FINAL ENVIRONMENTAL IMPACT STATEMENT

Middle Island Solar Farm
Solar Energy Production Facility

Moriches-Middle Island Road
Hamlet of Mastic, Town of Brookhaven
Suffolk County, New York

PREPARED FOR

MISF, LLC
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New York, New York 10003

PREPARED BY

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Hauppauge, NY 11788

September 2016

FINAL ENVIRONMENTAL IMPACT STATEMENT
PROPOSED MIDDLE ISLAND SOLAR FARM
SOLAR ENERGY PRODUCTION FACILITY
MORICHES-MIDDLE ISLAND ROAD
HAMLET OF MASTIC, TOWN OF BROOKHAVEN
SUFFOLK COUNTY, NEW YORK

PROJECT LOCATION: 100.33± acres located on the south side of Moriches-Middle Island Road in the hamlet of Mastic, Town of Brookhaven, Suffolk County, New York

APPLICANT: MISF, LLC
88 University Place
New York, New York 10003

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(631) 589-5000

LEAD AGENCY: Town of Brookhaven Planning Board
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DATE OF PREPARATION: August 2016

AVAILABILITY OF DOCUMENT: This document, together with the Draft Environmental Impact Statement (DEIS), is the Final Environmental Impact Statement (FEIS). It has been prepared for the Lead Agency. Copies are available for public review and comment at the offices of the Lead Agency and at the local library. This FEIS is also available electronically at the Brookhaven Town website at: http://www.brookhaven.org/.

DATE OF FILING: _____

AVAILABILITY OF DOCUMENT: Office of the Town Clerk
Brookhaven Town Hall
One Independence Hill
Farmingville, New York 11738

This document is a Final Environmental Impact Statement (FEIS)
for the Middle Island Solar Farm Solar Energy Production Facility.
This FEIS incorporates, by reference, the Draft Environmental Impact Statement (DEIS)
for this proposed action, dated January 2016. The above-referenced DEIS was the subject
of a Town of Brookhaven Planning Board Public Hearing on March 21, 2016, and written
comments on the DEIS were accepted until April 8, 2015.
The Written Correspondence and Public Hearing Transcripts are provided in Appendices
A and B of this FEIS, respectively.

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1.0

Introduction

This document is a Final Environmental Impact Statement (FEIS) prepared in response to comments received by the lead agency, the Town of Brookhaven Planning Board (hereinafter the "Planning Board"), on the Draft Environmental Impact Statement (DEIS) for the proposed action, dated January 2016. The proposed action consists of the application of MISF, LLC for the development of the Middle Island Solar Farm Solar Energy Production Facility (SEPF) on 100.33± acres of vacant land located along the south side of Moriches-Middle Island Road, east of Cranford Boulevard, in the hamlet of Mastic, Town of Brookhaven, Suffolk County (see Figure 1). The subject property is known on the Suffolk County Tax Map (SCTM) as District 0200 – Section 712.00 – Block 09.00 – Lot 001.000 (see Figure 2).

As presented in the DEIS, the proposed action consists of a special use permit for the development of a photovoltaic (PV) solar energy farm capable of generating approximately 19.6 megawatts (MW) of renewable electricity for distribution onto the Long Island Power Authority (LIPA) – PSEG Long Island power grid.

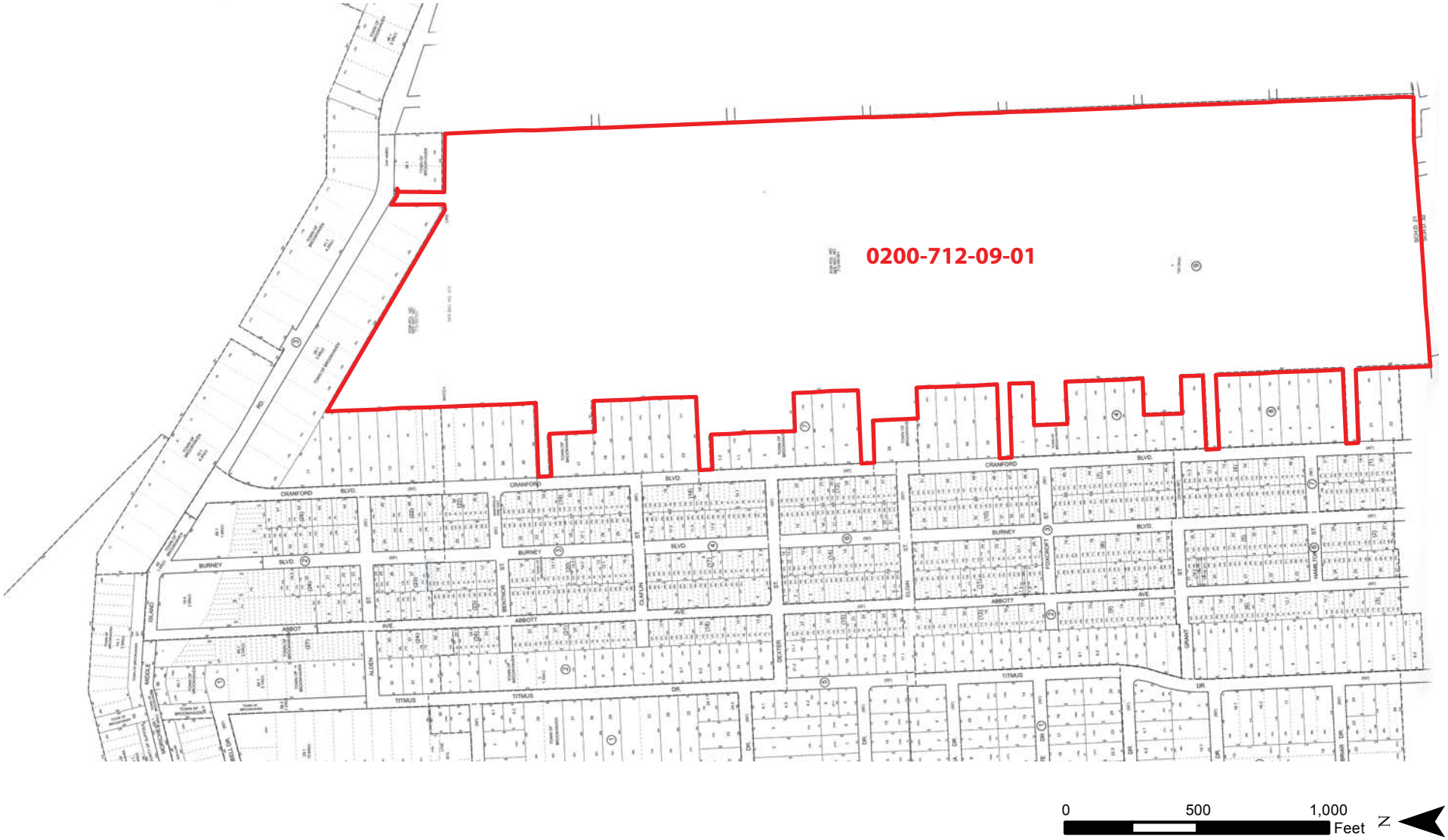
Middle Island Solar Farm FEIS
Mastic, Suffolk County, New York

Site Location

Figure 1

1 Subject Property (w/ Parcel ID No.)

Sources: 1. Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation



Middle Island Solar Farm FEIS
Mastic, Suffolk County, New York

Suffolk County Tax Map Excerpt
District 0200 – Sections 645, 673 & 712

Figure # 2

Approx. Location of Subject Property

LEGEND

Property or RW Line		Subdivision Lot No.	(12)	Block Line		School District Line	—SCH—	Hydrant District Line	—H—
Denotes Common Owner	—Z—	Subdivision Block/Bldg. No.	(21)	Block No.	2	Fire District Line	—F—	Refuse District Line	—R—
Subdivision Lot Line		Deed Dimension		County Line		Water District Line	—W—	Historical District Line	—HST—
Stream / Shore		Scaled Dimension		Town Line		Light District Line	—L—	Ambulance District Line	—A—
Parcel No.	--	Deed Area	12.1 A(d) or 12.1A	Village Line		Park District Line	—P—	Wastewater District Line	—WW—
		Calculated Area	12.1 A(c)			Sewer District Line	—S—		

UNLESS DRAWN OTHERWISE, ALL PROPERTIES ARE WITHIN THE FOLLOWING DISTRICTS:

SCHOOL	21	SEWER	
FIRE	FM1	HYDRANT	
LIGHT	LX1	WATER	
PARK		REFUSE	
AMBULANCE	MAN	WASTEWATER	

Sources: Suffolk County Water Authority, June 26, 2014

The DEIS was accepted by the Planning Board as complete and adequate for public review, circulated to all involved agencies and interested parties, made available to the public via the Town of Brookhaven's website and at the local public library(ies), and a public hearing was held on March 21, 2016. The DEIS comment period was held open until April 8, 2016.

In accordance with 6 NYCRR §617.9(b)(8):

> *A final EIS must consist of: the draft EIS, including any revisions or supplements to it; copies or a summary of the substantive comments received and their source (whether or not the comments were received in the context of a hearing); and the lead agency's responses to all substantive comments. The draft EIS may be directly incorporated into the final EIS or may be incorporated by reference. The lead agency is responsible for the adequacy and accuracy of the final EIS, regardless of who prepares it. All revisions and supplements to the draft EIS must be specifically indicated and identified as such in the final EIS.*

Since the time of the close of the public comment period on the DEIS, the applicant has modified its proposed action to, among other things, relocate the on-site location of electrical equipment and switchgear. The plan modifications are discussed in detail in Section 2.0 of this document.

1.1 Format of FEIS

As evidenced by a review of written comments received (see Appendix A), many of the commenters expressed support for the proposed action. Accordingly, while these comments are included in the aforementioned appendices, they are not "substantive comments" as contemplated in 6 NYCRR §617.9(b)(8), and are not individually addressed in this FEIS. These comments are designated as "GS" (General Support). Comments of General Support are discussed in Section 3.0 of this FEIS. For the purposes of this FEIS, none of the written comments were determined to express only general opposition to the proposed action (e.g., vote "no" for this project, the project is too big), without being accompanied by substantive comments. Therefore, this FEIS does not separately discuss general opposition comments.

Various substantive comments were received on the DEIS. Written correspondence containing substantive comments are addressed in Section 4.0. Written comments are designated with the letter "C." The substantive written comments have been coded by commenter and are included in Appendix A-2 of this FEIS. Substantive comments made at the public hearings are also addressed in Section 4.0 of this FEIS. Each speaker at the public hearing was assigned a number preceded by the letter "H." The comments received during the public hearing are coded within the marked hearing transcript included in Appendix B of this FEIS (at the right-hand page margin).

2.0

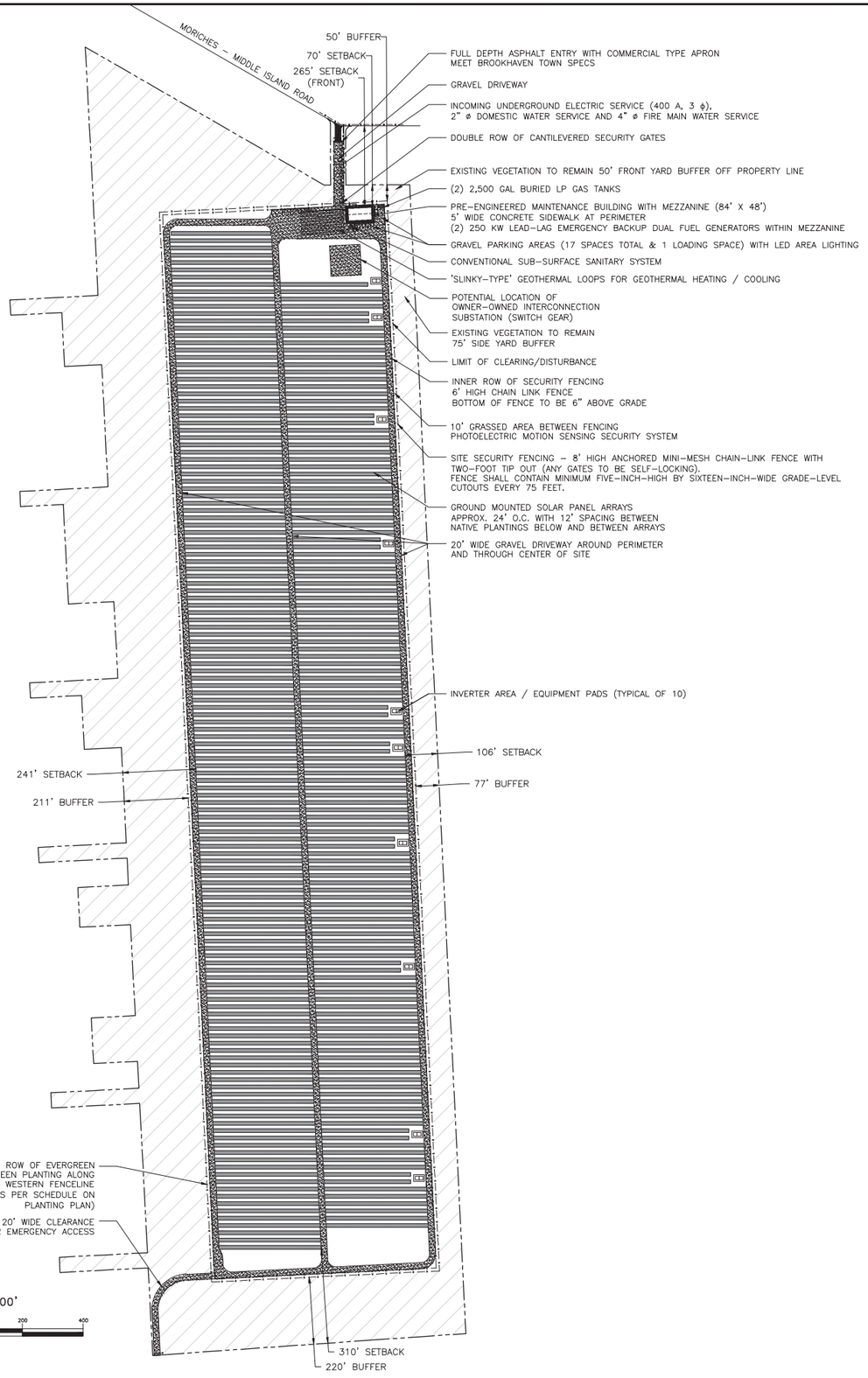
Revised Site Plan

2.1 Introduction

Based on comments received during the public comment period for the DEIS, the proposed Site Plan was revised. The revised site plan (hereinafter "FEIS Plan" or "Revised Site Plan") maintains nearly all of the characteristics of the plan that was presented in the DEIS (i.e., the "DEIS Plan," presented in Appendix C thereof) with respect to the generating capacity of the solar PV installation, the site layout, the large vegetative buffers, the small maintenance building, security features, etc. However, the 100-foot-by-100-foot area reserved for electrical equipment and switchgear has been relocated from the southern portion of the subject property to the northern portion. In addition, the on-site transmission cables are now shown for burial underground. A comparison of the two plans, including a comparison of their potential environmental impacts, is presented in Section 2.3, below. The FEIS Plan (Sheet C02, *Proposed Site Plan*) is presented herein as Figure 3 and contained in Appendix C of this FEIS. Also provided in Appendix C are a corresponding revised *Clearing and Erosion & Sediment Control Plan*, a revised *Grading & Drainage Plan*, a revised *Planting Plan*, and a revised *Conceptual Interconnection Route* plan.

2.2 Description of Revised Site Plan

The applicant has prepared a revised site plan (i.e., the FEIS Plan) which relocates the 100-foot-by-100-foot electrical equipment area from the southern portion of the subject property to the northern portion, as shown on the FEIS Plan (see Figure 3 and Appendix C). This location is optimized for an interconnection route that extends from the north end of the site, onto Moriches-Middle Island Road, as already anticipated and evaluated within the DEIS. To accommodate the relocated equipment area, approximately three rows of solar PV panels were relocated to the southern portion of the site, at the former location of the equipment area.



SITE PLAN

SCALE: 1" = 200'

200 0 100 200 400

Jan 22, 2016 - 08:07am
P:\13066.004 (Middle Island Solar Farm)\dwg\C02 Proposed Site Plan.dwg

PLOT SIZE: 24 x 36

SITE DATA

SUFFOLK COUNTY TAX NUMBER(S)	0200 71200 0900 001000
TOTAL AREA OF SITE	100.33 ACRES (4,370,336.56 SF)
TOTAL AREA OF BUILDINGS (PROPOSED)	4,032 SF
DEPTH TO GROUNDWATER	± 30 FT (AVERAGE)
ZONING	A-1 (6.13 A) & L-1 (94.20 A)
EXISTING USE	UNDEVELOPED
INTENDED USE	SOLAR ENERGY PRODUCTION FACILITY

NOTE: L-1 PORTION IS 94% OF PARCEL. BASED ON § 85-136 A (7), A-1 ZONE (6.13 A) SHALL NOT BE USED FOR YIELD.

SITE LOCATION
NTS

ZONING REQUIREMENTS

DIMENSIONAL CRITERIA
§ 85-568 L INDUSTRIAL 1 DISTRICT (LIGHT INDUSTRY) DIMENSIONAL CRITERIA:

	CODE SECTION	REQUIRED	PROPOSED
MINIMUM LOT AREA	§ 85-568 (A) (3)	120,000 SF	L1 4,103,352.0 SF (PART OF TOTAL 100.33 A PARCEL)
MINIMUM LOT WIDTH	§ 85-568 (B) (3)	200 FT	50 FT AT ENTRANCE TO FLAG LOT (± 1,000 FT THROUGHOUT MAJORITY)**
FRONT YARD SETBACK	§ 85-568 (C) (2)	100 FT	265 FT TO BLDG (TO ROADWAY PROPERTY LINE AT FLAG ENTRY)
SIDE YARD SETBACK	§ 85-568 (D) (3)	50 FT	106 FT (ON EASTERN SIDE)
REAR YARD SETBACK	§ 85-568 (E) (1)	50 FT	310 FT
MAXIMUM FLOOR AREA RATIO (F.A.R.)	§ 85-568 (F) (2)	30 % OF L1 or 1,231,006 SF	0.1 %
MAXIMUM HEIGHT	§ 85-568 (G) (1)	50 FT / 3 ST	24 FT / 1 ST

§ 85-815 SOLAR ENERGY PRODUCTION FACILITIES:

MIN. LOT AREA	§ 85-815 (A) (1)	10 A	94.2 A L1 (100.33 TOTAL)
LOT COVERAGE (WITH SOLAR EQUIPMENT)	§ 85-815 (B) (1)	60 %	26.9 % (ARRAYS, INVERTERS AND SUBSTATION)
MAX. PANEL HEIGHT	§ 85-815 (C) (1)	20 FT	17 FT
MIN. NATURAL AREA	§ 85-815 (D) (1)	35 %	35.21 % (OF 94.2 A L1 ZONE)
MIN. BUFFER FROM RESIDENTIAL	§ 85-815 (D) (2)	75 FT	77 FT
MIN. SETBACK FROM RESIDENTIAL	§ 85-815 (D) (3)	100 FT	106 FT
MIN. BUFFER FROM COMMERCIAL/INDUSTRIAL	§ 85-815 (D) (4)	25 FT	50 FT
MIN. SETBACK FROM COMMERCIAL/INDUSTRIAL	§ 85-815 (D) (5)	50 FT	70 FT
ELECTRICAL TRANSMISSION LINES	§ 85-815 (E) (3)	ALL ON-SITE UTILITY AND TRANSMISSION LINES SHALL, TO THE EXTENT FEASIBLE, BE PLACED UNDERGROUND.	

§ 85-843 LAND DEVELOPMENT STANDARDS (PERCENTAGES OF L1 ONLY)

MINIMUM NATURAL AREA / LANDSCAPING	§ 85-843 (A) (1)	20 % (18.84 A)	92.73 % (33.17 A UNCLEARED + 54.18 A LANDSCAPED / GRASS)
MIN. NATURAL AREA / LANDSCAPING IN FRONT YD	§ 85-843 (A) (2)	50 % of 20 % (9.42 A)	N/A – FLAG LOT
STREET TREES	§ 85-843 (A) (3)	MIN. 4 IN CAL. @ 30 FT O.C.	N/A – FLAG LOT
MIN. NATURAL AREA / LANDSCAPING ALONG STREET	§ 85-843 (A) (4)	15 FT	56 FT
SUP. MIN. NATURAL AREA / LANDSCAPING	§ 85-843 (A) (6) (a)	SITE > 5A, 30 % (28.26 A)	92.73 % (33.17 A UNCLEARED + 54.18 A LANDSCAPED / GRASS)
MIN. GREEN SPACE ALONG ROAD	§ 85-843 (A) (6) (c)	SITE > 5A, 50 FT	56 FT
MIN. BUFFER ADJACENT TO RESIDENTIAL	§ 85-843 (B) (2) (c)	SITE > 5A, 75 FT	211 FT (WEST); 77 FT (EAST); 220 FT (SOUTH)

§ 85-852 OFF-STREET PARKING REQUIREMENTS

PARKING MULTI-TENANT INDUSTRIAL	§ 85-852	1/250 SF GFA (17 SPACES)	17 SPACES
PARKING STALL SIZE		9 FT X 20 FT	9 FT X 20 FT
ADA PARKING		1/25 SPACES (1)	1
LANDBANKED STALLS		0	0
LOADING	§ 85-850 (A)	1	1

SIGN REQUIREMENTS

DETACHED / GROUND SIGN AREA	§ 85-815 (F) (1)	1 SIGN/2.25 SF	1 SIGN/2.25 SF

** VARIANCE REQUESTED TO REDUCE WIDTH OF LOT THROUGHOUT TO 50 FT DUE TO DIMENSIONS OF PROPERTY AT THE ENTRY AT MORICHES MIDDLE ISLAND ROAD

TOWN OF BROOKHAVEN STANDARD PAVING SPECIFICATION

6" STABILIZED BASE, $3\frac{1}{4}$" DENSE BINDER WITH $1\frac{1}{2}$" TOP WEARING COURSE

TOWN OF BROOKHAVEN STANDARD NOTES:

1. ALL CONCRETE CURBING, SIDEWALKS, AND DRAINAGE STRUCTURE SHALL CONFORM TO PLANNING BOARD STANDARD DETAIL AND SPECIFICATIONS.
2. TOWN OF BROOKHAVEN ENGINEERING INSPECTOR IN THE DEPARTMENT OF PLANNING, ENVIRONMENT AND LAND MANAGEMENT SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ALL CONSTRUCTION AT 631-451-6400 BETWEEN THE HOURS OF 9:00AM– 4:30PM MONDAY THROUGH FRIDAY.
3. PLEASE CONTACT THE DIVISION OF ENGINEERING AT (631)-451-6400 TO SCHEDULE A PRE-CONSTRUCTION MEETING 48 HRS PRIOR TO THE COMMENCEMENT OF ANY AND ALL CONSTRUCTION ACTIVITIES.
4. LOCATION AND GRADES FOR CURBS AND WALKS TO BE VERIFIED WITH THE TOWN OF BROOKHAVEN HIGHWAY DEPARTMENT, SCDPW OR NYSDOT PRIOR TO CONSTRUCTION.
5. ALL TRAFFIC CONTROL DEVICES, I.E. SIGNALS, SIGNS, AND PAVEMENT MARKINGS SHALL BE INSTALLED IN CONFORMANCE WITH THE GUIDELINES OF THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND AS DIRECTED BY THE TOWN OF BROOKHAVEN, DIVISION OF TRAFFIC SAFETY.
6. THE CONTRACTORS PERFORMING ANY AND ALL TRAFFIC CONTROL DEVICES LAYOUT AND INSTALLATION WORK SHALL NOTIFY THE TOWN OF BROOKHAVEN DIVISION OF TRAFFIC SAFETY, 48 HOURS IN ADVANCE OF BEGINNING SUCH WORK ALONG A TOWN ROAD.
7. ALL PAVEMENT MARKINGS REQUIRED SHALL BE THERMOPLASTIC (SUFFOLK COUNTY SPECIFICATIONS) UNLESS OTHERWISE NOTED ON PLAN.
8. STOP LINE SIGHT DISTANCE SHALL BE MAINTAINED AT ALL INTERSECTIONS IN ACCORDANCE WITH AASHTO REQUIREMENTS.

ESTIMATE OF QUANTITIES

CONCRETE CURB	0
ASPHALT CURB	0
ASPHALT PAVING	1,000 SF
WALKS (CONCRETE)	1,416 SF
BUILDING	4,032 SF
GRAVEL PAVING	274,259 SF
EQUIPMENT PADS (10 INVERTERS)	7,730 SF
SUBSTATION AREA	10,000 SF
LEACHING POOLS (OPEN GRATE)	50
AREA DRAINS	0
CHAIN LINK FENCE	17,000 FT (DOUBLE ROW SECURITY PERIMETER FENCE)
SCREEN PLANTING	± 3,500 FT (ALONG WEST PERIMETER FENCE – RESIDENTIAL BUFFER)
STREET TREES	N/A – UNCLEARED
SHRUBS / BUSHES (AREA)	25 A
RECHARGE BASIN EXCAVATION	0
RECHARGE BASIN FENCING	0
RECHARGE BASIN PLANTING	0

Warning: It is a violation of the NY State Education Law for any person to alter this document in any way, unless acting under the direction of a licensed professional engineer.

SCTM # 0200 71200 0900 001000
TOB LOG # 2013-030-CZ

DATE	BY	DESCRIPTION	APPROV. BY
06/08/16	YCR	RELOCATE SUBSTATION	MCJ/RGD
01/30/16	MCJ	REVISIONS REQUESTED BY TOB PLANNING	RGD
01/19/16	MCJ	REVISIONS REQUESTED BY TOB	RGD
11/13/15	MCJ	REVISIONS FOR DEIS RESUBMISSION	RGD
11/6/15	MCJ	REVISIONS FOR DEIS RESUBMISSION	RGD
10/28/15	MCJ	REVISIONS FOR DEIS RESUBMISSION	RGD
8/17/15	MCJ	CONFORM TO NEW TOB SOLAR CODE	RGD
5/5/15	MCJ	REVISIONS FOR DEIS RESUBMISSION	RGD

REVISIONS

LKMA

MISF, LLC
88 UNIVERSITY PLACE 8TH FLOOR, NY, NY 10003

MIDDLE ISLAND SOLAR FARM
MORICHES-MIDDLE ISLAND ROAD, MASTIC, NY

Figure 3

PROPOSED SITE PLAN

L. K. McLEAN ASSOCIATES, P.C.
CONSULTING ENGINEERS 437 SOUTH COUNTRY RD., BROOKHAVEN, NEW YORK 11719

vhb

Designed By: MCJ	Scale: AS NOTED	Sheet No. C02
Drawn By: MCJ	Date: DEC. 29, 2014	
Approved By: RGD	File No. 13066.004	

The relocation of the equipment area and the three rows of solar PV panels results in an increase in the size of the rear yard from 270 feet (under the DEIS Plan) to 310 feet, as highlighted in the table of bulk and dimensional requirements below (see Table 1). All other zoning dimensions remain unchanged from those evaluated in the January 2016 DEIS, as presented in Table 11 thereof.

Table 1 – Consistency with Bulk and Dimensional Zoning Requirements

Regulation	L Industrial 1	Land Development Standards	Proposed Middle Island Solar Farm
Minimum lot area (hydrogeologic sensitive zone)	120,000 SF (2.75 acres)		94.20± acres (L Industrial 1 portion)
Minimum width of lot throughout (hydrogeologic sensitive zone)	200 feet		50± feet*
Minimum front yard setback (parcels five acres or more in size)	100 feet		265± feet
Minimum side yard setback (parcels five acres or more in size)	50 feet		106± feet
Minimum rear yard setback	**50 feet**		**310± feet**
Maximum permitted floor area ratio (FAR) (hydrogeologic sensitive zone)	30 percent		0.10± percent**
Maximum permitted height	50 feet / 3 stories		24 feet / 1 story
Minimum landscaped or natural area (industrial use >5 acres)		30 percent	92.73± percent
Minimum natural area/landscaping in front yard		50 percent of 30 percent required	***
Minimum natural area/landscaping along street frontage (industrial use >5 acres)		50 feet	56± feet
Minimum buffer adjacent to residential use or zone (industrial use >5 acres)		75 feet	77± feet

* The subject property is 50± feet wide at the entrance on Moriches-Middle Island Road; however, the majority of the subject property is 1,000± feet wide. An area variance would be required due to the dimensions of the subject property at the entrance.

** Calculated as percentage of L Industrial 1 zoned portion of subject property.

*** Planning Board relief required.

The FEIS Plan also includes a note confirming that all on-site electric transmission lines would be placed underground to the extent feasible, in accordance with the associated design standard for Solar Energy Production Facilities as set forth at Section 85-815(E)(3) of the Code of the Town of Brookhaven.

None of the quantities changed due to the plan changes described above, as compared with the DEIS Plan. Specifically, the proposed FEIS Plan would continue to retain 39.30± acres of existing wooded area (i.e., 39.17 percent of the 100.33±-acre subject property) within large buffers at each site perimeter and contiguous to adjacent

wooded open space. The grading and drainage plan would continue to minimize the extent of cut and fill and achieve a balanced site (i.e., no significant quantities of natural material would be removed from or brought to the site), and 100 percent of stormwater runoff from developed areas from a minimum eight-inch rainfall event would be accommodated on-site. Additionally, all measures incorporated into the design of the DEIS Plan to minimize or preclude potential environmental impacts (e.g., implementation of various erosion and sediment control measures, installation of staggered evergreen plantings along the entire western fence line, an extensive planting plan to re-vegetate areas beneath the solar arrays with native species, etc.) are also proposed within the FEIS Plan.

2.3 Comparison of DEIS Plan vs. FEIS Plan

Due to the nature and extremely limited number of modifications to the FEIS Plan, as compared to the DEIS Plan, the potential environmental impacts of the FEIS Plan are anticipated to be similar to those detailed in the DEIS. There would be no change to the impacts evaluated in detail within the January 2016 DEIS (i.e., for the DEIS Plan) with respect to Geological Resources; Water Resources and Plans; Air Resources; Land Use, Zoning and Plans; Transportation; Noise; and Energy.

With respect to Aesthetics and Visual Resources, the FEIS Plan would have a slightly reduced potential for impact as compared with DEIS Plan, due to the increased rear yard setback (i.e., from 270 feet to 310 feet) and the installation of all on-site utility and transmission lines underground (to the extent feasible) is now noted on the FEIS Plan. The proposed burial of the transmission lines would eliminate the potential for associated visual impacts, and will be consistent with the applicable design standard at §85-815(E)(3) of the Code of the Town of Brookhaven.

Based on consultations with the New York State Department of Environmental Conservation (NYSDEC), the U.S. Fish & Wildlife Service's Final 4(d) Rule for the Northern Long Eared Bat, and other considerations, the FEIS Plan will further limit the portion of the year during which the clearing of vegetation may take place, as compared with the DEIS Plan. Accordingly, with respect to Ecological Resources, the potential for adverse environmental impacts to result from implementation of the proposed action is reduced by the FEIS Plan.

Based on the above, the results of all impact analyses and conclusions in the DEIS remain applicable to the FEIS Plan, as the FEIS Plan is as protective or more protective of environmental resources.

3.0

Comments in General Support

3.1 Comments in General Support of the Proposed Action

The written correspondence received during the comment period that ended on April 8, 2016, that are in general support of the proposed project, are designated with a "GS" before the comment number and have been grouped apart from the substantive written comments. These GS comments are contained in Appendix A-1. A summary of the written support comments follows:

GS1 – Sustainable Long Island

- Sustainable Long Island supports the expansion of renewable energy projects and investments in Long Island's energy assets, including solar
- Projects create local jobs, improve air quality, reduce reliance on fossil fuels and help meet peak energy demands
- It is urgent that there be a switch to renewable and locally-produced energy, which are of long-term benefit locally, and to the nation as a whole
- The proposed solar farm has the potential to provide power to thousands of homes across Long Island
- The proposed solar farm promotes renewable energy and creates green jobs, helping to boost the local economy
- The proposed solar farm would further the goals of cleaner and more reliable energy
- The Planning Board should approve the proposed project

GS2 – Renewable Energy Long Island

- Harnessing Long Island's solar power will create jobs, lessen dependence on fossil fuels, mitigate price volatility and improve local air quality
- The Planning Board should approve the proposed project

- The uniform solar Code in Brookhaven helps to ensure that solar farms are properly designed with local consideration in mind
- The adoption of solar farms like that proposed will increasingly give Long Island communities control of their energy future

GS3 – William Hille

- The proposed solar farm is the best possible option outside of a green space purchase by the Town or County
- The proposed project will add a taxable base to the Town without straining the existing taxable base
- The proposed project would generate minimal traffic in the area, as compared to other possible projects

GS4 – New York League of Conservation Voters (NYLCV)

- NYLCV called for expansion of renewable energy projects and investments in Long Island's energy assets, including large-scale solar in its 2016-17 *Blueprint for a Greener Long Island*
- Such projects create local jobs, reduce air pollution, stabilize the energy grid, and help meet peak energy demands
- The proposed solar farm is the type of project that furthers the goals of cleaner and more reliable energy as outlined in the *Blueprint for a Greener Long Island*
- Large-scale solar projects on Long Island are a top priority for NYLCV. Their development and installation are encouraged, to meet the state's long-term energy goals

GS5 – John Paulson

- The proposed solar farm would be much better than seeing all the property's trees removed for warehouses
- There will be land available for wildlife
- The project would not affect the headwaters of Forge River

It should be noted that there were no commenters that attended the public hearing on the DEIS on March 21st that spoke to express their general support for the proposed project. It should also be noted that no written comments of general opposition were submitted to the lead agency during the public comment period, and no commenters spoke at the aforementioned public hearing to express only their general opposition. All speakers at the March 21st public hearing on the DEIS are addressed within this FEIS as having offered substantive comments.

4.0

Responses to Substantive Comments

All of the written correspondence containing substantive comments is included in Appendix A-2 of this FEIS. The public hearing transcripts are included as Appendix B. This section contains responses to all substantive comments contained in the written correspondence (including electronic mail) as well as those made at the public hearings. The following is a list of commenters whose substantive comments are addressed herein. Note that commenters that offered substantive comments within more than one piece of written correspondence, or that appeared at the public hearing and also submitted written correspondence, will appear in the list multiple times.

As explained in Section 1.0 of this FEIS, the commenters that submitted substantive written comments have been assigned the letter "C" and a number, and commenters that offered substantive comments at the public hearing before the Planning Board on March 21, 2016, have been assigned the letter "H" and a number. Within Sections 4.1 through 4.8 of this FEIS, comments are arranged by their subject matter (i.e., water resources, ecological resources, etc.). If one comment is closely related or similar in nature to one or more other comments received, those comments have been combined for the purpose of providing a response. All comments are followed by a listing of the respective commenter(s) and comment number(s).

Written Correspondence

C1 – Town of Brookhaven (Luke Ormand, Environmental Analyst)

C2 – New York State Department of Environmental Conservation (Kevin Kispert, Environmental Analyst II)

C3 – The Sustainability Institute at Molloy College (Neal Lewis, Executive Director)

C4 – Long Island Sierra Club (Peter J. Gollon, Energy Chair)

C5 – Open Space Council (Mary England, President)

C6 – Planet-in-Peril.org (Richard Brummel)

C7 – Long Island Pine Barrens Society (Richard Amper, Executive Director)

C8 – Lisa Pedota

C9 – Randi Pellone

C10 – Joanne Ceresko McKnight

C11 – Anthony Ertola

C12 – Desiree Carlino Twigg

C13 – Grace Goncharuk

Public Hearing (March 21, 2016)

H1 – Michael Smith

H2 – Andrew Manet

H3 – Linda DiPierro

H4 – Peter Gollon

H5 – Steven Schwartz

H6 – Grace Goncharuk

H7 – Steven File

H8 – Joanne Ceresko McKnight

H9 – Judy Garbato

H10 – Greg Lamb

H11 – Guiseppina Butera

H12 – Vera Weeks

H13 – Maryann Jonston

H14 – Jaime Connaughton

H15 – John Galbardo

H16 – Ray Keenan

H17 – John Rose (Member, Town of Brookhaven Planning Board)

H18 – Steven Wilitus (Deputy Chair, Town of Brookhaven Planning Board)

H19 – Peter E. Zarcone (Member, Town of Brookhaven Planning Board)

H20 – Richard Smith (Member, Town of Brookhaven Planning Board)

H21 – Karen L. Dunne, Esq. (Member, Town of Brookhaven Planning Board)

4.1 Water Resources

Comment No. WAT-1

The proposed action is proposed on land that contains critical undeveloped upland forest in the watershed of the already heavily compromised Forge River. Protecting wetlands and surface waters should be a primary concern for any action taken on the subject property. [C3-2, H2-2, H13-2, H15-1]

Response No. WAT-1

The DEIS acknowledges that the subject property is located within the watershed of the Forge River, and evaluates the potential impacts of the proposed action upon the Forge River and other surface waters and wetlands. Section 3.2 of the DEIS contains a detailed assessment of the proposed action's consistency with the relevant recommendations of the Town of Brookhaven's *Forge River Watershed Management Plan* (March 2012) (hereinafter the "*Forge River Plan*"), which was prepared to identify and prioritize solutions and management strategies for the protection and restoration of the Forge River and its watershed. Relevant strategies include limiting site clearance for industrial properties to 65 percent, restricting fertilizer use, and encouraging the use of indigenous landscape plants, among others. As presented in the DEIS, the proposed action would be consistent with all relevant objectives and strategies of the *Forge River Plan*.

Also presented in the DEIS is a nitrogen mass balance analysis, which focused on the Forge River and potential impacts of the proposed action upon same (see Section 3.2.2 of the DEIS). The *Forge River Plan* acknowledges nitrogen loading "from residential septic systems, a duck farm, private treatment plants, sediment release, residential and agricultural fertilizer use, and to a lesser extent atmospheric deposition and stormwater" (page 1-11) to be a central issue facing water quality in the Forge River, and several of the management strategies set forth in the *Forge River Plan* are intended to address nitrogen inputs. The results of the analysis indicate that the proposed action would have very little effect on the quantity of nitrogen entering the Forge River's watershed (i.e., approximately 36.67 pounds per year), and that atmospheric deposition (which is minor) would continue to be the most dominant source of nitrogen input at the subject property. This result reflects the minimal quantity of sanitary waste that would be generated at the 100.33±-acre subject property, as the facility would be largely unmanned (except for the 4,032±-square-foot maintenance building). For comparison, it is noted that the expected quantity of sanitary waste to be generated (i.e., 161 gallons per day [gpd]) is less than that generated by a typical single family residence. Additionally, no fertilizer-dependent vegetation is proposed, and a total of 93.17± percent of the subject property would either remain natural or

would be re-vegetated with native species upon implementation of the proposed action. No significant adverse impacts upon the Forge River watershed are expected to result from the proposed action.

It should be noted that the alternative development of the subject property in accordance with prevailing zoning, as evaluated in Section 5.4 of the DEIS, has the potential to result in significant on-site discharges of sanitary waste to on-site systems, as well as the potential to include the establishment of extensive areas of fertilizer-dependent vegetation.

Comment No. WAT-2

The DEIS states that the proposed stormwater containment measures would fully contain stormwater from an eight-inch rainfall event. Since climate change is expected to result in more frequent extreme precipitation events, the potential for impacts due to even greater rainfall events and the feasibility of designs to contain stormwater from them should be assessed. [C3-3, H2-3]

Response to Comment No. WAT-2

The proposed stormwater management system is designed to contain and recharge, on-site, all stormwater runoff generated from an eight-inch rainfall event. Specifically, among the five drainage areas at the site, a total of 489,424 cubic feet of storage is required to accommodate an eight-inch rainfall event, and a total of 575,634 cubic feet of storage is provided by the preliminary drainage plan (see *Grading & Drainage Plan* in Appendix C of this FEIS), well in excess of the requirement (i.e., 118± percent of the eight-inch rainfall requirement). It should be noted that the proposed action would create only a minimal area of impervious surfaces (i.e., 0.55± acre at the 100.33±-acre subject property, or 0.55 percent of the site area). No stormwater controls are currently present at the subject property. As the proposed drainage design would meet or exceed all design requirements of the Town of Brookhaven, no significant adverse impacts related to stormwater containment are expected to result from implementation of the proposed action.

Comment No. WAT-3

No matter what is built at the subject property, considerably more thought must be given to preventing runoff and silting during and after construction than is described in the DEIS. The plans laid out there for eight inches of rain will not come close to being able to handle the thirteen inches plus of rain that fell in Islip on August 12, 2014, with five inches failing in just one hour. [C4-3, H4-3]

Response No. WAT-3

As discussed in Sections 3.1.2 of the DEIS, a *Clearing and Erosion & Sedimentation Control Plan* (see Appendix C of this FEIS) has been developed to address potential erosion and sedimentation impacts, and a Storm Water Pollution Prevention Plan (SWPPP) acceptable to the Town of Brookhaven would be implemented during and after construction (with a Notice of Intent filed with the NYSDEC). The erosion and sedimentation controls to be implemented during construction as part of an approved SWPPP would include:

- Protection of existing vegetation to remain.
- Scheduling of clearing and grading activities to minimize the total area of land disturbed at any one time.
- Limiting the length of time areas are exposed by establishing pavement and plantings at exposed areas as soon as practicable.
- Installation of sediment barriers (e.g., silt fence, hay bales) along the limits of disturbance for the duration of the work. No sediment from the site would be permitted to wash onto adjacent properties, wetlands or roads.
- Stabilization of graded and stripped areas and stockpiles via temporary seeding or other effective cover.
- Protection of drainage inlets through the use of sediment barriers, sediment traps, etc., to prevent sediment buildup.
- Control of fugitive dust (e.g., covering of stockpiles, temporary seeding, use of a water truck during extended dry periods).
- Establishment of a stabilized construction entrance to prevent soil and loose debris from being tracked onto local roads.

The above measures are designed to be consistent with the relevant portions of the New York State Stormwater Management Design Manual (NYSDEC, 2010) and the New York Standards and Specifications for Erosion and Sediment Control (NYSDEC, 2005) as required by Town Code Chapter 86 – Stormwater Management and Erosion Control, and would be regularly inspected and maintained (e.g., removal of accumulated sediment and debris from drainage structures, repair of damaged sediment barriers, etc.) to ensure proper function. Sediment barriers and other erosion control measures would remain in place until upland disturbed areas are permanently stabilized. Paved areas would be cleaned and the drainage system flushed as necessary to remove any silt and debris. With the aforementioned control measures employed, no significant adverse erosion- or sedimentation-related impacts are expected.

With regard to post-construction conditions and stormwater management, as explained above in Response No. WAT-2, and in Section 3.2 of the DEIS, a total of 489,424 cubic feet of stormwater storage is required by the Town (based on an eight-inch rainfall storage design). A total of 575,634 cubic feet of storage is provided by the preliminary drainage plan (see *Grading & Drainage Plan* in Appendix C of this FEIS) –

an excess storage capacity of 86,210 cubic feet. Additionally, only a minimal quantity of impervious surface area would be created as a result of the proposed improvements, (i.e., 0.55± acre at the 100.33±-acre subject property), such that the proposed improvements would not generate significantly increased quantities of stormwater runoff as compared with existing conditions.

Comment No. WAT-4

Because of the subject property's relationship to the Forge River watershed, the proposed action could have an adverse effect on the river and the Town of Brookhaven has a responsibility to protect the land and the Forge River. [C4-6]

Response No. WAT-4

As discussed in Response No. WAT-1, above, the DEIS acknowledges that the subject property is located within the watershed of the Forge River, and evaluates the potential impacts of the proposed action upon the Forge River and other surface waters and wetlands. Section 3.2 of the DEIS contains a detailed assessment of the proposed action's consistency with the relevant recommendations of the Town of Brookhaven's *Forge River Watershed Management Plan* (March 2012) (hereinafter the "*Forge River Plan*"), which was prepared to identify and prioritize solutions and management strategies for the protection and restoration of the Forge River and its watershed. Relevant strategies include limiting site clearance for industrial properties to 65 percent, restricting fertilizer use, and encouraging indigenous landscape plants, among others. As presented in the DEIS, the proposed action would be consistent with all relevant objectives and strategies of the *Forge River Plan*.

Also presented in the DEIS is a nitrogen mass balance analysis, which focused on the Forge River and potential impacts of the proposed action upon same (see Section 3.2.2 of the DEIS). The results of the analysis indicate that the proposed action would have very little effect on the quantity of nitrogen entering the Forge River's watershed (i.e., approximately 36.67 pounds per year), and that atmospheric deposition (which is minor) would continue to be the most dominant source of nitrogen input at the subject property. This reflects the extremely minimal quantity of sanitary waste that would be generated at the 100.33±-acre subject property, as the facility would be largely unmanned (except for the 4,032±-square-foot maintenance building). Additionally, no fertilizer-dependent vegetation is proposed, and a total of 93.17± percent of the subject property would either remain natural or would be re-vegetated with native species upon implementation of the proposed action. No significant adverse impacts upon the Forge River watershed are expected to result from the proposed action.

It should be noted that the alternative development of the subject property in accordance with prevailing zoning, as evaluated in Section 5.4 of the DEIS, has the

potential to result in significant on-site discharges of sanitary waste to on-site systems, as well as the potential to include the establishment of extensive areas of fertilizer-dependent vegetation.

Comment No. WAT-5

Activities associated with the proposed action (e.g., the clearing of over 60 acres, construction of a maintenance building, access roads, etc.), have the potential to cause severe and lasting soil disturbance leading to erosion and sedimentation impacts on the Forge River as a result of stormwater runoff. These effects will impact the river's ecological viability and recovery. [C5-1]

Response No. WAT-5

As discussed in Response Nos. WAT-2 and WAT-3, above, and as discussed in the Sections 3.1 and 3.2 of the DEIS (see also the *Clearing and Erosion & Sedimentation Control Plan* and the *Grading and Drainage Plan* in Appendix C of this FEIS), a number of measures have been incorporated into the design of the proposed action to preclude erosion and sedimentation impacts as a result of stormwater runoff. The *Grading and Drainage Plan* provides stormwater management, such that all stormwater runoff generated at the proposed solar PV facility would be contained and recharged on-site. As such, the proposed facility would not discharge runoff to the Forge River. The subject property is located a minimum of 1,121± feet from the nearest portion of wetlands associated with headwaters of the Forge River, separated by undeveloped woodlands. Moreover, the subject property is separated from the Forge River itself by additional wooded areas and extensive development, including highways (i.e., Sunrise Highway, Montauk Highway), residential and commercial development. Accordingly, there is no potential for the proposed action to cause significant adverse erosion and sedimentation impacts on the Forge River as a result of stormwater runoff, and the river's ecological viability and recovery would not be impeded by development of the proposed Middle Island Solar Farm.

Comment No. WAT-6

The DEIS fails to acknowledge any of the severe impacts that can be expected from flooding, nitrogen and ion loading into the already impaired Forge River watershed, and other critical hydrological and biological impacts such as those reported in a 1965 study by ecologists Gene Likens and Herbert Bormann in New Hampshire's Hubbard Brook Experimental Forest (hereinafter, the "Hubbard Study"). [C5-2]

Response No. WAT-6

The DEIS evaluates the potential impacts of the proposed action related to stormwater runoff, including flooding, within Section 3.2. The proposed improvements would

create a nominal area of impervious surface (i.e., 0.55± acre at the 100.33±-acre subject property), and the grading and drainage plan to be implemented as part of the proposed action (see preliminary *Grading & Drainage Plan* in Appendix C of this FEIS) would contain and recharge all stormwater runoff generated at the proposed solar energy production facility. As such, as also concluded in the DEIS, there would be no flooding impacts.

The DEIS presents a nitrogen mass balance analysis within Section 3.2 (see pages 36-37 and 51-52 of the DEIS). As discussed therein, the proposed action would not introduce any significant new nitrogen inputs to the site, as a nominal quantity of sanitary waste would be generated (i.e., 161± gallon per day [gpd] or the equivalent of less than one single family residence), and as no fertilizer-dependent landscaped areas would be created at the site. It is also noted throughout the DEIS that the proposed project includes the re-vegetation of 89± percent of the area proposed to be cleared. Overall, as concluded in the DEIS, no significant adverse impacts related to nitrogen are anticipated.

With respect to the study referenced by the commenter (entitled, *Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed-Ecosystem*,[1] hereinafter referred to as the "Hubbard Study"), it is important to understand that the study is of very little relevance to the proposed action, because the conditions studied are very different from the conditions that are proposed for the subject property. Among the many differences, the Hubbard Study evaluated the clear-cutting of a forested study area, leaving all felled trees in place, whereas the proposed action involves the clearing of only a portion of the site, and the removal of the felled trees. At the Hubbard Study property, clear-cutting was followed by an aerial application of an herbicide, then the individual application of an acid to regrowth. In contrast, the proposed action involves the re-vegetation of 89± percent of the cleared area with native species. The Hubbard Study property sits atop a "homogeneous bedrock, which forms an impermeable base" which is in stark contrast to the permeable, sandy soils that are present beneath the subject property, and where the depth to bedrock is approximately 1,500 feet below grade surface.[2] Moreover, the conclusions of the Hubbard Study attribute the increased nitrogen in water quality samples to decaying organic matter. The Hubbard Study indicates that the study itself was "…designed to test the effects of blockage on a major ecosystem pathway, i.e., nutrient and water uptake by vegetation" and, therefore, is not relevant to his project where re-vegetation of nearly all (i.e., 89± percent) cleared areas is proposed.

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[1] Likens, Gene E., et al. *Effects of Forest Cutting and Herbicide Treatment on Nutrient Budgets in the Hubbard Brook Watershed-Ecosystem*. Ecological Monographs, Vol. 40, No. 1. 1970.
[2] Bedrock Surface Elevation Map. *Groundwater Atlas of the United States – Segment 12*. U.S. Geological Survey. 1995.

Comment No. WAT-7

The results of the Hubbard Study, including an increase in stream flow following deforestation, because of the current flooding that already exists in the neighborhood that is likely to be heightened if the proposed action is implemented. [C5-3]

Response No. WAT-7

As indicated in Response No. WAT-6, the Hubbard Study is not relevant to the proposed action. Nonetheless, the DEIS evaluated potential stormwater-related impacts of the proposed action. As the proposed action would create only a nominal area of new impervious surface (i.e., 0.55± acre at the 100.33±-acre subject property) and includes a comprehensive stormwater management plan, no significant adverse impacts related to stormwater runoff are anticipated. It is also noted that the subject property is not within, nor is it contiguous to, any special flood hazard areas, as determined by the Federal Emergency Management Agency (FEMA) (see Figure 10 of the DEIS).

Comment No. WAT-8

The results of the Hubbard Study indicate that nitrate concentrations were 41 times higher the first year and 56 times higher the second year following deforestation. The DEIS has failed to assess cumulative nitrogen impacts from clear cutting the subject site or those of the three other anticipated solar PV projects within the Forge River watershed cited in the DEIS. Also relevant are other impacts noted in the Hubbard Study, including water temperature, acidity, and ion concentrations. [C5-4]

Response No. WAT-8

As detailed in Response No. WAT-6, the Hubbard Study results are not relevant to the proposed action. Additionally, the DEIS analyses were consistent with the Final Scope promulgated by the Town Board and referenced within the Positive Declaration adopted by the Planning Board as the Lead Agency on September 21, 2015. Factors such as water temperature, acidity, and ion concentrations in the Forge River were not identified within the Lead Agency's Positive Declaration or the Town Board's Final Scope as potential significant adverse impacts of the proposed action warranting analysis within the DEIS. Nonetheless, the DEIS analyzed potential impacts of the proposed action upon the Forge River and other stormwater-related impacts of the proposed action in Section 3.2. A Nitrogen Mass Balance analysis of the proposed action was contained in that section. Cumulative impacts of the proposed action and other projects identified by the Lead Agency and by the Town of Brookhaven Department of Planning, Environment and Land Management prior to accepting the DEIS as complete and adequate for public review (see February 10, 2016

Notice of Completion) were evaluated within the section of the DEIS entitled, *Cumulative Impacts* (see Section 4.1 of the DEIS.

Comment No. WAT-9

The DEIS refers fleetingly to the Forge River Management Plan, partially looking at a nitrogen budget but failing to consider the forest biomass regarding nitrogen and other elements themselves, nor the nitrogen cycle, nor the cumulative impact throughout the Forge River watershed of this and other proposed solar and building projects. [C5-5]

Response No. WAT-9

The DEIS includes a comprehensive evaluation of the proposed action's consistency with the relevant recommendations of the Town of Brookhaven's *Forge River Plan* in Section 3.2.2. The nitrogen budget analysis considers atmospheric deposition, on-site wastewater treatment systems and fertilizers as inputs from the subject property to calculate nitrogen loads, and concludes that the proposed action would result in a negligible (i.e., 0.012 percent) increase in the Forge River watershed's nitrogen contribution. With respect to the nitrogen cycle, the *Forge River Plan* does not distinguish between forest biomass and other native plantings when applying a 65 percent removal rate to atmospheric deposition of nitrogen inputs. As the subject property would recharge stormwater on-site and would revegetate nearly 90 percent of proposed cleared areas with native plantings, and maintain 39.30± acres of natural wooded areas, the 65 percent removal rate is applicable.

With respect to the cumulative impact of the proposed action and other proposed solar and building projects within the Forge River watershed, the DEIS evaluated such impacts in Section 4.1 entitled, *Cumulative Impacts*. The other proposed developments that were analyzed for cumulative impacts include the Brookhaven National Lab (BNL) Solar Farm, sPower Solar Farm, Brookhaven Town Solar Project, Shoreham Solar Commons, Caithness Long Island II, Bayou Hotel Corporation and Moriches-Middle Island Solar Park. Of these projects, the BNL Solar Farm (which has already been built), Brookhaven Town Solar Project (at Calabro Airport), and the Moriches-Middle Island Solar Park (north of the Moriches-Middle Island Road) are located wholly or partially within the Forge River watershed. However, as concluded by the relevant analyses in Section 4.1 of the DEIS, there would be no cumulative impacts on soils, water (including the Forge River), traffic, noise or visual resources from these projects.

Comment No. WAT-10

The DEIS should include a meaningful analysis of cumulative impacts on nitrogen loading, flooding, water temperature, turbidity, and overall recovery or demise of the Forge River watershed on a short and long-term basis. [C5-6]

Response No. WAT-10

The DEIS discusses the *Forge River Plan* at Section 3.2. As described therein, the *Forge River Plan* identifies various considerations relevant to the Forge River's condition, and offers recommendations/strategies for its improvement and short- and long-term management. All recommendations and strategies that are relevant or potentially relevant to the proposed action were identified in Section 3.2 of the DEIS, and a full consistency analysis of the proposed action was conducted. The proposed action was found in the DEIS to comply with all relevant recommendations and strategies. Specifically, the following objectives and strategies were identified:

Objectives:

- Reduce Nitrogen Concentrations.
- Implement Total Maximum Daily Load (TMDL)-allocated scenario.

Strategies:

- Establish a Forge River Protection Overlay District (FRPOD).
- Impose stricter clearing limits.
- Replace direct discharge stormwater systems.
- Impose strict limits on nitrogen fertilizer use.
- Enact ordinance requiring pumpouts for all On-site Waste Treatment Systems (OWTS) within FRPOD every five years.
- Encourage use of indigenous landscape plants.

The proposed action would result in a negligible (0.012 percent) increase in the subject property's contribution of nitrogen to the Forge River watershed. Additionally, the proposed action would clear 60.83± percent of the subject property, consistent with the *Forge River Plan* recommendation for a maximum clearing limit of 65 percent for industrial uses. Upon project completion, a total of 93.17± percent of the subject property would be either natural or re-vegetated with native species that do not require routine fertilizer application. The proposed storage of liquid propane (a compressed gas) for backup power generation would comply with the relevant provisions of the Suffolk County Sanitary Code. The proposed stormwater management system includes vegetated swales and leaching basins to contain and recharge 100 percent of stormwater runoff on-site. Finally, the proposed action includes an on-site sanitary system for the maintenance building that would be

designed and maintained in accordance with the relevant provisions of the Suffolk County Sanitary Code.

Based on the above, and as detailed in Section 3.2.2 of the DEIS, the proposed action will not result in significant adverse impacts on the Forge River watershed.

Comment No. WAT-11

According to the American Forests, trees catch rain as it falls, filtering and cleansing it before it reaches the underground aquifers that supply our wells and city water systems. This is another fact to consider since our water on Long Island is supplied through a series of underground aquifers. [C8-2]

Response No. WAT-11

As shown on Table 10 of the DEIS (page 120), upon implementation of the proposed action, 61.03± acres (60.83± percent) of the subject property would be cleared of undeveloped wooded areas. Approximately 54.18 acres of this area to be cleared would be revegetated with native landscape trees, grasses and shrubs, underneath, between and surrounding the proposed solar PV panels. 39.30± acres (39.17± percent) of the subject property would remain as undeveloped woodlands. Only 0.55± acre (0.55± percent) of the subject property would be converted to impervious areas. The remaining 6.30± acres (6.28± percent) of the subject property would consist of gravel-surface driveways and parking. In total, 93.48± acres (93.17± percent) of the site would consist of a combination of undeveloped wooded areas and areas to be re-vegetated with native landscape trees, grasses and shrubs.

The *Grading & Drainage Plan* (see Sheet C03 in Appendix C of this FEIS and discussion in Section 3.2.2 of the DEIS [pages 52-53]) provides details of the proposed stormwater management system for the subject property. The stormwater management system would consist of leaching basins and vegetated drainage retention areas to contain and recharge, on-site, all stormwater runoff generated from the areas to be developed. This stormwater management system would allow for stormwater to be filtered in the ground before reaching the aquifers.

Additionally, the consistency of the proposed action with the Long Island Comprehensive Waste Treatment Management Plan (*208 Study*) is discussed in Section 3.2.2 of the DEIS (page 49). For Hydrogeologic Zone VI, the *208 Study* recommends "control stormwater runoff to minimize the transport of sediments, nutrients, metals, organic chemicals and bacteria to ground or surface waters." With the above-described stormwater management system, the proposed action will be consistent with this recommendation.

Finally, the DEIS includes a discussion of the consistency of the proposed action with the Long Island Segment of the Nationwide Urban Runoff Program (*NURP Study*) (pages 56-57). The *NURP Study* includes recommendations with regard to stormwater runoff, as it pertains to the protection of groundwater and surface water resources. The relevant recommendations are as follows:

GW 1: *Continue to use recharge basins wherever feasible for the disposal of stormwater and the replenishment of groundwater.*

GW 4: *Consider the use of in-line storage leaching drainage structures, or components thereof, as a substitute for recharge basins in areas, other than parking lots, where maintenance will be assured and where the value of the land for development purposes is greater than the cost of installing and maintaining the underground system. Storage leaching drainage systems should also be considered for use where the installation of recharge basins is not feasible.*

GW 5: *Prevent illegal discharges to drainage systems or recharge basins. Such discharges, which often result from improper storage or deliberate dumping of chemicals, must be controlled at the source.*

As discussed in detail on pages 56-57 of the DEIS, the proposed action is consistent with the relevant recommendations of the *NURP Study*. Although recharge basins would not be used, the proposed stormwater management system includes vegetated shallow drainage retention areas and leaching basins at key locations to ensure that all stormwater generated from an eight-inch rainfall event on the areas to be developed would be contained and recharged on-site. The two proposed, 2,500-gallon underground liquid propane storage tanks (to be used for emergency backup purposes), would be handled in accordance with the relevant provisions of the Suffolk County Sanitary Code, and all required permits would be secured, as needed. As such, no discharges of such materials to the proposed drainage system are expected.

Based on the above, the proposed action would continue to filter stormwater underground, and there would be no adverse stormwater-related impacts to aquifers.

Comment No. WAT-12

The Forge River watershed starts in the area of the subject property, and pollutants will seep into the water. [C10-2]

Response No. WAT-12

As referred to throughout the *Forge River Plan*, the river begins south of Montauk Highway. Accordingly, at its nearest point, the Forge River is located well over a mile

(i.e., approximately 6,525 feet) to the southeast of the subject property. The area between the subject property and the Forge River contains extensive areas of undeveloped woodland, two of Long Island's major east-west highways (i.e., Sunrise Highway and Montauk Highway), and various residential and non-residential development. The subject property is located approximately 1,121 feet from the nearest headwaters of the Forge River.

It is noted within the discussion of the *Forge River Plan* in the DEIS (page 57) that the primary contributors to pollution of the Forge River watershed are nitrogen loading from agricultural (i.e., duck farming) and residential land uses. As noted in the nitrogen mass balance discussion (see Response Nos. WAT-9 and WAT-10), the proposed action would result in a negligible (0.012± percent) increase in the Forge River watershed's nitrogen contribution, reflecting the small quantity of sanitary wastewater discharge to an on-site sanitary system associated with the proposed maintenance building. This maintenance building is expected to generate approximately 161 gpd of sanitary wastewater. By comparison, a typical single-family residence is generates approximately 300 gpd of sanitary wastewater. As discussed in Section 3.2.2 of the DEIS (page 50), Article 6 of the Suffolk County Sanitary Code limits the maximum permissible discharge to on-site sanitary systems to 300 gpd per acre, or approximately 30,099 gpd for the 100.33±-acre subject property. Accordingly, the proposed action would comply with the relevant sanitary density limitation of Article 6. The proposed quantity of sanitary waste to be discharged to an on-site sanitary system is approximately one half of one percent of the maximum allowable pursuant to Article 6.

Furthermore, the proposed action does not involve industrial processes or similar activities what would generate significant pollutant emissions. Two, 2,500-gallon underground liquid propane tanks would be installed for emergency purposes only. All applicable permits would be obtained for these tanks, in compliance with Article 12 of the Suffolk County Sanitary Code, which regulates toxic and hazardous materials storage and handling. Moreover, even in the extraordinary case of a release, liquid propane is a compressed gas and therefore would not adversely impact the river.

It should also be noted that, as discussed in Section 3.4.4 of the DEIS, the proposed action would result in the establishment of a clean, renewable source of power generation, which would reduce the need for power generation by conventional power plants that produce electricity by burning fossil fuels. Accordingly, implementation of the proposed action will result in a net reduction in the emission of greenhouse gases (and other air pollutants) generated by power sources that supply electricity to Long Island.

Overall, based on the above, the proposed action would not result in a significant adverse impact upon the Forge River, including any significant adverse impact related to contamination.

Comment No. WAT-13

The woods at the subject property are vital to the restoration and revival of the Forge River. The headwaters of the Forge River still has clean water and the Trout in the Classroom program releases brook trout each spring as part of environmental education on stream ecosystems. Solar panels should be installed on rooftops and the woods should be retained for clean water recharge and wildlife habitat. [C11-1]

Response No. WAT-13

As discussed in Response Nos. WAT-1, WAT-4, WAT-9 and WAT-10, above, and as detailed in Section 3.2.2 of the DEIS (pages 57-60), the proposed action is consistent with the relevant recommendations of the *Forge River Plan*. The proposed action would also maintain 39.30± acres of natural wooded areas as a natural buffer, contiguous to existing publicly owned land. As the subject property is located 1,121± feet from the nearest headwaters of the Forge River, the proposed action would not impede educational programs associated with these headwaters. Additionally, installation of the proposed Middle Island Solar Farm would not preclude the installation of rooftop solar panels elsewhere in the community.

Comment No. WAT-14

The removal of a large forested area will negatively impact rainwater and storm water runoff to the Forge River. [C12-4]

Response No. WAT-14

The potential stormwater-related impacts of the proposed action are discussed in Response Nos. WAT-2, WAT-3, WAT-5 and WAT-11, above, and in Section 3.2.2 of the DEIS. During construction, a SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) would be secured, and several protective measures would be implemented, as shown on the *Clearing and Erosion & Sediment Control Plan* in AppendixC of this FEIS, and as fully described in Response No. WAT-3, above, and in Section 3.2.2 of the DEIS (pages 53-54).

It is noted that the proposed stormwater management system, as shown on the *Grading & Drainage Plan* (see Appendix C of this FEIS), is designed to contain and recharge, on-site, all stormwater from an eight-inch rainfall from the areas to be developed at the subject property. This would be achieved through a system of vegetated drainage retention areas and leaching basins located at key areas.

Furthermore, approximately 54.18 acres (88.78± percent of the area to be cleared) would be revegetated with native landscape trees, grasses and shrubs, to be installed underneath, between and surrounding the proposed solar PV panels. Upon implementation of the proposed action, 39.30± acres (39.17± percent) of the subject property would remain as undeveloped woodlands. Only 0.55± acre (0.55± percent) of the subject property would be converted to impervious areas. The remaining 6.30± acres (6.28± percent) of the subject property would consist of gravel-surface driveways and parking. In total, 93.48± acres (93.17± percent) of the site would consist of a combination of undeveloped wooded areas and areas to be re-vegetated with native landscape trees, grasses and shrubs.

Overall, there would be no significant increase in the quantity of stormwater runoff generated (as only a limited area of new impervious surfaces would be created and as most areas to be cleared would be revegetated), and the proposed stormwater management system would control runoff by containing and recharging stormwater on-site. Therefore, no significant adverse stormwater runoff impacts are expected, including associated potential impacts upon the Forge River.

Comment No. WAT-15

Grass is proposed between the double-rows of fencing. Unless irrigation is installed, the area will turn into weeds and will become a dust farm. [H7-5]

Response No. WAT-15

There are no irrigation systems proposed as part of the proposed action. Native and low-maintenance vegetative species are proposed throughout the portions of the site to be improved, including between the double-row of fencing (see *Planting Plan* in Appendix C of this FEIS). Such species are more drought-tolerant than non-native species, and are not expected to require irrigation in order to maintain a stable ground cover.

Comment No. WAT-16

Based on the contour lines shown on topographic maps of the area, there is an old creek bed present to the south of the subject property. The creek would probably feed into the Forge River. The closeness of the topographic lines is the sign of a creek bed. [H16-3]

Response No. WAT-16

A review of the USGS Topographic Map, USDA Soil Survey, NYSDEC Freshwater Wetlands Map, and National Wetlands Inventory Map, does not indicate an old creek bed immediately south of the subject property. The closest wetlands associated with

the Forge River are located approximately 1,121 feet east of the southeast corner of the subject property. As has been discussed above and in Section 3.2.2 of the DEIS, the proposed action will not result in adverse impacts to surface waters or wetlands, including the Forge River.

Comment No. WAT-17

The proximity of the proposed facility to the Forge River and the potential impacts of the proposed action upon the Forge River should be identified. [H17-1]

Response No. WAT-17

As discussed above, the subject property is located approximately 1,121 feet from the nearest headwaters of the Forge River, and approximately 6,525 feet from the nearest point of the river. The proposed action has been evaluated for consistency with the recommendations of the Town of Brookhaven's *Forge River Plan* in Section 3.2.2. As concluded by the various analyses conducted in the DEIS, there would be no adverse impacts to the Forge River as a result of the proposed action.

Comment No. WAT-18

The conclusions of an analysis of the impacts of the proposed project upon the Forge River should be identified. [H20-1]

Response No. WAT-18

A consistency analysis with the *Forge River Plan* is included in Section 3.2.2 of the DEIS (pages 57-60) as well as a nitrogen mass balance analysis (pages 51-52). The various analyses in the DEIS conclude that no significant adverse impacts upon the Forge River watershed are expected to result from implementation of the proposed action (also see Response No. WAT-10, above).

4.2 Ecological Resources

Comment No. ECO-1

The DEIS indicates that DEC jurisdiction for this project is limited to the State Pollutant Discharge Elimination System (SPDES) General Permit for stormwater discharges from construction activity (GP-0-15-002). However, DEC staff have concerns for the extensive area of proposed clearing of this established Pitch Pine-Oak ecological community as that action relates to the northern long-eared bat (NLEB), and the eastern box turtle (EBT), and the potential need for an incidental "take" permit pursuant to Article 11 of Environmental Conservation Law (ECL) § 11-0535 and its implementing regulations at 6 NYCRR Part 182 (Part 182). As the DEIS indicates in Section 3.3, the NLEB is listed as federally threatened species and the eastern box turtle is listed as a species of special concern pursuant to 6NYCRR Part 182 of the New York State Endangered Species Act (Article 11-0535). The NLEB is also listed as a threatened species in New York State pursuant to Part 182. As the application is likely aware, the "take" of a species listed as endangered or threatened is prohibited in the absence of authorization (Incidental Take Permit) from this Department pursuant of ECL § 11-0535 and its implementing regulations (6NYCRR Part 182).

Response No. ECO-1

In response to this comment from the NYSDEC, VHB scheduled a field inspection of the subject property with NYSDEC Biologist Kevin Jennings on May 19, 2016. During the field inspection, wide variations were observed within the Pitch Pine-Oak Forest community that covers the entire subject property, with respect to tree species composition, tree age and sub-canopy vegetation. Mr. Jennings noted that these community variations affect the degree of functionality of the Pitch Pine-Oak Forest at the subject property as potential northern long-eared bat (NLEB) (*Myotis septentrionalis*) roosting and foraging habitat. Accordingly, based upon consultations with the NYSDEC, VHB conducted a bat roosting and foraging habitat survey of the subject property on June 14-16, 2016. The purpose of the survey was to delineate potential habitat areas at the subject property, based upon their degree of suitability as potential roosting and foraging habitat for NLEB. During the survey, the following three parameters were used to differentiate the existing habitats at the subject property:

- Percentage of deciduous versus coniferous trees
- Tree diameter
- Sub-canopy vegetation density

As detailed in the VHB's Potential Northern Long-Eared Bat Roosting and Foraging Habitat Survey summary report, dated June 29, 2016 (see Appendix D), a total of five habitats were identified at the subject property and located with a global positioning system (GPS) unit during the survey, based upon observations of the three aforementioned habitat parameters:

- Habitat Area A – Oak-Pine Woodland (21.89 acres)
- Habitat Area B – Oak-Dominated Woodland (10.28 acres)
- Habitat Area C – Pine-Oak Forest (43.91 acres)
- Habitat Area D – Pine-Oak Forest, Dense Understory (19.79 acres)
- Habitat Area E – Oak-Pine Forest, Dense Understory (4.46 acres)

The locations of the five habitats identified above are shown on Figure 2 of the summary report. As observed in the field, the five habitats have varying degrees of functionality as potential habitat for NLEB, based upon observed differences in deciduous versus coniferous tree composition, tree diameter and sub-canopy stratum density. Specifically, deciduous trees provide a higher degree of functionality for NLEB roosting sites as compared to coniferous trees, and trees with a diameter-at-breast-height (dbh) of less than three inches are generally not considered suitable roost trees for NLEB.[3] Finally, as most NLEB foraging behavior occurs within the zone located within or beneath the canopy stratum and above the shrub stratum,[4] high-density understory vegetation provides a lesser degree of functionality as foraging habitat, as compared to low-density sub-canopy vegetation.

Based upon the above parameters, Habitat Areas A and B provide a greater degree of functionality as potential NLEB habitat, as compared to Habitat Areas C, D and E, as the former two habitat areas are dominated by oaks rather than pines, contain relatively few trees with a dbh of three inches or less, and support low density sub-canopy vegetation. In contrast, Habitat Areas C, D and E provide a significantly lower degree of potential NLEB habitat functionality, as they are dominated by pines, contain a higher number of sapling trees with diameters of three inches or less at breast height, and/or support dense sub-canopy vegetation.

The summary report was submitted to Mr. Jennings for NYSDEC review on June 29, 2016. In correspondence dated August 5, 2016 (Appendix E), Mr. Jennings indicated the following:

> *"…I concur with the conclusion that Pitch Pine-Oak Forest, which occurs at the subject property, contains areas of varying suitability for northern long-eared bats. Therefore, the Department recommends that the proposed project minimize clearing*

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[3] United States Fish and Wildlife Service. 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance.
[4] United States Fish and Wildlife Service. 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance.

and disturbance within Habitat Area A and Habitat Area B, as identified in the [June 29, 2016][5] *Memorandum, to the extent practicable.*

The Department also recommends that any tree clearing on the site occur between November 1st and March 31st of any year, to avoid any potential impacts to NLEB. Any proposed clearing outside of this window would need to be supported by surveys that rule out the presence of NLEB at the site."

As detailed on Figure 3 of the summary report, disturbance associated with the majority of the proposed solar farm infrastructure would occur primarily within the three habitat areas with low NLEB habitat functionality (i.e., Habitat Areas C, D and E), as determined during the habitat survey. The project areas are concentrated away from the most favorable habitat areas to the extent practicable. Specifically, of the total 60.86± acres to be disturbed, 12.16± acres would occur within the two habitat areas determined to be most favorable as potential roosting and foraging habitat for NLEB, as identified by VHB and the NYSDEC (i.e., Habitat Areas A and B). This represents less than 20 percent of the total area of disturbance, and only 12 percent of the total subject property area. In contrast, a significant majority (i.e., 48.70± acres or 80 percent) of the proposed disturbance would occur within the three habitat areas determined to be least favorable as potential roosting and foraging habitat for NLEB (i.e., Habitat Areas C, D and E). As such, the proposed disturbance within the most favorable NLEB habitat areas has been minimized to the extent practicable, in accordance with the NYSDEC's recommendation offered in the aforementioned August 5, 2016 correspondence.

Moreover, tree clearing for the proposed action would occur within the November 1 – March 31 window indicated by the NYSDEC, in order to avoid any potential direct take of NLEB. No clearing is proposed to occur outside of this window without additional NYSDEC consultations and a bat survey to rule out the presence of NLEB at the subject property, as may be required.

It should be noted that, at the time of the DEIS preparation, the NLEB had been listed as a federal Endangered Species, and a Section 4(d) interim rule was in effect (see detailed discussion at Section 3.3 of the DEIS). Since that time, the United States Fish and Wildlife Service (USFWS) issued a final 4(d) rule for conservation of the NLEB,[6] and issued a determination that no Critical Habitat would be established for the listed species.[7]

The USFWS final 4(d) rule differs from the interim rule in various ways. While most purposeful take of the NLEB remains prohibited, most incidental take (i.e., a take of

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[5] The NYSDEC reference to VHB's "6/28/16 Memorandum" is a typographical error. The correct date of the memorandum is June 29, 2016 (see Appendix E of this FEIS).
[6] http://www.regulations.gov/document?D=FWS-R5-ES-2011-0024-3792, accessed August 2016.
[7] http://www.regulations.gov/docket?D=FWS-R3-ES-2016-0052, accessed August 2016.

an individual of the species incidental to an otherwise lawful activity, such as the clearing of portions of the subject property) is not prohibited within the USFWS-mapped white-nose syndrome (WNS) zone.[8] Incidental take from tree removal is only prohibited when it:

(1) Occurs within 0.25 mile of known NLEB hibernacula; or

(2) Cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius from the known occupied maternity trees, during the pup season (June 1 through July 31).

With respect to the availability of suitable habitat and the conservation of the NLEB, the USFWS has found the following:

> "[USFWS's] *approach to designing the regulatory provisions for the northern long-eared bat inside the WNS zone reflects the significant role WNS plays as the central threat affecting the species. For other threatened species, habitat loss or other limiting factors usually contribute to the decline of a species … The northern long-eared bat is not habitat-limited and has demonstrated a great deal of plasticity within its environment (*e.g.*, living in highly fragmented forest habitats to contiguous forest blocks from the southern United States to Canada's Yukon Territory) in the absence of WNS. For the northern long-eared bat, development actions that have been on-going for centuries (*e.g.*, forest management, forest conversion) have not been shown to have significant negative impacts to northern long-eared bat populations.*" Federal Register, Vol. 81, No. 9, January 14, 2016

The provisions of the USFWS's final 4(d) rule "recognize that all other (non-WNS) threats cumulatively were not impacting the species at the population level" and that "the conservation of the northern long-eared bat is best served by limiting the prohibitions to the most vulnerable life stages … while in hibernacula or in maternity roost trees…"

As noted above, the USFWS made a determination that the designation of Critical Habitat is not prudent for the NLEB. This determination was based, in part, on the available information that:

> *"designating the wintering habitat as critical habitat for the bat would likely increase the threat from vandalism and disturbance, and could, potentially, increase the spread of white-nose syndrome … designating the summer habitat as critical habitat would not be beneficial to the species, because there are no areas within the summer habitat that meet the definition of critical habitat … Because summer*

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[8] Defined by the USFWS as the portion of the range of the northern long-eared bat within 150 miles of the boundaries of U.S. counties or Canadian districts where the fungus *Pseudogymnoascus destructans (Pd)* or white-nose syndrome had been detected.

habitat for the northern long-eared bat is not limiting, and because the northern long-eared bat is considered to be flexible with regards to summer habitat, ***the availability of forest does not now, nor will it likely in the future, limit the conservation of the northern long-eared bat****."* Federal Register, Vol. 81, No. 81, April 27, 2016 (emphasis added)

The NYSDEC acknowledges the above-described findings of the USFWS, and reflects these findings in their guidance for protective measures for the NLEB. Specifically, the NYSDEC indicates that it "…concurs within the conclusion of the USFWS that the NLEB population decline is not the result of habitat loss."[9] Because the NYSDEC is tasked with implementing the New York State endangered species law, which differs from the federal laws that apply to USFWS, the NYSDEC maintains its own standards for activities within the jurisdiction of New York State. The NYSDEC's standards are divided among the NLEB's winter and summer activity seasons, and are as follows:[10]

November 1 to March 31

During this period of time, the NLEB are inactive and are within the hibernation sites.

- No cutting of any trees may occur within the ¼ mile buffer around a hibernation site.
- No activities that may result in disturbance to a hibernation site including, but not limited to, actions that would alter the hydrology, increase noise or introduce fill may occur.
  - Please note that if you plan any development or tree clearing activities within ¼ mile of a hibernation area for NLEB, you may be required to obtain a permit from the US Fish and Wildlife Service and the DEC.
- For cutting of trees outside of the ¼ mile buffer around hibernacula:
  - No restrictions, with the following voluntary measures recommended:
- Leave uncut all known and documented roost trees, and any trees within a 150 foot radius of a documented summer occurrence.
- Leave uncut all snag and cavity trees unless their removal is necessary for protection of human life and property. For the purposes of this guidance, protection of human life and property includes removal of trees that, if not removed, could result in the loss of electric service. Snag and cavity trees are defined under DEC Program Policy ONR-DLF-2 Retention on State Forests.

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[9] http://www.dec.ny.gov/animals/106090.html, accessed August 2016.
[10] http://www.dec.ny.gov/animals/106090.html, accessed August 2016.

April 1 to October 31

During this period of time, NLEB are active and are within the forested landscape. The following restrictions are required unless a permit is obtained from the DEC:

- No cutting of any trees may occur within the ¼ mile buffer around a hibernaculum.
  - Please note that if you plan any tree clearing activities within ¼ mile of a hibernation area for NLEB, you may be required to obtain a permit from the US Fish and Wildlife Service and DEC.

- For cutting of trees in occupied NLEB habitat outside of the ¼ mile buffer around hibernacula or within 1.5 miles of a summer occurrence:
  - The following are restrictions that must be followed for forest management activities at this time of year:
    - Leave uncut all snag and cavity trees unless their removal is necessary for protection of human life and property. For the purposes of this guidance, protection of human life and property includes removal of trees that, if not removed, could result in the loss of electric service. Snag and cavity trees are defined under DEC Program Policy ONR-DLF-2 Retention on State Forests.
    - Leave uncut all known and documented roost trees, and any trees within a 150 foot radius of a documented summer occurrence.
      - Please note that if you plan any tree clearing activities within 150 feet of a summer occurrence for NLEB during June or July, you may be required to obtain a permit from the US Fish and Wildlife Service and DEC.
    - If any bats are observed flying from a tree, or on a tree that has been cut, forestry activities in the area should be suspended and DEC Wildlife staff notified as soon as possible.

As indicated above, tree clearing for the proposed action would occur within the November 1 – March 31 window in order to avoid any potential direct take of NLEB, which is consistent with the constraints set forth above. No clearing is proposed to occur outside of this window without additional consultations with the NYSDEC, and therefore, no significant adverse impacts to NLEB are expected to result from implementation of the proposed action.

With respect to eastern box turtle, as noted in DEIS Section 3.3.1, the open woodlands at the subject property represent habitat for the New York State Special Concern eastern box turtle (*Terrapene carolina*), and a carapace (shell) from this species was observed at the subject property. The proposed action would preserve 39.30 contiguous acres of wooded habitat for this species that is contiguous with additional and extensive wooded habitat area to the north, east and south of the subject

property. The 200-foot wooded buffer to be preserved at the southern portion of the site is adjacent to preserved woodlands that contain wetlands and surface waters associated with the headwaters of the Forge River, as observed to the south of the subject property during field surveys conducted for the DEIS. Accordingly, as eastern box turtle seems to prefer upland habitats located near ponds and streams,[11] the proposed action would preserve significant potential habitat area for eastern box turtle, including wooded habitat contiguous with wetlands associated with the Forge River.

Comment No. ECO-2

DEC staff finds that this project is located approximately 2 miles from a known NLEB summer roost tree and concur with the statement in the DEIS that the project area contains suitable habitat for NLEB roosting and foraging. DEC staff also find that this habitat is likely suitable for the raising of offspring. Therefore, it is our strong recommendation that the project sponsor conduct a survey of the property to determine whether NLEBs are using the site. The survey must be conducted in accordance with the following guidelines:

http://www.fws.gov/Midwest/endangered/mammals/inba/inbasummersurveyguidance.html

Although the DEIS indicates the project complies with most local restrictions concerning buffer requirements and the extent of the clearing, this project still involves the complete clearing of 61acres of a forested area and DEC staff has concerns for both direct loss of NLEB individuals that could result while the trees are being cleared, and for indirect loss of the NLEB habitat. Both of these actions are considered a "take" pursuant to Article 11. However, staff emphasize that Article 11 compels the applicant to first avoid any impacts to the species which could result in a take. If this is not possible and a take is likely, then authorization from this Department is required pursuant to ECL § 11-0535 and tis implementing regulations (6NYCRR Part 182). If bats are found to be present and will be adversely impacted by the project, mitigation strategies will need to be considered before any incidental take permit can be issued by DEC.

Section 3.3 of the DEIS provides description of potential project impacts to both the NLEB and EBT on page 90, and provides some potential measures to mitigate the impacts. Staff concur that some of the measures described can help minimize the potential impact of the project, such as seasonal tree clearing restrictions for the NLEB and breeding season restrictions with wildlife sweeps for the EBT, but find that the DEIS needs to further explore potential measures that can first reduce, and then offset the project's unavoidable impacts. A literature search on this topic should be

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[11] Gibbs, J.P., et. al., 2007. *The Amphibians and Reptiles of New York State – Identification, Life History and Conservation*. Oxford University Press.

conducted with appropriate articles consulted and referenced in the DEIS. In addition, consultation on this topic should be conducted with NYSDEC in addition to the USFWS, and staff encourage the applicant to initiate this as soon as possible so that surveys can be conducted during the appropriate season.

Response No. ECO-2

As indicated in the response to Comment No. ECO-1, the NYSDEC's concerns with respect to NLEB have been addressed through completion of the NLEB habitat survey and avoidance of disturbance within the majority of habitats that are most suitable for potential NLEB roosting and foraging. Of the total 60.86± acres to be disturbed, 12.16± acres would occur within the two habitat areas determined to be most favorable as potential roosting and foraging habitat for NLEB, as identified by VHB and the NYSDEC (i.e., Habitat Areas A and B). This represents less than 20 percent of the total area of disturbance, and only 12 percent of the total subject property area. In contrast, a significant majority (i.e., 48.70± acres or 80 percent) of the proposed disturbance would occur within the three habitat areas determined to be least favorable as potential roosting and foraging habitat for NLEB (i.e., Habitat Areas C, D and E). As such, the proposed disturbance within the most favorable NLEB habitat areas has been minimized to the extent practicable, in accordance with the NYSDEC's August 5, 2016 correspondence regarding the proposed action.

Moreover, it is our understanding that the NYSDEC's concerns were due, at least in part, to the proposal in the DEIS to restrict tree clearing only during the NLEB pup-rearing season (June 1 – July 31). As noted above, the FEIS addresses this concern by specifying that tree clearing for the proposed action would occur within the November 1 – March 31 window indicated by the NYSDEC, in order to avoid any potential direct take of NLEB. Any proposed clearing outside of this window would require additional NYSDEC consultations and a bat survey to rule out the presence of NLEB at the subject property.

Based upon the foregoing, potential adverse impacts to NLEB have been minimized to the extent practicable to avoid a take pursuant to Article 11, in concurrence with the NYSDEC comment.

With respect to eastern box turtle, as noted in DEIS Section 3.3.1, the open woodlands at the subject property represent habitat for the New York State Special Concern eastern box turtle (*Terrapene carolina*), and a carapace (shell) from this species was observed at the subject property. The proposed action would preserve 39.30 contiguous acres of wooded habitat for this species that is contiguous with additional and extensive wooded habitat area to the north, east and south of the subject property. The 200-foot wooded buffer to be preserved at the southern portion of the site is adjacent to preserved woodlands that contain wetlands and surface waters associated with the headwaters of the Forge River, as observed to the south of the

subject property during field surveys conducted for the DEIS. Accordingly, as eastern box turtle seems to prefer upland habitats located near ponds and streams, the proposed action would preserve significant potential habitat area for eastern box turtle, including wooded habitat contiguous with wetlands associated with the Forge River.

Comment No. ECO-3

A solar PV generation facility is the lowest possible impact development that could take place on the property as it is currently zoned. However, the property does have several attributes that make it an excellent candidate for preservation, including its location in the watershed of the Forge River, its adjacency to already publicly held preserved land, and its value as habitat. The parcel is bounded on the north, east and south by publicly owned land, and its preservation would provide a significant contiguous wilderness and create a greenway for wildlife and passive recreation. The DEIS indicates that it is potential habitat for a number of rare or protected species, and the eastern box turtle, a New York State Special Concern species was sighted on the parcel. [C3-4, H2-4]

Response No. ECO-3

As indicated by the commenter, the proposed action would result in minimal potential adverse impacts to existing ecological conditions at the subject property and surrounding undeveloped properties, as compared to other uses permitted under the current zoning. Development of the subject property in accordance with the prevailing L Industrial 1 zoning district, as an alternative to the proposed action, was evaluated in detail in Section 5.4 of the DEIS. The results of the DEIS analyses indicate that, among other things, the development of the subject property "as-of-right" (as described in the Final Scope) would result in the clearing of the subject property to a greater extent, the generation of significantly greater numbers of vehicular trips on area roadways, and a significantly greater quantity of sanitary waste to be discharged to groundwater, than if the subject property were to be developed with a "green," renewable source of energy as proposed. It should be noted that, as discussed in detail in Section 3.2 of the DEIS, the proposed action is consistent with the relevant objectives and strategies of the *Forge River Plan*, including objectives pertaining to clearing limits, stormwater discharge, septic systems, nitrogen fertilizer usage and indigenous landscape plantings. As such, no significant adverse impacts upon the Forge River watershed are expected to result from implementation of the proposed action.

With respect to preservation, the proposed action would preserve 39.30 acres of on-site wooded habitat in a contiguous habitat block surrounding the solar farm perimeter fencing. The preserved wooded acreage includes a minimum 50-foot buffer on the northern site border, a minimum 211 buffer on the western site border, a

minimum 77-foot buffer area on the eastern site border and a 220-foot buffer on the southern site border. The latter three wooded buffers are contiguous with additional wooded habitat located within the surrounding publicly held preserve lands referenced by the commenter. Accordingly, based on the site design and strategic placement of the wooded habitat areas to be preserved, the subject property would continue to function as a greenway and habitat corridor to facilitate the movement of wildlife between the adjoining wooded habitats located to the north, east and south of the site.

Regarding rare and protected species, as discussed in detail in DEIS Sections 3.3.1 and 3.3.2, wooded areas at the subject property represent potential breeding and/or foraging habitat for the NYS Special Concern birds Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*) and whip-poor-will (*Caprimulgus vociferous*). As such, the retention of 39.30 contiguous acres of existing wooded habitat at the subject property would provide on-site habitat area for these species. Further, as clearing of existing habitat would occur between November 1 and March 31 only, it would not occur during the avian breeding seasons. As such, direct elimination of individuals of the three species would also be avoided.

As noted in DEIS Section 3.3.1, the open woodlands at the subject property represent habitat for the New York State Special Concern eastern box turtle (*Terrapene carolina carolina*), and a carapace (shell) from this species was observed at the subject property. The proposed action would preserve 39.30 contiguous acres of wooded habitat for this species that is contiguous with additional and extensive wooded habitat area to the north, east and south of the subject property. The 200-foot wooded buffer to be preserved at the southern portion of the site is adjacent to preserved woodlands that contain wetlands and surface waters associated with the headwaters of the Forge River, as observed to the south of the subject property during field surveys conducted for the DEIS. Accordingly, as eastern box turtle seems to prefer upland habitats located near ponds and streams,[12] the proposed action would preserve significant potential habitat area for eastern box turtle, including wooded habitat contiguous with wetlands associated with the Forge River.

<u>Comment No. ECO-4</u>

There is no quantification of the wildlife on the site. The DEIS talks about how populations may be below the carrying capacity of the land which is entirely dependent on numbers but fails to attempt to provide any population estimates. The populations of all wildlife in the entire area surrounding the subject property are important. Population counts are feasible, as they are done routinely, and frequently appear in legal discussions of wildlife impacts and mitigation. [C6-1, C7-1]

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[12] Gibbs, J.P., et. al., 2007. *The Amphibians and Reptiles of New York State – Identification, Life History and Conservation*. Oxford University Press.

Response No. ECO-4

The existing ecological conditions, impacts and mitigation analyses presented in the DEIS, including the wildlife analysis, were prepared in accordance with the Final Scope promulgated by the Town of Brookhaven Town Board (the "Town"), dated September 16, 2014. Pursuant to the Town's scope, wildlife species inventories were required as observed and expected species lists, according to the following guidelines:

> *"…the site's existing natural resources, including vegetation and wildlife species will be described and lists of observed and/or expected will be provided. A map of the sites habitat areas will be prepared…"*

Based upon the foregoing scope, the DEIS included presence/absence wildlife species surveys of the subject property that were conducted to document observed species, while onsite habitat assessments and review of various published resources (e.g., the New York State Breeding Bird Atlas, the New York State Amphibian and Reptile Atlas Project, Town of Brookhaven Natural Resources Inventory, etc.) were consulted to prepare lists of expected wildlife species. Additionally, a habitat map was included in the DEIS, along with discussions of the suitability of the existing site habitat, as identified in the habitat map, for various wildlife species. Accordingly, the existing wildlife analysis prepared for the DEIS was conducted in accordance with the scope promulgated by the Town. Moreover, for the purposes of analyzing potential impacts to resident wildlife, the presence/absence of observed and expected wildlife species, as presented in the DEIS, is more than adequate to analyze the potential impacts of the proposed action on wildlife.

Comment No. ECO-5

Species of Lepidoptera are entirely omitted from the DEIS. Species like Monarch Butterflies are frequently mentioned as being at risk and of great concern. Other such species are listed in the New York State listings of species deserving special attention. [C6-2, C7-2]

Response No ECO-5

An analysis of existing conditions at the subject property with respect to Lepidopterans (butterflies and moths), as well as potential impacts and mitigation for the proposed action is presented herein. It should be noted that the USFWS Trust Resources Report and NYNHP records for rare/protected species reviewed as part of the DEIS analysis in the DEIS did not identify any records for Lepidopterans.

As the subject property supports Pitch Pine-Oak Forest, it is best suited for Lepidopterans that occur within pine and oak-dominated forests, particularly those species that utilize oaks (*Quercus spp.*), pines (*Pinus spp.*) or heath-dominated

understory vegetation (e.g. blueberries [*Vaccinium spp.*], huckleberries [*Gaylussacia spp.*], and bearberry [*Arctostaphylos uva-ursi*]) as adult food sources and/or as larval host plants. On Long Island, such species include brown elfin (*Callophrys augustinus*), eastern pine elfin (*Callophrys niphon*), Edward's hairstreak (*Satyrium edwardsii*), banded hairstreak (*Satyrium calanus*), white-m hairstreak (*Parrhasius m-album*), spring azure (*Celastrina ladon*), Canadian tiger swallowtail (*Papilio canadensis*), mourning cloak (*Nymphalis antiopa*), sleepy duskywing (*Erynnis brizo*), Juvenal's duskywing (*Erynnis juvenalis*) and others.

The proposed action would preserve 39.30 contiguous acres of Pitch Pine-Oak Forest habitat that would be available for local Lepidoptera species, including those listed above. Moreover, as detailed in DEIS Sections 3.3.2 and 3.3.3, the site interior would be revegetated following installation of the solar farm equipment. Specifically, the areas beneath the solar panel arrays would be planted with native heath shrubs, including lowbush blueberry (*Vaccinium angustifolium*), black huckleberry (*Gaylussacia baccata*) and dwarf huckleberry (*Gaylussacia dumosa*). As noted previously, these species currently occur extensively within the understory stratum of the Pitch Pine-Oak Forest that occurs at the subject property and are integral components of the existing site ecology, including usage by indigenous Lepidopterans as adult food sources and/or as larval host plants. In addition, Pennsylvania sedge (*Carex pensylvanica*) would be planted by seed underneath the solar panel arrays in all areas where the aforementioned shrubs are planted. The areas located in between the rows of solar panel arrays would be planted with a seed mixture comprised of fescues (*Festuca spp.*), rye grasses (*Lolium spp.*) and yellow sweet clover (*Melilotus officinalis*). A native evergreen screen consisting of eastern red cedar (*Juniperus virginiana*) and American holly (*Ilex opaca*) plantings would be installed along the western fence line of the solar farm. In total, 54.00 percent (54.18± acres) of the subject property (i.e., nearly 90 percent of all areas to be cleared) would be re-vegetated with the aforementioned native plant species.

The revegetated site interior would represent habitat types that currently do not occur at the subject property that would be available as potential habitat for other Lepidopterans that occur within meadow, shrubland, woodland edge and cultural ecological communities on Long Island. These include the monarch butterfly (*Danaus plexippus*) referenced by the commenter, as well as black swallowtail (*Papilio polyxenes*), orange sulfur (*Colias eurytheme*), American copper (*Lycaena phlaeas*), coral hairstreak (*Satyrium titus*), eastern-tailed blue (*Cupido comyntas*), American lady (*Vanessa virginiensis*), painted lady (*Vanessa cardui*), red admiral (*Vanessa atalanta*), little wood satyr (*Megisto cymela*) and many others. In particular, the proposed grass-dominated habitats that would occur between the rows of solar panel arrays represent habitat for over a dozen locally-occurring species of skipper butterflies (Family Hesperiidae) that utilized grasses as larval host plants.[13]

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[13] *South Fork Natural History Society. 2000. Butterflies of the South Fork of Long Island.*

The removal of 60.83 acres of Pitch Pine-Oak Forest would result in a reduction of available habitat for Lepidopterans that occur within this ecological community. However, 39.30 contiguous acres of Pitch Pine-Oak Forest would be preserved and available as habitat for these butterfly and moth species. Clearing and revegetation of the site interior would result in the creation of several habitat types (i.e., meadow, shrubland, woodland edge and cultural ecological communities) that currently do not occur at the subject property, creating potential habitat for many Lepidopterans for which habitat does not currently occur onsite. Accordingly, through preservation of existing habitat and creation of several new habitat types, it is anticipated that the overall species diversity of Lepidopterans at the subject property would increase following implementation of the proposed action.

Comment No. ECO-6

It would be indispensable to know the biomass of the vegetation to be removed, given the richness of the vegetation lost, to help understand its potential loss. [C6-8, C7-8]

Response No ECO-6

The existing ecological conditions, impacts and mitigation analyses presented in the DEIS, including ecological community and vegetation analyses, were prepared in accordance with the Final Scope promulgated by the Town of Brookhaven Town Board, dated September 16, 2014. Pursuant to the scope:

> *"…the site's existing natural resources, including vegetation and wildlife species will be described and lists of observed and/or expected will be provided. A map of the sites habitat areas will be prepared. Describe/discuss the existing vegetation resources of the site, including habitats found acreages of each habitat type, expected and observed vegetation and wildlife species identification, document any known or observed endangered or protected plant species…Potential impacts from loss/change of habitat area and/or displacement of species will be quantified and addressed. Quantify change in habitat quantities and types on the site; document change to ecological character and wildlife species occupying the site based on NHP findings, as well as the potential impact upon rare, threatened or endangered plant and animal species, if present. Additionally, discuss potential impacts of the newly developed habitat and potential impacts on species within the geographic area and for species known to utilize the new habitat. Lastly, the DEIS will describe what will happen to the vegetation removed from the site (i.e. mulch, paper mill, fuel, etc.)."*

In accordance with the Town's Final Scope, the analyses presented in the DEIS included quantification of the existing habitat at the subject property by area, rather than biomass (i.e., mass and volume of trees, as determined by measurements of basal area, weight and spatial density). Specifically, as detailed in Section 3.3.1 of the DEIS, the subject property supports 100.33±-acres of wooded habitat that is representative of

the Pitch Pine-Oak Forest ecological community, as described by the New York Natural Heritage Program (NYNHP) publication Ecological Communities of New York State. Moreover, qualitative descriptions of vegetative density for the various forest strata (i.e. canopy, sapling, shrub and groundcover strata) were provided in the DEIS. As such, the existing ecological resources, including vegetation, were sufficiently characterized within the DEIS to provide an understanding of the conditions at the site and the potential impacts of the proposed action upon the ecological resources present.

Comment No. ECO-7

The DEIS claims that contiguous forest would be preserved. The core of the forest would be hollowed out, and what would be left is margins. This cannot be called contiguous forest. Alternative configurations of the project such as discrete island of solar panels within an otherwise intact forest could allow the greater preservation of contiguous forest, an important ecological consideration. [C6-9, C7-9]

Response No ECO-7

Under the proposed action, development of would occur within the interior of the subject property, while the remaining 39.30 acres of wooded habitat to the north, south east and west would be preserved as buffers to the surrounding woodlands and to facilitate the movement of wildlife to and from these properties. The preserved wooded acreage includes a minimum 50-foot wooded buffer on the northern site border, a minimum 211 buffer on the western site border, a minimum 77-foot buffer area on the eastern site border and a 220-foot buffer on the southern site border. These preserved habitat areas would be contiguous, with each other and with the extensive publicly-held wooded habitats to the north, east and south detailed within the DEIS. The benefits of clustering development to preserve contiguous buffers and habitat corridors is well-documented in the scientific literature,[14,15,] as well as in guidance documents issued by the New York State Department of Environmental Conservation (NYSDEC) and government environmental agencies in other Northeastern States.[16,17] From an ecological perspective, this strategic site design would allow for the continuance of existing contiguous habitat corridors at the subject property that facilitate the movement of wildlife between the adjoining wooded habitats located to the north, east and south of the site.

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[14] Milder, J.C. 2007. *A Framework for Understanding Conservation Development and its Ecological Implications*. American Institute of Biological Sciences.
[15] Bond, M. 2003. *Principles of Wildlife Corridor Design*. Center for Biological Diversity.
[16] New York State Department of Environmental Conservation. 2008. *Conserving Natural areas and Wildlife in Your Community – Smart Growth Strategies for Protecting Biological Diversity of New York's Hudson River Valley.*
[17] New Hampshire Department of Environmental Services. 2004. *Habitat Sensitive Site Design and Development Practices to Minimize the Impact of Development on Wildlife.*

Comment No. ECO-8

There is a lot of wildlife on the subject property. The woods at the subject property are home to generations of deer, turkeys, foxes, great horned owls, peregrine falcons, red-tailed hawks, and bats, and the trees are a filter for air quality and an anchor for the soil. The turkeys eat the ticks, the bats eat the mosquitos, and the birds-of-prey eat the rodents. [C10-1, H7-1, H8-1, H8-3, H9-3, H10-2, H15-3]

Response No ECO-8

As the subject property is entirely wooded, it supports a wildlife fauna of species adapted primarily to these conditions. The observed and expected wildlife species at the subject property, including those listed in the comment, were discussed in detail in DEIS Section 3.3.1. To a large extent, the resident flora and fauna function as integrated components within "food webs" and other simple and complex interrelationships within the woodland ecosystem.

In addition to providing habitat for wildlife, wooded habitats also provide numerous other environmental benefits, including sequestration of pollutants and erosion control, as referenced by the commenter and reflected in relevant portions of the DEIS (e.g., Section 3.1 [Geological Resources], Section 3.2 [Water Resources] and Section 3.4 [Air Resources]).

The proposed action would preserve 39.30 acres of on-site wooded habitat in a contiguous habitat area surrounding the solar farm equipment to be installed within the site interior. The preserved woodlands would also be contiguous with additional wooded habitat located within the surrounding publicly-held preserve lands to the north, east and south of the subject property. Following implementation of the proposed action, it is anticipated that the preserved woodlands would continue to function as habitat for the existing wildlife fauna, as well as providing numerous other environmental benefits.

It should be noted that, with respect to air quality, the detailed analysis presented in Section 3.4 of the DEIS determined that the proposed action would result in a significant net benefit to air quality.

Comment No. ECO-9

Removal of vegetation will eliminate food, nesting and shelter being utilized by a diverse number of species, including four on the New York State Special Concern list. [C12-3, H9-1]

Response No ECO-9

As detailed in the response to Comment No. ECO-3 and discussed in detail in DEIS Sections 3.3.1 and 3.3.2, the subject property woodlands represent potential breeding and/or foraging habitat for the NYS Special Concern birds Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*) and whip-poor-will (*Caprimulgus vociferous*). As such, the preservation of 39.30 contiguous acres of wooded habitat at the subject property would preserve significant habitat area for these species. Further, as clearing of existing habitat would occur between November 1 and March 31 only, it would not occur during the avian breeding seasons. As such, direct elimination of individuals of the three species would also be avoided.

As noted in DEIS Section 3.3.1, the open woodlands at the subject property represent habitat for the New York State Special Concern eastern box turtle (*Terrapene carolina carolina*), and a carapace (shell) from this species was observed at the subject property. The proposed action would preserve 39.30 contiguous acres of wooded habitat for this species that is contiguous with additional and extensive wooded habitat area to the north, east and south of the subject property. The 200-foot wooded buffer to be preserved at the southern portion of the site is adjacent to preserved woodlands that contain wetlands and surface waters associated with the headwaters of the Forge River, as observed to the south of the subject property during field surveys conducted for the DEIS. Accordingly, as eastern box turtle seems to prefer upland habitats located near ponds and streams,[18] the proposed action would preserve significant potential habitat area for eastern box turtle, including wooded habitat contiguous with wetlands associated with the Forge River.

Comment No. ECO-10

Eastern box turtles lay eggs at the subject property, which are a watched species. [H7-2]

Response No ECO-10

Eastern box turtle is a New York State Special Concern species that occurs at the subject property. Existing site conditions, potential impacts and preservation of habitat for eastern box turtle under the proposed action are discussed at length in DEIS Section 3.3 and in the responses to Comment Nos. ECO-3 and ECO-9.

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[18] Gibbs, J.P., et. al., 2007. *The Amphibians and Reptiles of New York State – Identification, Life History and Conservation*. Oxford University Press.

4.3 Land Use and Zoning

Comment No. LUZ-1

The Solar Energy Production Facility code is a good compromise between the need to promote renewable energy and to protect community character. The proposed project should comply with all substantive requirements of this code. [C3-1, H2-1]

Response No. LUZ-1

This comment is noted. As discussed in Section 3.5.2 of the DEIS (pages 122-126), and as shown on the *Proposed Site Plan* in Appendix C of this FEIS, the proposed facility will conform to all of the Town's special permit criteria for solar energy production facilities, as set forth in §85-815 of the Town Code. Such criteria include, among other things, minimum lot area, buffer and setback restrictions; lot coverage and clearing restrictions; and wetland setbacks.

Comment No. LUZ-2

Along the western edge of the property are finger-like projections of land, which are shown on the 1947 subdivision map as small right-of-ways in an unplanned subdivision and square areas for recharge basins. [H13-1]

Response No. LUZ-2

As shown on Figure 2 of the DEIS – Suffolk County Tax Map Excerpt (page 3), the subject property contains several finger-like projections extending west toward Cranford Boulevard. These are not identified as paper streets on the tax map, and are in fact a part of the tax parcel that is the subject property (i.e., District 0200 – Section 712.00 – Block -09.00 – Lot 001.000). This is confirmed by the survey of the subject property contained in Appendix B of the DEIS. It is noted that all of these projections are within the area to be maintained as natural vegetated buffer between the proposed solar energy production facility (i.e., the western limit of clearing) and the residential properties along Cranford Boulevard (see *Proposed Site Plan* in Appendix C of this FEIS).

Comment No. LUZ-3

The heights of the proposed solar panels and the allowed maximum height should be identified. Additionally, it should be confirmed whether the solar panels will be fixed position. [H19-1]

Response No. LUZ-3

According to §85-815(C)(1) of the Town Code, the maximum allowable height for solar panels is 20 feet above the ground. The proposed solar panels at the subject property would be installed to a maximum height of 17± feet above grade level (agl). As such, the proposed facility would conform to the maximum height requirement for solar energy production facilities, and in fact would not reach the maximum height allowable by the Town Code. As described in detail in Section 2.0 of the DEIS and the preliminary project plans (see Appendix C), the solar arrays are proposed to consist of ground mounted, fixed position, photovoltaic solar collection panels.

Comment No. LUZ-4

Consistency of the project with the Special Permit criteria for Solar Energy Production Facilities for lot coverage should be presented. [H21-1]

Response No. LUZ-4

The maximum lot coverage for solar energy production facilities is set forth in §85-815(B)(1) of the Town Code, which states that total lot coverage cannot exceed 60 percent, as measured from the outer edge(s) of the arrays, inverters, batteries, storage cells and all other mechanical equipment used to create solar energy, exclusive of fencing and roadways. As discussed in Section 3.5.2 of the DEIS (page 124), the proposed equipment used to create solar energy at the subject property would cover approximately 26.9 percent of the subject property. If coverage were to be calculated such that all area within the outermost limits the proposed equipment – including the area between the panels (to be planted with native species), the area between the panel arrays and the proposed maintenance building, etc. – the total lot coverage would equate to approximately 53.5 percent of the site. Thus, regardless of the method of calculation, the proposed action is well within the maximum lot coverage limitation set forth for solar energy production facilities within the Town Code.

4.4 Transportation

Comment No. TRA-1

Increased volume of commercial vehicles during onsite development and maintenance of the facility could have the potential to create more traffic and accidents. Moriches-Middle Island Road is already congested and dangerous. [C12-6]

Response No. TRA-1

Section 3.6.2 of the DEIS (pages 132-133) addresses the construction activity that would be expected to occur as a result of the proposed action, including the level of traffic generation related to construction activity. As described within that section, construction is expected to occur over a 12±-month period, between the hours of 7:30 AM and 6:00 PM, Monday through Saturday. Routine traffic during construction is expected to include:

- Equipment/material deliveries: approximately 4-6 per day
- Coffee truck: 2 per day
- Employee vehicles: 15 cars per day

The anticipated construction vehicles include:

- 2-3 excavators
- 4 trenchers
- 1 dump truck

Construction-related traffic would enter and exit the subject property via a construction entrance corresponding to the proposed site access driveway (see *Clearing and Erosion & Sediment Control Plan* in Appendix C of this FEIS), the final design of which would be determined in consultation with the Town of Brookhaven.

Material deliveries would be scheduled to occur during off-peak hours, so as not to coincide with peak commuter traffic times, to the extent practicable. Overall, a total of approximately 30 vehicles per day would be travelling to and from the site during the 12± month construction period. This increase in roadway volume is not substantial, and is not expected to result in a significant adverse impact upon traffic conditions.

Appendix E of this FEIS contains correspondence prepared by VHB dated March 21, 2016, which was presented to the Planning Board at the time of the public hearing on the DEIS. This letter contains an analysis of potential traffic volume and safety

impacts during project operations and maintenance. With regard to traffic impacts during facility operations and maintenance, it is noted that the proposed facility is expected to generate a maximum of six peak hour trips to and from the subject property. Such a low level of trip generation would not impact traffic flow conditions on Moriches-Middle Island Road. Furthermore, sight distances to the east (i.e., ≥560 feet) and to the west (≥1,000 feet) of the proposed driveway location exceed the standards for Stopping Sight Distance (SSD) and Intersection Sight Distance (ISD) as promulgated by the American Association of State Highway and Transportation Officials (AASHTO). Thus, sufficient sight distances are present for the safe operation of the proposed site driveway along on Moriches-Middle Island Road.

Based on the above, no significant adverse traffic-related impacts on Moriches-Middle Island Road are expected to result from the construction or operation of the proposed facility. It should also be noted that, as presented in Section 5.4 of the DEIS, an alternative development of the subject property in accordance with prevailing zoning (e.g., with a light industrial use or other permitted use) would be expected to result in a significantly greater number of vehicular trips to-and-from the subject property. Specifically, the as-of-right alternative development of the site could be expected to generate approximately 241 vehicular trips in the Weekday PM peak hour, as compared to a maximum of only six trips under the proposed action.

Comment No. TRA-2

The proposed action includes an emergency access road on the southwest, but Cranford Boulevard would never be used for access. [H7-6]

Response No. TRA-2

As shown on the *Proposed Site Plan* in Appendix C of this FEIS, the proposed facility would include an emergency access point at the southwest corner of the subject property. As discussed in Section 3.6.2 of the DEIS, this emergency access would connect to Grove Drive (south of the subject property). The emergency access route would be controlled by crash gate, such that only authorized personnel (e.g., first responders) would have access. Final design of the emergency access would be developed in consultation with the Town of Brookhaven Highway Department, the Town of Brookhaven Fire Prevention Division and the local fire district. This emergency access would be used by authorized personnel, in emergency situations only, and would not result in any routine traffic on nearby roads. Only a single site entrance and exit is proposed, which would be located along Moriches-Middle Island Road.

Comment No. TRA-3

There is a paper road adjacent to a residence on Cranford Boulevard, and the plans for development or use of the paper road should be discussed. [H9-4]

Response No. TRA-3

As shown on Figure 2 of the DEIS – Suffolk County Tax Map Excerpt (page 3), the subject property contains several finger-like projections extending west toward Cranford Boulevard. These are not identified as paper streets on the tax map, and are in fact a part of the tax parcel that is the subject property (i.e., District 0200 – Section 712.00 – Block -09.00 – Lot 001.000). It is noted that all of these projections are within the area to be maintained as natural vegetated buffer between the proposed solar energy production facility (i.e., the western limit of clearing) and the residential properties along Cranford Boulevard (see *Proposed Site Plan* in Appendix C of this FEIS). There is an emergency access proposed to be located at the southwest corner of the subject property, which is not located along one of these finger-like projections, the final design of which would be developed in consultation with the Town of Brookhaven Highway Department, Town of Brookhaven Fire Prevention Division and the local fire district. The nearest paper street is Grove Street, which is bounded by properties owned by the Town of Brookhaven or jointly by the Town and Suffolk County, none of which are improved with residences. As such, any improvements that may ultimately occur along an existing paper street to provide emergency access would not occur adjacent to any private residences.

Comment No. TRA-4

The potential impact on air traffic should be considered. The proposed facility would create reflections, which could possibly impact air traffic and cause serious conditions for the people that live in the area. [H15-2]

Response T-4

The potential for the proposed solar energy production facility to create glare or affect air transportation is discussed in Section 3.7.2 of the DEIS (pages 137-138). According to the Federal Aviation Administration's (FAA) *Technical Guidance for Evaluating Selected Solar Technologies on Airports* (November 2010), PV solar panels reflect as little as two percent of sunlight, while vegetated surfaces reflect approximately 50 percent of sunlight. Furthermore, the project site is located east of the Town of Brookhaven Calabro Airport's runway, and well outside of the aircraft approach surfaces and, therefore, will not penetrate any restricted airspace. The solar panels are engineered to be light absorptive and, therefore, do not pose a light reflective or glare concern to pilots.

With respect to off-airport solar projects, the FAA's technical guidance indicates that there are "no defined thresholds for project size, type, or distance from the airport… that automatically trigger FAA airspace review." However, as the proposed action consists of light-absorptive solar PV technology, the tallest proposed building is 24± feet (the maintenance building), and the proposed facility would be located approximately 0.5-to-1-mile from the runways of the Brookhaven Calabro airport at its closest point, it is unlikely that FAA airspace review of the proposed action would be necessary. It should also be noted that a solar PV installation at the Brookhaven Calabro airport property is being considered by the Town of Brookhaven, as acknowledged within Section 4.1.3 of the DEIS.

4.5 Aesthetics and Visual Resources

Comment No. VIS-1

The solar panels may be visible to residents on Cranford Boulevard, even though there will be a 200-foot vegetated buffer. There are mature trees, 30 feet tall, and even during the growing season the leaves are at the top portion of the trees. Most of those trees are pine trees and the pine needles are at the top of the tree. The solar panels will be from eight to 17 feet off of the ground and will be visible through the trees. The solar panels will be visible from the second floor of the residences on Cranford Boulevard. [C13-1, H6-1, H14-1]

Response No. VIS-1

The proposed solar panels would be setback a minimum of 241 feet from the nearest residential property line (see *Proposed Site Plan* in Appendix C of this FEIS). As discussed in Section 3.7.3 of the DEIS (page 139), several mitigation measures have been incorporated into the design of the proposed facility to minimize or preclude potential visual impacts. With respect to the residences along Cranford Boulevard, the relevant mitigation measures include:

- Evergreen screen plantings would be installed along the length of the western project limit, and privacy slats would be installed in the adjacent fence. Should there be any visibility through the 211-foot natural wooded buffer to be maintained, the evergreen plantings would screen the solar facility, even in winter months.

As depicted on Detail 2 of the *Planting Plan* included in Appendix C, the staggered, double row of evergreen plantings to be situated along the outer limit of the western fence line, would provide year-round foliage. In the unlikely instance that there is any direct line of sight from a residential property along Cranford Boulevard and the proposed limit of clearing that is not completely obscured by the several intervening tree trunks, branches and low foliage across the minimum 211-foot span of wooded area to be retained, the proposed solar PV installation would be screened by the proposed fencing and evergreen plantings.

Based on the above, the proposed facility has been designed to incorporate measures that will preclude any potential significant adverse visual impacts to nearby residences.

Comment No. VIS-2

There are going to be three, 50-foot-high buildings on the subject property, which will be visible from the residences on Cranford Boulevard. [H8-2, H10-1]

Response No. VIS-2

The proposed action does not involve the construction of any 50-foot-tall buildings. One of the alternatives that was evaluated in the DEIS was the *Development in Accordance with Existing L Industrial 1 / A Residence 1 District Zoning (As-of-Right)* (see Section 5.4 of the DEIS). This alternative considered the potential development that would be permitted at the subject property in accordance with the bulk and dimensional regulations of the prevailing L Industrial 1 zoning regulations, as an alternative to the proposed action. A *Yield Map Plan* is included in Appendix G of the DEIS, which depicts the potential as-of-right development scenario. As detailed in Section 5.4 of the DEIS, there are three, 250,000-SF, single-story warehouses, each reaching a height of 50 feet agl on this *Yield Map Plan*. The applicant is only proposing to construct a Solar Energy Production Facility as described in Section 2.3 of the DEIS and further discussed in this FEIS.

As discussed in Section 2.3 of the DEIS (page 6), and as shown on the *Proposed Site Plan* in Appendix C of this FEIS, under the proposed action, the only proposed building is a 4,032-SF maintenance and operations building, to be situated within the northeast portion of the subject property. The proposed building would have a maximum height of 24± feet agl. The proposed maintenance building would be located approximately 830 feet from the nearest limit of any residential property on Cranford Boulevard. As discussed in Section 3.7.3 of the DEIS (page 139) and further discussed above in Response No. VIS-1, the proposed facility (including the single proposed building at the far [northwest] portion of the site) would not expected to be visible from residences along Cranford boulevard.

4.6 Energy

Comment No. ENG-1

On April 5th, 2016, Newsday published an article entitled, 8 LIPA Substations Maxed Out for Renewable Energy, which specifically referenced a substation located "…north of Sunrise Highway in Moriches…" It is the understanding of [the Town of Brookhaven Division of Environmental Protection] that the article is referring to substation 8RX-Moriches – the same substation the proposed solar facility will connect to as per the DEIS. The article states that this substation, "…can no longer accept any new sources of generation, green or otherwise."

Furthermore, a PSEG document from April 28, 2015 entitled, "Request for Information: Innovative Solutions to Provide Transmission and Distribution System Load Relief" indicates that the 8RX-Moriches station requires a "10.3-17.6% load relief" starting in 2016 and requiring "approximate .01 MWs additional load relief … the months requiring this relief are June-August." This request also implies that the substation is at capacity and that it may need significant improvements or updates to hand existing load, not including the proposed additional power generated from the proposed solar facility. [C1-1]

Response No. ENG-1

As presented in Section 3.8 of the DEIS, the proposed project would generate approximately 19.6 megawatts (MW) of energy from a renewable source, thereby reducing fossil fuels, and increasing clean energy within the Town of Brookhaven. The proposed project would meet the demand of existing LIPA consumers, and accomplish the goals set forth in the New York State Energy Plan for increasing renewable energy deployment, decreasing greenhouse gas emissions, etc. Furthermore, the proposed project would be consistent with the Clean Energy Action Plan for 2006 and Town of Brookhaven Resolution 9-2006.

An analysis of the interconnection for the proposed Solar Energy Production Facility has been performed by Mark Scher, P.E. of MSE Engineering, LLC (see interconnection engineering letter report dated August 29, 2016 in Appendix F). As indicated by Mr. Scher, the proposed project is expected to be required by the New York Independent System Operator (NYISO) to interconnect the proposed Solar Energy Production Facility via an on-site collector facility to LIPA's Moriches 8 substation. The on-site equipment would be located within the 100-foot-by-100-foot area dedicated for such equipment as shown on the preliminary project plans (see Appendix C) and evaluated within the DEIS. The final decision regarding the precise method of interconnection is to be made by NYISO in coordination with LIPA and

PSEG Long Island, and that such decision is typically not determined until after the SEQRA process is concluded and relevant approvals for the plant (e.g., the proposed Solar Energy Production Facility) are obtained. The applicant is committed to working with NYISO, PSEG Long Island, and LIPA accordingly in order to construct the appropriate collector facility, which would minimize or eliminate any impact to the Moriches 8 substation.

There are two options for the interconnection anticipated within Mr. Scher's analysis, as further described therein (see Appendix F), which concern the portion of the line along Weeks Avenue. Both options are consistent with the *Conceptual Interconnection Route* identified and evaluated within the DEIS (see Appendix C of the DEIS). The existing utility poles on Weeks Avenue are designed for two circuits, but only one is currently installed. One option would utilize the existing provisions for a second circuit. Under the second option, the new line from Moriches-Middle Island Road would tap into the existing circuit along Weeks Avenue. Under either option, it is expected that the connection would occur on the transmission input side of the Weeks Avenue (Moriches 8) substation, bypassing the capacity constrained portion of the substation and requiring only a minimal expansion of the existing substation facility.

It should be noted that, as indicated in the visual impact analysis in the DEIS, the interconnection may result in the installation of additional utility cable supports along the route. As provided by Mr. Scher's analysis, it is expected that only a limited number of new poles would be necessary (i.e., five to six) along Moriches Middle Island Road in order to support the proposed solar energy production facility. These additional poles would be similar to the existing poles located along Weeks Avenue. The new interconnect line would then utilize the existing pole structures along Weeks Avenue to reach the Moriches 8 substation. As demonstrated in Section 3.7.2 and the photographs in Appendix E of the DEIS, the proposed distribution poles are an established element of the visual environment in the immediate vicinity of the subject property and would not change the character of the surrounding area.

<u>Comment No. ENG-2</u>

Adding 20 megawatts (MW) of renewably generated electricity would be a significant increase in the total amount of renewably generated electricity for Long Island. The project is conveniently located next to the Weeks Avenue substation, into which it would feed its power. However, the capacity of that substation – or any substation in the system – to accept locally generated electricity is limited by its equipment. The ability of the local system to accommodate the expected 19.6 MW of electricity should be evaluated. [C4-4, H4-4]

<u>Response No. ENG-2</u>

This comment is noted. Also see Response No. ENG-1.

Comment No. ENG-3

The DEIS does not include a discussion of the economics of the proposed solar PV facility and how long it would operate or be viable technologically. The technology will wear out and be superseded. The claims of carbon sequestration must be modified to include the end-period, at which the facility would no longer function but the forest would have. The analysis of jobs must take this into account to be complete. [C6-7, C7-7]

Response No. ENG-3

As discussed in Section 3.8.2 of the DEIS, the proposed solar PV arrays have an estimated lifetime of approximately 40 years. Furthermore, it is expected that a power purchase agreement between the applicant and another entity (i.e. Long Island Power Authority/PSEG Long Island) to purchase power from the proposed renewable, "green" source of energy, would be for an agreement term of 20 years. At the end of 20 years:

- The agreement could be extended for an additional time period.
- The agreement could end as scheduled, whereupon the solar project could then be transferred to another entity to operate or upgrade.
- The agreement could end as scheduled, whereupon the solar facility would be dismantled and the property would be restored or apply for modified use within zoning regulations.

Based on the foregoing, although an initial power purchase agreement would likely expire after 20 years, the useful lifetime of the proposed equipment is approximately 40 years, and the agreement could be extended and/or the facility could be upgraded to continue providing various benefits (including air quality benefits) into the future. As such, it would not be appropriate to assume that the proposed facility will cease to operate (and therefore cease to provide the various expected benefits of the facility) as suggested by the commenter.

It should be noted that, as required pursuant to §85-816 of the Town Code, a decommissioning plan acceptable to the Town of Brookhaven will be maintained for the dismantling of the facility and restoration or reuse of the subject property, to be implemented at the end of its operational life or at such time that its efficiency is substantially reduced.

Section 3.4.4 of the DEIS presents an analysis of the net air quality benefit of the proposed solar PV facility. The reduction in carbon sequestration by the existing woodland to be removed is calculated and compared to the emissions reductions achieved by exchanging conventional power generation for the proposed renewable energy source. The analysis concludes that there would be a significant net air quality

benefit to the proposed solar PV facility operation. For the purposes of conservative analysis, no credit is taken in the DEIS analysis for the 54.18± acres of land that would be re-vegetated following clearing. Nearly 90 percent of all areas to be cleared would be established in native shrubs and grasses, thereby partially off-setting the effects of clearing on the carbon sequestration value of the property. The proposed facility is intended to be a permanent facility, which can be upgraded over time to continue providing a renewable source of energy, such that the air quality benefits would be expected to continue to be achieved into the future.

The commenter also mentions an analysis of jobs. Among the various benefits of the proposed project (in addition to those associated with the proposed renewable energy source), are construction- and operation-phase job generation. The proposed project will aid the local economy in that it is expected to generate approximately 32 construction jobs and 6 full-time post-construction positions. Construction activities will require the services of landscapers, heavy equipment operators, electricians, and building contractors for tasks involving vegetation clearing, site grading, array support installation, electrical equipment installations/connections, and building construction. Additional economic benefits would result from the purchase of green industry equipment and supplies, which would not occur under if remaining under the existing conditions. Just as with other benefits of the proposed project, the expected permanent job creation would continue to be realized on a long-term basis.

Comment No. ENG-4

The proposed project is nearby to the existing solar PV generation facility at Brookhaven National Laboratory and the planned panels at the Town of Brookhaven Calabro Airport. The capacity of the nearby substation should be considered, if all of the power generated at these facilities will go to the same substation. [C9-1, H16-2]

Response No. ENG-4

This comment is noted. See Response No. ENG-1.

Comment No. ENG-5

High-tension transmission wires may adversely affect nearby residents, if they are proposed. [H6-3]

Response No. ENG-5

The proposed solar farm will be interconnected to the power grid to distribute electricity generated by the PV arrays, and New York Independent System Operator (NYISO)/PSEG Long Island will be responsible for locating, designing and installing the power line(s) for the distribution of power generated by the proposed facility. The

installation of high-tension transmission cables is not anticipated as part of the proposed action. As indicated in Section 3.7.2 of the DEIS, improvements associated with the interconnection of the proposed facility to the utility grid has the potential to result in visual impacts, such as may result from the installation of additional cables or supports along the interconnection route. However, overhead utility cables and supports are an established element of the visual environment along the nearby roadway corridors, such that the potential visual impacts of additional cables or supports would be incremental to the existing conditions.

Comment No. ENG-6

How many kilowatts is the proposed project going to generate? It will only produce enough energy for a couple of hundred homes or less than 1,000 homes. [H10-4]

Response No. ENG-6

The capacity of the proposed solar PV facility and the anticipated quantity of electricity to be generated are detailed in Section 2.4 of the DEIS entitled, *Purpose, Benefit, and Need*, as well as within other sections of the DEIS. As a source of renewable energy, the proposed project will benefit the Town of Brookhaven by helping to meet energy needs in a non-polluting fashion. Upon completion, MISF anticipates that the facility will be interconnected to the LIPA power grid supplying 19.6 MW of electricity to the system for use by PSEG Long Island's customers. Based on the United States Energy Information Administration's (U.S. EIA) 2012 annual capacity factor of 20.3 percent for utility scale solar photovoltaic generators (the most recent final year available),[19] it is anticipated that the proposed facility would generate approximately 34,854 megawatt hours (MWh) of electricity annually. According to the U.S. EIA, the average household in New York State consumes 6,578 kilowatt hours (kWh), or approximately 6.6 MWh, annually.[20] Based on these factors, the proposed project would generate sufficient electricity to power approximately 5,281 homes. The applicant anticipates that actual generation by the proposed Middle Island Solar Farm would range between 38,000 to 44,000 MWh annually,[21] which would be enough electricity to power up to approximately 6,666 homes.

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[19] United States Energy Information Administration, *Table 6.7.b* from *Electric Power Monthly with Data from May 2014*, July 2014 (accessed December 2014); available from http://www.eia.gov/electricity/monthly/current_year/july2014.pdf.

[20] United States Energy Information Administration, *Table CE2.2* from *2009 Residential Energy Consumption Survey (RECS)* (accessed December 2014); available from http://www.eia.gov/consumption/residential/data/2009/index.cfm?view=consumption.

[21] The specific technology to be implemented at the subject property has not yet been selected, and will be determined by the applicant based on the latest technology available at the time of final design. However, the applicant proposes to construct a state-of-the-art facility, with higher-rated solar PV panels and with significantly lower loss factors than many other solar PV facilities, such that the actual output is expected to be higher than the average published within the U.S. EIA's 2012 report.

4.7 Alternatives to the Proposed Action

Comment No. ALT-1

Due to the site's value for surface water protection, habitat, and open space, the discussion of an alternative regarding the sale or transfer to a government entity for preservation needs to be fully addressed in the FEIS. The FEIS should provide evidence that confirms the possibility of purchase by the Town of Brookhaven, or of a land swap for less environmentally critical, or previously developed land held by the Town which is suitable for the proposed facility, was in fact fully explored. [C3-5, H2-5]

Response No. ALT-1

The DEIS evaluated various alternatives to the proposed action, including the sale or transfer of the subject property for preservation (see Section 5.2 of the DEIS). As discussed in the DEIS, the applicant has controlled the subject property for greater than 30 years, with no reasonable offers made during that time to acquire the property for the purposes of preservation. Additionally, no opportunities were identified when the applicant pursued the possibility of public acquisition or a land swap early in the application process. Therefore, the DEIS concluded that this alternative could not be implemented.

After the preparation of the DEIS and following a public hearing on the DEIS that was accepted by the Planning Board as complete and adequate for public review, additional consultations were undertaken with the Town of Brookhaven and Suffolk County for the purposes of considering opportunities for public acquisition of the subject property for preservation purposes. As expressed within the enclosed correspondence dated April 13, 2016 (see Appendix G), the applicant has spent a great deal of resources analyzing the property and its development and engaging in the application and environmental review process. The lack of any offers from any of the municipal agencies that were aware of the proposed project for over four years was taken by the applicant as an indication that either there was no public money available or no interest to purchase the subject property or swap the property for other land. The proposed action would result in various environmental benefits of a renewable energy source (as detailed throughout the DEIS) and conforms to the Town's various requirements intended to provide adequate safeguards for the location, siting and operation of solar energy production facilities. The applicant believes that the pursuit of a potential preservation alternative and initiating a formal appraisal process and a highly competitive process for limited funding at this time would delay a critical renewable energy project and its various benefits and would

not be beneficial, nor produce the requisite offer of sale from Suffolk County and the Town of Brookhaven.

Comment No. ALT-2

The highest and best use of the subject property would be its acquisition and preservation by local government. This would protect the investments made in already protected areas nearby and would have ecological and potential recreational benefits. [C4-1, H4-1]

Response No. ALT-2

The preservation of the subject property via its acquisition by a government entity was evaluated in the DEIS (see Section 5.2), and was determined not to be a feasible alternative to the proposed action. Also see Response No. ALT-1, above. It should be noted that, as detailed in Section 3.3 of the DEIS, the proposed action would result in the retention of approximately 39.30 acres of existing woodland within natural buffers and the establishment of 54.18 acres in native plantings and grasses beneath the solar arrays. The wooded buffers would be contiguous to each other, as well as the publicly-owned natural areas to the north, east and south of the subject property.

Comment No. ALT-3

Development of the subject property whether for a solar farm or for an industrial use (e.g., warehouse) permitted by its current zoning would necessitate considerable clearing and leveling of the land. The warehouse alternative would require much more earthmoving and construction than the solar farm, with the potential for greater silting of the river during and after construction. [C4-2, H4-2]

Response No. ALT-3

This comment is noted, and is consistent with the analysis of the as-of-right alternative to the proposed action evaluated in Section 5.4 of the DEIS – Development in Accordance with Existing L Industrial 1 / A Residence 1 District Zoning (As of Right). The analysis concluded (among other things) that the permitted alternative industrial use of the subject property would result in clearing of the subject property to a greater extent than the proposed action, additional grading to create flat building sites, the generation of significantly greater quantities of vehicular trips on area roadways, and the generation of a significantly greater quantity of sanitary waste to be discharged to groundwater.

Comment No. ALT-4

Building a solar farm on the subject property is the second most environmentally benign use for it, second only to its acquisition for preservation. [C4-5]

Response No. ALT-4

This comment is noted. As discussed in the DEIS, and in Response No. ALT-1 above, acquisition of the subject property by a government entity for preservation is not expected to be a feasible alternative.

Comment No. ALT-5

The no action option is indistinguishable from the government preservation option. This alternative emphasizes the loss of solar energy generation, but the solar investment could be made elsewhere, particularly on rooftops and above parking lots, in a manner that preserves habitat and living ecosystems while generating solar energy. [C6-3, C7-3, H16-1]

Response No. ALT-5

The No-Action alternative and the sale/transfer of land to a government entity for preservation alternative, evaluated in Sections 5.1 and 5.2 of the DEIS, respectively, both would result in the subject property remaining in its current, wooded state. Therefore, the potential environmental impacts of each are nearly identical. Both alternatives would forego the potential beneficial environmental impacts of establishing the proposed renewable energy source, such as the beneficial impacts on air quality.

Implementation of the proposed action would not preclude the installation of solar PV electric generating facilities on rooftops or above parking lots, as mentioned by the commenter. The applicant does not have the ability to install such facilities, and such installations do not represent a feasible alternative to the proposed action.

Comment No. ALT-6

The DEIS does not include other solar production alternatives, for example, how a smaller facility would function, or whether other technologies exist that could produce similar outputs with smaller footprints. [C6-4, C7-4]

Response No. ALT-6

The proposed action is designed to meet the objectives of the project sponsor, including the establishment of a Solar Energy Production Facility at the subject

property that conforms to all relevant provisions of the Town of Brookhaven's Special Permit criteria for the development of same, including the bulk and dimensional restrictions for clearing, coverage, etc. At the time of construction, the applicant will select the most appropriate technology for installation considering a variety of relevant factors, including the efficiency of the solar panel technology.

Comment No. ALT-7

The analysis of an as-of-right industrial development of the subject property does not take into account necessary mitigation or SEQRA requirements. The industrial uses might not be as extensive as allowed as-of-right, because SEQRA requires that impacts be minimized. Further, the industrial alternative analysis includes no economic analysis of whether that type of development is a reasonable alternative that would actually be undertaken. [C6-5, C7-5]

Response No. ALT-7

The Final Scope adopted by the Town Board and referenced in the Planning Board's Positive Declaration for the proposed action (see Appendix A of the DEIS) required the consideration of an as-of-right alternative, i.e., the development of the subject property in accordance with the prevailing L Industrial 1 / A Residence 1 zoning of the subject property. This analysis is presented in Section 5.4 of the DEIS, and refers to a *Yield Map Plan* presented in Appendix G of the DEIS. As depicted on the *Yield Map Plan*, a light industrial development consisting of 752,250±-square feet of building floor area, over 39 acres of parking, over 10 acres of landscaping, and associated site improvements, could be developed under the prevailing zoning.

As explained within the NYSDEC publication, *The SEQR Handbook, 3rd Edition* (2010)[22] (hereinafter, "*The SEQR Handbook*") an as-of-right alternative may be analyzed within a DEIS to provide additional bases for comparison with other alternatives. The NYSDEC specifically indicates that "[t]here can be cases where 'as-of-right' alternatives are more likely to cause significant adverse environmental impacts than would the action requiring agency approvals." (p.127)

Comment No. ALT-8

The DEIS analysis of the government acquisition alternative should be expanded to show what would actually be developed at the subject property if the government did buy the property and turn it into a learning center, etc. [C6-6, C7-6]

[22] http://www.dec.ny.gov/docs/permits_ej_operations_pdf/seqrhandbook.pdf, accessed August 2016.

Response No. ALT-8

The DEIS evaluates the acquisition of the subject property for preservation (see DEIS Section 5.2), as indicated in the aforementioned Final Scope. It would be speculative to assume any development of the subject property by a government agency, as no such plans for the subject property exist. The goal of alternatives discussions in an Environmental Impact Statement is to investigate means to avoid or reduce one or more identified potentially adverse environmental impacts, as described by the NYSDEC in *The SEQR Handbook*. The alternative described by the commenter does not appear to be directed at minimizing a potential impact of the proposed action. Moreover, any such alternative development of the subject property would not be controlled by the applicant (i.e., the project sponsor), such that it is not a feasible alternative for the applicant to pursue.

Comment No. ALT-9

Land swaps within the Town for available parcels that are already cleared should be considered in order to preserve the subject property. The proposed project would destroy some of the only woods left in the area when there are many other areas that are clear space and could provide the necessary space for the proposed facility without much destruction of the environment. Cleared farmland that was previously purchased by the Town of Brookhaven and the Town landfill should be considered. [C8-1, C9-2, H3-1, H5-1, H7-3, H9-2, H11-1, H12-1]

Response No. ALT-9

The range of reasonable alternatives for the private applicant to pursue is limited by sites that are owned or controlled by the applicant. Also refer to Response No. ALT-1.

Comment No. ALT-10

The subject property is zoned for industrial use, which means that industrial buildings could be built there. The better choice is renewable energy for the future generation. [H1-1]

Response No. ALT-10

This comment is noted. The DEIS contains an analysis of alternatives to the proposed action, including development of the subject property in accordance with prevailing zoning (see Section 5.4 of the DEIS). Under this alternative, approximately 752,250±-square-feet of light industrial use buildings would be constructed, along with associated appurtenances (parking areas, lawn and landscaping, sanitary systems, lighting, etc.).

Comment No. ALT-11

The property on the north side of Moriches-Middle Island Road should be considered as an alternative site for the proposed solar PV facility because there are no residential neighbors to that property. [H6-4]

Response No. ALT-11

The applicant does not own or control property along the north side of Moriches-Middle Island Road, such that the applicant could not develop a facility on that property. Moreover, a review of the Town of Brookhaven Zoning Map and the Existing Land Use figures contained in the DEIS (see Figure Nos. 14 and 13, respectively), it appears that the large undeveloped parcel to the north abuts several residential properties.

Comment No. ALT-12

The paperwork describes a 4,000-square-foot building, but it seems that there are three, 250,000-square-foot, 50-foot-high buildings proposed. That would change the whole dynamic of the neighborhood and would affect the quality of life. [H11-2]

Response No. ALT-12

The DEIS evaluates the development of the subject property with a Solar Energy Production Facility, consisting of solar PV panel arrays, a 4,032±-square-foot maintenance and operations building, electrical distribution equipment, and associated appurtenances, as described within DEIS Section 2.0 – *Description of the Proposed Action* and as shown on the preliminary project plans contained in Appendix C of the DEIS. The 4,032±-square-foot maintenance building is the only building proposed as part of the proposed action.

Section 5.0 of the DEIS evaluates various alternatives to the proposed action, including the development of the subject property in accordance with prevailing zoning (see Section 5.4 of the DEIS and the Yield Map Plan in Appendix G of the DEIS). To represent the development of the subject property in accordance with prevailing zoning, the DEIS evaluated a yield map plan with three, 250,000±-square-foot, 50-foot high industrial use buildings, a 2,250±-square-foot maintenance building, various parking areas and driveways, a recharge basis, and other improvements. Such development is not proposed, but is intended to portray a development that could be implemented as an alternative to the proposed action.

Comment No. ALT-13

Preservation of the subject property is the preferred alternative. [H13-3]

Response No. ALT-13

This comment is noted. Also see Response Nos. ALT-1 and ALT-2.

4.8 General Comments

Comment GEN-1

The proposed action would provide approximately 19.6 MW of electricity. Long-term studies have not been conducted on such a large facility built by residential areas, most likely posing a health risk. [C12-1]

Response No. GEN-1

The DEIS was prepared to address all areas of potential environmental impacts identified within the Final Scope originally adopted by the Town of Brookhaven Town Board and referred to within the Planning Board's Positive Declaration dated September 21, 2015 (see Appendix A of the DEIS). With respect to potential health impacts, it is noted that the DEIS contained analyses of potential impacts on various elements of the human environment, including water resources, air quality, construction-related impacts, and others.

Comment GEN-2

The air will be affected during onsite development and the removal of vegetation. The large amount of vegetation at the subject property provides an air pollution barrier to the surrounding community, which would be diminished. [C12-2]

Response No. GEN-2

The potential air quality-related impacts of the proposed action are fully evaluated in Section 3.4 of the DEIS entitled, *Air Resources*. As concluded therein, the proposed action would have a significant net air quality benefit, even after accounting for the carbon sequestering properties of wooded areas to be removed from the subject property.

Comment GEN-3

The Dungan Line is a paper road that runs through the property east to west that was put there as a land boundary in the 1600's. This is an historical landmark and should remain that way. [C12-5]

Response No. GEN-3

The Suffolk County Tax Map (see excerpt as Figure 2 of the DEIS) does not identify any paper roads running through the subject property. Additionally, no such paper

road was identified by the property survey contained in Appendix B of the DEIS. The subject property includes a single tax parcel held in private ownership (i.e., District 0200 – Section 712.00 – Block 09.00 – Lot 001.000).

A review of the Town of Brookhaven list of historic sites[23] and the New York State Cultural Resource Information System[24] (CRIS) does not identify the presence of any designated local, state or federal historic or cultural resources at or contiguous to the subject property. Therefore, no significant adverse impacts upon such historic or cultural resources would be expected to result from implementation of the proposed action.

Comment GEN-4

The property value of nearby homes will be negatively impacted by the proposed action. [C12-7, H6-2, H11-3]

Response No. GEN-4

The proposed facility has been designed such that there would be a substantial buffer surrounding the improved portion of the site in virtually all directions. From along Moriches-Middle Island Road, views of the subject property would be minimally altered, as a result of the creation of the single site driveway. Including the on-site buffer along the northern property boundary and the Town of Brookhaven-owned wooded parcels separating the subject property and the roadway, views of the proposed facility would be obscured by wooded areas a minimum of 225 feet in depth. From the west, there would be a significant buffer of natural vegetation retained (ranging in depth from 211± feet to approximately 500 feet), as well as a staggered row of evergreen plantings and a privacy fence, separating the improved portion of the proposed facility and the nearest residential properties. Buffers are also provided to the south and east, where the subject property abuts publicly-owned vacant, wooded land. Therefore, from the perspective of aesthetics and visual resources, as well as neighborhood character, the proposed action has an extremely limited potential to adversely affect property values. Moreover, based on the various analyses performed within the DEIS, the proposed action would not result in significant adverse noise impacts, impacts upon transportation, or other environmental aspects evaluated therein, such that related effects on property values would not be anticipated. The introduction of a renewable, "green" energy source would have positive air quality impacts on the region, and the proposed action would have a significantly reduced potential to result in various environmental impacts as compared with an as-of-right development of the subject property with an industrial

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[23] https://www.brookhaven.org/History
[24] https://cris.parks.ny.gov/Login.aspx?ReturnUrl=%2f

use (see Section 5.4 of the DEIS). Overall, therefore, no significant adverse impacts to property values are expected to result from implementation of the proposed action.

It should also be noted that, based on the analysis presented at Section 3.5.2 of the DEIS, and as submitted within expert testimony by John Breslin, Esq. of Breslin Appraisal Company at the March 23, 2016 public hearing before the Town of Brookhaven Zoning Board of Appeals, the requested area variance associated with the existing shape of the subject property is not expected to adversely impact neighborhood character or property values.

Comment GEN-5

There is a big issue with noise pollution coming from Sunrise Highway affecting residences along Cranford Boulevard. The removal of woods at the subject property will increase noise pollution, particularly during the summer when highway traffic volumes increase. [H7-4]

Response No. GEN-5

The nearest residential property along Cranford Boulevard is separated from the Sunrise Highway corridor by a distance well over 2,000 feet, which is nearly entirely unimproved and containing woodlands. Sunrise Highway is an east-west corridor located to the south of the Cranford Boulevard residences. Therefore, the portion of the subject property to be improved with the proposed Solar Energy Production Facility (which is situated to the east of Cranford Boulevard) is not located between the residences and the corridor, such that the existing wooded areas at the subject property to be cleared as part of the proposed action could not act as a noise barrier.

For any residential property on Cranford Boulevard for which the subject property does lie between it and the Sunrise Highway corridor, it should be noted that the highway would be obscured from the residences by a minimum of 1,500 feet of off-site woodland, the minimum 220-foot wooded buffer to remain at the south side of the subject property, the minimum 211-foot wooded buffer to remain along the west side of the subject property. Moreover, nearly all portions of the subject property to be cleared (with the exception of the proposed gravel access drives, etc.) will have solar PV panel arrays constructed thereon, extending from eight to 17 feet above grade, with native vegetative plantings installed below. These features themselves would have the ability to absorb or reflect sound. Lastly, the screen fencing and staggered row of evergreen plantings to be installed along the western limit of clearing would also be located between Cranford Boulevard residences and portions of the Sunrise Highway corridor.

Overall, given the above, the potential for the proposed action to alter the noise environment of the residences along Cranford Boulevard, with respect to highway activity on Sunrise Highway, is not significant.

Comment No. GEN-6

The forest at the subject property cleans the air, and the proposed solar panels will not clean the air. The removal of woods will result in more air pollution because there are more people on Long Island. [H8-4]

Response No. GEN-6

The potential air quality-related impacts of the proposed action are fully evaluated in Section 3.4 of the DEIS entitled, *Air Resources*. As concluded therein, the proposed action would have a significant net air quality benefit, even after accounting for the carbon sequestering properties of wooded areas to be removed from the subject property.

Comment No. GEN-7

People currently walk, jog and walk their dogs on the subject property, which will be lost if the proposed action is implemented. [H10-3]

Response No. GEN-7

The subject property is held in the private ownership of the applicant and is not available to the public for recreational purposes. Wooded open space owned by the Town of Brookhaven and Suffolk County exists adjacent to the subject property. The commenter may be referring to trails through the adjacent publicly-owned land, which would not be impacted upon implementation of the proposed action.

Comment No. GEN-8

The topography of the subject property and proposed earthmoving activities should be identified. [H18-1]

Response No. GEN-8

Section 3.1 of the DEIS entitled, *Geological Resources*, is devoted to an analysis of the soil and topography of the subject property, and the relevant potential impacts of the proposed action. Existing soil and topographic conditions are described based upon published resources (e.g., the USDA *Soil Survey of Suffolk County, New York*, the USGS Topographic Map, Moriches Quadrangle, etc.) and the site-specific topographic

survey performed by T. Eason Land Surveyor P.C., contained in Appendix B of the DEIS.

Based on the *Clearing and Erosion & Sediment Control Plan* and the *Grading & Drainage Plan* contained in Appendix C of the DEIS (see revised plans in Appendix C of this FEIS), the DEIS analyzed the potential for the proposed action to impact upon site topography, and for erosion-related impacts to occur due to ground disturbance and earthmoving activities. As presented in Section 3.1 of the DEIS, the proposed action is expected to minimally alter the existing topography of the subject property, and the proposed *Grading & Drainage Plan* is designed to retain existing grades to the maximum extent practicable, thereby minimizing the need for earthmoving activities. Additionally, the potential impacts of these activities would be minimized to the maximum extent practical via the implementation of various erosion and sediment control measures, to wit:

- Strategic grading and application of topsoil (as needed) to address potential soil limitations.
- Protection of existing vegetation to remain.
- Scheduling of clearing and grading activities to minimize the total area of land disturbed at any one time.
- Limiting the length of time areas are exposed by establishing pavement and plantings at exposed areas as soon as practicable.
- Installation of sediment barriers (e.g., silt fence, hay bales) along the limits of disturbance for the duration of the work. No sediment from the site would be permitted to wash onto adjacent properties, wetlands or roads.
- Stabilization of graded and stripped areas and stockpiles via temporary seeding or other effective cover.
- Protection of drainage inlets through the use of sediment barriers, sediment traps, etc., to prevent sediment buildup.
- Control of fugitive dust (e.g., covering of stockpiles, temporary seeding, use of a water truck during extended dry periods).
- Establishment of a stabilized construction entrance to prevent soil and loose debris from being tracked onto local roads.