depicted on Figures 5 through 10 of the Wetland Delineation Report (Appendix K). A distinct topographic rise in elevation defined the wetland limits for the majority of these delineated wetlands. Wetland Areas B and C were also delineated; however, they were not located within the Facility Site limits. The wetland areas identified within the Facility Site and their Cowardin description is summarized in the table below.

Table 3. Delineated Wetlands

Feature ID	Acreage Per Feature	Cowardin Classification	Description
Area A (WA)	0.11	PAB4H	Permanent pond with floating watershield and duckweed surround by grasses.
Area D (WD)	0.1	PFO1E	Forested wetland dominated by red maple and black gum.
Area E (WE)	0.04	PUB4F	Unconsolidated, semi-permanent pond wetland dominated by wetland grasses.
Area F (WF)	0.23	PSS1B	Scrub/shrub wetland dominated by buttonbush
Area G (WG)	1.24	PFO1E/PUH4H	Forested wetland transitioning to unconsolidated bottom pond.
Area H (WH)	0.7	PUB4H	Isolated pond associated with abandoned golf course.
Total Acreage	3.16		

Notes:
*Acreage within Facility Site based on approximate site boundary lines
PAB4H = palustrine aquatic bed with floating vascular plants.
PFO1E = palustrine forested broad-leaved deciduous system, seasonally flooded/saturated
PSS1B = palustrine scrub/shrub wetland, seasonally flooded/saturated
PUB4F = palustrine unconsolidated bottom semi-permanent pond
PUB4H = palustrine unconsolidated bottom wetland, permanently flooded

Please see Appendix K for additional information.

(k) Wetland Functional Assessment

A functions and values assessment will be included in the Article 10 Application. It is anticipated that this assessment will follow the general methodology described in the *Wetlands Functions and Values: Descriptive Approach* in the September 1999 supplement to *The Highway Methodology Workbook* (Supplement) by the New England Division of the USACE (USACE, 1995).

Wetland functions are ecosystem properties that result from the biologic, geologic, hydrologic, chemical and/or physical processes that take place within a wetland. These functions include:

1. Groundwater Recharge/Discharge
2. Floodflow Alteration
3. Fish and Shellfish Habitat
4. Sediment/Pollutant Retention
5. Nutrient Removal/Retention/Transformation
6. Production (Nutrient) Export
7. Sediment/Shoreline Stabilization
8. Wildlife Habitat

Wetland values are the perceived benefits for society that can be derived from the ecosystem functions and/or other characteristics of a wetland. Values attributed to wetlands in the Supplement include the following:

1. Recreation
2. Education/Scientific Value
3. Uniqueness/Heritage
4. Visual Quality/Aesthetics
5. Threatened or Endangered Species Habitat

These functions and values will be evaluated in the Article 10 Application.

(l) Offsite Wetlands Analysis

The wetland delineations will be used to inform an analysis of hydrological connections to offsite wetlands, including those that are state mapped wetlands protected by NYSDEC.

(m) Wetland Impacts

During construction, potential direct or indirect impacts to wetlands and surface waters may occur as a result of the installation of panels, access roads, buried electrical collection lines, and the development and use of temporary workspaces. Direct impacts, including clearing of vegetation, earthwork (excavating and grading activities), and the direct placement of fill in wetlands, may occur as a result of Facility development. Indirect impacts to wetlands may result from sedimentation and erosion caused by adjacent construction activities (e.g., removal of vegetation and soil disturbance). This indirect impact may occur at wetlands adjacent to work areas where no direct wetland impacts are anticipated, including areas adjacent to proposed access roads and electrical collection routes.

The Article 10 Application will quantify both temporary and permanent impacts to wetlands (and state-regulated adjacent areas pending the results of the formal JD request), based on the limits of temporary and permanent disturbance as determined through development of the Preliminary Design Drawings.

(n) Measures to Avoid/Mitigate Wetland Impacts

The Article 10 Application will discuss measures to be implemented to avoid, minimize, and mitigate wetland impacts. It is anticipated that such measures may include equipment restrictions, herbicide use restrictions, and erosion and sedimentation control measures. Compensatory mitigation measures may be considered, depending on level of impacts quantified.

(o) State and Federal Endangered or Threatened Species

In order to assess the potential occurrence of federally-listed threatened and endangered species within the Facility Site, EDR consulted the USFWS IPaC system, which aids developers in identifying potential project conflicts with federally-listed threatened and endangered species. According to the IPaC system, one mammal, three birds, and two flowering plants were identified as potentially occurring within the Facility Site (Appendix J). Specifically, the northern long-eared bat (threatened), piping plover (threatened), red knot (threatened), roseate tern (endangered), sandplain gerardia (endangered), and seabeach amaranth (threatened) were identified by the IPaC system.

In addition to review of the IPaC system described above, formal requests for information regarding state- and federally-listed endangered and threatened species within the Facility Site were sent to the NYNHP, and responses were received from the NYNHP on December 31, 2017 and February 22, 2018 (Appendix J). These response letters indicate that one species has been documented at the Project Site (tiger salamander [endangered]), one species has been documented within 0.4 mile of the Project Site (short-eared owl [endangered]), and one species has been documented

"in a nearby river" (swamp darter [endangered]). In addition, the NHP response letters indicate that two vascular plants (trinerved white boneset [threatened] and tooth cup [threatened]) have been documented within approximately 0.15 mile of the Facility Site.

Each of these species are addressed below.

Northern Long-eared Bat

According to the USFWS NLEB Fact Sheet, this species is a brown colored, medium-sized bat, ranging in size from 3 to 3.7 inches, with a wingspan of 9 to 10 inches. Winter roosting habitat for NLEB occurs within caves, mines or similar habitats, while summer roosting habitat occurs either singly or colonies, underneath the bark or in cavities or crevices of living or dead trees. At dusk, the bats emerge from roosts to feed on insects, which they catch in flight using echolocation or glean from vegetation and water surfaces. Foraging habitat includes forested understories, as well as the surfaces of aquatic habitats. Based on the foregoing habitat description, the wooded portions of the Project Site represent potential summer roosting and foraging habitat for NLEB. The sod fields of the proposed solar panel array facility and the developed portion of the existing solar panel array are devoid of trees and therefore do not represent summer roost habitat for NLEB.

The NLEB is listed as federally Threatened by the USFWS under section 4(d) of the federal Endangered Species Act of 1973, due to significant population declines as a result of the white-nose syndrome fungal disease. According to the USFWS white-nose syndrome zone map, Suffolk County is included among the counties containing hibernacula (winter hibernation sites) that are infected with white-nose syndrome. As such, the provisions of the USFWS final 4(d) rule for NLEB (effective February 16, 2016) are applicable to Suffolk County and the Project Site. The final 4(d) rule includes certain prohibitions against incidental take, which is defined as killing, wounding, harassing or otherwise disturbing a species that would occur incidental to, and is not the purpose of, an otherwise lawful activity. Pursuant to the final 4(d) rule, incidental take of NLEB within white-nose syndrome zone counties (e.g., Suffolk County) is prohibited if it occurs within a hibernacula or if it results from tree removal activities that occur within 0.25 mile of a known, occupied hibernacula. Further, incidental take of NLEB is also prohibited if it results from cutting or destroying a known, occupied maternity roost tree or other trees within a 150-foot radius from a maternity roost tree during the pup season (from June 1 through July 31). Any proposed activity that would result in prohibited incidental take of NLEB, as described above, would require USFWS consultation and/or permitting. Activities that would not result in prohibited incidental take of NLEB as described above can proceed without USFWS consultation or permitting, provided that the activity does not require federal authorization, funding or approvals.

Potential impacts to this species will be detailed in the Article 10 Application; however, as indicated on Figure 3 of this PSS, the primary forest community within the Facility Site (southwestern portion of the site) is not currently anticipated to be impacted by the Facility. It should also be noted that neither of the two NHP response letters identified northern long-eared bat as being document within or adjacent to the proposed Facility.

Short-eared Owl

Short-eared owls are small to medium sized owls with small ear tufts and a dark band around their bright yellow eyes. The back and upper wings are tawny brown to buff colored with some streaking with bold vertical streaking on their breast and a pale belly that is lightly streaked. Short-eared owls prefer open areas such as grasslands, including hayfields, fallow farm lands, and pastures. Fresh and salt water marshes are typically used during the breeding season in New York. Females make a simple nest in a small depression on the ground, lined with grass, leaves, twigs, or feathers. Short-eared owls detect prey by coursing open areas while flying low over the ground but have been observed hunting from a perch. Their diet consists of small rodents, primarily voles, but can also include small mammals and sometimes birds. Short-eared owls are found in New York State year-round, although their breeding range is limited to the St. Lawrence and Lake Champlain valleys, the Great Lakes Plains, and marshes along the south shore of Long Island. Breeding occurs between April and June. In New York, an increase in short-eared owl observations has been noted during the winter, as northern populations migrate south in search of food. Ecological communities associated with this species include cropland, dwarf shrub bog, high and low salt marsh, and successional old field. The most significant threat to the short-eared owl is habitat loss due to development, reforestation, wetland loss, and changes in farming practices such as conversion of hayfields to row crops or frequent mowing of hayfields. As a ground-nesting bird, eggs and unfledged young are at risk of predation by predators including foxes, raccoons, and skunks. A limiting factor for short-eared owls is their dependency on rodent populations (NYNHP, 2015e). The short-eared owl is state listed as endangered in New York.

Observations of this species along Dingman Road, approximately 3-miles southwest of the Facility Site, have been reported as recently as November of 2016 (eBird, 2012) and possible suitable habitat for the short-eared owl, in the form of mowed hayfields and successional old fields occur within the Facility Site. It should be noted that the NYNHP did not identify any occurrence records for the short-eared owl within the Facility Site. In addition, initial consultation with NYSDEC Region 1 personnel indicate that there are no known breeding areas within the Facility Site or in the vicinity, and wintering habitat on-site is poor; therefore, no mitigation for short-eared owls would be needed for development of a solar project within the Facility Site.

Eastern Tiger Salamander

According to the NYNHP Eastern Tiger Salamander Conservation Guide, 19 the eastern tiger salamander (*Ambystoma tigrinum*) is the largest terrestrial salamander in New York State, with adult salamanders ranging in size from six to over 12 inches. Distinguishing characteristics include a long tail with compressed sides, wide head, yellow lower lip and dark brown to black coloration, with irregular yellow to olive blotches. As a member of the mole salamanders (Family *Ambystomatidae*), the eastern tiger salamander spends the majority of its life cycle underground in self-excavated burrows or in the burrows of small mammals, where they feed on earthworms, arthropods and small animals, including other amphibians. Adults spend an average of only 12 days per year in breeding ponds, with the remaining portions of the life cycle spent in surrounding terrestrial habitat. On Long Island, migration of adults to breeding ponds occurs between late November and early April (most often during February and March), typically on rainy nights. Favored breeding habitat includes deep, vegetated areas of ponds that do not support predatory fish populations, are open to sunlight and have at least some surrounding forest cover. The larvae hatch within four weeks and remain in the breeding pond until late July or early August, when migration to adjacent terrestrial habitat occurs. Based upon multiple studies, adult eastern tiger salamanders on Long Island typically range within 250 meters (820 feet) of breeding ponds during the non-breeding season, but are typically found much closer. Preferred adult terrestrial habitat is deciduous and mixed pine-deciduous forests with friable soils suitable for burrowing or extensive small mammal burrow networks.

The eastern tiger salamander is listed as a New York State Endangered wildlife species, and the NYSDEC has established a series of guidelines for projects that would occur within the 1,000 feet of known eastern tiger salamander breeding ponds. The guidelines include the preservation of all existing upland forest habitat within 535 feet of breeding ponds, the preservation of a minimum of 50 percent of upland area within 1,000 feet of breeding ponds and other requirements regarding roadways, swimming pools, window wells, lighting and other development-related items located within 1,000 feet of breeding ponds.

Based on preliminary investigations, there appears to be suitable tiger salamander breeding habit within and/or immediately adjacent to the Facility Site. As such, the Applicant's representatives are consulting with NYSDEC Region 1 personnel to determine the appropriate interpretation and implementation of the guidelines for this Facility.

Swamp Darter

According to the NYNHP *Eastern Swamp Darter Conservation Guide*, the New York State Threatened swamp darter (*Etheostoma fusiforme*) is a small, slender light brown-to-olive-colored fish that rarely exceeds two inches in length. Swamp darters feed on aquatic invertebrates and inhabit murky, sluggish waters, including ponds, lakes and river backwaters with muddy, debris-filled bottoms and abundant aquatic vegetation. The species is known to tolerate a

wide range of water temperatures, as well as waters with low oxygen and pH. The swamp darter is known to have occurred historically within 16 waterbodies on Long Island, including the Peconic River system. As indicated in the NYNHP correspondence, swamp darter has been documented in a nearby river, which the Applicant assumes to be the Peconic River system located to the south of the proposed Facility. Therefore, impacts to this species will not occur as a result of the Facility.

With respect to the birds identified by the IPaC system, none of these species were identified by the NHP site-specific response letters and as such all three species are expected to be associated with the shores of Long Island Sound and/or Flanders Bay. Therefore, the Facility is not expected to impact any of these species.

With respect to the rare plants identified by both the IPaC system and the NHP response letters, an EDR botanist conducted rare plant surveys within the Facility Site in August 2018. The rare plant survey consisted of a targeted survey, focused exclusively on the four plant species known to occur near the Facility Site as identified in the state and federal databases. The table below lists the species that were the focus of the survey effort, and summarizes the status, habitat requirements, and survey period for each species.

Table 4. Target Rare Plant Species

Common Name	*Scientific Name*	State Status	Habitat	Survey Period
Sandplain gerardia	*Agalinis acuta*	Endangered[1]	grasslands, openings in pine barrens, plains, roadsides, railroad ROWs	August, September
Seabeach amaranth	*Amaranthus pumilis*	Threatened[2]	coastal, sea beach habitats; on barrier island beaches between the foredune and the wrack line	August, September, October
Trinerved white boneset	*Eupatorium subvenosum*	Threatened	dry, sandy, open habitats, including roadsides and mowed areas in pine barrens, cemeteries, interdunal swales, dry oak forests, lake or pond margins, successional old fields, and railroad and powerline ROWs.	July, August
Tooth-cup	*Rotala ramosoir*	Threatened	shorelines and edges of ponds, lakes, artificial wetlands, along paths in seasonally-wet sites such as wet meadows or agricultural fields	July, August, September

[1] Also federally-listed as endangered.
[2] Also federally-listed as threatened.

None of the four plants species on the target list was observed during the survey, and no other state- or federally-listed plant species were found within the Facility Site. The Article 10 Application will include the full results of the rare plant survey, which will be documented in a Rare Plant Survey Report.

(p) Invasive Species Prevention and Management Plan

Please see (b) above for a description of the Invasive Species Control Plan (ISCP) to be prepared.

(q) Agricultural Impacts

Agricultural land use within the Facility Site is well understood, and the specific type of agricultural use (e.g., sod farms) will be described and documented in the Article 10 Application. In addition, the Article 10 Application will include a map and summary of all locations classified as "prime farmland," "prime farmland if drained", and "farmland of statewide importance" within the Facility Site. All impacts to agricultural land will be based on calculations as described above in association with 1001.22(b), and mitigation is anticipated to generally follow the guidelines established by the New York State Department of Agriculture and Markets (NYSDAM).

Please also note that the Draft Environmental Impact Statement (DEIS) prepared for the Riverhead Solar 1 project conducted a detailed analysis of the potential cumulative impacts of future solar development on agricultural land as required by the Final DEIS Scope prepared in accordance with the State Environmental Quality Review Act (SEQRA). Specifically, the analysis contained in the DEIS was based on the following requirements from the Final DEIS Scope:

"…assess the potential for implementation of the proposed action to lead to additional future applications for similar projects (i.e., conversion of large tracts of agricultural or manufacturing-industrial land for passive solar use)… [t]his analysis will identify similarly situated lands in the greater Calverton area and in the Town of Riverhead as a whole – i.e., available large parcels having both industrial zoning (eligible for development with a Commercial Solar Energy Production System) and an active agricultural use."

This analysis will be updated, as needed, and included in the Article 10 Application for the Facility.

2.23 WATER RESOURCES AND AQUATIC ECOLOGY

Exhibit 23 of the Article 10 Application will include relevant information related to the potential groundwater, surface water, and aquatic ecology impacts of the Facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures.

(a) Groundwater

(1) Hydrologic Information

As stated in the Geotechnical Report for Riverhead 1 (Appendix I), groundwater was encountered at a depth of 20 to 48 feet below the ground surface in some of the test borings, which were conducted immediately adjacent to the Facility Site. The Article 10 Application will include maps showing depth to water table throughout the Facility Site, based on the Soil Survey of Suffolk County, New York. Where relevant, information on groundwater gleaned from the geotechnical investigations performed for Riverhead Solar 1 will be incorporated and/or cross-referenced in this section.

Other information sources to be utilized will include the US Geological Service (USGS) Office of Groundwater, US Department of Agriculture (USDA) Soil Conservation Service, USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, NYSDOH, NYSDEC, Suffolk County and local municipalities, where appropriate.

(2) Groundwater Aquifers and Recharge Areas

Based on preliminary evaluations conducted in support of this PSS, the Facility Site lies above the Long Island Aquifer. According to mapping from the NYSDEC and USGS, the unconsolidated deposits across the entirety of Long Island are considered a primary aquifer, a designation applied by and to aquifers that are highly productive and utilized by major municipal water supply systems (NYSDEC, 2018; Bugliosi & Trudell, 1988). Additionally, the US Environmental Protection Agency (USEPA) maintains data on sole source aquifers, which are those that supply at least 50% of the drinking water in a given area. The Facility Site resides completely within the Nassau-Suffolk Sole Source Aquifer (USEPA, 2011). The Article 10 Application will include mapping identifying aquifers, recharge areas, well heads and aquifer protection zones, to the extent that information is known, in the vicinity of the Facility Site and within 2,000 feet of proposed ground disturbances.

To identify existing water wells in the area, a Freedom of Information Law request letter will be sent to the NYSDEC, NYSDOH and to Suffolk County. These letters will request any information pertaining to groundwater wells (including location, construction logs, depths, and descriptions of encountered bedrock) within the Facility Site. The Article 10 Application will include information received from the NYSDEC and Suffolk County on public water wells, including location, depth, yield, and use, if such data are available.

In addition, private wells will also be identified by sending a well survey to all residences/businesses located within a 1,000-foot radius of the proposed Facility. Enclosed with the well survey, the Applicant will provide the project's

Article 10 case number, project website, and instructions on obtaining further information regarding the project, or becoming a party to the proceeding. The well survey will solicit information on well construction details, usage patterns, and water quality data, if available. A summary of responses received from the well survey will be included in the Article 10 Application, along with a corresponding GIS-based parcel map. The Facility's Complaint Resolution Plan will include plans for notification and complaint resolution related to public and private wells during Facility construction and operation.

The Application will include a table summarizing the location, depth, usage and water quality data obtained for all identified public and private water wells, to the extent available. GIS data for public and private well locations will be provided to NYSDPS staff.

(3) Groundwater Impacts

The Facility is not anticipated to result in any significant impacts to groundwater quality or quantity, drinking water supplies, or aquifer protection zones. Excavations for access roads and underground collection lines are expected to be relatively shallow, and are not anticipated to intercept groundwater within the surrounding aquifers. The Facility will add only small areas of impervious surface, which will be dispersed throughout the Facility Site, and will have a negligible effect on groundwater recharge, as will be demonstrated in the Application. Additional detail regarding groundwater impacts will be provided in the Article 10 Application, including results from a geotechnical evaluation, as well as specific avoidance, minimization, and mitigation measures if required that will be implemented to protect groundwater resources during construction of the Facility.

The Facility is not expected to require significant quantities of water for construction, given the nature and scale of the Facility proposed. No concrete batch plant will be needed, and the Applicant will source its concrete from existing local suppliers as needed. However, the Application will describe the source(s) and collection system for water used for Facility construction, such as for invasive species wash station(s), fire control, and other uses.

(b) Surface Waters

(1) Surface Waters Map

As previously indicated, on-site delineations have been completed and the results set forth in the delineation report included as Appendix K. As indicated in the delineation report, no streams were identified within the Facility Site. Therefore, information/data associated with streams will not be included in the Article 10 Application. Ponds were

identified during the delineations; however, such features will be further described and evaluated in Exhibit 22 of the Article 10 Application.

(2) Description of Surface Waters

The Facility Site is located in the Southern Long Island Watershed (USGS Hydrologic Unit 02030202), a sub basin of the Atlantic Ocean/Long Island Sound Watershed. The Southern Long Island Watershed includes almost the whole Long Island area, including portions of Kings, Queens, Nassau, and Suffolk Counties, as well as part of the Atlantic Ocean. The watershed occupies approximately 2,047 square miles and ranges in elevation from -16 to 384 feet above sea level. The highest elevations are in the northern portion of the watershed. Urban areas make up 70.9% of the watershed since it is so close to and includes the New York City Area. Agriculture is located mostly in the north-east corner of the watershed (USDA NRCS, 2011).

As previously indicated, on-site delineations have been completed and no streams were identified within the Facility Site. Therefore, information/data associated with streams or surface waters will not be included in the Article 10 Application.

(3) Drinking Water Supply Intakes

A FOIL request on the location of downstream surface drinking water intake sites will be submitted to the NYSDOH and Suffolk County Department of Public Health. The inquiry will request data on public surface drinking water intake sites within 1 mile of the proposed Facility, within the same drainage basin, or if there are no such intake sites, the nearest intakes downstream of the Facility Site. The Article 10 Application will identify the surface drinking water intake sites identified through this correspondence, and discuss the type, nature, and extent of services provided by each source based on the information received.

(4) Impacts to Surface Waters

As previously indicated, on-site delineations have been completed and no streams were identified within the Facility Site. Therefore, impacts to streams or surface waters will not be included in the Article 10 Application.

The Article 10 Application will address potential Facility-related impacts to drinking water supplies, if any. No dredging or sediment removal is proposed as part of this Facility. Therefore, the Article 10 Application will not identify precautions taken to avoid or minimize the need for dredging or sediment removal. Furthermore, the

Applicant does not propose to withdraw more than 100,000 gallons per day of water; therefore a discussion of water withdrawals or water withdrawal permitting will not be included.

(5) Measures to Avoid or Mitigate Surface Water Impacts

As previously indicated, on-site delineations have been completed and no streams were identified within the Facility Site. Therefore, measures to avoid or mitigate impacts to streams or surface waters will not be included in the Article 10 Application. If any Facility-related impacts to drinking water supplies are identified, corresponding mitigation measures will be described in the Article 10 Application.

(c) Stormwater

The Application will identify potential impacts to wetlands and drinking water resources, which could result from stormwater runoff from upslope areas on the Facility Site during construction or operation. If stormwater impacts are identified, mitigation measures will also be identified and discussed.

(1) Stormwater Pollution Prevention Plan

Prior to construction, the Applicant will seek coverage under the NYSDEC SPDES General Permit with a Notice of Intent (NOI) for Stormwater Discharges from Construction Activity issued in January 2015 and effective on January 29, 2015 (modified July 15, 2015) (please see http://www.dec.ny.gov/docs/water_pdf/gp015002.pdf) as needed. This authorization is subject to review by NYSDEC, and is independent of the Article 10 process.

The Article 10 Application will contain a Preliminary SWPPP, which will describe in general terms the erosion and sediment control practices that will likely be implemented during construction activities. The Preliminary SWPPP will provide typical information on temporary and permanent erosion and sediment control measures (vegetative and structural), construction phasing and disturbance limits, waste management and spill prevention, and site inspection and maintenance. The Preliminary SWPPP will be prepared in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, and the New York State Stormwater Management Design Manual.

Should dewatering be needed, the Application will describe proposed dewatering methods, potential impacts and requirements related to runoff and sediment transport specifically from dewatering, as well as other relevant SPDES General Permit (GP) 0-15-002 requirements. In addition, the Preliminary SWPPP will address construction-related best management practices specific to dewatering.

(2) Post-Construction Erosion and Sediment Control Practices

As described above, the Preliminary SWPPP and associated erosion and sedimentation control plan will address the anticipated stormwater management practices that will be used to reduce the rate and volume of stormwater runoff after Facility construction has been completed. The Article 10 Application will include a description of the green infrastructure practices (e.g., vegetative or landscape filters) for stormwater quality to be implemented at the Facility Site, as described in the Preliminary SWPPP.

Following Certification of the Facility during the compliance phase, it is anticipated that hydrologic models (e.g., Hydraflow Hydrographs Extension for AutoCAD Civil 3D software) based upon measurable watershed characteristics will be utilized by professional engineers to calculate stormwater discharges as needed. Stormwater runoff rates discharged from the site under existing conditions (pre-construction) will provide the basis for evaluation and comparison to proposed conditions (post-construction). Design points of interest will be established where stormwater runoff exits the site (e.g., where proposed Facility access roads intersect with existing public roads/roadside ditches). These design points will provide fixed locations at which existing and proposed stormwater quantities can be compared. The areas draining to these design points will be delineated using land survey information and proposed grading plans, and a hydrologic analysis of each of the drainage areas will be conducted to model their discharges (typically for the 1, 2, 10, 25, 50 and 100-year storm events). Because final engineering will not be completed until the Facility has been certified, and because the Applicant will ultimately seek coverage under the SPDES General Permit independent of the Article 10 process, a final SWPPP will not be included in the Article 10 Application, but will be provided later in the Article 10 compliance filing process, after an Article 10 Certificate is granted.

(d) Chemical and Petroleum Bulk Storage

(1) Spill Prevention and Control Measures

The Article 10 Application will describe the Best Management Practices to be implemented during construction to prevent and contain spills. In addition, the Article 10 Application will contain a Preliminary Spill Prevention, Containment and Counter Measures (SPCC) Plan that will be implemented during Facility operation to minimize the potential for unintended releases of petroleum and other hazardous chemicals. This plan is anticipated to contain information about water bodies to be included in the final SPCC, procedures for loading and unloading transfers of oil, discharge or drainage controls, procedures in the event of discharge discovery, a discharge

response procedure, a list of spill response equipment to be maintained on-site,), methods of disposal of contaminated materials in the event of a discharge, and spill reporting information.

(2) Compliance with New York State Chemical and Petroleum Bulk Storage Regulations

It is not anticipated that the Facility will require the on-site storage or disposal of large volumes of any substances subject to regulation under the State of New York's chemical and petroleum bulk storage programs (e.g., fuel oil, petroleum, etc.). This will be confirmed in the Article 10 Application. In the event that construction or maintenance activities at the Facility require petroleum or other hazardous chemicals to be stored on-site, the Application will identify such substances and demonstrate compliance with laws and guidelines.

(3) Compliance with Local Laws for Storage of Chemicals or Petroleum

It is not anticipated that the Facility will require the on-site storage or disposal of large volumes of any substances subject to regulation under local laws. This will be confirmed in the Article 10 Application. In the event that construction or maintenance activities at the Facility require petroleum or other hazardous chemicals to be stored on-site, the Application will identify such substances and demonstrate compliance with laws and guidelines.

(e) Aquatic Species and Invasive Species

(1) Impact to Biological Aquatic Resources

The Article 10 Application will contain the results of the on-site wetland and stream delineation field effort, which will be used to further minimize impacts to surface waters, as practicable. Based on the Facility layout and the delineated stream and wetland boundaries, calculations will be performed to determine the anticipated acreage of surface waters to be temporarily and permanently impacted, as discussed above in Section 2.23(b)(4). The identification of the locations of surface waters to be impacted will allow for an analysis of potential impacts on biological aquatic resources, including any listed endangered, threatened, or special concern species that may occupy potentially affected waters.

For additional information on how aquatic invasive species will be addressed in the Article 10 Application, please see Section 2.23(b)(2) above.

(2) Measures to Avoid or Mitigate Impacts to Aquatic Species

Avoidance, minimization and mitigation measures proposed to address impacts to surface waters and aquatic resources will be provided in the Application. Please see Section 2.23(b)(5) above for additional information. This section will also include a brief discussion of measures that will be taken to ensure compliance with applicable water quality standards pursuant to 6 NYCRR Part 703.

If it is determined by the Applicant, NYSDEC, or USFWS that the construction, operation or maintenance of the Facility is likely to result in the take of a listed T&E aquatic species, including adverse modification of habitat on which a listed T&E species depends, the Applicant will submit with the Application a minimization and mitigation plan that demonstrates a net conservation benefit to the affected T&E species as defined by 6 NYCRR Part 182.11, along with the informational requirements of an Incidental Take Permit (ITP).

(f) Cooling Water

The proposed Facility does not involve the use of cooling water, and as such, the requirements of this section are not applicable to this Facility. Therefore, information related to cooling water systems, intake, and discharge will not be included in the Article 10 Application.

2.24 VISUAL IMPACTS

(a) Visual Impact Assessment

A Visual Impact Assessment (VIA) will be conducted to determine the extent and assess the significance of Facility visibility. The components of the VIA will include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), and proposed visual impact mitigation.

(1) Character and Visual Quality of the Existing Landscape

Per the definition set forth at 1000.2(ar), the visual study area to be used for analysis of major electric generating facilities is defined as "*an area generally related to the nature of the technology and the setting of the proposed site. For large facilities or wind power facilities with components spread across a rural landscape, the study area shall generally include the area within a radius of at least five miles from all generating facility components, interconnections and related facilities and alternative location sites. For facilities in areas of significant resource concerns, the size of a study area shall be configured to address specific features or resource issues*."

Unlike a wind power project that contains wind turbines that may be 500 feet or more in height and which are visible from a relatively large surrounding area (e.g., five miles or more), a solar generating facility does not have prominently visible components. The tallest components of the generating portion of the proposed Facility will be the PV panels and inverter equipment, which have a relatively low profile, and are not expected to be more than 8 feet above grade, less than a single-story residence. The nature of the technology is such that visibility is anticipated to be relatively limited to those areas located adjacent to the Facility. For that reason, the Applicant intends to use a one-mile Study Area for assessment of potential visual impacts.

With respect to setting, the Facility is located within elevations of approximately 45± feet to approximately 75± feet above sea level, while elevations for Suffolk County range from approximately 400 feet down to sea level. The Facility is sited in a predominantly agricultural and industrial zoned area, that is actively used for these land classifications. The site is characterized by flat topography, with gently sloped areas surrounded by a few wetlands in the lower-lying areas and adjacent to forested areas. Existing land use in the vicinity includes a mix of agricultural, industrial, rural residential, and commercial. In addition, because of the flat topography in the immediate vicinity of the Facility and its low-profile, visibility of the Facility components will be largely limited to the immediate vicinity of the proposed Facility.

The Article 10 Application will discuss the physiographic and vegetative community characteristics of the one-mile-radius visual study area. Per the requirements set forth in 16 NYCRR § 1000.24(b)(1), Landscape Similarity Zones must be defined within the visual study area to be shown along with other indicators of potential visual impact (i.e. viewshed maps). Definition of discrete landscape types within a given study area provides a useful framework for the analysis of a project's potential visual effects. These landscape types, referred to in the PSS and Article 10 Application as Landscape Similarity Zones (LSZs), are defined based on the similarity of various landscape characteristics including landform, vegetation, water, and/or land use patterns, in accordance with established visual assessment methodologies (Smardon et al., 1988; USDA Forest Service, 1995; USDOT Federal Highway Administration, 1981; USDI Bureau of Land Management, 1980). Distinct LSZs within the visual study area will be identified, defined, and the approximate location of these LSZs will be illustrated in the VIA appended to the Article 10 Application.

The VIA will include an analysis of potential visibility and identify locations within the Visual Study Area where it may be possible to view the proposed Facility arrays or additional equipment added to the collection substation. Viewshed maps will be created to identify potential visibility of the PV arrays. The methodology for these analyses is described in detail below in Section (b)(2). In addition, photographs from visually sensitive sites as well as representative photographs from LSZs in the study area will be included in the Application. Photos will be taken

using digital SLR cameras with a minimum resolution of 10 megapixels. All cameras will utilize a focal length between 28 and 35 mm (equivalent to between 45 and 55 mm on a standard 35 mm film camera). This focal length is the standard used in visual impact assessment because it most closely approximates normal human perception of spatial relationships and scale in the landscape (CEIWEP, 2007). Viewpoint locations will be documented using hand-held global positioning system (GPS) units and high-resolution aerial photographs (digital ortho quarter quadrangles). The time and location of each photo will be documented on all electronic equipment (cameras, GPS units, etc.) and noted on field maps and data sheets. The results of the field review will be presented in detail with visual aids in the VIA.

(2) Visibility of Above-ground Interconnections and Roadways

Access roads, fences, and any other above ground component of the Facility will be included in all visual simulations in which they would be visible.

(3) Appearance of the Facility Upon Completion

To show anticipated visual changes associated with the proposed Facility, high-resolution computer-enhanced image processing will be used to create realistic photographic simulations of the proposed Facility from selected viewpoints. The photographic simulations will be developed by using appropriate software (e.g., Autodesk 3ds Max Design®) to create a simulated perspective (camera view) to match the location, bearing, and focal length of each existing conditions photograph. Existing elements in the view (e.g., topography, buildings, roads) will be modeled based on aerial photographs and DEM data, and a three dimensional ("3-D") topographic mesh of the landform (based on DEM or LIDAR data) will be brought into the 3-D model space. At this point minor adjustments will be made to camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements in the photograph. This assures that any elements introduced to the model space (i.e., the proposed PV panel arrays) will be shown in proportion, perspective, and proper relation to the existing landscape elements in the view. As a result, the alignment, elevations, dimensions and locations of the proposed Facility structures will be accurate and true in their relationship to other landscape elements in the photograph.

A computer model of the proposed array layout will be prepared based on specifications and data provided by the Facility engineer. Using the camera view as guidance, the visible portions of the modeled arrays will be imported to the landscape model space described above and set at the proper coordinates.

Once the proposed Facility is accurately aligned within the camera view, a lighting system will be created based on the actual time, date, and location of the photograph. Thus, light reflection, highlights, color casting, and shadows will be accurately rendered on the modeled Facility based on actual environmental conditions represented in the photograph. The rendered Facility will then be superimposed over the photograph and portions of the arrays that fall behind vegetation, structures, or topography will be masked out. In addition, for some views, "wireframe renderings" may be prepared to illustrate the potential screening effect of vegetation or other features in the photograph from a given viewpoint that screen or partially screen views of the Facility. In these wireframe renderings, the portions of the proposed arrays that would be screened by vegetation (or other factors) will be shown in a bright color (for illustrative purposes). These wireframe renderings may be prepared for viewpoints that are being considered as candidates for visual simulations, or for the explicit purpose of illustrating the effects of screening.

(4) Lighting

No lighting will be installed as part of the PV arrays, therefore it is not anticipated that lighting will be addressed in the Article 10 Application. No additional lighting will be added to the Edwards substation.

(5) Photographic Overlays

To show anticipated visual changes associated with the proposed Facility, high-resolution computer-enhanced image processing will be used to create realistic photographic simulations of the completed arrays from each of the selected viewpoints. See Section (a)(4) above for discussion of the methodology to be used for creating the simulations.

(6) Nature and Degree of Visual Change from Construction

Visual impacts during construction are anticipated to be relatively minor and temporary in nature. Representative photographs of construction activities will be included in the VIA. Anticipated visual effects during construction will include disturbance, loss of vegetation, and addition of construction equipment and materials to certain views. Impacts will be described and illustrated in the Article 10 Application.

(7) Nature and Degree of Visual Change from Operation

To evaluate anticipated visual change, the photographic simulations of the completed Facility will be compared to photos of existing conditions from each of the selected viewpoints. These "before" and "after" photographs, identical in every respect except for the Facility components to be shown in the simulated views, will be provided as 11 x 17-inch color prints to a panel of three registered landscape architects, who will determine the effect of the proposed Facility in terms of its contrast with existing elements of the landscape. The methodology to be utilized was developed by EDR in 1999 for reviewing visual impacts to energy development projects and is a simplified version of the U.S. Bureau of Land Management (BLM) contrast rating methodology (USDI BLM, 1980). It involves using a short evaluation form, and a simple numerical rating process to assign visual contrast ratings on a scale of 0 (insignificant) to 4 (strong). A copy of this form is included in Appendix L to this PSS. This methodology 1) documents the basis for conclusions regarding visual impact, 2) allows for independent review and replication of the evaluation, and 3) allows a large number of viewpoints to be evaluated in a reasonable amount of time. Landscape, viewer, and Facility-related factors to be considered by the landscape architects in their evaluation will include the following:

- *Landscape Composition:* The arrangement of objects and voids in the landscape that can be categorized by their spatial arrangement. Basic landscape components include vegetation, landform, water and sky. Some landscape compositions, especially those that are distinctly focal, enclosed, detailed, or feature-oriented, are more vulnerable to modification than panoramic, canopied, or ephemeral landscapes.

- *Form, Line, Color, and Texture*: These are the four major compositional elements that define the perceived visual character of a landscape, as well as a Facility. Form refers to the shape of an object that appears unified; often defined by edge, outline, and surrounding space. Line refers to the path the eye follows when perceiving abrupt changes in form, color, or texture; usually evident as the edges of shapes or masses in the landscape. Texture in this context refers to the visual surface characteristics of an object. The extent to which form, line, color, and texture of a Facility are similar to, or contrast with, these same elements in the existing landscape is a primary determinant of visual impact.

- *Focal Point*: Certain natural or man-made landscape features stand out and are particularly noticeable as a result of their physical characteristics. Focal points often contrast with their surroundings in color, form, scale or texture, and therefore tend to draw a viewer's attention. Examples include prominent trees, mountains and water features. Cultural features, such as a distinctive barn or steeple can also be focal points. If possible, a proposed Facility should not be sited so as to obscure or compete with important existing focal points in the landscape.

- *Order*: Natural landscapes have an underlying order determined by natural processes. Cultural landscapes exhibit order by displaying traditional or logical patterns of land use/development. Elements in the landscape that are inconsistent with this natural order may detract from scenic quality. When a new Facility is introduced to the landscape, intactness and order are maintained through the repetition of the forms, lines, colors, and textures existing in the surrounding built or natural environment.

- *Scenic or Recreational Value*: Designation as a scenic or recreational resource is an indication that there is broad public consensus on the value of that particular resource. The particular characteristics of the resource that contribute to its scenic or recreational value provide guidance in evaluating a Facility's visual impact on that resource.

- *Duration of View*: Some views are seen as quick glimpses while driving along a roadway or hiking a trail, while others are seen for a more prolonged period of time. Longer duration views of a Facility, especially from significant aesthetic resources, have the greatest potential for visual impact.

- *Atmospheric Conditions*: Clouds, precipitation, haze, and other ambient air related conditions, which affect the visibility of an object or objects. These conditions can greatly impact the visibility and contrast of landscape and Facility components, and the design elements of form, line, color, texture, and scale.

- *Lighting Direction*: Backlighting refers to a viewing situation in which sunlight is coming toward the observer from behind a feature or elements in a scene. Front lighting refers to a situation where the light source is coming from behind the observer and falling directly upon the area being viewed. Side lighting refers to a viewing situation in which sunlight is coming from the side of the observer to a feature or elements in a scene. Lighting direction can have a significant effect on the visibility and contrast of landscape and Facility elements.

- *Scale*: The apparent size of a proposed Facility in relation to its surroundings can define the compatibility of its scale within the existing landscaping. Perception of Facility scale is likely to vary depending on the distance from which it is seen and other contextual factors.

- *Spatial Dominance*: The degree to which an object or landscape element occupies space in a landscape, and thus dominates landscape composition from a particular viewpoint.

- *Visual Clutter*: Numerous unrelated built elements occurring within a view can create visual clutter, which adversely impacts scenic quality.

(8) Operational Effects of the Facility

Glare is frequently raised as a possible concern for solar PV installations. PV panels are designed to absorb as much of the solar spectrum as possible to maximize efficiency. There is an inverse correlation between light absorption and reflection. Consequently, virtually all PV panels installed in recent years have at least one anti-reflective coating to minimize reflection and maximize absorption. The reflectivity of a surface is often measured as albedo, which is the fraction of solar energy reflected by that surface. For comparison, the albedo of PV panels (0.1 -0.3) (Lasnier and Ang, 1990) is generally similar to, or lower than many natural surfaces such as coniferous forests (0.2), grasslands (0.25), dry sand (0.45), and snow cover (0.50) (Budikova, 2010). Furthermore, the glare and reflectivity of PV panels have been found to be lower than the glare and reflectivity generated by standard glass (SunPower, 2009). In addition, the SEQR review of the adjacent Riverhead Solar 1 Project included a glare analysis. As set forth in the Lead Agency's SEQR Findings Statement issued on October 19, 2017, "…*no significant adverse glare-related impacts will result form the proposed action*." See Appendix M for a copy of the SEQR Findings Statement. See also Appendix N for the glare analyses prepared for Riverhead Solar 1.

Operation of the Facility will not generate plumes or any other visible effect. The only visual effect of the Facility is the visibility of PV panels and other Facility components. Therefore, operation of the Facility is not anticipated to result in potential impacts from glare or other off-site effects (such as plumes) and therefore these types of effects will not be addressed in the Article 10 Application.

(9) Measures to Mitigate for Visual Impacts

In accordance with New York State Department of Environmental Conservation (NYSDEC) Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts* (NYSDEC, 2000), various mitigation measures will be considered, these include the following:

- Professional Design
- Screening
- Relocation
- Camouflage
- Low Profile
- Alternate Technologies
- Non-specular Materials

- Lighting
- Maintenance
- Offsets

There are a variety of visual mitigation options that have been or could be applied to solar projects. For a given project, visual mitigation options are typically evaluated based on the existing visual character, aesthetic features, vegetation, and visual sensitivity of a given project setting. Appropriate setback distances should be determined based on the sensitivity of the adjacent uses. For instance, smaller setbacks may be appropriate for limited use county roads than for more highly used roadways. Larger setbacks may be appropriate for areas adjacent to residences or public recreational areas, but smaller setbacks would be acceptable in areas adjacent to agricultural, industrial, forest, or vacant land. Security fencing needs to be considered in terms of visual impact for solar projects sited in rural areas. It is important to understand that security fencing is required for solar projects for safety and security purposes. However, specific vernacular fence styles in selected locations can be considered if there are specific existing styles, materials, or designs that relate to existing features in the landscape of a given project area. In these cases, selection of fence styles is typically based on precedent examples on adjacent properties or projects within the local community so that when installed the project would better blend into the existing visual setting. Visual screening can include use of earthen structures (i.e., berms) or planting of vegetation intended to block or soften views of the project. Common approaches to visual screening include:

- *Earthworks/berms*: In select locations altering the topography to aid in the screening of a project from adjacent areas and/or sensitive sites can be a viable option. However, in many areas (such as relatively undeveloped agricultural areas, such as the Facility Site) the introduction of earthen berms (or other earthworks) would result in new visual elements that are not in keeping with the existing landscape and would not be appropriate.
- *Evergreen Hedges*: Use of vegetation for mitigation can include installing a screening hedge made up of evergreen trees and shrubs along roadways and/or selected portions of the exterior fence line of the project. This approach is effective and commonly implemented in urban and suburban settings, however, it may not be appropriate in some settings (such as relatively undeveloped agricultural areas) where the introduction of evergreen hedges would be inconsistent with the existing visual setting.
- *Native Shrubs and Plantings*: An alternative to evergreen hedges, which may not appear naturalized or appropriate in many settings, is use of native shrubs and plantings along road frontages and/or selected portions of the exterior fence line of a project. This approach does not typically result in plantings that completely screen views of the project, but instead serve to soften the overall visual effect of the project and can help to better integrate the project into the surrounding landscape. Plantings should be selected based on aesthetic properties, to match with existing vegetation in the project vicinity, and the ability to grow in the

specific conditions of a project area. In addition to helping to blend the project into the surrounding landscape, use of native plant species will also provide environmental benefits to the local animal and insect communities.

- *Pollinator-Friendly Grasses and Wildflowers*: In many agricultural areas, installation of hedges or shrubs may not be in keeping with the existing visual setting, which is typically characterized by open fields backed by occasional hedgerows or woodlots. Trees, shrubs, or tall vegetation along roadsides are often atypical in these settings. An alternative form of vegetative screening that may be appropriate in these areas is use of tall native grasses and wildflowers along selected roadsides and other fence lines to soften the appearance of the project and better integrate the project into the landscape. Regionally appropriate plantings can also provide habitat for pollinator species when planted around the periphery of the site and/or in locations on site where mowing can be restricted during the summer months. Leaving the taller plants un-mowed during the summer provides benefits to pollinators, habitat to ground nesting/feeding birds and cover for small mammals, in addition to softening the appearance of the project.

The Application will discuss feasibility and potential effectiveness of the various mitigation options.

(10) Description of Visual Resources to be Affected

As mentioned previously, visually sensitive resources of statewide significance will be identified within the one-mile Visual Study Area. Consistent with the NYSDEC Visual Policy, the Applicant will review the following types of resources to determine which are present in the Study Area:

- Properties listed on or determined eligible for listing on the National Register of Historic Places.
- State Parks.
- Urban Cultural Parks (now referred to as New York State designated Heritage Areas).
- The State Forest Preserve (i.e., the Adirondack or Catskill Parks).
- National Wildlife Refuges, State Game Refuges, and State Wildlife Management Areas.
- National Natural Landmarks.
- National Parks, Recreation Areas, Seashores, or Forests.
- Rivers designated as National or State Wild, Scenic or Recreational Rivers.
- A site, area, lake, reservoir, or highway designated or eligible for designation as scenic.
- Scenic Areas of Statewide Significance.
- A state or federally designated trail, or one proposed for designation.
- Adirondack Park Scenic Vistas.
- State Nature and Historic Preserve Areas.

- Palisades Park.
- Bond Act Properties purchased under Exceptional Scenic Beauty or Open Space category.

In addition, resources of local significance within the Visual Study Area will also be identified. These scenic areas include places of concentrated activity such as village centers and heavily used roadways, or landscapes of high aesthetic merit that may be considered important by local residents. See Section (b)(3) below for additional detail on visually sensitive resources.

(b) Viewshed Analysis

The VIA will include a Viewshed analysis to identify locations within the visual study area where it may be possible to view the proposed PV arrays and other proposed above-ground facilities from ground-level vantage points. The methodology to be employed in this analysis is described below.

(1) Viewshed Maps

Viewshed maps define the maximum area from which an array within the completed Facility could potentially be seen within the study area. Maps showing the results of viewshed analysis will be prepared based on the screening effect of topography alone, and the combined screening effect of topography, vegetation, and built structures within the environment. A preliminary viewshed analysis that depicts predicted Facility visibility based on the combined screening effect of topography, vegetation, and built structures is included as Figure 4 of the Facility's Final PIP. Updated viewshed maps, based on the Facility Layout presented in the Article 10 Application will be included in the VIA. In addition, the VIA included in the Article 10 Application will include maps that show the results of the viewshed analysis along with visually sensitive sites, viewpoint locations, and LSZs.

With respect to line-of-sight profiles, please note that the computer model program defines the viewshed (when evaluating topography only for instance) by reading every cell of the digital elevation model (DEM) data and assigning a value based upon the existence of a direct, unobstructed line of sight to the location/elevation coordinates of each cluster of PV panels from observation points throughout the entire visual study area. Therefore, for the purposes of the Article 10 Application, the viewshed analyses will also serve to document the line-of-sight profiles for resources of statewide and local concern.

(2) Viewshed Methodology

A topographic viewshed map for all Facility components will be prepared using a bare earth digital elevation model ("DEM") derived from Light Detection and Ranging ("LiDAR") data; sample points representing solar panel locations based on the Facility Layout presented in the Application; an assumed maximum solar panel height of 10 feet; an assumed viewer height of six feet; and ESRI ArcGIS® software with the Spatial Analyst extension. For the purpose of generating the viewshed, sample points with an assigned height of 10 feet (representing the solar panels) will be placed 200 feet apart in a grid pattern throughout all developable areas within the Facility Site. This provides an effective and manageable GIS data set for evaluating potential Facility visibility. There are portions of the one-mile Visual Study Area where no LiDAR data is available. In these areas, topographic data will be derived from USGS-based DEM Hillshade and the most recent edition 1:24,000-scale USGS topographic base maps.

The ArcGIS program defines the viewshed (using topography only) by reading every cell of the bare earth (or ground surface) DEM data and assigning a value based upon the existence of a direct, unobstructed line of sight to the solar panel sample points from all areas within the one-mile Visual Study Area. The resulting topographic viewshed map defines the maximum area from which any solar panel sample point could potentially be seen within the study area (i.e., ignoring the screening effects of existing vegetation and built structures). Because the screening provided by vegetation and buildings is not considered in this stage of the analysis, the topographic viewshed represents a "worst case" assessment of potential Facility visibility. This "worst case" assessment significantly overstates the actual anticipated visibility of the Facility.

In addition, a second-level analysis will be conducted to incorporate the screening effect of structures and vegetation, as captured in LiDAR data. A digital surface model ("DSM") of the study area has been created from these LiDAR data, which includes the elevations of buildings, trees, and other objects large enough to be resolved by LiDAR technology. As noted above, there are portions of the one-mile Visual Study Area where no LiDAR data is available. In these areas, a base vegetation layer has been created using the USGS National Land Cover Dataset (NLCD) to identify the mapped location of forest land within those portions of the Visual Study Area where LiDAR data is not available. Consistent with standard visual assessment practice, the mapped locations of the forest land in these areas will be assigned an assumed height of 40 feet and added to the DEM.

Because it accounts for the screening provided by structures and trees, this second-level analysis is a more accurate representation of probable Facility visibility but is not definitive. Per the requirements set forth in 16 NYCRR § 1000.24(a), the potential cumulative visual effect of the Facility as well as other energy projects built or

proposed in the surrounding region must be considered. Cumulative impacts are two or more individual environmental effects which, when taken together, are significant or that compound or increase other environmental effects. The Application will address the potential cumulative visual impacts that may arise from simultaneous visibility of the proposed Facility and other nearby operating or permitted solar facilities.

(3) Sensitive Viewing Areas

In accordance with standard visual impact assessment practice in New York State, visually sensitive resources will be identified in accordance with the NYSDEC Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts* (NYSDEC, 2000), which define specific types of properties as visually sensitive resources of statewide significance. The types of resources identified by NYSDEC in Program Policy DEP-00-2 are consistent with the types of resources identified in 16 NYCRR § 1000.24(b)(4), though not all such resources will be present in this Facility Site. Such resources include landmark landscapes; wild, scenic or recreational rivers administered respectively by either the DEC pursuant to ECL Article 15 or Department of Interior pursuant to 16 USC Section 1271; forest preserve lands, conservation easement lands, scenic byways designated by the federal or state governments; Scenic districts and scenic roads, designated by the Commissioner of Environmental Conservation pursuant to ECL Article 49 scenic districts; Scenic Areas of Statewide Significance; state parks or historic sites; sites listed on National or State Registers of Historic Places; areas covered by scenic easements, public parks or recreation areas; locally designated historic or scenic districts and scenic overlooks; and high-use public areas.

To identify visually sensitive resources within the visual study area, a variety of data sources including digital geospatial data (shapefiles) obtained primarily through the NYS GIS Clearinghouse or the Environmental Systems Research Institute (ESRI) will be used to identify visually sensitive resources of local and statewide significance. This data consists of numerous national, state, county and local agency/program websites as well as websites specific to identified resources; the DeLorme Atlas and Gazetteer for New York State; USGS 7.5-minute topographical maps; and web mapping services such as Google Maps. Identified aesthetic resources of statewide or local significance, areas of intensive land use within one mile of the proposed Project, and location of visually sensitive resources within the visual study will be included with the Article 10 application.

A preliminary desktop inventory of visually sensitive resources of potential statewide significance within 1 mile of the proposed Facility has been completed, and are included in the visual outreach letter (Appendix O).

In addition, per the requirements set forth in 16 NYCRR § 1000.24(b)(4), the Applicant will conduct a systematic program of public outreach to assist in the identification of visually sensitive resources, summarized briefly in the following section. A detailed summary of this process will be included in the VIA.

(4) Viewpoint Selection

16 NYCRR § 1000.24(b)(4) includes the requirements that "the applicant shall confer with municipal planning representatives, DPS, DEC, OPRHP, and where appropriate, APA in its selection of important or representative viewpoints". The Applicant intends to coordinate outreach to agency staff and stakeholder groups to determine an appropriate set of viewpoints for the development of visual simulations. It is anticipated that outreach efforts will include the following:

- The Applicant will distribute a request in the form of a Visual Outreach Letter (see Appendix O) to appropriate agency personnel, municipal representatives, and other visual stakeholders, seeking feedback regarding the identification of important aesthetic resources and/or representative viewpoints in the Facility vicinity to inform field review efforts and the eventual selection of candidate viewpoints for the development of visual simulations. The materials provided as part of this request will include: a summary of the purpose and necessity of consultation per the requirements of Article 10; a definition, explanation, and map of the visual study area; a preliminary inventory and map of visually sensitive resources identified in accordance with the NYSDEC Program Policy DEP-00-2 *Assessing and Mitigating Visual Impacts*; a discussion of anticipated subsequent steps, including additional consultation regarding the eventual selection of viewpoints for development of visual simulations; and, a request for feedback regarding additional visually sensitive resources to be included in the analysis. These letters will also include the case number and project website, to direct interested persons to additional information available online.

Following receipt of feedback from the initial outreach effort, field work will be completed, resulting in photos from representative and sensitive locations throughout the study area. Upon completion of the visual fieldwork and associated data processing, the following actions will be taken:

- The Applicant will distribute a memorandum related to recommendations for Visual Simulations to the visual stakeholders. This memo is anticipated to include: a summary of research and consultation undertaken to date; description of the field review/photography for the Facility; a rationale for viewpoint selection; recommendations for viewpoints to be considered by agencies and stakeholders from which a subset will be

selected for the preparation of visual simulations; and a request for feedback on the recommended viewpoints. Viewpoint selection will include the following factors:

- Providing representative views from the various LSZs and Distance Zones within the study area.
- The locations of visually sensitive resources/sites within the study area, including recommendations for sensitive sites received from stakeholders.
- The predicted visibility of the Facility based on viewshed analysis.
- The availability of open views towards the proposed Facility as determined by field review/site visits.

Ultimately, viewpoints will be selected for simulation based upon the following criteria:

1. They provide open views of proposed PV arrays (as indicated by field verification), s.
2. They illustrate Facility visibility from sensitive resources with the visual study area identified by local stakeholders and state agencies.
3. They illustrate typical views from LSZs where views of the Facility will be available.
4. They illustrate typical views of the proposed Facility that will be available to representative viewer/user groups within the visual study area.
5. They illustrate typical views of different numbers of PV panel arrays, from a variety of viewer distances, and under different lighting conditions, to illustrate the range of visual change that will occur with the Facility in place.
6. The photos obtained from the viewpoints display good composition, lighting, and exposure.

(5) Photographic Simulations

In order to show anticipated visual changes associated with the Facility, high-resolution computer-enhanced image processing will be used to create photo-realistic simulations of the completed Facility from each of the selected viewpoints. As indicated in Section (b)(4) above, viewpoints to be included in the VIA will be selected, in part, for their open views and as such there will be no significant screening of the proposed Facility due to foreground vegetation in the photographic simulations. Therefore, it is not anticipated that both leaf-on and leaf-off simulations will be necessary.

(6) Additional Simulations Illustrating Mitigation

The Article 10 Application will include visual simulations or other representative images that illustrate the various visual mitigation measures (such as fence styles or plantings) that are being considered for the Facility.

(7) Simulation Rating and Assessment of Visual Impact

A panel of three registered landscape architects (LAs) will evaluate the visual impact of the proposed Facility. Utilizing 11 x 17-inch digital color prints of the selected viewpoints, the LAs will review the existing and proposed views, evaluate the contrast/compatibility of the Facility with various components of the landscape (landform, vegetation, land use, water, sky, land use and viewer activity), and assign quantitative visual contrast ratings on a scale of 0 (insignificant) to 4 (strong). The average contrast score assigned by each member of the rating panel will be calculated for each viewpoint, and an average score for each viewpoint will be determined. A copy of the visual rating form is included in Appendix L to this PSS, and will be included in the VIA. The methodology for the rating panel exercise is described above in Section (a)(8). Results of the rating process for the proposed Facility will be presented in the Article 10 Application, along with an explanation of the factors contributing to visual impact and the significance of that impact.

(8) Visible Effects Created by the Facility

As described previously, glare is frequently raised as a possible concern for solar PV installations. PV panels are designed to absorb as much of the solar spectrum as possible to maximize efficiency. There is an inverse correlation between light absorption and reflection. Consequently, virtually all PV panels installed in recent years have at least one anti-reflective coating to minimize reflection and maximize absorption. The glare and reflectivity of PV panels have been found to be lower than the glare and reflectivity generated by standard glass (SunPower, 2009). In addition, operation of the Facility will not generate plumes or any other visible effect. Therefore, these types of effects will not be addressed in the Article 10 Application. Please see Appendix N for the glare analyses conducted for Riverhead Solar 1.

2.25 EFFECT ON TRANSPORTATION

(a) Conceptual Site Plan

For the purposes of the Article 10 Application, the preliminary design drawings prepared in association with Exhibit 11 will serve as the conceptual site plan, and those drawings will identify horizontal and vertical geometry, the

number of approach lanes, the lane widths, shoulder width, traffic control devices (if needed), and sight distance of all Facility Site driveway and roadway intersections.

(b) Description of the Pre-construction Characteristics of Roads in the Area

(1) Traffic Volume and Accident Data

Data will be obtained from the New York State Department of Transportation (NYSDOT) Traffic Data Online Viewer to review existing traffic volumes along proposed approach and departure routes for the Facility. Accident information along those routes contained in the Accident Location Information System (ALIS) will be requested from the local police agencies and/or NYSDOT regional office.

(2) School District Bus and Routes

The Article 10 Application will include a review of school district routes for the Riverhead Central School District that serves the Facility Site. This will be accomplished by obtaining school bus routes, number of buses, and times from the school district.

(3) Emergency Service Providers

This section of the Article 10 Application will provide a review of locations of emergency service provider stations (police, fire, ambulance, and hospitals) that serve the Facility Site, including approximate distances to select locations within the Facility Site. In addition, the Article 10 Application will summarize consultations that have occurred between the Applicant and local emergency service providers, including local fire departments, police, and ambulance services.

These consultations will result in the fire departments learning about the Facility, the Article 10 process, and how the Applicant typically interacts with fire and emergency service providers during construction and operation. The Applicant will alert all Fire Departments in the Facility Site that there will be a fire and emergency training and communication plan developed as part of the Article 10 process.

Further consultation with each service provider will determine specific routes that are currently used by service providers within the vicinity of the Facility Site. The Article 10 Application will provide a map of service provider locations and routes.

(4) Available Load Bearing and Structural Rating Information

For non-posted bridges along identified potential Facility transportation routes, information from the NYSDOT's Highway Data Services website will be reviewed to determine potential load capacity restrictions. In addition, prior to the submittal of the Article 10 Application, the Applicant will correspond with local highway supervisors and hold follow-up meetings as necessary. Such consultations will continue throughout the Article 10 process and prior to construction. This information will be summarized in the Article 10 Application.

(5) Traffic Volume Counts

The Facility is not within a congested urbanized area, therefore twenty-four-hour traffic counts are not applicable and will not be included in the Article 10 Application.

(c) Facility Trip Generation Characteristics

(1) Number, Frequency, and Timing of Vehicle Trip

An estimate of the number, frequency and timing of vehicle trips will be presented in the Application based on anticipated delivery routes, site plan, and location of Facility components as presented in the Article 10 Application. Exact scheduling of construction work and required vehicles will be determined by the Applicant's contractor prior to construction. Therefore, the study to be conducted and included in the Article 10 Application will only provide an estimate based on the anticipated volume of materials and number of vehicles. The Application will tabulate construction vehicle volumes for the Facility broken down by Facility component/truck type.

(2) Approach and Departure Routes for Trucks Carrying Water, Fuels, or Chemicals

During Facility construction, all trucks carrying water, fuels, or chemicals will utilize the same haul routes used by other construction vehicles/component delivery haulers.

(3) Cut and Fill Activity

It is not anticipated that significant cut and fill to accommodate vehicles, delivery, or other transportation access will be necessary. The Article 10 Application will provide an estimate of cut and fill activity, based on typical volume of materials and number of vehicles, and the preliminary design drawings prepared in support of Application Exhibit 11. Any cut and fill activity will be subject to the conditions of the Facility-specific SWPPP.

(4) Conceptual Haul Routes and Approach and Departure Routes for Workers and Employees

Any workers and employees in regular vehicles (pick-up truck size and smaller) will access the construction site and worker parking areas through use of whichever public road route is most logical and efficient for the respective individual/vehicle. Employees and workers accessing the site with heavy haul/construction equipment will follow specified haul routes.

(d) Traffic and Transportation Impacts

(1) Levels of Service along Linear Segments of Highway

Based on the experience of the Applicant and analysis on traffic volumes from solar projects, typical operations of the Facility will have a negligible increase over existing traffic volumes during operation. Synchro and HCS software (or similar software generally accepted by the industry) will be utilized to determine levels of service for linear segments of highways used by construction and delivery vehicles. As indicated above, the Facility is not in a congested urbanized area requiring detailed intersection analysis.

(2) Route Evaluation Study

As indicated above, the Article 10 Application will identify the anticipated haul routes to be utilized, and the adequacy of these routes to accommodate deliveries during construction as well as traffic during operation of the Facility. A detailed description of potential haul routes will be provided, and will include information associated with adequacy of the routes to accommodate projected traffic.

Once the Facility is commissioned and construction activities are concluded, traffic associated with Facility operation will be negligible and limited to occasional trips associated with routine maintenance activities.

(3) Over-sized Deliveries

The Applicant will conduct a review of aerial photography and online street view maps in conjunction with driving all potential haul routes to identify physical restrictions. Anticipated temporary improvements will be identified and a corresponding location map will be developed and included in the Article 10 Application.

(4) Measures to Mitigate for Impacts to Traffic and Transportation

No new traffic control devices are anticipated to be necessary, and no damage to roads due to normal operation of the Facility are expected to occur.

Although not anticipated, any public road upgrades that may be required to accommodate construction vehicles will be identified prior to construction. These improvements will be made at the Applicants' expense prior to the arrival of oversized/overweight vehicles. Final transportation routing will be designed in consultation with the County and the Town's Highway Superintendent to avoid and/or minimize, to the extent practical, safety issues associated with the use of the approved haul routes, which will confine the heavy truck travel to a few select roads.

Additional detail regarding measures to mitigate traffic and transportation impacts may be included in the Article 10 Application as needed.

(5) Road Use and Restoration Agreements

No damage to public roads is anticipated as a result of the construction or operation of the proposed Facility. Therefore, no road use agreement is anticipated.

(e) Impact of the Facility on Mass Transit Systems

There are no mass transit systems within the Facility Site. The Long Island Rail Road is adjacent to the southern portion of the Facility Site (i.e., the Edwards Substation). However, the Facility will not result in any impacts to the Long Island Rail Road. Accordingly, mass transit systems are not anticipated to be affected by the construction and operation of the Facility and will not be addressed in the Article 10 Application

(f) Federal Aviation Administration Review

Construction and operation of the Facility are not anticipated to affect aviation and therefore will not be addressed in the Article 10 Application

(1) Department of Defense Review

Construction and operation of the Facility are not anticipated to affect aviation and therefore will not be addressed in the Article 10 Application

(2) Consultation with Nearby Airports/Heliports

In accordance with the PIP filed on behalf of the Facility, prior to the submission of the Article 10 Application, letters regarding the Facility's development and status will be sent to any public airports or heliports identified on the Facility's stakeholder list. In addition, if necessary or requested, the Applicant will meet with the above-mentioned aviation stakeholders to discuss Facility-specific information. The Article 10 Application will discuss the results of those consultations. However, construction and operation of the Facility are not anticipated to affect aviation.

(3) Responses from the FAA and DoD

Please see Section (f) and (f)(1) above.

2.26 EFFECT ON COMMUNICATION

The Applicant is not aware of any research conducted to date that indicates utility-scale solar generation facilities have the potential to interfere with any existing communication systems. The Facility is not expected to have any impact on AM/FM radio, television reception, or microwave communication because it lacks tall structures and it will generate only very weak electromagnetic fields (EMFs), which would only be generated during the day and which would dissipate rapidly within short distances. The "PV arrays generate EMF in the same extremely low frequency (ELF) range as electrical appliances and wiring found in most homes and buildings" (MDER, 2015). In a recent study of three (3) solar arrays in Massachusetts, electric fields levels measured along the boundary of each project were not elevated above background levels (Massachusetts Clean Energy Center, 2012).

Additionally, the Facility is not expected to have any material impact on military or civilian radar systems because it lacks tall structures that could potentially block radar signals. As noted above, it will generate only very weak EMFs that will dissipate rapidly within short distances. The Federal Aviation Administration ("FAA") has concluded that solar arrays do not cause radar interference:

> "Radar interference occurs when objects are placed too close to a radar sail (or antenna) and reflect or block the transmission of signals between the radar antenna and the receiver (either a plane or a remote location)…
> Due to their low profiles, solar PV systems typically represent little risk of interfering with radar transmissions. In addition, solar panels do not emit electromagnetic waves over distances that would interfere with radar signal transmissions, and any electrical facilities that do carry concentrated current are buried beneath the ground and away from any signal transmission…
> Off-airport solar projects are even more unlikely [than on-airport solar projects] to cause radar interference unless located close to airport property and within the vicinity of a radar equipment and transmission pathways" (FAA Guidance, 2010).

Please also note that the proposed Facility is located adjacent to multiple operating solar projects. Located south and east to the proposed Facility are the existing Sutter and Sterlington Solar Projects, both owned and operated by sPower. Another solar project adjacent to the Facility, Riverhead Solar 1, which is also being developed by sPower, completed a robust State Environmental Quality Review Act (SEQR) environmental review prior to obtaining permits from the Town of Riverhead. The SEQR review for this Project did not identify any potential impacts on communication systems. The Riverhead Solar 2 project is located even further from the Calverton Executive Airpark, and is therefore not anticipated to have potential impacts on communications systems there, or elsewhere in the Project Area.

Therefore, the Applicant is not proposing to conduct any research or analysis regarding the Facility's potential effects on communication. The Applicant is aware that 1001.26(a) requires identification of all existing broadcast communication sources within a two-mile radius. However, this portion of the regulations states, "An identification of all existing broadcast communication sources within a two-mile radius of the facility… *unless otherwise noted*." The Applicant proposes that the scoping phase for this Facility will allow the parties to agree (i.e., *otherwise* note) that an analysis of communication systems is not required for this Facility.

2.27 SOCIOECONOMIC EFFECTS

To quantify the local economic impacts of constructing and operating the Facility, the Job and Economic Development Impact (JEDI) model will be used, which was created by the National Renewable Energy Laboratory (NREL), a national laboratory of the United States Department of Energy. The model calculates various indicators for each level of impact using project-specific data provided by the Applicant and geographically-defined multipliers. These multipliers are produced by IMPLAN Group, LLC using a software/database system called IMPLAN (IMpact analysis for PLANning), a widely-used and widely-accepted general input-output modeling software and data system that tracks each unique industry group in every level of the regional data (IMPLAN Group, 2018).

Calculating the number of jobs and economic output associated with a proposed facility using the JEDI model is a two-step process. The first step requires facility-specific data inputs (such as year of construction, size of facility, nameplate capacity and location). The next step of analysis requires a detailed input of project cost values into the JEDI model, including project cost values, financial parameter values, default tax values, default lease payment values, and default local share of spending values. Based on these customized cost inputs, the JEDI model then calculates the economic impacts, typically through the use of county-specific and state-specific multipliers. These multipliers account for the change in jobs, earnings, and output likely to occur throughout the economy as a result of Facility-related expenditures. This model allows impacts to be estimated for both the construction and operation phases of the proposed development. The Article 10 Application will present the results of the JEDI model.

Specifically, the Article 10 Application will analyze three levels of impact that the proposed Facility will have on the economy:

- On-site labor impacts: These are the direct impacts experienced by the companies engaged in the construction and operation of the Facility. This value estimates the dollars spent on labor and professional services by Facility developers, consultants, and construction contractors, as well as and operation and maintenance (O&M) personnel. On-site labor impacts do not reflect material expenditures.
- Local revenue and supply chain impacts: These impacts measure the estimated increase in demand for goods and services in industry sectors such as local food and hotel industries, that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries).
- Induced impacts: Induced impacts measure the estimated effect of increased household income resulting from the Facility. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels of economic impact. This reinvestment can occur anywhere within the economy, on household goods, entertainment, food, clothing, transportation, etc.

Each of these three levels can be measured in terms of three indicators: jobs (as expressed through the increase in employment demand), the amount of money earned through those jobs, and the overall economic output associated with each level of economic impact. These indicators are described in further detail below:

- Jobs: Jobs refer to the increase in employment demand as a result of Facility development. These positions are measured across each level of impact, so that they capture the estimated number of jobs on site, in supporting industries, and in the businesses that benefit from household spending. For the purposes of this analysis, this term refers to the total number of year-long full-time equivalent (FTE) positions created by the development. Persons employed for less than full time or less than a full year are included in this total, each representing a fraction of a FTE position (e.g. a half-time, year-round position is 0.5 FTE).
- Earnings: This measures the wages earned by the employees described above.
- Output: Output refers to the value of industry production in the state or local economy, across all appropriate sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector, it is equal to sales volume.

(a) Construction Workforce

The Article 10 Application will identify the estimated construction workforce associated with the Facility, as indicated above. The results of the JEDI model output will be evaluated by the Applicant's construction management team to provide an estimate of the average work force, by discipline, for each phase of construction.

(b) Construction Payroll

The Article 10 Application will identify the estimated annual construction payroll and non-payroll expenditures associated with the Facility, as indicated above. The results of the JEDI model output will be evaluated by the Applicant's construction management team to provide an estimate of the annual construction payroll by trade.

(c) Secondary Employment and Economic Activity Generated by Facility Construction

The Article 10 Application will identify the estimated secondary employment and economic activity associated with Facility construction, as indicated above. The results of the JEDI model output will be included in the Application and the economic multiplier factors or other assumption(s) used will be described.

(d) Workforce, Payroll, and Expenditures during Facility Operation

The Article 10 Application will identify the estimated number of jobs associated with Facility operation, as indicated above. The Article 10 Application will also provide an estimate of other expenditures likely to be made in the vicinity of the Facility during operation.

(e) Secondary Employment and Economic Activity Generated by Facility Operation

Facility operation will also result in payment to local landowners in association with the lease and/or purchase agreements executed to host Facility components. The Article 10 Application will provide additional information regarding the economic benefit associated with these expenditures.

(f) Incremental School District Operating and Infrastructure Costs

The Facility is not expected to result in any additional operating or infrastructure costs to the local school districts. The Article 10 Application will confirm this expectation.

(g) Incremental Municipal, Public Authority, or Utility Operating and Infrastructure Costs

The Facility is not expected to result in any additional operating or infrastructure costs to local municipalities, authorities, or utilities. The Article 10 Application will confirm this expectation.

(h) Jurisdictions that Will Collect Taxes or Benefits

- Suffolk County
- Town of Riverhead
- Riverhead Central School District

(i) Incremental Amount of Annual Taxes or Payments

The Applicant expects to enter into a PILOT agreement with the Town but the specific terms of the PILOT agreement have not yet been negotiated. The PILOT payments will increase the revenues of the local taxing jurisdictions, and will represent a significant contribution to their total tax levy.

The Article 10 Application will provide more detail regarding the anticipated PILOT agreement.

(j) Comparison of Incremental Costs and Incremental Benefits

As indicated above, the Facility is not expected to result in any additional costs to local tax jurisdictions, but will result in significant benefit through implementation of a PILOT Agreement, and through the potential increase in sales tax revenue.

(k) Equipment or Training Deficiencies in Local Emergency Response Capacity

As indicated in Section 2.18 of this PSS, Exhibit 18 of the Article 10 Application (along with a Preliminary Health and Safety Plan and Emergency Action Plan to be appended to the Article 10 Application) will provide specific detail on emergency equipment that the Applicant will maintain for the Facility. The local emergency responders are expected to have typical first aid, medical emergency and fire vehicles and equipment that would be at a local fire and emergency department, but are not expected to need specialized equipment or vehicles in order to respond to potential emergencies at the Facility. . More detailed meetings prior to the Application will be held to discuss specifics of the Facility, to obtain any necessary design information (e.g. turning radii for fire vehicles) to permit access during emergency situations, and to identify any necessary training first responders might need in order to address potential emergencies at a utility-scale solar facility, or at this Facility specifically. The Applicant will continue consultation with local fire departments and first responders in order to confirm all necessary equipment and training for fire and medical emergencies either by the Applicant or fire and emergency responders.

(l) Consistency with State Smart Growth Public Infrastructure Criteria

The New York State Smart Growth Public Infrastructure Policy Act is meant to maximize the social, economic, and environmental benefits from public infrastructure development by minimizing the impacts associated with unnecessary sprawl. State infrastructure agencies, such as the NYSDOT, shall not approve, undertake, or finance a public infrastructure Facility, unless, to the extent practicable, the Facility is consistent with the smart growth criteria set forth in ECL § 6-0107.

Although the Facility does not include any infrastructure that will promote or facilitate secondary growth or sprawl as specified in this law, the Article 10 Application will address the Facility's consistency with the smart growth criteria as defined in in ECL 6-0107(2).

2.28 ENVIRONMENTAL JUSTICE

Exhibit 28 of the Article 10 Application requires the Applicant to provide sufficient information for the New York State Department of Environmental Conservation ("NYSDEC") and others to assess the potential impact of the Facility on Environmental Justice communities. However, it should be noted that the intent of an Environmental Justice evaluation is to determine if air quality and associated health impacts are disproportionately affecting certain communities or populations. CP-29 has limited applicability, applying only to applications for major projects and major modifications for permits relating to water pollution, air pollution, solid and hazardous waste management, and siting of industrial hazardous waste facilities. The Project will not require any such permits. Accordingly, CP-29 is not applicable to the Project. Although CP-29 is not applicable, the Applicant has considered whether the Project could have negative impacts on nearby environmental justice areas. As previously indicated, the Facility is a solar powered generation facility that will not result in emissions or air quality impacts beyond vehicle/equipment emissions and fugitive dust during construction (see Section 2.15). Therefore, for the purposes of the Environmental Justice evaluation, and based on the criteria set forth in 6 NYCRR 487.4, the Applicant has defined the "Impact Study Area" to consist of a 0.5-mile radius around each of the Facility components, which is considered to be a conservative basis for evaluating potential impacts.

Based on data obtained from the NYSDEC's Geospatial Information System ("GIS") Tools for Environmental Justice website (http://www.dec.ny.gov/public/911.html), there are no Potential Environmental Justice Areas within the Impact Study Area. The nearest Potential Environmental Justice Area to the Facility is located within the Towns of Brookhaven and Southampton, and is approximately 2 miles east of the Facility Site boundary. A map of these potential Environmental Justice Areas, in relation to the Facility Site, will be provided in the Article 10 Application.

The Applicant provided this information in the PIP and, to date, no comments have been received regarding potential impacts to these Environmental Justice Areas. Because of the distance between the proposed Facility and the Potential Environmental Justice Area described above, the Facility is not expected to have an impact on this or any other Environmental Justice Areas. Therefore, the full Environmental Justice Analysis outlined in 6 NYCRR 487.6 is not required, and will not be provided in the Article 10 Application.

2.29 SITE RESTORATION AND DECOMMISSIONING

(a) Performance Criteria

The Article 10 Application will provide a statement of the performance criteria proposed for the restoration or decommissioning of the Facility, and the proposed form of financial security adequate to fund the decommissioning of the Facility at the end of its useful life (approximately 20 to 40 years), including site restoration, as appropriate. , The Application will discuss proposed financial security mechanisms for funding decommissioning, including calculating the cost of decommissioning.

(b) Decommissioning and Restoration Plan

Utility-scale PV facilities typically have a life expectancy of 20 to 40 years (NYSUN, 2016). At the end of its useful life, the Facility will be decommissioned, in accordance with a Decommissioning Plan. This Plan will be included in the Article 10 Application and will include the following provisions:

- Consistent with the Town of Riverhead Zoning Code (§ 301-282(S)), Decommissioning would be triggered if the Facility is non-operational for a continuous period of 24 months.
- All above-ground structures, including PV panels, racking, inverters, fencing, poles, and the collection substation, will be removed.
- Buried collection lines will be de-energized, and remain in-place as dictated by the New York State Department of Agriculture & Markets guidelines.
- Where appropriate the Applicant will leave in place any access roads, fences, gates, buffer plantings, and/or buildings which underlying landowners have sought to retain following decommissioning of the Facility, consistent with Riverhead's zoning code.
- Ground disturbance during decommissioning will be minimized to the extent practicable and the site will be restored to its original condition to the extent practicable, including restoration of soil areas with native species and/or suitable plant species or, in the case of agricultural lands, with appropriate crops selected in consultation with the landowner.

- Consistent with Riverhead Zoning Code § 301-283(5), the disposal of all solid and hazardous wastes during decommissioning will be conducted in accordance with applicable local, state, and federal waste disposal regulations.
- The Applicant will provide written notification to the Town and to impacted landowner(s) at least two weeks prior to the commencement of decommissioning activities, and prior to commencing site restoration.
- The type of financial assurance, as needed and secured by the Applicant, for the purpose of adequately performing decommissioning will be described. The value of the financial assurance will be based on a Professional Engineer's certified estimate of decommissioning cost, less the expected salvage value and/or resale value of components.
- The Application will also include clear instructions for the Town as to how it will be able to access the financial assurance should the Applicant fail to decommission the project in accordance with the Decommissioning Plan.
- The Decommissioning Plan will be binding upon the Applicant, or any of its successors, or assigns.
- The Decommissioning Plan will include a provision which ensures appropriate Town officials are granted access to the Facility Site, pursuant to reasonable notice to the Applicant, to inspect the completed decommissioning activities.

Additional detail will be provided in the Article 10 Application. The Applicant's Complaint Resolution Plan will include information on public outreach and notifications during the decommissioning and restoration process; the Decommissioning Plan will generally defer to the Complaint Resolution Plan for discussion of those matters.

(c) Description of Decommissioning/Restoration Agreements Between Applicant and Landowners

All Facility components will be located on private land under lease and/or purchase agreement with the landowners, and all leases with private landowners will contain a provision on decommissioning. Although the specific terms of these lease agreements are confidential, decommissioning provisions in the leases outline a plan substantially similar to the one described above. Information on the method and schedule for updating the cost of decommissioning and restoration, the method of ensuring funds will be available for decommissioning and restoration, and the method by which the Facility will be decommissioned and the site restored will be provided in Exhibit 29(b) of the Application.

(d) Nuclear Power Facilities

This section is not applicable and therefore will not be addressed in the Article 10 Application.

2.30 NUCLEAR FACILITIES

The proposed Facility is not a nuclear facility, and as such, the requirements of 1001.30 are not applicable and will not be addressed in the Article 10 Application.

2.31 LOCAL LAWS AND ORDINANCES

The Facility will be located in Suffolk County, New York, in the Town of Riverhead, New York. Throughout the pre-application process, the Applicant has been conferring with the municipality on a range of issues, including identifying relevant local laws and ordinances that could impact the Facility as described further below. The Applicant will continue to consult with the municipalities during the Article 10 Application process to ensure that all applicable laws and ordinances are addressed in the Article 10 Application. The Town of Riverhead's local laws are available online at https://ecode360.com/RI0508. Suffolk County's local laws are available online at https://ecode360.com/SU0867.

(a) List of Applicable Local Ordinances and Laws of a Procedural Nature

Below is a preliminary list of applicable local laws and ordinances of a procedural nature that may be applicable to the Facility.

Town of Riverhead
Zoning Code Article LII, Commercial Solar Energy Production Systems (as amended by local law adopted February 6, 2018)

- Article LII § 301-281 (B) Special Permit Approval
- Article LII § 301-282
    - (Q) Expiration and re-application for special permit
    - (R) Building permit for replacing solar panels and accessory equipment
    - (S) Decommissioning/Removal
- Article LII § 301-283 Decommissioning plan; fees
    - (A) Decommissioning plan shall accompany application for commercial solar energy system
        - (A)(6) Surety for commercial solar energy systems of more than 10 acres
    - (B) "Notwithstanding Article LVI of this chapter, the fee for new site plan applications for commercial solar energy production systems shall be a flat fee of $3,000, and the fee for an amendment to a site plan application for commercial solar energy production systems shall be $2,000."

General Town Code

- Chapter 209 Architectural Review[14]
- Chapter 217 Article I § 217-10 Land clearing permit
- Chapter 229 Article I § 229-3 Excavation permit; reclamation plan
- Chapter 237 Article II § 237-4 Permit for highway alterations
- Chapter 295, Town wetlands permits

[14] Architectural review is required in the Town of Riverhead for all development subject to Site Plan Review by the Town. There are no substantive standards articulated in this review process, and thus no substantive standards identified in section (c) below.

Town Zoning Code

- Article LVI § 301-302 to 307 Site plan review general requirements
- Article LVII § 301-308 to 314 Special Permits
    - § 301-310 Requirements for application for special use permit
    - § 301-311 Application procedure; fees
- Article XLIX § 301-263 Procedure to determine compliance with exterior lighting requirements
- Article XLVIII § 301-255 Sign permit requirements

(b) Local Procedural Requirements Requiring Board Authorization

All local procedural requirements are supplanted by Article 10, except where the Siting Board expressly authorizes local imposition of some requirement, generally at the request of an Applicant. At this time, the Applicant has not identified any local procedural requirements requiring Board authorization; if any are identified, they will be included in the Application.

To the extent the Town and/or County require any sort of permit or approval to perform work within municipal rights-of way, or on municipally owned roads, the Applicant may request that the Board grant the Town and/or County authority to issue such permits or approvals, separately or in connection with a local Road Use Agreement, if one is proposed. Additional discussion on the potential need for any such permits will be included at greater length in the Application. In the interim, the Applicant will work with the Town and County to understand the procedural and substantive requirements for highway work permits, and any issues of local concern relative to local laws. At this time, Applicant is aware of the following local road related permits and approvals which may be applicable to this Facility:

Town of Riverhead

- Permission for Temporary Obstruction of Highway under Highway Law Section 103
- Road Opening Permit from Town Highway Department

(c) Identification of Municipal Agency Qualified to Review and Approve Building Permits

Town officials with the Riverhead Building Department are generally responsible for reviewing and approving local building permits and ensuring compliance with the New York State Fire Prevention and Building Code and Energy Conservation Code of New York State. In addition, the Town may choose to contract with qualified consultants to assist their review and approval of the Facility. The Applicant will work with the municipalities to identify these individuals and/or entities. Any arrangements between the Applicant and regarding the scheduling of such consultants will be described and included as part of the Article 10 Application.

(d) List of Applicable Local Ordinances and Laws of Substantive Nature

Below is a preliminary list of applicable local laws and ordinances of a substantive nature that may be applicable to the Facility.

Town of Riverhead

Zoning Code Article LII, Commercial Solar Energy Production Systems (as amended by local law adopted February 6, 2018)

- Article LII § 301-282 Use Regulations
  - (A) Acreage requirement
  - (B) and (P) Height requirement
  - (C) Fence and gate requirement
  - (D) and (K) Coverage limit
  - (E) and (O) Buffer and screening requirement
  - (F) "All solar energy production systems are designed and located in order to prevent reflective glare toward any habitable buildings as well as streets and rights of way."
  - (G) Transmission lines underground if feasible
  - (H) "The installation of a clearly visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations."
  - (I) Compatibility with adjacent and nearby properties
  - (J) and (N) Minimum setback
  - (M) Minimum natural open space
- Article LII § 301-283 Decommissioning plan; fees
  - (A)(1) "Restoration of the surface grade and soil after removal of aboveground structures and equipment."
  - (A)(2) "Restoration of soil areas with native seed mixes and/or plant species suitable to the area, which shall not include any invasive species."
  - (A)(3) "Retention of access roads, fences, gates or buildings or buffer plantings, as required at the discretion of the Town."
  - (A)(4) "Restoration of the site for agricultural crops or forest resource land, as applicable."
  - (A)(5) Solid and hazardous waste disposal

General Town Code

- Chapter 229 Article II § 229-13 Minimum standards for grading
- Chapter 251 Article 1 § 251-4 and Table I, Noise Limitations (non-Construction)
- Chapter 251 Article I § 251-5 (K) Construction noise
- Chapter 295-4 and -5, Construction near wetlands
- Chapter 295-8, Standards for Town wetlands permits

Town Zoning Code

- Article XLIX § 301-259 Exterior lighting standards
- Article XLV § 301-231 Off-street parking
- Article XLV § 301-232 Off-street loading
- Article XLV § 301-236 Screening and buffer regulations
- Article XLVIII § 301-249 to 251 Standards for signs requiring permits
- Article XLVIII § 301-252 Standards for signs not requiring permits
- Article XLVIII § 301-254 (H) Sign regulations in Industrial zoned areas

Suffolk County

Local Law Number 41-2007, A Local Law to Reduce Nitrogen Pollution by Reducing Use of Fertilizer in Suffolk County

(e) List of Substantive Local Ordinances/Laws That the Applicant Requests the Board Not Apply

At this time, the Applicant anticipates complying with all substantive local laws and ordinances, to the greatest extent practicable, and has not identified any specific substantive local laws for which it seeks a waiver. The Applicant will work with the Town of Riverhead to identify potential substantive provisions of local law for which it may need to seek a waiver from the Siting Board, and will identify those provisions, if any, in the Application. Should the Applicant seek relief from any substantive local laws, the Application will include the justification required under Article 10 to support a waiver of local laws or ordinances.

(f) List of Procedural Local Ordinances/Laws Related to Use of Water, Sewer, or Telecommunication Lines

The Facility is not anticipated to require any physical connections for water or sewer lines, but there may be fiber optic lines associated with the Facility. However, the Applicant has not identified any procedural local ordinances or laws related to the interconnection of water, sewer, or telecommunications lines that are applicable to the Facility. In the event such changes are determined to be needed, they will be addressed in the Application.

(g) List of Substantive Local Ordinances/Laws Related to Use of Water, Sewer, or Telecommunication Lines

The Facility is not anticipated to require any physical connections for water or sewer lines, but there may be fiber optic lines associated with the Facility. However, the Applicant has not identified any substantive local ordinances or laws related to the interconnection of water, sewer, or telecommunications lines that are applicable to the Facility. In the event such changes are determined to be needed, they will be addressed in the Application.

(h) Local Ordinances/Laws Related to Use of Water/Sewer that the Applicant Requests the Board Not Apply

Since the Facility will not require any physical connections to water or sewer lines, the Applicant has not identified any local laws or ordinances that it anticipates requesting that the Board not apply. In the event such connections are determined to be needed, relevant standards will be addressed in the Application.

(i) Summary Table of Substantive Local Requirements

The Article 10 Application will include a table identifying all substantive local laws and ordinances that may impact the Facility and how Applicant intends to meet those requirements. If applicable, the Applicant will include the justification required under Article 10 for any waivers it may request from the application of substantive local laws.

(j) Zoning Designation

The Town of Riverhead has adopted zoning regulations (Figure 5). The proposed Facility would involve location of solar panels in the Town's Industrial A and Industrial C zoning districts, and the placement of a collector substation and Point of Interconnection in the Town's Industrial C zoning district. Commercial solar energy production systems are allowed with a special permit in the Industrial A zoning district, and are allowed with a special permit in that portion of the Industrial C zoning district also located within the zip code boundary of Calverton (11933), which includes the parcels in the proposed Facility Site. Therefore, Commercial Solar is a permitted use in the zoning districts in which the Facility is proposed.

The Article 10 Application will provide a detailed summary of the zoning regulations for the Town, as well as any applicable Suffolk County requirements. As part of that summary, the Article 10 Application will discuss the permitted and prohibited uses in the zoning district where the Facility is proposed to be located, as well as the solar specific regulations that were recently adopted by the Town. In addition, the Article 10 Application will describe how the Facility will comply with these zoning regulations, or areas where deviation is necessary, if any.

2.32 STATE LAWS AND REGULATIONS

During preparation of the Article 10 Application, the Applicant will consult with the state agencies and authorities whose requirements are the subject of Exhibit 32 to determine whether all such requirements have been correctly identified. To the extent the substantive requirements below are applicable, the Applicant intends to comply with such requirements unless the Applicant specifically requests relief from the Siting Board.

(a) List of State Approvals, Consents, Permits, Certificates, or Other Conditions of a Procedural Nature

The Applicant has compiled a preliminary listing of state approvals, consents, permits, or other conditions of a procedural nature required for the construction or operation of the proposed Facility, as summarized in Table 5 and Table 6.

Table 5. List of All State Approvals for the Construction and Operation of the Facility that are Procedural in Nature and Supplanted by Article 10

State Agency	Requirement	Discussion
New York State Department of Environmental Conservation	Water Quality Certification (WQC), Section 401 of the Clean Water Act	The request for a 401 WQC will not be filed until a federal U.S. Army Corps of Engineers permit application is filed (if necessary). Under the Siting Board regulations, the WQC will be issued by the Siting Board.
New York State Office of Parks, Recreation, and Historic Preservation (OPRHP)	Consultation Pursuant to §14.09 of the New York State Historic Preservation Act	The Applicant will consult with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to ensure compliance with §14.09 of the New York State Historic Preservation Act.
New York State Department of Environmental Conservation	Endangered and Threatened Incidental Take Permit Article 11, 6 NYCRR Part 182	The NYSDEC may issue a license or permit to "take" any species listed as endangered or threatened. This permit may be required if, in consultation with state agencies, it is determined that the project could result in incidental take of any state-listed endangered or threatened fish or wildlife species from occupied habitat. If this permit is required, the procedural requirements are supplanted by Article 10.
New York State Department of Environmental Conservation	Permit for Freshwater Wetlands Article 24, 6 NYCRR Part 663	This permit would be required for the crossing of regulated freshwater wetlands or adjacent areas by Facility components. Regulated freshwater wetlands are designated and mapped by the NYSDEC, and are generally 12.4 acres or larger. Around every regulated freshwater wetland is an adjacent area of 100 feet that is also regulated to provide protection for the wetland. If this permit is required, the procedural requirements are supplanted by Article 10.
New York State Department of Environmental Conservation	SPDES General Permit for Construction Activity	This permit is required for construction projects that disturb one or more acres of soil. In accordance with 16 NYCRR 1001.32(a) this is identified as a state procedural requirement issued by the NYSDEC pursuant to federal recognition of state authority. This approval is subject to review by the NYSDEC independent of the Article 10 process.
New York State Public Service Commission	Certificate of Public Convenience and Necessity NY PSL §68	No electric corporation shall begin construction of an electric plant, having a generating capacity of at least 80 MW, without first having obtained the permission and approval of the commission. The procedural requirements of Section 68 are supplanted by Article 10.

As indicated in the table above, some of these state procedural requirements are supplanted by PSL Article 10, except those permits to be issued by the New York State Department of Environmental Conservation (NYSDEC) which are authorized pursuant to Federal recognition of State authority, or pursuant to federally delegated or approved authority,

in accordance with the Clean Water Act, the Clean Air Act and the Resource Conservation and Recovery Act, and permits pursuant to Section 15-1503, Title 9 of Article 27, and Articles 17 and 19 of the ECL.

Table 6. List of All State Approvals Related to the Construction of the Facility to be Obtained from Issuing Agency

State Agency	Requirement	Discussion
New York State Department of Transportation	Highway Work Permit NYS Highway Law, Article 3, Section 52	A highway work permit may be required by the New York State DOT. This includes permits for crossing state highways, use highway for access, or for curb cuts, which are not supplanted by Article 10.

As indicated in the chart above, the Applicant anticipates requesting that the Siting Board authorize the NYSDOT to issue the applicable highway work permit(s) and other ministerial permit(s) associated with road work in State highways or rights-of-ways. Generally, these approvals are issued immediately prior to construction and are submitted by the contractor. It is anticipated that the information required to be included in the submission will not be available until after a contractor is selected and post-Certification. The Applicant will provide an additional explanation of why such an authorization would be desirable and/or appropriate in the Article 10 Application.

(b) List of Procedural State Approvals/Permits/Etc. that the Applicant Requests the Board Not Apply

The Applicant does not anticipate any procedural state approvals/permits/etc. that the Applicant will request the Board not apply. However, should any be identified, they will be discussed in the Application.

(c) List of State Approvals, Consents, Permits, Certificates, or Other Conditions of a Substantive Nature

The Applicant will construct and operate the Facility in a manner that conforms to all State substantive requirements for those approvals, consents, permits, certificates, or other conditions, to the greatest extent practicable. The following is a list of all substantive state requirements, which may or may not be applicable to the Facility:

- Water Quality Certification (WQC), Section 401 of the Clean Water Act 6 NYCRR Part 621.4e (Water Quality Certifications in Accordance with Section 401 of the Clean Water Act)
- Consultation Pursuant to Section 14.09 of the New York State Historic Preservation Act
- Permit for Protection of Waters, Article 15, 6 NYCRR Part 608.7b (Permit Application Review) and 608.8 (Standards)
- Permit for Freshwater Wetlands, Article 24, 6 NYCRR Part 663.5 (Standards for Issuance of Permits and Letters of Permission)

- SPDES General Permit for Construction Activity, Article 3, 6 NYCRR Part 750-1.11 (Application of Standards, Limitations, and other Requirements)
- Endangered and Threatened Incidental Take Permit Standards, Article 11, 6 NYCRR 182.12 (Incidental Take Permit Standards)

(d) Summary Table of Substantive State Requirements

The substantive state requirements preliminarily identified above in (c) will be presented in a table in the Article 10 Application, and formatted per the associated requirements.

(e) State Approvals/Permits/Etc. for Offsite Features Not Encompassed by Major Electric Generating Facility

To the extent that offsite ancillary features, which are not considered part of the Major Electric Generating Facility, are needed, a list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of said offsite ancillary features will be listed in the Article 10 Application. Riverhead Solar 2 does not anticipate that the proposed Project will include offsite interconnections or ancillary features not otherwise encompassed by the Major Electric Generating Facility, which would make this section inapplicable.

2.33 OTHER APPLICATIONS AND FILINGS

(a) Other Applications or Filings Concerning the Subject Matter of the Proceeding

Besides the list of approvals identified in Section 2.32 and below in subparagraph (B) the Applicant does not have, and is not aware of, any other application or filing before any governmental agency, department or court which concerns the subject matter of this proceeding (i.e., Riverhead Solar 2).

(b) Federal Permits, Consents, Approvals, or Licenses Required for Construction or Operation

Table 7 summarizes any anticipated federal permit, consent, approval, or license needed for the proposed Facility. This information will be confirmed and/or updated in the Article 10 Application.

Table 7. Federal Permits and Approvals for the Facility

Agency	Anticipated Application Date[1]	Description of Permit or Approval Required
U.S. Army Corps of Engineers	TBD	• Section 10 of the Rivers and Harbors Act of 1898; • Section 404 or Nationwide Permit for Placement of Fill in Federal Jurisdictional Wetlands/Waters of the U.S. • National Environmental Policy Act (NEPA) Compliance; • Compliance with Section 106 of the National Historic Preservation Act (NHPA).

[1] The anticipated application submittal date will be identified in the Article 10 Application.

2.34 ELECTRIC INTERCONNECTION

Interconnection of the Facility to the electric grid will be achieved using multiple systems. The PV panels themselves produce power at a low voltage, which is converted from direct current (DC) to alternating current (AC) at the inverters. A medium voltage (34.5 kV) collection system comprised of underground cables transmits the power from the inverters to a collection substation. The collection substation then steps the voltage up to a higher voltage (138 kV), and a high voltage transmission line runs a short distance to a POI substation. The POI substation connects the Facility to the PSEG Long Island existing Edwards 138 kV transmission line, where it can be injected into the New York State electric grid.

(a) Design Voltage and Voltage of Initial Operation

Inverters will convert the output of the PV arrays from DC to AC. The number and specifications for the inverters, as well as the length and anticipated number of circuits for the electrical collection system will be described in the Article 10 Application.

(b) Type, Size, Number, and Materials of Conductors

The length of the collection system, broken down by anticipated length of overhead (if any) and underground lines, will be described in the Article 10 Application. The underground system will be comprised of numerous cable sections in parallel, connecting each of the PV arrays to the inverter, then to the collection substation.

(c) Insulator Design

Typical utility-grade ceramic/porcelain or composite/polymer insulators, designed and constructed in accordance with ANSI C29, are anticipated to be used. Insulators in the POI substation are anticipated to be porcelain and will be described in the Article 10 Application.

(d) Length of the Transmission Line

As indicated above, a 138 kV transmission line will span a short distance from the collection substation to the POI substation, and will serve both the Riverhead 1 and Riverhead 2 Projects. It is currently anticipated that this line will total approximately 300 feet and will be constructed and existing at the time the Riverhead 2 Facility is constructed. The Article 10 Application will provide more detailed information on these proposed components. Generally, the conductor type to be used will be a 750 kcmil Aluminum XLPE insulated conductor, one per phase, in 6 inches PVC SDR 21 conduit. (one per phase). The Article 10 Application will include more specific design details about the gen-tie.

(e) Typical Dimensions and Construction Materials of the Towers

The Applicant does not propose overhead transmission lines, and therefore this section does not apply. In the event that overhead collection or transmission is proposed, such as in locations where undergrounding proves impracticable, the Application will include the typical dimensions and construction materials of towers to be used for those lines.

(f) Design Standards for Each Type of Tower and Tower Foundation

As noted above, the Applicant does not propose overhead collection or transmission lines, and thus there would be no towers or tower foundations for which design standards would be required. In the event that plans change and Applicant must make use of overhead collection or transmission, additional information about tower and tower foundation design standards would be included in the Article 10 Application.

(g) Type of Cable System and Design Standards for Underground Construction

Traditional trench digging will be utilized for digging trenches. Direct burial methods through use of a cable plow, and/or similar equipment, will be used during the installation of underground electrical collection system whenever possible. Bilateral drilling may be used under difficult areas like trees or roads, a hammer or drill will be used if the line runs into a ledge Direct burial will involve the installation of bundled cable (electrical and fiber optic bundles) directly into a “rip” in the ground created by the plow or saw blade. The rip may disturb an area up to approximately 36 inches wide with bundled cable installed to a minimum depth of 36 inches in most areas, and 48 inches in active or fallow agriculture and pasture lands. Sidecast material will be replaced with a small excavator or small bulldozer. All areas will be returned to approximate pre-construction grades and restored.

(h) Profile of Underground Lines

A typical drawing of the underground collection cable and associated material will be provided in the Article 10 Application.

(i) Equipment to be Installed in Substations or Switching Stations

The POI substation and collection substation equipment will be described in the Article 10 Application. The Article 10 Application will include a plan/overview of the POI substation and the collection substation.

(j) Any Terminal Facility

The only terminal facilities expected are the POI substation and the collection substation and will be described/shown above in section (i).

(k) Need for Cathodic Protection Measures

The potential need for cathodic protection measures will be discussed in the Article 10 Application.

2.35 ELECTRIC AND MAGNETIC FIELDS

The information presented in Exhibit 35 of the Article 10 Application will be derived from an electric and magnetic field (EMF) study to be prepared for the Facility.

(a) Every Right-of-way Segment Having Unique Electric and Magnetic Field Characteristics

All electrical lines from the inverter to the collection station/POI station will run at 34.5 kV; therefore, the Facility will not have a Right-of-Way (ROW) associated with high voltage transmission power lines. However, the Article 10 Application will identify 34.5 kV ROW segments with unique EMF characteristics, which will be evaluated in the EMF study. The strength and location of EMFs will be modeled on representative areas of these segments. Modeling calculations will identify existing EMFs and future EMFs that would result from construction and operation of the Facility. For the purposes of calculations, the ROW width on private lands is assumed to be 15 feet (7.5 feet from centerline), which represents the majority of the segments or gen-tie lines. The Article 10 Application will identify the name and calculation number of each segment.

(b) For Each Right-of-way Segment, Base Case and Proposed Cross Sections Showing:

For each of the unique ROW segments, the EMF study will provide both base case (where existing facilities are present) and proposed cross sections that will show, to scale, the following features:

- any known overhead electric transmission, sub-transmission, and distribution facilities showing structural details and dimensions and identifying phase spacing, phasing, and any other characteristics affecting EMF emissions;
- any known underground electric transmission, sub-transmission (i.e., 34.5 kV collection system), and distribution facilities;
- ROW boundaries; and
- structural details and dimensions for all structures (dimensions, phase spacing, phasing, and similar categories) and an overview map showing locations of structures.

The station numbers associated with each of the unique ROW segments will be included in the Article 10 Application.

(c) Enhanced Aerial Photos/Drawings Showing Exact Locations of Each:

The EMF study to be included in the Article 10 Application will include a set of aerial photos/drawings showing the exact location of each unique ROW segment and each cross-section, and any residences or occupied buildings within the ROW segments. If no residence or occupied building is within the ROW segments, the measurement of the distance between the edge of the ROW segment and the nearest residence or occupied building will be provided.

(d) Electric and Magnetic Field Study

(1) Licensed Professional Engineer

The EMF study included in the Article 10 Application will be signed and stamped/sealed by a licensed professional engineer registered and in good standing in the State of New York.

(2) Computer Software Program

The software to be used in the EMF study will be identified in the Article 10 Application.

(3) Electric Field Calculation Tables and Field Strength Graphs

The Facility is currently proposing underground 34.5 kV collection only, which will deliver power to an existing collection station. These underground lines will not produce electric fields outside of their outer protection covering (i.e., the electric fields will be contained within the cable insulation of the conductor). Therefore, electric field calculation tables and field strength graphs are not proposed. However, if the electrical design as presented in

the Article 10 Application has the potential to produce electric fields, then the associated studies will be conducted, and tables/graphs will be presented in the Application.

(4) Magnetic Field Calculation Tables and Field Strength Graphs

The EMF study will model the strength and locations of magnetic fields to be generated by the Facility. Modeling will be conducted at summer normal and winter normal conductor ratings provided by the manufacturer for the conductor specified. Additionally, the measurement location and interval will be described in the Article 10 Application. There is no expected change in amperage under any of the following conditions: summer normal, summer short term emergency, winter normal, winter short term emergency. Therefore, the magnetic field modeling to be performed will be applicable to any of these conditions. Magnetic field strength graphs depicting magnetic fields along the width of the entire ROW and out to the property boundary of the Facility will be included in the EMF study. Digital copies of all input assumptions and outputs for the calculations are being filed under separate cover.

(5) Magnetic Field Calculation Tables and Field Strength Graphs for Maximum Annual Load within 10 Years

There is no expected change in amperage in maximum average load initially versus for 10 years after initiation of operation. Therefore, the modeling of magnetic fields described above in 1001.35(d)(4) (including both the graphs and tables included in the EMF study) will be applicable to both initial operation and operation after 10 years.

(6) Base Case Magnetic Field Calculation Tables and Field Strength Graphs

There are no proposed high voltage transmission lines, therefore this analysis is not applicable to the proposed Facility.

2.36 GAS INTERCONNECTION

The proposed Facility will not require gas interconnection facilities, and as such, the requirements of 1001.36 are not applicable and will not be included in the Article 10 Application.

2.37 BACK-UP FUEL

The proposed Facility will not require back-up fuel, and as such, the requirements of 1001.37 are not applicable and will not be included in the Article 10 Application.

2.38 WATER INTERCONNECTION

The proposed Facility will not require water interconnection facilities, and as such, the requirements of 1001.38 are not applicable and will not be included in the Article 10 Application.

2.39 WASTEWATER INTERCONNECTION

The proposed Facility will not require wastewater interconnection facilities, and as such, the requirements of 1001.39 are not applicable and will not be included in the Article 10 Application.

2.40 TELECOMMUNICATIONS INTERCONNECTION

Generally, it is not anticipated that the Facility will require telecommunication interconnections as defined by Article 10, 16 NYCRR 1000.40, in that new off-site telecommunication lines are not anticipated at this time. It is likely that data will be transmitted to PSEG Long Island and others using existing telecommunications facilities as the area is generally served by existing cellular and broadband services.

(a) Operational Data Transmitted to NYISO

The Facility's operational generating data will be transmitted to NYISO/PSEG Long Island through a fiber-optic shield wire from the collection substation into the POI, and will include generation data (MW output, MVAR, and any curtailment) and environmental data. The Article 10 Application will provide additional information on the Facility's meter location, the means of providing the operational data to PSEG Long Island, and the secure communications network for this operational data.

(b) Facility Operations Communications Methods

The Article 10 Application will provide information regarding a high-speed internet (T-1 or other provider) to be established, and the means of transmitting the necessary data and other information to the appropriate parties for monitoring and reporting purposes.

(c) Status of Negotiations

The Article 10 regulations require a description of the status of negotiations, or a copy of agreements that have been executed, with companies or individuals for providing the communications interconnection, including any restrictions or conditions of approval placed on the Facility imposed by the provider, if applicable. Such negotiations have not yet been initiated for the Facility because at this time, no such agreements have been identified as necessary. Although not anticipated, any changes in status will be discussed in the Article 10 Application.

2.41 TELECOMMUNICATIONS INTERCONNECTION

Generally, it is not anticipated that the Facility will require telecommunication interconnections as defined by Article 10, 16 NYCRR 1000.40, in that new off-site telecommunication lines are not anticipated at this time. It is likely that data will be transmitted to PSEG Long Island and others using existing telecommunications facilities as the area is generally served by existing cellular and broadband services.

(a) Operational Data Transmitted to NYISO

The Facility's operational generating data will be transmitted to NYISO/PSEG Long Island through a fiber-optic shield wire from the collection substation into the POI, and will include generation data (MW output, MVAR, and any curtailment) and environmental data. The Article 10 Application will provide additional information on the Facility's meter location, the means of providing the operational data to PSEG Long Island, and the secure communications network for this operational data.

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The Article 10 Application will provide information regarding a high-speed internet (T-1 or other provider) to be established, and the means of transmitting the necessary data and other information to the appropriate parties for monitoring and reporting purposes.

(c) Status of Negotiations

The Article 10 regulations require a description of the status of negotiations, or a copy of agreements that have been executed, with companies or individuals for providing the communications interconnection, including any restrictions or conditions of approval placed on the Facility imposed by the provider, if applicable. Such negotiations have not yet been initiated for the Facility because at this time, no such agreements have been identified as necessary. Although not anticipated, any changes in status will be discussed in the Article 10 Application.

3.0 SUMMARY AND CONCLUSIONS

This Preliminary Scoping Statement has been prepared for the Facility, which will generate up to 36 MW of renewable energy with no emissions of pollutants or greenhouse gases to the atmosphere, and without the need for the use of significant quantities of water. Other proposed Facility components will include: access roads, underground collection lines, a collection substation, construction staging/laydown yard, and additional equipment added to an existing collection substation. This document has been prepared to facilitate an understanding of the proposed Facility, to further solicit input from the various stakeholders, and to satisfy the requirements of 1000.5(l) of the New York Public Service Law.

The proposed Facility is a utility scale solar project located in the Town of Riverhead, Suffolk County, New York. The proposed Facility Site boundary (see Figure 2) consists of approximately 290 acres of private land, including a mix of agricultural and forest land. The Project's actual footprint will total approximately 174 acres within the proposed Facility Site boundary. There are no villages or other urban areas within the Facility Site boundary.

The Applicant prepared a Public Involvement Program (PIP) plan in accordance with 16 NYCRR § 1000.4. The initial draft of the PIP was submitted to the Siting Board on October 20, 2017, comments on the PIP were received from the New York State Department of Public Service (DPS) on November 10, 2017, and the PIP was updated, finalized and filed by the Applicant on December 20, 2017. The PIP can be accessed, viewed and downloaded on the online case record maintained by the Siting Board and on the Facility-specific website maintained by the Applicant:

- http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=54735&MNO=17-F-0655
- http://riverheadsolar2.com/

In addition to the websites identified above, the Applicant has established a toll free number ((855) 561-6212) to call with any questions and comments on the Facility. The Applicant has also held various public meetings/open houses, which provided answers to questions from area residents, as well as the following information regarding the proposed Facility.

During the time before the submission of the Article 10 Application, the Applicant intends to continue stakeholder outreach. The Applicant will be conducting a mailing to all stakeholders concurrent with the submission of the PSS to provide an update on the Facility and invite comments and remind the stakeholders of the comment period timeframe. The Applicant will continue to attend municipal meetings and will hold one additional open house prior to submitting

the Article 10 Application. Finally, the Applicant will also attempt to identify additional community events in which it would participate. All outreach efforts will be tracked in the meeting logs.

Section 2.0 (Content of Application) of this PSS has been organized in accordance with 16 NYCRR § 1001 (Content of an Application). Specifically, all sub-sections of Section 2.0 correspond directly to 16 NYCRR § 1001 (e.g., Section 2.1 corresponds to 16 NYCRR § 1001.1, Section 2.2 corresponds to 16 NYCRR § 1001.2, etc.). These subsections of the PSS identify numerous Facility-specific support studies that will be conducted and included in the Article 10 Application, including:

- Preliminary Emergency Action Plan
- Complaint Resolution Plan
- Noise Impact Assessment
- Phase 1B Archeological Survey
- Historic Architectural Resources Survey
- Preliminary Geotechnical Investigation
- Invasive Species Control Plan
- Preliminary Stormwater Pollution Prevention Plan
- Preliminary Spill Prevention Containment and Countermeasure Plan
- Plant and Wildlife Species Inventory
- Wetland and Stream Delineation Report
- Shadow Flicker Assessment
- Route Evaluation Study
- Draft Decommissioning Plan
- Electric and Magnetic Field Study

Finally, as previously indicated, the Applicant has prepared a content matrix to allow for a comparison of the content of this document with the requirements of 1000.5(l), which is provided below as Table 8.

Table 8. Comparison of Contents of this PSS with the Requirements of 1000.5(l)

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(1)	As much information as is reasonably available concerning the proposed facility, generally in the form (though in less detail) that it will appear in the application;	Section 2.0	This Section, and all associated subsections, of the PSS contain reasonably available information related to existing conditions, potential impacts and minimization/mitigation.
PSL 1000.5 (l)(2)	A preliminary scope of an environmental impact analysis containing a brief discussion, on the basis of reasonably available information, of the following items:	Section 1.3	This section includes general information regarding Project-related impacts.
PSL 1000.5 (l)(2)(i)	A brief description of the proposed facility and its environmental setting;	Section 1.1, Sections 2.21(l), 2.22(a), 2.22(d), 2.23(a), 2.23(b)	Section 2.1 provides a brief description of the Project, while Sections 2.21(l), 2.22(a), 2.22(d), 2.23(a), 2.23(b) provide a brief description of its environmental setting
PSL 1000.5 (l)(2)(ii)	Potentially significant adverse environmental and health impacts resulting from the construction and operation of the proposed facility including also an identification of particular aspects of the environmental setting that may be affected, including any material impacts or effects identified in consultations by the public, affected agencies, and other stakeholders, and a responsive analysis by the Applicant as to those issues identified in consultations;	Section 1.3, Sections 2.15(e) and 2.17(d), Sections 2.21 (m), 2.22 (b), 2.22(f), 2.22(m), 2.22(q), 2.23(b)(4), 2.23(e)(1), 2.24(b)(7), 2.25(d)(2)	Section 1.3 includes general information regarding Project-related impacts, Sections 2.15(e) and 2.17(d) provide information regarding potential health impacts, and Sections 2.21 (m), 2.22 (b), 2.22(f), 2.22(m), 2.22(q), 2.23(b)(4), 2.23(e)(1), 2.24(b)(7), 2.25(d)(2) provide information regarding potential environmental impacts. As of the date of the filing of this PSS, no material impacts have been identified during any consultations.
PSL 1000.5 (l)(2)(iii)	The extent and quality of information needed for the application to adequately address and evaluate each potentially significant adverse environmental and health impact, including existing and new information where required, and the methodologies and procedures for obtaining the new information;	Section 2.0	This Section, and all associated subsections, identify the extent and quality of information that is proposed to be included in the Article 10 Application, including numerous stand-alone support studies.

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(2)(iv)	For proposed wind-powered facilities, proposed or on-going studies during pre-construction activities and a proposed period of post-construction operations monitoring for potential impacts to avian and bat species;	Sections 2.22(d) and 2.22(h)(1), Section 2.22(h)(2)	Sections 2.22(d) and 2.22(h)(1) discuss the methodology by which the Applicant proposed and implemented pre-construction avian and bat surveys, while Section 2.22(h)(2) discusses post-construction monitoring.
PSL 1000.5 (l)(2)(v)	A description of how the applicant proposes to avoid adverse impacts to the environment and health;	Section 1.3, Sections 2.15(j) and 2.17(d), Sections 2.22 (c), 2.22(g), 2.22(n), 2.22(q), 2.23(b)(5), 2.23(e)(2), 2.24(a)(10), 2.25(d)(4)	Section 1.3 includes general information regarding Project-related avoidance, minimization and mitigation measures, Sections 2.15(j) and 2.17(d) describe avoidance, minimization and mitigation measures associated with health impacts, and Sections 2.22 (c), 2.22(g), 2.22(n), 2.22(q), 2.23(b)(5), 2.23(e)(2), 2.24(a)(10), 2.25(d)(4) describe avoidance, minimization and mitigation measures associated with environmental impacts.
PSL 1000.5 (l)(2)(vi)	For those adverse environmental and health impacts that cannot be reasonably avoided, an identification of measures proposed to mitigate such impacts;	see above	see above
PSL 1000.5 (l)(2)(vii)	Where it is proposed to use petroleum or other back-up fuel for generating electricity, a discussion and/or study of the sufficiency of the proposed on-site fuel storage capacity and supply;	Not applicable to this Project	

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(2)(viii)	A description and evaluation of reasonable and available alternative locations for the proposed facility, including a description of the comparative advantages and disadvantages of the proposed and alternative locations, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates;	Section 2.9	This Section of the PSS specifically addresses alternatives, including reasonable and available alternative locations and the comparative advantages and disadvantages of the proposed and alternative locations. However, as indicated in Section 2.9, this Project is being proposed by a private facility applicant and therefore the description and evaluation of alternative locations will be limited to parcels owned by, or under option to, such private facility applicant or its affiliates.
PSL 1000.5 (l)(2)(ix)	If the proposed facility affects any land or water use or natural resource of the coastal area and federal authorization or funding is necessary, a preliminary analysis of the consistency of the proposed facility with the enforceable policies of the New York State coastal management program or, where the action is in an approved local waterfront revitalization program area, with the local program;	Not applicable to this Project	

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(2)(x)	A statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, including a "no action" alternative, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve, except that a private facility applicant may limit its description and evaluation of alternative locations to parcels owned by, or under option to, such private facility applicant or its affiliates and its description and evaluation of alternative sources to those that are reasonable alternatives to the proposed facility that are feasible considering the objectives and capabilities of the sponsor;	Section 2.9	This Section of the PSS specifically addresses alternatives, including a "no action" alternative and a statement of the reasons why the primary proposed location and source, taking into account the potentially significant and adverse environmental impacts, is best suited, among the alternatives, to promote public health and welfare, including the recreational and other concurrent uses that the site may serve. However, as indicated in Section 2.9, this Project is being proposed by a private facility applicant and therefore the description and evaluation of alternative locations will be limited to parcels owned by, or under option to, such private facility applicant or its affiliates.
PSL 1000.5 (l)(2)(xi)	A preliminary identification of the demographic, economic and physical attributes of the community in which the facility is proposed to be located and in which any alternative location identified is located, and a preliminary environmental justice evaluation of significant and adverse disproportionate environmental impacts of the proposed facility and any alternative facility identified that would result from construction and operation considering, among other things, the cumulative impact of existing sources of emissions of air pollutants and the projected emission of air pollutants from the proposed or alternative facility in a manner that is in accordance with any requirements for the contents of an Article 10 preliminary scoping statement contained in 6 NYCRR Part 487 promulgated by the DEC for the analysis of environmental justice issues; and	Sections 2.27 and 2.28	Section 2.27 provides demographic information for the host towns, while Section 2.28 specifically address Environmental Justice, including identification of the nearest Potential Environmental Justice Area

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(2)(xii)	An identification of any other material issues raised by the public and affected agencies during any consultation and the response of the applicant to those issues.	Appendix C	As of the date of filing this PSS, no material issues have been raised by the public or affected agencies beyond what will be addressed in the Article 10 Application. Appendix C of the PSS includes the most recently filed Meeting Log.
PSL 1000.5 (l)(3)	An identification of all other state and federal permits, certifications, or other authorizations needed for construction, operation or maintenance of the proposed facility;	Sections 2.32 and 2.33	Section 2.32 addresses state laws and regulations, which Section 2.33(b) addresses anticipated federal permits and approvals.
PSL 1000.5 (l)(4)	A list and description of all state laws and regulations issued thereunder applicable to the construction, operation or maintenance of the proposed facility and a preliminary statement demonstrating an ability to comply;	Section 2.32	Section 2.32 addresses state laws and regulations.
PSL 1000.5(l)(5)	A list and description of all local laws, and regulations issued thereunder, applicable to the construction, operation, or maintenance of the proposed facility and a statement either providing a preliminary assessment of an ability to comply or indicating specific provisions that the applicant will be requesting the Board to elect not to apply, in whole or in part, and a preliminary explanation as to why the Board should elect not to apply the specific provisions as unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers whether located inside or outside of such municipality;	Section 2.31	Section 2.21 addresses local laws and ordinances.

PSL 1000.5(l) Section	Requirement	Corresponding Section of the Riverhead Solar 2 PSS	Notes
PSL 1000.5 (l)(6)	A description of the applicant, its formation, status, structure, holdings, affiliate relationships, powers (including whether it has or will seek to obtain the power of eminent domain, either directly or indirectly), franchises and consents;	Section 2.1	Section 2.1 describes the applicant, including the type of business and its formation. The Applicant does not plan to seek to obtain the power of eminent domain.
PSL 1000.5 (l)(7)	A description of the applicant's property rights and interests or those it proposes to acquire to all lands of the proposed facility and any private or public lands or private or public streets, highways or rights-of-way crossed by any interconnections necessary to serve the facility such as, but not limited to, electric lines, gas lines, water supply lines, waste water or other sewage treatment facilities, communications and relay facilities, access roads, rail facilities, or steam lines; and	Section 2.13	Section 2.13 provides information regarding the applicant's property rights and interests.
PSL 1000.5 (l)(8)	Any other information that the Applicant may deem to be relevant.	Entire PSS	Any other information deemed relevant by the Applicant has been included in the PSS.

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