

LI Solar Generation, LLC
Calverton Solar Energy Center

PROJECT NARRATIVE

SEPTEMBER 2018

Table of Contents

1.0	DESCRIPTION OF PROPOSED ACTION	1
1.1	Introduction	1
1.2	Project Description	1
1.2.1	Project Location	1
1.2.2	Project Components and Layout	3
1.3	Construction and Operation	4
1.4	Decommissioning	5
1.5	Required Permits and Approvals	6
2.0	EXISTING CONDITIONS, POTENTIAL IMPACTS, AND PROPOSED MITIGATION	6
2.1	Zoning	6
2.1.1	Commercial Solar Energy Production Systems (§301-282)	8
2.1.2	Pine Barrens Overlay District – Compatible Growth Area (§301-197)	12
2.2	Rare / Protected Species and Communities	13
2.2.1	Sensitive Habitats and Protected Species	18
2.3	Wetlands and Water Resources	19
2.3.1	Wetlands	19
2.3.2	Waterways	23
2.4	Noise	24
2.4.1	Applicable Standards	24
2.4.2	Impacts During Construction	25
2.4.3	Impacts During Operation	25
2.5	Glare	29
2.6	Cultural Resources	29
2.7	Aesthetic Resources	29
2.8	Stormwater Pollution Prevention Plan (§275)	31
2.9	Special Permit Criteria (§301-312)	32

Tables

Table 1.2-1. Pre- and Post-Construction Conditions.....	4
Table 1.5-1. Anticipated Permit and Approvals	6
Table 2.1-1. Comparison of Town of Riverhead Commercial Solar Energy Production System Dimensional Regulations (§301-282) to Proposed Conditions	8
Table 2.2-1. Potential Federal and State-Listed Species in the General Project Vicinity.....	13
Table 2.2-2. Potential Federal and State-Listed Species Summary in Project General Vicinity.....	14
Table 2.3-1. Project Wetlands and Impacts	21
Table 2.4-1. Town of Riverhead – Maximum Permissible Sound Levels by Receiving Property Category (Chapter 251 Attachment 1 – Table 1)	24
Table 2.4-2. Summary of Acoustic Modeling Results	28
Table 2.7-1. Aesthetic or Scenic Resources within Five Miles of Project.....	30

Figures

Figure 1.2-1. Detail of the Calverton Solar Energy Center Project Area on USGS Suffolk 7.5 minute Topographic Quadrangle.	2
Figure 2.1-1. Town of Riverhead Zoning Districts.....	7
Figure 2.3-1. Project Site Wetlands and Waterbodies.....	20
Figure 2.4-1. Received Sound Levels – Normal Operation	27

Appendices

Appendix A	Preliminary Decommissioning Plan
Appendix B	USFWS and NYSDEC Consultation
Appendix C	Wetland and Waterbodies Delineation Report
Appendix D	Noise study
Appendix E	Cultural Resources Consultation

1.0 DESCRIPTION OF PROPOSED ACTION

1.1 Introduction

LI Solar Generation, LLC (Applicant) is proposing to build and operate the Calverton Solar Energy Center (Project) in the hamlet of Calverton in the Town of Riverhead, Suffolk County, New York. The Calverton Solar Energy Center was a selected project as a result of PSEG Long Island's (PSEG-LI) 2015 Renewable Request for Proposal (2015 Renewable RFP) issued on December 22, 2015 to increase the renewable energy capacity and generation on Long Island. The Project will consist of a 22.9 megawatt (MW) solar energy center, which is estimated to provide clean renewable power for approximately 4,500 homes. The intent of the 2015 Renewable RFP was to meet the goal of 400 MW of new renewable energy generation in PSEG-LI's service area, as part of an overall plan to create "a pathway to further diversify the resource portfolio available for its customers".

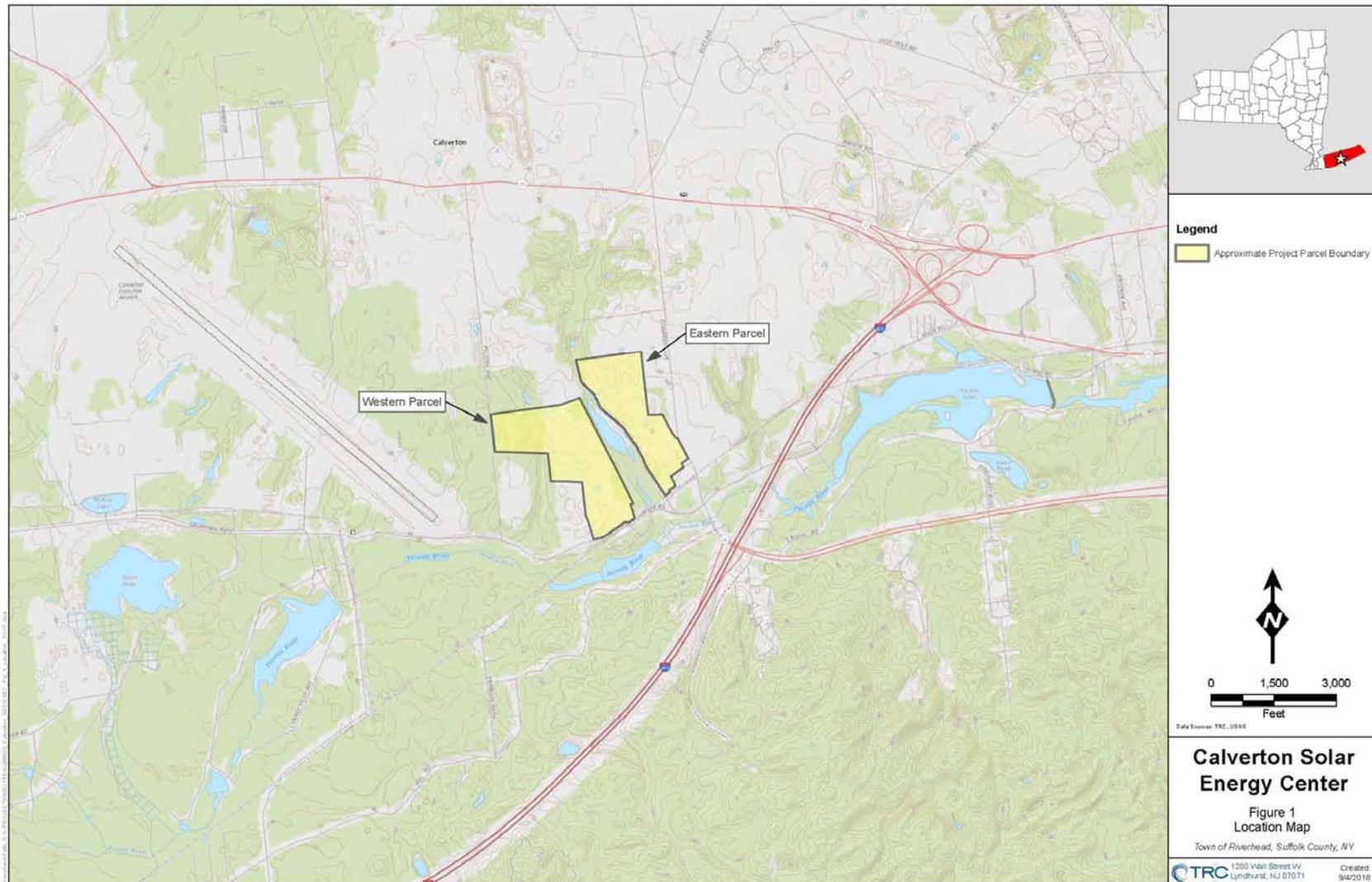
1.2 Project Description

LI Solar Generation, LLC is a jointly owned entity between wholly owned subsidiaries of NextEra Energy Resources, LLC and National Grid plc. NextEra Energy Resources, LLC is the world's largest generator of renewable energy from the wind and sun and operates over 19,060 MW of generating capacity in the United States & Canada. NextEra Energy Resources, LLC is among the largest developers of solar facilities in North America, operating a portfolio of more than 2,000 MW. KeySpan Corporation, an indirect wholly-owned subsidiary of National Grid plc, owns 3,860 MWs of electric generating assets on Long Island. National Grid (and its predecessor companies on Long Island) have successfully managed the design, permitting, construction, and commissioning for the current fleet of steam electric and combustion turbines on Long Island.

1.2.1 Project Location

The Project will be located on two proximate but physically separated parcels totaling approximately 200 acres under Option to Purchase Agreements with private landowners (Project Site). The eastern parcel is identified in the Town Assessment Roll as 149 Edwards Avenue while the western parcel is identified as 2714 River Road. The Project Site is illustrated on the U.S. Geologic Survey (USGS) 7.5-minute Wading River and Riverhead quadrangle maps (USGS 2016) provided as Figure 1.2-1. The Project Site is located within an industrially zoned area and is surrounded by a variety of land uses.

Figure 1.2-1. Detail of the Calverton Solar Energy Center Project Area on USGS Suffolk 7.5 minute Topographic Quadrangle.



North of the Project Site consists predominantly of forested and agricultural uses, an extension of the Long Island Sports Park, and then New York State Route 25. To the east of the eastern parcel is Edwards Avenue and the Long Island Power Authority (LIPA) Edwards Avenue Substation, followed by agricultural uses, a privately-owned commercial water park and Interstate 495. To the south of the Project Site is the Long Island Rail Road (LIRR) and Railroad Avenue, followed by scattered single family home residential uses and then the Peconic River and Interstate 495. Agricultural uses are located to the west of the western parcel, followed by the planned Enterprise Park at Calverton (EPCAL), which consists of the redevelopment of the former Naval Weapons Industrial Reserve Plant at Calverton, and the Calverton Executive Airport. Between the two parcels of land that consist of the Project Site at the south and central areas is forested land and Conoe (also known as Canoe) Lake which is owned by the New York State Department of Environmental Conservation (NYSDEC).

Current land uses of the Project Site also vary. The Eastern Parcel corresponds to the former Calverton Links golf course, initially constructed in the early 1990s, now privately-operated by the Long Island Sports Park and used primarily for commercial disc and miniature golf and paintball activities. This parcel contains two buildings: the Country Club, a single-story building with vinyl siding built in ca. 2005, and a single-story, concrete block, former agricultural outbuilding built in ca. 1958 now used as a Maintenance Shed. The western parcel is presently used for agriculture and contains one standing structure (an abandoned home) in the southwest corner of the parcel in forested area.

The Applicant has entered into two Option to Purchase agreements with two separate private landowners.

1.2.2 Project Components and Layout

The proposed layout for the Calverton Solar Energy Center is illustrated on Overall Site Plan (Drawing C100 of the Site Plan Drawings). In total, the Project will have a developed area of approximately 55 acres on the eastern parcel and 71 acres on the western parcel. The existing building and parking lot on the eastern parcel will be removed prior to construction of the Project.

The entrance to the eastern parcel will utilize the existing paved driveway off Edwards Avenue. An interior access road will be installed at the end of the paved driveway to allow vehicle access to the interior areas of the solar energy center. The entrance to the western parcel will be located off River Road at the property's existing point of ingress/egress and an interior access road will be installed to allow vehicle access to the solar energy center. These internal access roads are shown on Overall Site Plan of the Site Plan Drawings. The entire facility will be enclosed in a security fence.

Landscaping will be installed in accordance with Town requirements (§ 301-124(1)(b), § 301-236 and §301-282(e)). A landscaping plan is included as drawings L.100 and L.101 within the Site Plan Drawings. Given the irrigation required for previous land uses of the properties, the Applicant believes it is reasonable to assume that there will be little to no increase in water usage. Based on the UDSA guidance, the expected water use by the landscaping plants is 4,380 gallons per day during the three-year establishment period. This value assumes an average demand for trees of nine (9) gallons of water per day and for shrubs of four (4) gallons of water per day. However, a significant percentage of this demand will be accounted for by natural precipitation

The solar arrays will be comprised of fixed-tilt, PV solar modules supported by structural racking systems on driven support posts. The height of the arrays will not exceed eight (8) feet. The ground cover under and between the rows of solar panels will be low-maintenance vegetation. The electrical output will be transmitted to inverters and then directed to a collection substation. All power will then be directed to the existing LIPA Edwards Avenue substation. To connect the solar facility on the western parcel of the Project Site to the collector substation located on the eastern parcel, the Project will require the construction of an underground collection line that exits to the north of the parcel and then heads south to the collection substation. Horizontal directional drilling (HDD) will be utilized for portions of this connection to avoid impacts to forested areas.

Table 1.2-1 below provides pre- and post-construction conditions at the site in terms of the development associated with the solar array.

Table 1.2-1. Pre- and Post-Construction Conditions

Site Coverage Type	Existing Conditions Western Parcel (Acres)	Existing Conditions Eastern Parcel (Acres)	Existing Conditions Total (Acres)	Proposed Conditions Western Parcel (Acres)	Proposed Conditions Eastern Parcel (Acres)	Proposed Conditions Total (Acres)
Concrete Pads	0.0	0.0	0.0	0.1	0.5	0.6
Drainage Reserve Areas	0.0	0.0	0.0	3.3	2.5	5.7
Wooded/Brush Areas	45.1	15.9	61.0	45.1	15.9	61.0
Pervious Surfaces (including dirt driveways and grass areas; solar panel array in brackets)	70.1	58.0	128.1	65.8 [46.9]	58.9 [38.6]	124.6 [85.5]
Gravel Roadway	0.0	3.2	3.2	1.1	3.8	4.9
Buildings	0.0	1.6	1.6	0.0	0.0	0.0
Paved Roadway	0.0	1.0	1.0	0.0	0.9	0.9
Parking Lot	0.0	2.8	2.8	0.0	0.0	0.0

1.3 Construction and Operation

The Project will be constructed in compliance with applicable municipal, state and federal regulations, guidelines, and standards, and the specific requirements of the necessary permits. Standard trucking methods will be used to transport materials and equipment to the Project Site. Virtually all major material

and equipment transportation activity will occur during the construction phase. The inverter and transformer stations will be delivered assembled on standard-width flatbed tractor-trailers. Other Project equipment (e.g., wire, cable, conduit, and construction materials) will also be transported on standard-width trucks. On-site, heavy construction equipment will be limited to a backhoe for conduit excavation and access road construction, pile drivers to install piles below each inverter and racking system, and a light duty crane to place the equipment on these metal piles. Construction of the collection substation involves cranes and cement trucks for constructing equipment foundations. Construction parking will be located on the Project Site and will not impact traffic along the local roads.

Preparation of the work areas will generally be performed mechanically and will not require the use of pesticides during construction. Reseeding will occur in developed areas.

The construction period of the Project is anticipated to be approximately six (6) months. The number of construction workers necessary at any one time will vary, depending on the stage of construction. At the peak of construction, approximately 180 workers will be present. Construction activities will occur within the hours of 7:00 am and 8:00 pm, Monday through Saturday in accordance with the Town Code (§ 251-K(1)).

There will be no full-time staff required to be located at the Site for operation of the solar energy center as the facility will be monitored remotely. Herbicide use will be limited to gravel and blue stone areas underneath electrical equipment. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. As such, there would be negligible use-related impacts (e.g. traffic, noise, occupancy) and no utilities (water, sewer) or solid waste generation. Personnel may also access the property in response to an automated alert of a system issue requiring further diagnosis. The Project's Renewable Operations Control Center (ROCC) located in Juno Beach, Florida, will provide constant 24/7 monitoring of the site and capability to shutdown systems as required and provide notifications to local area operations staff.

1.4 Decommissioning

The proposed Project has been selected for a 30-year power purchase agreement (PPA) under the PSEG-LI 2015 Renewable RFP. LI Solar Generation proposed to operate and maintain the solar panel array facility for 30 years. After expiration of the 30-year PPA, the Applicant would either seek to extend the PPA or continue operations, at which point there would be an application submitted for a special permit. Otherwise, the Project would be decommissioned and properly disposed of as part of a planned decommissioning process.

The Applicant has provided a preliminary decommissioning plan (Appendix A) with this Application to demonstrate that the Project would follow the necessary decommissioning processes, consistent with the Town's standards, to allow for restoration and reuse of both parcels. Prior to implementation of the Project, the Applicant would submit a complete decommissioning plan based on final site drawings and as-builds detailing the process that would occur after the expiration of the 30-year PPA. The Applicant would also provide the Town with security before construction to cover the cost of removal and completion of the decommissioning process.

1.5 Required Permits and Approvals

The Applicant anticipates that the permits and approvals shown in Table 1.5-1 below will be required to construct and operate the Project.

Table 1.5-1. Anticipated Permit and Approvals

TOWN	PERMIT/APPROVAL	ANTICIPATED SUBMITTAL DATE
Town of Riverhead Town Board	Special Permit	August 2018
Town of Riverhead Planning Board	Site Plan	August 2018
Town of Riverhead Building Department	Building Permit	Following Special Permit/Site Plan Approval
Town of Riverhead Highway Department	Road Opening Permit	Following Special Permit/Site Plan Approval
New York State Department of Environmental Conservation	Notice of Intent-SWPPP; SPDES General Permit for Stormwater (GP-0-15-002)	Prior to or following Special Permit/Site Plan Approval
	Wild, Scenic and Recreational River Permit	Fall 2018
Long Island Power Authority (LIPA)	Power Purchase Contract	N/A

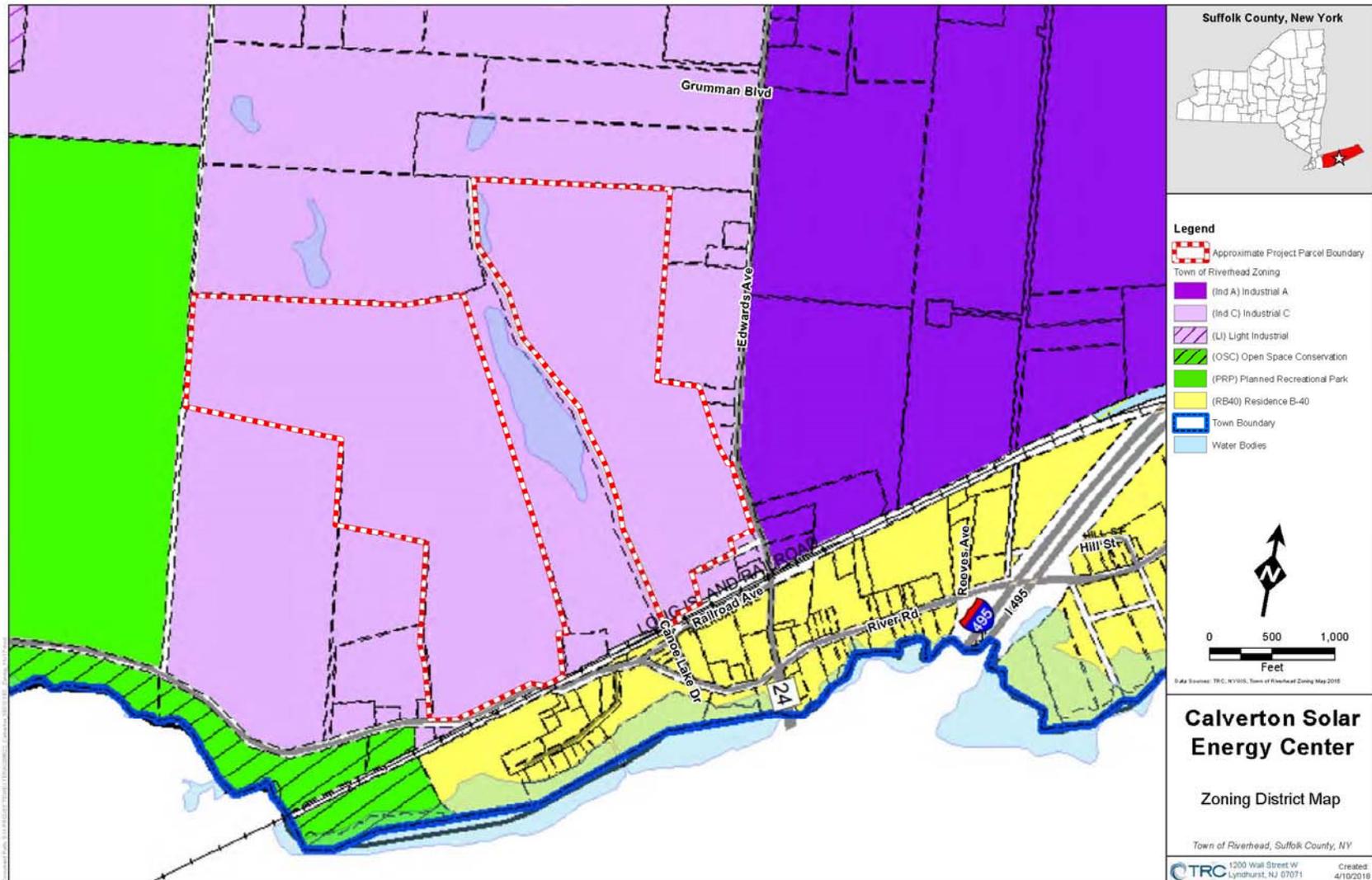
2.0 EXISTING CONDITIONS, POTENTIAL IMPACTS, AND PROPOSED MITIGATION

The following section provides a discussion of topics for which the Applicant believed an expanded level of discussion was warranted in addition to the State Environmental Quality Review Act (SEQRA) Full Environmental Assessment Form (EAF) included with this application.

2.1 Zoning

The two parcels (consisting of an area of 197.7-acres) containing the proposed Calverton Solar Energy Center Project Site are located within the Industrial C (Ind C) Zoning District of the Town of Riverhead, New York (see Figure 2.1-1).

Figure 2.1-1. Town of Riverhead Zoning Districts



Several zoning districts exist adjacent to the Project Site which include:

North: Industrial C

East: Industrial A (Ind A)

South: Residence B-40 (RB-40), Open Space Conservation (OSC)

West: Planned Recreational Park (PRP)

2.1.1 Commercial Solar Energy Production Systems (§301-282)

Commercial solar energy production facilities are allowed with special permit approval in the Industrial C (IC) Zoning Use District that is located within the zip code boundary of Calverton. Commercial solar energy production systems are subject to specific use regulations and requirements for decommissioning plans, as specified in §301-282 and 301-283, respectively. The proposed Project’s consistency with the dimensional requirements for the zoning district is represented in Table 2.1-1. The Project is consistent with the dimensional commercial solar energy production systems requirements, so no variances will be requested with regards to these criteria.

Table 2.1-1. Comparison of Town of Riverhead Commercial Solar Energy Production System Dimensional Regulations (§301-282) to Proposed Conditions

Dimension	Requirement	Proposed (Eastern Parcel)	Proposed (Western Parcel)
Minimum Lot Area	6 acres	82.486	115.18
Maximum Total Lot Coverage ¹	75%	53%	42%
Maximum Height (feet) (ground-mounted panels)	8	8	8
Minimum Natural Open Space	25%	46.76% ²	55.70%
Minimum Setback to Residential Building/Zoning Districts	100 feet	105.3 feet	109.8 feet
Minimum Setback to Commercial/ Industrial Property	25 feet	32.8 feet	42.5 feet
Minimum Vegetated Perimeter Buffer Along Adjacent Properties	25 feet	32.8 feet	42.5 feet
Minimum Vegetated Perimeter Buffer Along Roads	50 feet (along roads)	51.3 feet	105.2 feet
Notes:	¹ Notwithstanding any requirement in § 301-115, 301-118, 301-123 and 301-127 of Chapter 301-282, the total surface area of all ground-mounted and freestanding solar collectors, including solar photovoltaic cells, panels, and arrays, shall not exceed 75% of the total parcel area. ² Natural Open space is defined as forested areas as well as previously maintained / landscaped lawn areas.		

The Town’s zoning ordinance requires that a commercial solar energy production system must be consistent with each of the following criteria of §301-282:

A. The commercial solar energy system shall be on a parcel of not less than six acres.

The Project includes two proximate but physically separated parcels totaling approximately 200 acres, which complies with this standard. The eastern parcel is approximately 82 acres and the western parcel is approximately 115 acres, both parcels comply with the standard.

B. All ground-mounted panels shall not exceed the height of eight feet.

The proposed solar panels will be installed to a maximum top height of eight feet above grade level, in conformance with this standard.

C. All mechanical equipment of commercial solar energy systems, including any structure for batteries or storage cells, are completely enclosed by a minimum eight-foot-high fence with a self-locking gate.

An eight-foot high fence with a compliant gate at the respective site access points will be installed around the perimeter of the Project on both parcels, which will contain the solar panel array fields, in conformance with this standard.

D. Notwithstanding any requirement in §301-115, 301-229, 301-123, 301-127 of this chapter, the total surface area of all ground-mounted and freestanding solar collectors, including solar photovoltaic cells, panels, and arrays, shall not exceed 75% of the total parcel area.

The proposed total surface area of all ground-mounted and freestanding solar collectors is 38.02 acres for the eastern parcel (47%) and 46.85 acres for the western parcel (41%), in conformance with this standard.

E. The installation of a of a minimum 25 foot vegetated perimeter buffer to provide year-round screening of the system from adjacent properties and a minimum 50 foot vegetative buffer along roads.

Vegetated buffers and screening in compliance with these requirements will be installed along the frontage of the eastern parcel along Edwards Avenue and adjacent to neighboring uses located along Edwards Avenue. Additional vegetative buffer/screening will be planted along the southern border of the eastern parcel where there is no existing vegetation to provide year-round screening. For the western parcel, vegetative screening will be installed on the western border of the property where there is no existing vegetation to screen the adjacent properties and along the frontage of River Road on the southern portion of the property. Vegetated buffers will be comprised of evergreen species to provide year-round screening of the proposed solar panel array at the specified buffer distances and in compliance with these standards.

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.

The solar panel arrays will be placed and constructed to prevent reflective glare in accordance with this standard. A study has been conducted for the Project and has determined that the Project will not result in glint/glare aviation impacts on the Calverton airport to the west of the site.

The Project is on two parcels separated by a narrow strip of land that runs north/south. There are no residential uses south of the eastern parcel that would have a view of the site and only a

few residential homes south of the western parcel. All of the panels will be south facing. Based on the existing topography as well as proposed landscaping and the low height of the solar arrays (8 feet) and the fact the panels are not designed to reflect light but, rather, to absorb it, the Applicant expects that there will not be any glare on habitable buildings or rights of way.

G. All on-site utility and transmission lines are, to the extent feasible, placed underground.

To the extent feasible, all on-site utility and transmission lines will be installed underground. The interconnection line connecting the proposed solar facility to the LIPA Edwards Ave substation also will be placed underground, with a horizontal directional drill (HDD) or trench installation.

H. The installation of a clearly visible warning sign concerning voltage must be placed at the base of all pad-mounted transformers and substations.

Clearly visible warning signs regarding high-voltage lines at the proposed solar facility will be placed as specified, in conformance with the Town Code.

I. The system is designed and situated to be compatible with the existing uses on adjacent and nearby properties.

The proposed solar panel array facility will be compatible with existing uses on adjacent and nearby properties. The Project will not interfere with any other existing on adjacent or nearby properties as there will be no air or water emissions or discharges, no audible sound impacts, and vegetative screening near several property lines will be added, where none exists now.

J. The minimum setback for equipment and panels adjacent to a commercial or industrial property shall be 25 feet.

The minimum proposed setback to an adjacent commercial or industrial property is 32.8 feet, in conformance with this standard.

K. The maximum lot coverage shall be 75%

The lot coverage proposed for the eastern parcel is 53% and 42% for the western parcel, in conformance with this standard.

L. (Reserved)

M. The minimum natural open space shall be 25%.

The natural open space proposed for the eastern parcel is 46.76% and 55.70 for the western parcel, in conformance with this standard. For the purposes of this discussion, Natural Open space is defined as forested areas as well as previously maintained / landscaped lawn areas.

N. The minimum setback of panels from a residential building or zoning district shall be 100 feet.

The minimum setback of proposed panels from a residential building or zoning district is 105.3 feet, in conformance with this standard.

O. The minimum buffer adjacent to a commercial or industrial property shall be 25 feet.

The Project will comply with this standard.

P. The maximum height of the panels shall not exceed eight (8) feet.

The Project will comply with this standard.

Q. Any special permit approval granted under this article shall have a term of 20 years, commencing from issuance of occupancy or certificate of compliance, which may be extended for additional five-year terms upon application to the Town Board.

The proposed Project has been selected for a 30-year power purchase agreement (PPA) under the PSEG-LI 2015 Renewable RFP and, therefore, the Project requires that the Town Board approve the special permit for a 20-year period, including two 5-year extensions, thereby matching the 30 year PPA.

R. A building permit may be required for replacing solar panels and accessory equipment as determined by the Chief Building Inspector.

The Project will comply with this standard.

S. Decommissioning/removal. The decommissioning provisions in §301-282(S) of the Town Code state that “a commercial solar energy production system that is not operated for a continuous period of 24 months shall be deemed abandoned.” Further, if the owner does not remove the components of the facility in 90 days, after a 30-day notice, the Town can then remove such components at the owner’s expense. The decommissioning provision of the use regulation indicates that the purpose of this criterion is to ensure the proper decommissioning of commercial solar energy production systems in order to “promote the public health, safety and general welfare of Town citizens.”

The proposed Project has been awarded a 30-year PPA under the PSEG-LI 2015 Renewable RFP. With respect to the above regulations, LI Solar Generation will operate and maintain the solar panel array facility for 30 years. After expiration of the 30-year PPA, the Applicant would either seek to extend the PPA, or continue operations without a PPA, at which time there would be an application submitted for an amended or new special permit. Otherwise, the Project would be decommissioned and properly disposed of as part of a planned decommissioning process. Prior to construction of the Project, the Applicant will provide a form of surety, in the form of a bond or otherwise, to the Town for the funds that would be necessary to complete the decommissioning process.

In accordance with the Town Code, applications for commercial solar energy production systems must include a decommissioning plan that would be instituted upon abandonment or removal of use. Section §301-283 specifies that the decommission plans must include the following information:

- 1. Restoration of the surface grade and soil after removal of aboveground structures and equipment.*
- 2. Restoration of soil areas with native seed mixes and/or plant species suitable to the area, which shall not include any invasive species.*
- 3. Retention of access roads, fences, gates or buildings or buffer plantings, as required at the discretion of the Town.*
- 4. Restoration of the site for agricultural crops or forest resource land, as applicable.*

5. *The disposal of all solid and hazardous waste shall be in accordance with all local, state, and federal waste disposal regulations.*
6. *An applicant of a commercial solar energy system comprising more than 10 acres shall provide a form of surety, either through escrow account, bond or otherwise, to cover the cost of removal in the event the Town must remove the installation and remediate the landscape, in the amount and form deemed to be reasonable by the Town Engineer. The applicant of the facility shall submit a fully inclusive estimate of the cost associated with removal, prepared by a professional engineer.*

The Applicant has provided a preliminary decommissioning plan (Appendix A) with this Application to demonstrate that the Project would follow the necessary decommissioning processes, consistent with the Town's standards, to allow for restoration and reuse of both parcels.

The above-mentioned analyses demonstrate that the proposed solar energy production facility will comply with the standard for the issuance of a special permit in the Ind C zoning district.

2.1.2 Pine Barrens Overlay District – Compatible Growth Area (§301-197)

The Project Site is located within the Long Island Central Pine Barrens Compatible Growth Area (CGA). The Town's Zoning Code at Article XLI Pine Barrens Overlay District (§301-194 - §301-198) regulates development within the CGA. The Project has been designed in compliance with the stormwater, vegetation and other applicable requirements of the Pine Barrens Overlay District. The following provides a summary of the primary regulations for projects within the CGA that influenced the layout of the solar arrays and associated equipment and how the Project will be in compliance.

CGA projects must comply with NYSDEC regulations. Development proposals for sites containing or abutting freshwater wetlands under the jurisdiction of the New York State Department of Environmental Conservation (NYSDEC) are to be separated by a non-disturbance buffer area that is to be in accordance with Article 24 of the New York State Environmental Conservation Law; the Wild, Scenic and Recreational Rivers Act (the Rivers Act); and Chapter 107 of the Code of the Town of Riverhead, whichever is most restrictive (§301-197.A.(5)). The most restrictive buffer area would be the Town's requirement of a 150 foot setback from freshwater wetlands for structures (§295-4.A) (NYSDEC regulates the 100 foot adjacent area to wetlands mapped by NYSDEC). Accordingly, the Project has been designed so that the solar arrays, inverters, access roads, and the substations will not impact wetlands mapped by NYSDEC and the Town of Riverhead and their adjacent 150-foot buffers. Only the stormwater management basins will be within 150 feet of the wetlands. An application for a Wild, Scenic and Recreational Rivers Act permit will be submitted to NYSDEC and a copy of the permit will be forwarded to the Town once obtained.

All stormwater generated by development in the CGA must be recharged onsite unless surplus capacity exists in an offsite drainage system. In the review of development plans, the Town encourages the use of natural recharge areas or drainage system design which result in minimal disturbance of native vegetation. The Project is compliant with these requirements as any additional stormwater generated due to the development of the Project will be directed to onsite infiltration basins where it will then be recharged onsite. Additionally, the infiltration basins (along with the entire Project) will be situated on

previously developed portions of the Project Site and no native vegetation or trees will be disturbed or cleared. A drainage report has been included with this application.

Finally, the Pine Barrens Overlay District restricts disturbance to natural vegetation, combined with previously disturbed areas, to a maximum clearing percentage of 65% for parcels located within the Ind C zone and the CGA. No natural, original vegetation including trees are proposed to be removed or disturbed as a result of the Project. Developed area at the Project Site equals 63.7% of the entire 197.7-acre Project Site. The solar array and associated equipment are proposed to be sited on previously developed and/or disturbed portions of the parcels. There are areas of existing, cosmetic, formalized landscaping, that were added to the Project Site when it was developed as a golf course, on the eastern parcel that will be removed as a result of the Project, particularly in the area of the former golf clubhouse and miniature golf course and between two fairways on the easternmost parcel near the site’s entrance off of Edwards Avenue. In accordance with the Pine Barrens Comprehensive Land Use Plan, clearing is defined as the removal of natural vegetation exclusive of vegetation associated with active agricultural or horticultural activity or formalized landscape and turf areas (section 5.3.3.6 of Central Pine Barrens Comprehensive Land Use Plan; Volume 1: Policies, Programs and Standards, 2012). There is no removal of such and the Project meets the requirements of the Pine Barrens Overlay District.

2.2 Rare / Protected Species and Communities

As presented below, the Project is designed to avoid any impacts to the identified potentially occurring species. Consultation letters were sent to the USFWS and the NYSDEC’s Natural Heritage Program (NYSNHP). These agencies identified potentially occurring federal- and state-protected species in the general vicinity of the Project. The resultant list is provided in Table 2.2-1 and the record of consultation is provided in Appendix B.

Table 2.2-1. Potential Federal and State-Listed Species in the General Project Vicinity

Species		Protected Status	
Scientific Name	Common Name	Federal	State
Mammals			
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	T	T
Birds			
<i>Asio flammeus</i>	Short-eared owl (wintering)	-	E, SGCN-H
<i>Calidris canutus rufa</i>	Red knot	T	-
<i>Charadrius melodus</i>	Piping plover	T	E, SGCN-H
<i>Sterna dougallii dougallii</i>	Roseate tern	E	E, SGCN
Reptiles and Amphibians (Herpetofauna)			
<i>Ambystoma tigrinum</i>	Tiger salamander	-	E, SGCN-H
Fish			
<i>Etheostoma fusiforme</i>	Swamp darter	-	T, SGCN
<i>Enneacanthus obesus</i>	Banded sunfish	-	T

Table 2.2-1. Potential Federal and State-Listed Species in the General Project Vicinity

Species		Protected Status	
Scientific Name	Common Name	Federal	State
Plants			
<i>Agalinus acuta</i> (=A. <i>decembola</i>)	Sandplain gerardia	E	E
<i>Amaranthus pumilus</i>	Seabeach amaranth	T	T
<i>Eupatorium album</i> var. <i>subvenosum</i>	Tri-nerved white boneset	-	T
<i>Rotala ramosior</i>	Toothcup	-	T
E = Endangered T = Threatened SC = Special Concern SGCN = Species of Greatest Conservation Need SGCN-H = Species of Greatest Conservation Need – High Priority			
Sources: USFWS, 2018 NYSDEC, 2018			

A summary of each species in the general vicinity of the Project and the potential for impacts is presented below in Table 2.2-2. Based on the analysis below, the Applicant does not believe that there will be adverse impacts to these species in the event that they are present.

Table 2.2-2. Potential Federal and State-Listed Species Summary in Project General Vicinity

Scientific Name	Common Name	Habitat	Analysis
Mammals			
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Forests. Hibernates in caves, mines.	Any removal of trees, which are expected to be limited solely to formal, non-natural, landscaped individuals, will occur during the recommended USFWS time-of-year clearing period (November 1 to March 31).

Table 2.2-2. Potential Federal and State-Listed Species Summary in Project General Vicinity

Scientific Name	Common Name	Habitat	Analysis
Birds			
<i>Asio flammeus</i>	Short-eared owl	Prairie & coastal grasslands, heathlands, meadows, shrubsteppe, savanna, tundra, marshes, dunes, & agricultural areas. Winter habitat may include large open areas within woodlots, stubble fields, fresh & saltwater marshes, weedy fields, dumps, gravel pits, rock quarries, & shrub thickets.	The maintained landscape on the two parcels, which are subject to continuous maintenance activities, do not represent optimal habitat for small prey animals or significant potential wintering or breeding habitat for owls. Accordingly, no adverse impacts to the short-eared owl are anticipated as a result of the proposed Project.
<i>Calidris canutus rufa</i>	Red knot	Breeds in drier tundra areas, such as sparsely vegetated hillsides. Outside of breeding season, it is found primarily in intertidal, marine habitats, especially near coastal inlets, estuaries, and bays	The Project area does not represent suitable habitat for this species.
<i>Charadrius melodus</i>	Piping plover	Nest above the high water line in sandy areas with sparse vegetation including marshes, ocean shores, bays, spoil islands, reservoirs, alkali lakes, & rivers. In winter they forage on coastal beaches, sandflats, & mudflats that are exposed during low tide	The Project area does not represent suitable habitat for this species.
<i>Sterna dougallii dougallii</i>	Roseate tern	Breeds on rocky offshore islands, barrier beaches, & salt marsh islands. Winters offshore or along coasts.	The Project area does not represent suitable habitat for this species.

Table 2.2-2. Potential Federal and State-Listed Species Summary in Project General Vicinity

Scientific Name	Common Name	Habitat	Analysis
Reptiles and Amphibians (Herpetofauna)			
<i>Ambystoma tigrinum</i>	Tiger salamander	In Long Island: sandy pine barren areas with temporary or permanent pools for breeding.	<p>NYSDEC correspondence indicates that this species is located within 40 yards of the Project area, which is presumably Conoe Lake and therefore outside of the Project area.</p> <p>NYCDEC has established guidelines for projects being proposed within 1,000 feet of known tiger salamander breeding areas¹. First, 100% of the existing upland forest habitat within 535 feet of breeding pond must be preserved. Second, a minimum of 50% of the adjacent upland area within 1,000 feet of breeding ponds in contiguous blocks of suitable habitat should be preserved, while allowing for the preservation of wooded corridors which provide connections to adjacent tiger salamander upland habitats.</p> <p>The Applicant will maintain 100% of the existing upland forest habitat within 535 of Conoe Lake. Within 1,000 feet of Conoe Lake, the habitat will remain the same (grassland, meadow) or be converted from open agricultural field to meadow. Accordingly, no adverse impacts to the Tiger Salamander are anticipated as a result of the proposed Project.</p>

¹ While the Guidelines are not available online at the time of this writing, they are described by the following: New York State Natural Heritage Program. Tiger Salamander. Available online at: <http://www.acris.nynhp.org/guide.php?id=6689&part=1>. Accessed on July 5, 2018.

Table 2.2-2. Potential Federal and State-Listed Species Summary in Project General Vicinity

Scientific Name	Common Name	Habitat	Analysis
Fish			
<i>Etheostoma fusiforme</i>	Swamp darter	In NY, it occurs in only a few ponds near to, and in the Peconic River in eastern Long Island. The typical habitat of the swamp darter is quiet or slow moving water with a sand, detritus or muck bottom and with an abundance of aquatic vegetation.	NYSDEC correspondence indicates this species is located in the Peconic River to the south, so there will be no impacts to this species.
<i>Enneacanthus obesus</i>	Banded sunfish	Occurs in slow water areas along the Atlantic Coast. In New York State, it has only been found in the Passaic drainage and in eastern Long Island in the Peconic drainage. It prefers heavily vegetated areas of lakes, bogs, and streams.	NYSDEC correspondence indicates this species is located in the Peconic River to the south, so there will be no impacts to this species.
Plants			
<i>Agalinus acuta</i> (=A. <i>decembola</i>)	Sandplain gerardia	Dry, sandy soil. Dry fields, woodland openings.	This plant requires disturbed habitat in maritime grasslands that are maintained by fire or grazing. Based on current and planned uses, the Project site does not provide suitable habitat for the species
<i>Amaranthus pumilus</i>	Seabeach amaranth	Beaches	The Project site does not provide suitable habitat for the species.
<i>Eupatorium album</i> var. <i>subvenosum</i> (= <i>E. subvenosum</i>)	Tri-nerved white boneset	Pine barrens, sandy shores, & openings.	NYSDEC correspondence indicates this species is located along the “parcel boundary between the eastern parcel and NY State Land, southeast of Conoe Pond and just to the north of the railroad.” The Applicant does not intend to develop this section of the parcel and will commit to develop a plan to avoid, minimize, or mitigate any potential impacts.
<i>Rotala ramosior</i>	Toothcup	Pond margins, sandy shores, damp depressions.	NYSDEC correspondence indicates this species is found “along the shore of Conoe Pond”. The Applicant will not be developing immediately adjacent to this pond and of the parcel and will commit to develop a plan to avoid, minimize, or mitigate any potential impacts.

2.2.1 Sensitive Habitats and Protected Species

In general, federal and state designated important habitats include USFWS designated critical habitat, New York State Wildlife Management Areas (WMA), NMFS Essential Fish Habitat (EFH), Important Bird Areas (IBA), Significant Coastal Fish and Wildlife Habitats (SCFWH), New York Natural Heritage Program (NYNHP), Significant Natural Communities (SNC), and any other designated lands that are protected primarily for the conservation of fish and/or wildlife habitat. As explained below, none of these habitats are located on the project site.

Wildlife Management Areas

WMAs are areas protected by the state for conservation and protection of wildlife. There are no NYSDEC WMAs on Long Island; therefore, the Project is not within a WMA.

Significant Coastal Fish and Wildlife Habitats

Under the Significant Coastal Fish and Wildlife Habitats (SCFWH) Program, the New York Department of State (NYDS) considers a site significant if it serves one or more of the following functions:

- It is essential to the survival of a large portion of a particular fish or wildlife population;
- It supports populations of species which are endangered, threatened or of special concern;
- It supports populations having significant commercial, recreational or educational value; or
- It exemplifies a habitat type which is not commonly found in the state or in a coastal region (19 NYCRR 602.5(a)).

There will be no impact to Significant Coastal Fish and Wildlife Habitats. The nearest SCFWH is the Peconic River, which was first designated as an SCFWH in 1987 and revised in 2002. The two parcels that comprise the Project Area are separated by the Conoe Lake ecosystem, which drains southward and into the Peconic River. Conoe Lake is not designated a SCFWH. No Project construction will take place within 150 feet of Conoe Lake. BMPs and SWPPP mitigation measures will be employed to protect this area, as described herein.

NYNHP Significant Natural Communities

There will be no impact to Significant NYNHP Natural Communities. The NYNHP is tasked with designating areas as Significant Natural Communities (SNCs). SNCs are locations of rare or high-quality wetlands, forests, grasslands, ponds, streams, and other types of habitats, ecosystems, and ecological areas (NYNHP, 2017c). The southern limits of the Project Area is about ½-mile from a NYNHP designated SNC associated with the Peconic River. The Conoe Lake ecosystem located between the two Project parcels is not mapped as an SNC. As noted above, no Project construction will take place within 150 feet of Conoe Lake.

2.3 Wetlands and Water Resources

2.3.1 Wetlands

The Applicant conducted a wetland delineation in accordance with criteria set forth in the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (USACE 2012) (Supplement). Delineated boundaries of streams are identified by the presence of an ordinary high water mark (OHWM), which is the line on the shore established by the fluctuations of water (33 CFR 328.3). The OHWM line is indicated by physical characteristics such as: a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other characteristics of the surrounding areas.

Results of the delineation are shown on Figure 2.3-1 and summarized below in Table 2.3-1. More details on the Project Site's wetlands, including details on methodologies and agency jurisdiction, are included in the "Wetland and Waterbodies Delineation Report" provided as Appendix C.

Figure 2.3-1. Project Site Wetlands and Waterbodies



Table 2.3-1. Project Wetlands and Impacts

Delineation ID	Field Determined National Wetlands Inventory Classification	Wetland Acreage within the Project Site	Conversion from Forested to Emergent and/or Scrub / Shrub Wetland	Temporary Direct Impacts During Construction
Wetland W1	PFO/PEM	0.78	0	0
Wetland W2	PSS	0.39	0	0
Wetland W3	PUB/PEM	0.41	0	0
Wetland W4	PUB	0.20	0	0
Wetland W5	PUB/PEM	0.54	0	0
Wetland W6	PEM	0.53	0	0
TOTALS:		2.85	0	0

Wetland W1 – Wetland W1 is located in the southern part of the western parcel, surrounded by open agricultural land. This is essentially a combination of a “Palustrine forested, broad-leaved deciduous” (PFO1) wetland dominated by black willow and pin oak, and a “Palustrine emergent, non-persistent” (PEM2) wetland dominated by pink weed, wool-grass, and a few areas with broad-leaf cattail. Non-native species are prevalent throughout this wetland, including bitter dock, mile-a-minute, Asian bittersweet, and multiflora rose. TRC did not observe any drainage features leading from this wetland area, and it was determined to be a physically isolated resource.

Wetland W2 – Wetland W2 is located in the northwestern part of the eastern parcel. This is a “Palustrine scrub-shrub, broad leaved deciduous” (PSS1) wetland dominated by buttonbush. This is a physically isolated resource with no observed drainage features leading from this wetland area.

Wetland W3 – Wetland W3 is located in the western part of the eastern parcel. This is essentially an excavated pond surrounded by emergent herbaceous vegetation along the circumference. It was delineated as a “Palustrine unconsolidated bottom” (PUB) (pond) and PEM resource. This is a physically isolated resource with no observed drainage features leading from this area.

Wetland W4 – Wetland W4 is located in the western part of the eastern parcel. This is essentially an excavated pond with a very narrow belt of herbaceous vegetation along the circumference. It was delineated as a PUB resource only. This is a physically isolated resource with no observed drainage features leading from this area.

Wetland W5 – Wetland W5 is located in the southwestern part of the eastern parcel. This is an excavated pond formerly used as a golf course pond. The perimeter of the PUB portion of the wetland is dominated with obligate herbaceous vegetation including cattail and bulrush. It was delineated as a PUB/PEM resource. This is a physically isolated resource with no observed drainage features leading from this area.

Wetlands W6 – This wetland is located in the eastern part of the eastern parcel and extends offsite. It is an excavated feature, likely once a golf course pond. However, at the time of the delineation most of this area was under herbaceous cover with few inundated areas. It was delineated as a PEM resource. Although the northern part of the wetland is offsite and was not physically inspected by TRC, available mapping indicates that this is a physically isolated resource with no observed drainage features leading from this area.

Wetlands W1, W2, W3, and W5, and pond W4 were determined to be physically isolated resources, without distinct surface hydrologic connections to waters of the United States. Wetland W6 extends offsite to the north, but based on reviews of available mapping, it is also likely physically isolated from waters of the United States. As such, these six resources are likely not under the jurisdiction of the USACE. Moreover, none of the Project components directly impact any of these wetlands and so USACE review is not necessary.

The wetlands are all mapped by the NYSDEC as state resources, per the NYSDEC ERM, and therefore the NYSDEC may claim jurisdiction.

Through design/ avoidance efforts, the construction and operation of the Project will not result in any direct impacts to any mapped ACOE or NYSDEC freshwater wetlands or the latter agency's assigned 100-foot adjacent area within the Project Site. This includes the NYSDEC wetlands associated with the Conoe Lake system between the two parcels that comprise the Project Site. As such, no federal or state wetland permits are required.

The Town of Riverhead regulates activities within a 150-buffer of any mapped freshwater wetlands, natural or altered drainage systems, or other watercourses. In accordance with §295-4, activities within the freshwater wetland or associated 150-buffer require review and approval from the Town. Certain specific limitations are put in place for these areas where applicable:

- No placement of cleared vegetation and slash materials within or adjacent to a wetland or waterbody;
- No accumulation of construction debris or trash within the restricted area;
- No use of herbicide within the restriction area (or as required per manufacturer's instructions);
- No parking of construction equipment, vehicles or mobile operations centers in the restricted area;
- No degradation of stream banks;
- No equipment washing or refueling within the restricted area; and
- No storage of any petroleum or chemical material and no disposal of excess concrete or concrete wash water within the restricted area.

Through design/ avoidance efforts, the construction and operation of the Project has largely avoided impacts to the 150-foot buffer around Town regulated freshwater wetlands. The only construction within this buffer region will be stormwater management basins and the Applicant will adhere to the previously listed limitations.

The National Wetland Inventory (NWI) maps two small excavated, crescent-shaped ponds as Palustrine System resources in the east-central part of the eastern parcel. These features were observed in the field and determined to be decorative landscape ponds, completely lined with waterproof fabric. As such, they were not delineated as wetland resources.

2.3.2 Waterways

The New York State Department of Conservation (NYSDEC) Environmental Resource Mapper (ERM) depicts the Conoe Lake wetland-stream complex between the two parcels and associated “check zones” for the wetlands that extend onto both parcels. In contrast to the NYSDEC’s mapping, the Class C stream shown by the NYSDEC ERM on the western parcel is an erroneously mapped water body. The Applicant inspected the area mapped as a stream and no such feature is present.

The NWI maps no streams on either parcel. The NWI mapping indicates two small excavated, crescent-shaped ponds (“PUBHX”) in the east-central part of the eastern parcel. The pond features mapped by NWI were observed during the field survey by TRC and were determined to be artificial ponds, completely lined with waterproof fabric. These ponds were decorative landscape features, created for the former golf course and as such, they were not delineated as wetland resources.

The Project Site is located within the non-tidal portion of the Peconic River–Flanders Bay drainage basin. The 12-digit Hydrologic Unit Code (HUC) assigned to the applicable section of the Peconic River is 020302020502. The western parcel drains generally southward via overland flow, and eastward to Conoe Lake (also spelled Conoe Lake). The eastern parcel drains westward to Conoe Lake via overland flow. Some site drainage is directed into several ponds excavated as part of the former golf course. These ponds do not have a hydrologic connection to the Conoe Lake system. Conoe Lake, which is located on New York State land, drains southward to the Peconic River via an unnamed stream. The Peconic River flows eastward to its mouth at Flanders Bay in eastern Long Island.

The Project Site is located within the Peconic Wild, Scenic and Recreational River (WSRR) Corridor where the Peconic River is designated as Scenic. A Major Public Utility which is not subject to Article 10 of the New York Public Service Law (which the Project is not) is an allowable use within a WSRR Corridor and requires a permit from NYSDEC. In order to comply with the rules set forth in the Environmental Conservation Law (ECL), Article 15 Title 27, 6 NYCRR Part 666 (WSRR Regulations), a project must comply with the key elements of preservation listed specifically in the WSRR regulations as well as local elements of concern identified by NYSDEC Region 1. These elements include:

- Preservation of Natural Flow
- Preservation of Water Quality
- Preservation of Natural Resources

- Preservation of Cultural Resources
- Preservation of Scenic Resources

The Project will not have any impact on the Peconic River and therefore satisfies the above elements.

Additionally, Section §301-197.A.(6) of the Pine Barrens Overlay District zoning ordinance requires development proposals for sites within the WSSR Corridor to conform with the elements listed above. As noted above, the Project will satisfy the applicable requirements as it will have no impact on the Peconic River.

2.4 Noise

A report entitled “Calverton Solar Energy Center Project Acoustic Assessment” dated June 2018 and prepared by Tetra Tech has been included as Appendix D of this Project Narrative that documents the Project’s compliance with the Town’s noise ordinance. The following provides a summary of the applicable noise standards, potential impacts during construction and potential impacts during operation.

2.4.1 Applicable Standards

The Town of Riverhead has a noise ordinance (Chapter 251 of the Town Code), which prescribes numerical decibel limits applicable to the Project and limits activities during hours based on noise levels generated. It states that noise disturbances are prohibited. “No person shall make, continue or cause or suffer to be made or continued any unreasonable noise” (§251-5).

To define unreasonable noise, the ordinance includes maximum permissible sound levels that limit the sound from any sound source on a specified category of property of any public and or right-of-way so that sound levels do not exceed those limits given in Table 2.4-1 when measured at or within the real property line of the receiving property. The Project is located on parcels that are zoned “Industrial”.

Table 2.4-1. Town of Riverhead – Maximum Permissible Sound Levels by Receiving Property Category (Chapter 251 Attachment 1 – Table 1)

Sound Source Property Category	Receiving Property Category					
	Another Apartment within Multi-dwelling Building		Residential		Commercial	Industrial
	7:00 am to 8:00 pm	8:00 pm to 7:00 am	7:00 am to 8:00 pm	8:00 pm to 7:00 am	All Times	All Times
Apartment within Multi-dwelling Building	50	45	65	50	65	75
Residential	-	-	65	50	65	75
Commercial or public land or rights-of-way	-	-	65	50	65	75

Sound Source Property Category	Receiving Property Category					
	Another Apartment within Multi-dwelling Building		Residential		Commercial	Industrial
	7:00 am to 8:00 pm	8:00 pm to 7:00 am	7:00 am to 8:00 pm	8:00 pm to 7:00 am	All Times	All Times
Industrial	-	-	65	50	65	75

Construction noise is also discussed in §251-5(K), with construction activities being prohibited between the hours of 8:00 pm and 7:00 am on weekdays, Sundays or legal holidays if the noise across a residential property boundary is unreasonable. At any other time, the sound level across a real property boundary cannot exceed an L₁₀ of 80 dBA. Lastly, the peak sound pressure level from an impulsive sound is not permitted to exceed 130 dBA across a real property boundary.

2.4.2 Impacts During Construction

Received sound levels during construction will fluctuate, depending on the construction activity, equipment type, and distance between noise source and receiver. The sounds will be typical of those heard at construction sites such as homebuilding or commercial development. All construction will be performed within the hours allowed by the Town Code and in compliance with noise regulations for construction.

Construction is anticipated to take approximately six months and will occur within the hours of 7:00 am and 8:00 pm, Monday through Saturday in accordance with the Town Code (§ 251-K(1)). In addition, sound levels across real property lines will not exceed the Code’s requirement of an L10 of 80dba. Accordingly, the Project will be in compliance with the Town’s Noise Code.

2.4.3 Impacts During Operation

Noise modeling results show that the Project will comply and, in fact, be below the Town’s Noise Code limits. Sound sources considered in the Project operational acoustic analysis include the centralized inverters and transformers associated with the PV modules, and the proposed onsite substation. The principal sources of noise are the cooling-ventilation fans, the electrical components of the inverters and the step-up transformer at the on-site substation. Each centralized inverter location would include an inverter inside a pre-fabricated enclosure and one transformer mounted on a concrete pad. The transformers and inverters are mounted on pads at grade level and would be centrally located within each 2 MW array of solar panels. PV station transformers and power inverters are generally considered a low-level source of noise, limited to daytime hours when the solar arrays are generating electricity.

Substations have switching, protection and control equipment and a transformer, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise and noise generated by the operation of the cooling equipment. The core is the principal noise source and does not vary significantly with electrical load. The load noise is primarily caused by the load current in the transformer’s conducting coils (or windings). The cooling

equipment (fans and pumps) may also be a noise component, depending on fan design. During air forced cooling method, cooling fan noise is produced in addition to the core noise.

A computer-aided noise abatement program was used to conduct an operational acoustic modeling analysis assuming Project operation during daytime hours, when all equipment could potentially be operating continuously and concurrently.

Broadband (dBA) sound pressure levels were calculated at an elevation of 1.5 meters (5 feet) above the ground, the height of the ears of a standing person. The sound energy was then summed to determine the equivalent A-weighted sound pressure level at a point of reception during normal operation. A sound contour plot displaying broadband (dBA) sound levels presented as color-coded noise isopleths in 5-dBA intervals is provided in Figure 2.4-1. The noise contours are graphical representations of the cumulative noise associated during normal operation of the individual equipment components and show how operational noise would be distributed over the surrounding area. The contour lines shown are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

Modeling results show that the Project meets the Town's Noise Code when measured both at and within the real property line of the receiving property. Land use adjacent to the Project is zoned as industrial and received sound levels within those adjacent parcels are well below the applicable daytime sound limit of 75 dBA for industrial property. In addition, Table 2.4-2 shows the projected exterior sound levels resulting at the closest residences, which range from 25 to 33 dBA and are well below the applicable residential sound limits of 65 dBA from 7am to 8pm and 50 dBA from 8pm to 7am (although the facility will only generate noise during the daylight periods) and the commercial sound limit of 65 dBA (all times). There are no multi-dwelling buildings adjacent to the Project, but these results are below the applicable standards for this classification as well.

Figure 2.4-1. Received Sound Levels – Normal Operation

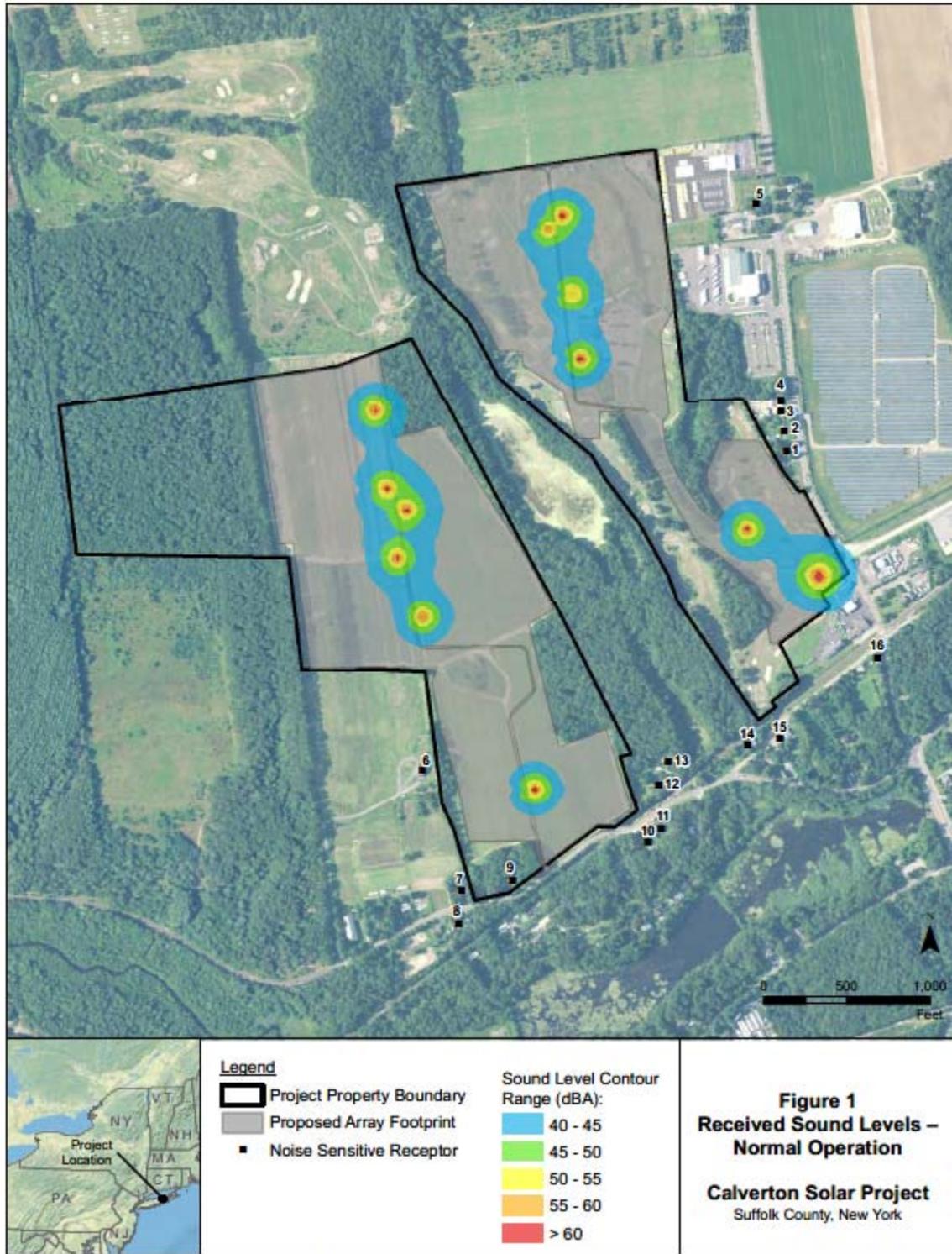


Table 2.4-2. Summary of Acoustic Modeling Results

Receptor ID	Status	Received Sound Level (dBA)	Town Nighttime Residential Noise Limit
1	Residence	33	50
2	Residence	32	50
3	Residence	31	50
4	Residence	31	50
5	Residence	28	50
6	Residence	30	50
7	Residence	28	50
8	Residence	25	50
9	Abandoned	30	50
10	Residence	27	50
11	Residence	27	50
12	Residence	27	50
13	Residence	27	50
14	Not a Residence	28	50
15	Residence	28	50
16	Residence	32	50

Sound levels along the Project boundary line are less than the 50dBA residential sound limit where that limit applies. Along the southeastern boundary, the land is zoned as industrial use and is used for commercial and industrial purposes. Land zoned as commercial and industrial uses have higher dbA limits (65 dBA and 75 dBA, respectively) during both daytime and nighttime hours; therefore, acoustic modeling results demonstrate that the Project will operate in compliance with the applicable noise requirements.

2.5 Glare

On behalf of the Applicant, Capitol Airspace Group performed a Glint and Glare Analysis to identify any potential impact of the proposed solar arrays on Calverton Executive Airpark operations. Specifically, the analysis considered impact on aircraft approaching to land on Runway 14/32. The results of the study show that there is no predicted glare from the solar array for aircraft making approaches to Runway 14/32.

These results are consistent with the FAA's interim policy for Solar Energy System Projects on Federally Obligated Airports². The FAA adopted this interim policy in order to enhance safety by providing standards for measuring ocular impact of proposed solar energy systems on pilots and/or air traffic controllers for the siting of solar projects at Federally obligated airports. In cooperation with the Department of Energy, the FAA developed and validated the Sandia National Laboratories' "Solar Glare Hazard Analysis Tool" (SGHAT), now licensed through ForgeSolar. The FAA requires the use of the SGHAT to demonstrate compliance with the standards for measuring ocular impact for the siting of solar projects as part of an airport layout plan. Therefore, this policy is not required by the FAA for the construction or operation of the Calverton Solar Energy Center Project. However, the Applicant utilized the FAA's interim policy as a conservative measure to assess any potential glare impacts.

2.6 Cultural Resources

The Applicant initiated consultation with the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) in April of 2018 (see Appendix E). Background research revealed that there are no National Register-listed or eligible historic districts or structures on or within a one-mile radius of the Project. In their May 7, 2018 response the OPRHP concluded that there "are no resources eligible for listing on the State or National Registers of Historic Places involved in the project" and as such no further historic architecture studies would be required.

With regards to archeological resources, the Cultural Resources Information System (CRIS) depicts that a portion of the Project Site as being within an archaeologically sensitive area for pre-contact period resources. In a transmittal sent on May 2, 2018, the OPRHP recommended that a Phase IA archaeological survey would be warranted, unless prior ground disturbance for the entire project area can be documented. The OPRHP noted that agricultural activity is not considered to be substantial ground disturbance. The Applicant is reviewing the OPRHP's recommendations and consultation is ongoing.

2.7 Aesthetic Resources

Officially designated and publicly accessible federal, state, or local scenic or aesthetic resources within five miles of the Project are provided in Table 2.7-1. Distance from the Project, landscaping design and the relatively low height of the solar array (eight feet) will avoid and/or minimize impacts on aesthetic resources.

² Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports 63276 Federal Register / Vol. 78, No. 205 / Wednesday, October 23, 2013 / Notices

Table 2.7-1. Aesthetic or Scenic Resources within Five Miles of Project

Resource Type	Name	Source	Distance from Site (miles)
Heritage Area	North Shore	NY GIS Clearinghouse	0
State Conservation Area	Otis Pike Preserve	NYPAD	0
State Wildlife Management Area	Otis Pike Preserve	NYPAD	0
Local Park	Suffolk County Lands	NYPAD	0.05
Local Conservation Area	Suffolk County Lands	NYPAD	0.27
Local Resource Management Area	Suffolk County Lands	NYPAD	0.76
Local Protected Area	Riverhead Town Lands	NYPAD	0.86
County Park	Robert Cushman Murphy County Park	NYPAD	0.97
Private Protected Area	Omnia Real Estate Corp Lands	NYPAD	1.11
Local Resource Management Area	Omnia Real Estate Corp Lands	NYPAD	1.32
Local Protected Area	Brookhaven Town Lands	NYPAD	1.43
Local Protected Area	Riverhead Town Lands	NYPAD	1.44
County Park	Peconic Bog County Park	NYPAD	1.5
Local Conservation Area	Brookhaven Town Lands	NYPAD	1.56
Local Park	Riverhead Town Lands	NYPAD	1.67
National Cemetery (DOD)	Calverton National Cemetery	NYPAD	1.85
Nature Reserve or Preserve	Calverton Ponds Preserve	NYPAD	2.03
County Park	Peconic Hills County Park	NYPAD	2.15
Nature Reserve or Preserve	Calverton Ponds	NYPAD	2.35
Private Protected Area	The Nature Conservancy Lands	NYPAD	2.38
Local Protected Area	Village Green At Baiting Hollow	NYPAD	2.69
Local Protected Area	Suffolk County Lands	NYPAD	2.8
State Park	Wildwood State Park	NYPAD	3.08
Local Resource Management Area	Riverhead Water District Lands	NYPAD	3.1
State Conservation Area	New York State Lands	NYPAD	3.15
Private Protected Area	Maklebust Mrs Lands	NYPAD	3.24
State Conservation Area	Baiting Hollow Tidal Wetlands Area	NYPAD	3.26
Local Park	Brookhaven Town Lands	NYPAD	3.32
Private Protected Area	Goldman Lands	NYPAD	3.39
Local Resource Management Area	Riverhead Town Lands	NYPAD	3.49
Local Conservation Area	Southampton Town Lands	NYPAD	3.5

Table 2.7-1. Aesthetic or Scenic Resources within Five Miles of Project

Resource Type	Name	Source	Distance from Site (miles)
State Unique Area	Long Island Pine Barrens	NYPAD	3.55
Local Park	Yale Development Corporation Lands	NYPAD	3.56
State Park	Wildwood	NY GIS Clearinghouse	3.67
State Preserve	Otis Pike Preserve	NYPAD	3.74
State Waterway Access	Wildwood Lake Waterway Access	NYPAD	3.84
State Unique Area	David A. Sarnoff Pine Barrens Preserve	NYPAD	3.91
Private Protected Area	Structural Technology Inc Lands	NYPAD	4.11
State Conservation Area	Suffolk County Lands	NYPAD	4.21
Municipal Park	Howard M Reeve Park	NYPAD	4.28
Local Park	Kingswood Park District Lands	NYPAD	4.5
State Park	Brookhaven State Park	NYPAD	4.69
Private Protected Area	Lake Panamoka Civic Association Lands	NYPAD	4.71
Local Protected Area	Southampton Town Lands	NYPAD	4.73
Private Protected Area	Common Area Asso Village At Eastport Sec 23 Lands	NYPAD	4.77
Local Park	Southampton Town Lands	NYPAD	4.77

2.8 Stormwater Pollution Prevention Plan (§275)

Consistent with Riverhead Town Code chapter 275, a Stormwater Pollution Prevention Plan (SWPPP) will be submitted at the time that either the Applicant receives written notice that the Planning Department has approved the generalized layout of the site or the Applicant receives a resolution conditionally approving the site plan application. Specific erosion and sedimentation control measures are expected to include:

- Minimize soil erosion and sedimentation through the stabilization of disturbed areas and removing sediment from construction site discharges.
- Stabilization of construction entrance / exit
- Installation of silt fencing and straw bales to control stormwater runoff
- Temporary stockpiling of granular material (gravel, excavated spoils, select backfill, topsoils, etc.)
- Dust control measures to prevent surface and air movement of dust from areas of soil disturbance.

- Invasive species management measures which are consistent with current NYSDEC guidance and similar projects in the Town.

The final SWPPP will also be submitted to the NYSDEC as part of obtaining coverage under the State’s SPDES General Permit for Stormwater (GP-0-15-002).

2.9 Special Permit Criteria (§301-312)

The Town Board and the Planning Board may consider, among other matters or factors which either Board may deem material, whether:

A. The site is particularly suitable for the location of such use in the community.

The Project Site is particularly suitable for the location of the proposal solar energy center as it is appropriately zoned and is located adjacent to the point of interconnection, LIPA’s Edwards Avenue substation.

B. The plot area is sufficient, appropriate and adequate for the use and the reasonably anticipated operation and expansion thereof.

The Project Site contains sufficient land area for the proposed 22.9 MW solar energy center, is appropriately located within a zone where a solar energy system is an allowable use and is adequate due to its proximity to the point of interconnection.

C. The characteristics of the proposed use are not such that its proposed location would be unsuitably near to a church, school, theater, recreational area or other place of public assembly.

The Project Site is not unsuitably near to a church, school, theater, recreational area or other place of public assembly.

D. Access facilities are adequate for the estimated traffic from public streets and sidewalks, so as to assure the public in relation to the general character of the neighborhood and other existing or permitted uses within it, and to avoid traffic congestion; and further that vehicular entrances and exits shall be clearly visible from the street and not be within 75 feet of the intersection of street lines at a street intersection except under unusual circumstances.

The Project will not result in additional traffic.

E. All proposed curb cuts and street intersections have been approved by the street or highway agency which has jurisdiction.

No new curb cuts and/or street intersections are required for the Project; existing site access locations are to be maintained.

F. Adequate provisions have been made for emergency conditions.

The Town’s fire official will review and provide input on the proposed solar energy center. The Applicant will coordinate with the fire official to address any concerns and to ensure that adequate provisions are made for emergency conditions, should any be identified.

G. There are off-street parking and truck loading spaces at least in the number required by the provisions of this chapter, but in any case, an adequate number for the anticipated number of occupants, both employees and patrons or visitors; and further, that the layout of the spaces and driveways are convenient and conducive to safe operation.

No off-street parking and/or truck loading spaces are required for the proposed use.

H. Adequate buffer yards, landscaping, walls, fences and screening are provided where necessary to protect adjacent properties and land uses.

Adequate buffer yards, landscaping, fences and screening are proposed to protect adjacent properties and land uses as required by the Town's zoning ordinance.

I. Where necessary, special setback, yard, height and building area coverage requirements, or easements, rights-of-way or restrictive covenants, shall be established.

The Project has been designed to meet the Town's specific requirements for solar energy systems as required by the Town's Commercial Solar Energy Production Systems (§301-282) ordinance.

J. Where appropriate, a public or semipublic plaza or recreational or other public areas will be located on the property.

Public access is not appropriate at electric generating facilities such as the proposed use.

K. Adequate provisions will be made for the collection and disposal of stormwater runoff from the site and of sanitary sewage, refuse or other waste, whether liquid, solid, gaseous or of other character.

The Project Site will have a stormwater management system that will ensure that any additional increase in stormwater runoff from pre-construction conditions will be infiltrated. Adequate provisions will be made for sanitary sewage, refuse or other waste.

L. Existing municipal services and facilities are adequate to provide for the needs of the proposed use.

Existing municipal services and facilities are adequate to provide for the needs of the proposed use.

M. The use will tend to generate or accumulate dirt or refuse or tend to create any type of environmental pollution, including vibration, noise, light, electrical discharges, electromagnetism, odors, smoke or irritants, particularly where they are discernible on adjacent properties or boundary streets.

The use will not generate or accumulate dirt or refuse or tend to create any type of environmental pollution, including vibration, noise, light, electrical discharges, electromagnetism, odors, smoke or irritants, particularly where they are discernible on adjacent properties or boundary streets, as documented in this Project Narrative and SEQRA Full EAF.

N. The construction, installation or operation of the proposed use is such that there is a need for regulating the hours, days or similar aspects of its activity.

The proposed use will not result in a need for regulating the hours, days or similar aspects of its activity.

O. The proposed use recognizes and provides for the further special conditions and safeguards required for particular uses as may be determined by the Town Board or the Planning Board.

The Project has been designed to comply with the Town's specific requirements for solar energy systems as required by the Town's Commercial Solar Energy Production Systems (§301-282) ordinance.

P. The design, layout and contours of all roads and rights-of-way encompassed within the site of the application are adequate and meet Town specifications.

No new Town roads and/or rights-of-way are proposed.

Q. Adequate provisions have been made for the collection and disposal of solid wastes, including but not limited to the screening of all containers.

Adequate provisions have been made for the collection and disposal of solid wastes and the entire Project Site will be screened in accordance with the requirements of the Town's Commercial Solar Energy Production Systems (§301-282) ordinance.

R. That the intensity of the proposed specially permitted use is justified in light of similar uses within the zoning district.

The Project conforms to the Town's requirements for solar array lot coverage and is compatible with similar uses within the zoning district and neighboring properties.