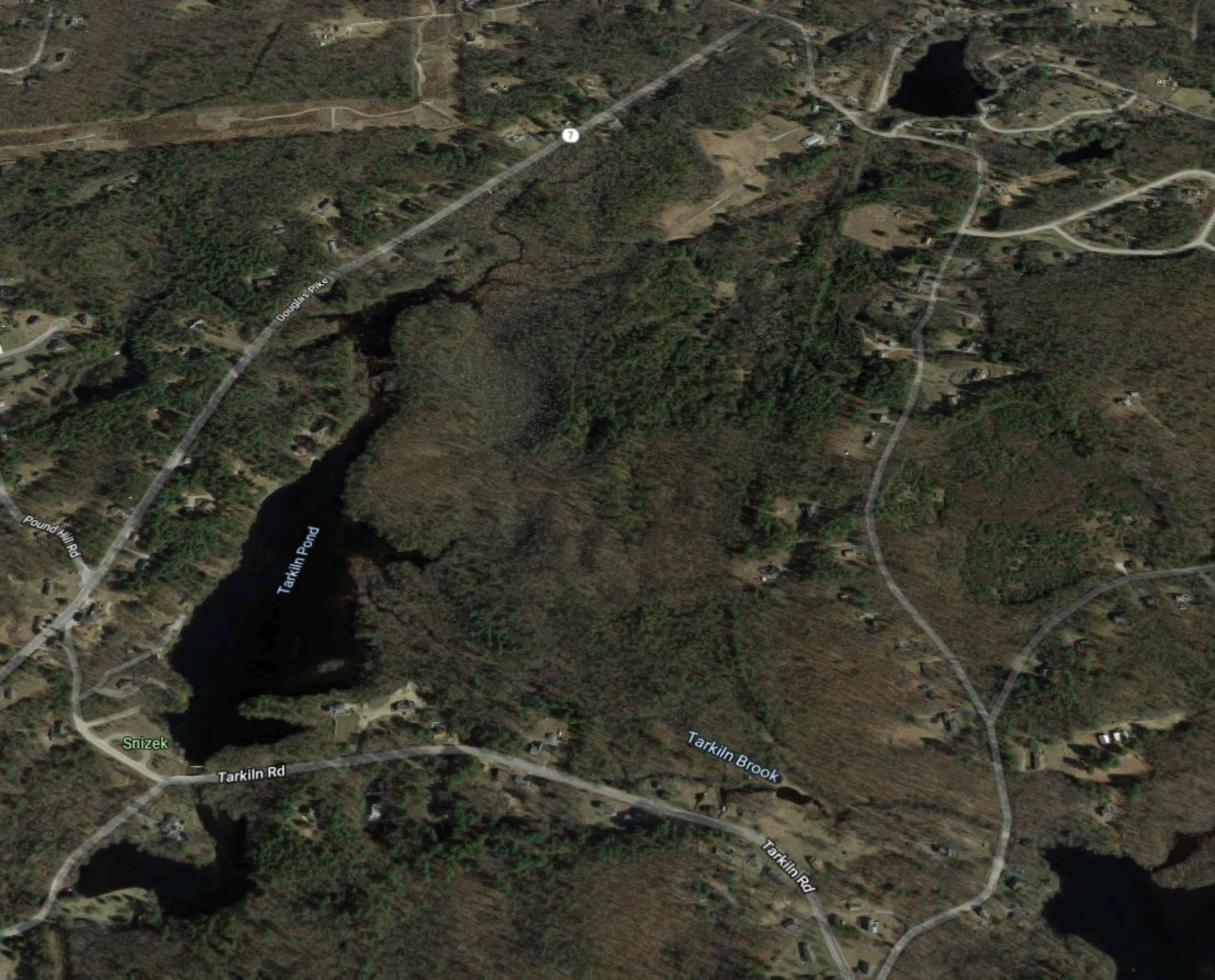
7
Douglas Pike
Pound Hill Rd
Tarkiln Pond
Snizek
Tarkiln Rd
Tarkiln Brook
Tarkiln Rd


Snizek
Tarkiln Pond
Douglas Pike
Tarkiln Brook
Christy Court
Subdivision
Lake Bel Air

Lake Bel Air
Tarkiln Brook
Tarkiln Rd
7
7
Douglas Pike
Tarkiln Pond
Tarkiln Rd
Snizek


Bound Hill Rd

2482-008 – Douglas Pike Solar – 200' Radius Abutters List – 09-18-2019

TOWN OF NORTH SMITHFIELD, RI

Parcel ID: 010-026
DAVIS MICHAEL P
151 DOUGLAS PK
N SMITHFIELD RI 02896

Parcel ID: 010-090
BEAUCHEMIN STEPHEN D
CHRISTINE M T/E
97 DOUGLAS PIKE
NORTH SMITHFIELD RI 02896

Parcel ID: 010-218 – SUBJECT PROPERTY
BEL AIR REALTY LLC
P O BOX 998
PAWTUCKET RI 02862

Parcel ID: 014-254
BEL AIR REALTY LLC
P O BOX 998
PAWTUCKET RI 02862

Parcel ID: 010-055
DOLBEC ANDRE J & LUCILLE C
LIFE ESTATE
191 DOUGLAS PIKE
NO SMITHFIELD RI 02896

Parcel ID: 010-021
BRAIS BERTRAND
MARY LOU J/T
259 MATTITY RD
N SMITHFIELD RI 02896

Parcel ID: 010-067
BRYAN ALEXANDRA R
207 DOUGLAS PIKE
N SMITHFIELD RI 02896

Parcel ID: 010-010
BURRILLVILLE TOWN OF
105 HARRISVILLE MAIN STREET
HARRISVILLE RI 02830

Parcel ID: 010-194
CADORETTE JAMES F
PO BOX 520
SLATERSVILLE RI 02876

Parcel ID: 010-069
MEHTA KIRIT & KARUNA
205 DOUGLAS PK
N SMITHFIELD RI 02896

Parcel ID: 014-161
ROBICHAUD MATTHEW D & BRITTANY
341 MATTITY ROAD
N SMITHFIELD RI 02896

Parcel ID: 010-060
ST LAURENT MATTHEW J
PO BOX 878
CHEPACHET RI 02814

Parcel ID: 010-011
DROSTE DAVID R & JAMIE L
1575 TARKILN ROAD
HARRISVILLE RI 02830

Parcel ID: 010-018
GOLD FAMILY IRREVOCABLE TRUST-1995
PO BOX 998
PAWTUCKET RI 02862

Parcel ID: 010-099
GOLD DAVID M & MARCIA I
275 MATTITY RD
N SMITHFIELD RI 02896

Parcel ID: 014-007-(REAR)
BEL AIR REALTY LLC
P O BOX 998
PAWTUCKET RI 02862

Parcel ID: 014-118
GREENE JOSHUA A
4 LUMBER HILL ROAD
N SMITHFIELD RI 02896

2482-008 – Douglas Pike Solar – 200' Radius Abutters List – 09-18-2019

Parcel ID: 014-137
GOUIN MICHAEL D
DONNA M TRUSTEES & L/E
5 LUMBER HILL ROAD
NO SMITHFIELD RI 02896

Parcel ID: 014-170
BRILLON JONATHAN R& SANDRA J/T
328 MATTITY ROAD
NORTH SMITHFIELD RI 02896

Parcel ID: 014-002
ORMOND MICHAEL J
DIANE M T/E
280 MATTITY ROAD
N SMITHFIELD RI 02896

Parcel ID: 010-058
BROWNELLI DAVID R JR
363 MATTITY ROAD
NO SMITHFIELD RI 02896

Parcel ID: 010-152
MURPHY JONATHAN
371 MATTITY ROAD
NO SMITHFIELD RI 02896

Parcel ID: 010-136
GRIFFIN PATRICIA L
351 MATTITY ROAD
NORTH SMITHFIELD RI 02896

Parcel ID: 010-151
JOYAL JOHN R & KRISTIN S
401 MATTITY RD
N SMITHFIELD RI 02896

Parcel ID: 010-072
POIRIER ANNE & KENNETH R
99 DOUGLAS PK
N SMITHFIELD RI 02896

Parcel ID: 010-161
SIMPKINS CHRISTOPHER P &
DEIRDRE A
409 MATTITY RD
N SMITHFIELD RI 02896

Parcel ID: 014-258
RAMOS ANTONIO
30 RELIANCE DRIVE
BRISTOL RI 02809

Parcel ID: 014-282
ANGELL PHILIP A &
JUDITH EIBEN
1 NARRAGANSETT DR
N SMITHFIELD RI 02896

Parcel ID: 010-024
BEL AIR REALTY LLC
PO BOX 998
PAWTUCKET RI 02862

Parcel ID: 010-015
SENDLEY DIANE E
JOHN F T/E
222 NICHOLS ROAD
HARRISVILLE RI 02830

Parcel ID: 014-270
RUZZO ANTHONY J JR
MELISSA B T/E
1 TONI CIRCLE
NORTH SMITHFIELD RI 02896

Parcel ID: 014-127
MANDEVILLE KEVIN
1 BROOKSIDE DR
NO SMITHFIELD RI 02896

Parcel ID: 010-241
JASPER DARYL J & JENNIFER M 249
MATTITY RD
N SMITHFIELD RI 02896

Parcel ID: 010-014
BEL AIR REALTY LLC
PO BOX 998
PAWTUCKET RI 02862

2482-008 – Douglas Pike Solar – 200' Radius Abutters List – 09-18-2019

TOWN OF BURRILLVILLE, RI

Parcel ID: 166/018
BENOIT DENISE M
1555 TARKLIN RD
HARRISVILLE RI 02830

Parcel ID: 183/016
CADORETTE ALAN J & STEPHANIE L 222
NICHOLS RD
HARRISVILLE RI 02830

Parcel ID: 183/017
LARUE JAMES M & AMY D
200 NICHOLS RD
HARRISVILLE RI 02830

Parcel ID: 183/024
DANDENEAU JAQUES & ROSEMARY L/E
DIAS KATHLEEN ET ALS
1405 TARKILN RD
HARRISVILLE RI 02830

Parcel ID: 183/031
COURNOYER RAYMOND L
1445 TARKILN RD
HARRISVILLE RI 02830

Parcel ID: 183/032
WENGER NEVIN O
1450 TARKILN RD
HARRISVILLE RI 02830

Parcel ID: 183/033
DUPUIS LORRAINE G
1505 TARKILN ROAD
HARRISVILLE RI 02830

Parcel ID: 183/045
BEL AIR REALTY LLC
P O BOX 998
PAWTUCKET RI 02862

General Notes:

1. THE SITE IS LOCATED ON THE TOWN OF NORTH SMITHFIELD'S AP 10 LOTS 24 & 218.
2. THE SITE IS APPROXIMATELY 128.29± ACRES AND IS ZONED RA (RURAL AGRICULTURE).
3. THE OWNER OF AP 10 LOTS 24 & 218 IS:

   BEL AIR REALTY LLC
   PO BOX 998
   PAWTUCKET, RI 02862

Abbreviations:

ASSESSOR'S PLAT	AP
NOW OR FORMERLY	N/F

Existing Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON PLANS

- PROPERTY LINE
- ASSESSORS LINE
- GROUNDWATER RECHARGE AREA
- 200' RADIUS LINE

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6036 www.diprete-eng.com
Boston • Providence • Newport

No.	Date	Description	By:
0	09-18-2019	200' Radius Abutters Map	J.A.R.

Drawn By: J.A.R. | Design By: D.A.R.

200' Radius Abutters Map

Douglas Pike Solar

AP 10, Lots 218
North Smithfield, Rhode Island

Applicant
Anthony Delvicario
43 Creston Way, Warwick, Rhode Island 02886
tel. 401-821-8978

SHEET 1 OF 1

z:\clemain\projects\2482-008 douglas pike solar\autocad drawings\2482-008-plan.dwg Plotted: 12/6/2019

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

NORTH SMITHFIELD ZONING BOARD OF REVIEW

APPLICATION FOR HEARING (REVISED 5/2/19)

APPLICATION FOR VARIANCE AND/OR SPECIAL USE PERMIT INSTRUCTIONS

******Application MUST be typed or be legible ******

1. Applications must be signed by the Applicant/Agent and the Owner. An applicant must be a person with a financial interest in the property, not the architect, engineer, draftsperson, contractor, or attorney. Examples include a current or potential tenant or purchaser.

2. All applicants for a variance must also complete Appendix A to the application.

3. All applicants for a special use permit must also complete Appendix B to the application.

4. **APPLICATIONS MUST BE COMPLETE AND ACCURATE. BEFORE YOU MAKE THE REQUIRED COPIES, SUBMIT YOUR ORIGINAL APPLICATION AND ATTACHMENTS (SEE BELOW) TO THE OFFICE OF THE ZONING OFFICIAL FOR REVIEW.**

Note that the Board and staff accept no responsibility for correcting or completing any application. Nor is the staff permitted to provide specific advice or recommendations regarding any particular application. However, staff may be able point out deficiencies before the finalized application is submitted, and to assist in explaining the application process, requirements, and general content requirements.

APPLICATION # _____

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Town of North Smithfield

Office of the Building and Zoning Official

5. If your proposal requires review by another board or commission, you must obtain the board or commission's review before submitting an application for a zoning variance or special use permit. A letter from the board or commission shall be submitted to the Zoning Board as evidence of appearance before such board or commission.

6. **Legal counsel and professional representatives**. There is no requirement that applicants be represented by legal counsel either during the application process or when appearing before the Board. While the Zoning Board does not recommend either for or against the hiring of legal counsel, the Board does caution all applicants that zoning law can be complex. Applicants may choose to have an architect, draftsperson, traffic engineer, zoning, or real estate professional testify at the hearing before the Board. However, the applicant or authorized representative (see authorization form) must still appear at the hearing and offer the presentation/testimony of the witness. If the applicant or authorized representative is not present and has not contacted the Zoning Official beforehand the board may deny the application without prejudice and the application will have to be resubmitted and all fees shall be paid by the applicant.

Zoning Board members and staff are not permitted to make referrals or recommendations regarding legal or other professionals.

7. Zoning Board approval of an application does not automatically indicate that you will receive a building permit. To shorten the length of the process, it is strongly recommended that you initiate the building permit review process

APPLICATION # _____

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by submitting your construction plans to the DIS when you submit your application for a variance or special use permit.

Your plans should detail exactly what you intend to do.

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

CHECKLIST OF SUPPORTING DOCUMENTATION REQUIRED FOR APPLICATION

The following documents must be provided WITH your application. An application will not be considered complete or vested until all documents and the filing fee are submitted.

*any plans submitted plans shall have one original stamped and signed by the Rhode Island licensed professional.(if applicable)

X Ten copies of the current recorded deed for the property or properties where the proposed changes would take place from the Town Clerk's Office

X Ten (10) complete sets of plans (scaled architectural drawings of the proposed building(s) or alteration(s); site plans; parking plans, landscaping plans, etc.). For height variances include plans to meet increased setback requirements for the appropriate zoning district.

NA For all proposals that will provide more than four (4) parking spaces, ten (10) sets of on-site parking plans showing parking spaces, proposed landscaping and curb cut(s).

NA For all proposals for signs/signage: ten (10) colored and scaled representations of the proposed signage, including a drawing representing scaled size in relationship to the appurtenant structure(s).

X Ten (10) 200' radius plans drawn to a scale of 1"= 50' from all corners of the lot or lots in question.

APPLICATION # _____

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Town of North Smithfield

Office of the Building and Zoning Official

Show all lot numbers, owners' names, street numbers and buildings (if any) on each lot within the radius, present use (example: parking lot, vacant lot, gas station, number of families, etc.) zone boundaries (including overlay districts), tax assessor's plat boundaries and indicate new construction and additions. If the 200' radius line intersects or is close to any lot(s) such lot(s) must be included fully within the radius.

_X_ Two (2) copies of a list containing the following information, consistent with the latest data available in the office of the North Smithfield Tax Assessor:

a. Each plat and lot number that appears within the 200 foot radius plan

b. The corresponding names and MAILING addresses, including zip codes, of all property owners of each plat and lot number listed

_X_ Three (3) sets of mailing labels with names and full mailing addresses of each property owner within the 200 foot radius

_X_ Four (4) photographs of the Property taken from different angles, taken within seven (7) calendar days of the filing of the complete application. If there are any changes to the Property between the filing of the application and the date of the hearing, the applicant must submit at the hearing photographs reflecting any such changes. All plans must be signed by the author and must contain the author's full name, address and telephone number.

APPLICATION # _____

MEETING DATE: _____

Town of North Smithfield

Office of the Building and Zoning Official

APPLICATION FEES (REVISED 9/18)

The application fee consists of advertising, notification and processing fees, and is provided for in Appendix A of the Zoning Ordinance.

A. Any Residential Use Application

1) One and two family dwellings

a) Special Use Permit/Dimensional Variance/ Use Variance $450
*Combination of two of the above $550

2) Three family and above

a) Special Use Permit/Dimensional Variance/ Use Variance $500
*Combination of two of the above $650

B. Commercial Applications

a) Special Use Permit/Dimensional Variance/ Use Variance $600
*Combination of two of the above $700

C. Appeal the decision of the Zoning Official, Historic Commission, Planning Board or their Administrative Officer: $450

D. Advertising Fee for each application: $125.00

E. Abutter's Notification $.50 per abutter

MAKE CHECK PAYABLE TO: TOWN OF NORTH SMITHFIELD

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

TOWN OF NORTH SMITHFIELD

ZONING BOARD OF REVIEW

APPLICATION FOR VARIANCE OR SPECIAL USE PERMIT

Check Each Type Zoning Relief Sought: ___ Variance ____ Use *

_X_ Variance – Dimensional*

_X_ Special Use Permit **

* Attach Appendix A to apply for a Use or Dimensional Variances

**Attach Appendix B to apply for a Special Use Permit

Applicant: Anthony Delvicario

Address 43 Creston Way, Warwick, RI

Zip Code 02886 Phone 401-821-8978 Home/Office /Mobile

E-mail a.delvicario@att.net

Owner: Bel Air Realty, LLC

Address P.O. Box 998, Pawtucket, RI

Zip Code 02862 Phone 401-724-3200 Home/Office/ Mobile

E-mail dgold@goldmachinery.com

APPLICATION # _____

MEETING DATE: _____

Town of North Smithfield

Office of the Building and Zoning Official

Lessee: NA

Address _____

Zip Code _____ Phone: _____ Home/Office Mobile

E-mail _____

Does the proposal require review by any of the following (check each):

X Planning Board

____ Historic District Commission

____ Other

1. Location of Property: 0 Mattity Road (AP10 Lot 218)

Street Address

2. Zoning District(s): RA

Special purpose or overlay district(s): Water Supply Protection Overlay District (Groundwater Recharge Area)

3a. Date owner purchased the Property: 5-17-1996

3b. Month/year of lessee's occupancy: NA

3. Dimensions of each lot:

Lot # 218 Frontage 1272' depth Variable Total area 5,432,804 sq. ft.

Lot # _____ Frontage _____ depth _____ Total area _____ sq. ft.

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

Lot # _____ Frontage _____ depth _____ Total area _____sq. ft.

4. Size of each structure located on the Property:

Principal Structure: Total gross square footage NA

Footprint _____ Height _____ Floors _____

Accessory Structure: Total gross square footage NA

Footprint _____ Height _____ Floors _____

5. Size of proposed structure(s): Total gross square footage:
1,367,267 SF of Solar Panel Area

Footprint _____ Height _____ Floors _____

6a. Existing Lot coverage: (include all buildings, decks, etc.)
0%

6b. Proposed Lot coverage: (include new construction)
25.2%

7a. Present Use of Property (each lot/structure):

Wooded / Vacant Land

7b. Legal Use of Property (each lot/structure) as recorded in the Office of the Building and Zoning Official
Vacant Land

APPLICATION # _____

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Office of the Building and Zoning Official

8. Proposed Use of Property (each lot/structure):

Commercial Solar Array

9. Number of Current Parking Spaces: 0

10. Describe the proposed construction or alterations (each lot/structure):

Installation of Solar Photovoltaic System, 20' gravel access road, associated equipment pads, and perimeter fencing.

11. Are there outstanding violations concerning the Property under any of the following: None to our knowledge

___ Zoning Ordinance

___ RI State Building Code

___ North Smithfield Town Ordinance

APPLICATION # _____

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Town of North Smithfield

Office of the Building and Zoning Official

12. List all Sections of the Zoning Ordinance from which relief is sought and description of each section:

5.4.9.10 - Special Use Permit for ground-mounted solar photovoltaic systems for commercial use in a RR (also known as RA and RA-65) District

13. Explain the changes proposed for the Property.

Per section 5.4.9.10 of the Zoning Ordinance, a ground-mounted solar photovoltaic system is allowed in a RA (RR) District by Special Use Permit. Proposed changes to the property include tree clearing, an access road, a security fence, and the installation of a solar array and associated equipment.

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Office of the Building and Zoning Official

The undersigned acknowledge(s) and agree(s) that members of the Zoning Board of Review and its staff may enter upon the exterior of the Property in order to view the Property prior to any hearing on the application. The undersigned further acknowledge(s) that the statements herein and in any attachments or appendices are true and accurate, and that providing a false statement in this application may be subject to criminal and/or civil penalties as provided by law, including prosecution under the State and Municipal False Claims Acts. Owner(s)/Applicant(s) are jointly responsible with their attorneys for any false statements.

Owner(s):	Applicant(s):
Bel Air Realty, LLC	Anthony Delvicario
Print Name	Print Name
Signature	Signature

All requirements listed and described in the Instruction Sheet must be met or this application will not be considered complete or vested

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

APPENDIX A

APPLICATION FOR VARIANCE(S)

Rhode Island General Laws § 45-24-41(c) requires that the Applicant for a variance demonstrate:

(1) That the hardship from which the applicant seeks relief is due to the unique characteristics of the subject land or structure and not to the general characteristics of the surrounding area; and is not due to a physical or economic disability of the applicant, excepting those physical disabilities addressed in § 45-24-30(16);

(2) That the hardship is not the result of any prior action of the applicant and does not result primarily from the desire of the applicant to realize greater financial gain;

(3) That the granting of the requested variance will not alter the general character of the surrounding area or impair the intent or purpose of the zoning ordinance or the comprehensive plan upon which the ordinance is based;

(4) That the relief to be granted is the least relief necessary; and

(5)

(a) For a use variance: That the land or structure cannot yield any beneficial use if it is required to conform to the provisions of the zoning ordinance;

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Office of the Building and Zoning Official

(b) For a dimensional variance, that the hardship suffered by the owner of the subject property if the dimensional variance is not granted amounts to more than a mere inconvenience.

Please provide the following information:

1. What is the specific hardship from which the applicant seeks relief?

The applicant is seeking to meet the 30% lot coverage for solar development and a variance from the maximum 6 Acres of lot coverage. The applicant is providing the Town with approximately 56 Acres of Conservation Land at no consideration from the Town.

2. Specify any and all unique characteristics of the land or structure that cause the hardship?

The applicant is providing approximately 60 Acres of Conservation Land at no consideration and the project is a unique circumstance.

3. (a) Is the hardship caused by an economic disability? Yes ___ No_X__

(b) Is the hardship caused by a physical disability? Yes ___ No _X__

(c) If the response to subsection (b) is "yes," is the physical disability covered by the Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. § 12101 et seq.? Yes ____ No ____

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Town of North Smithfield

Office of the Building and Zoning Official

4. Did the owner/applicant take any prior action with respect to the Property that resulted in the need for the variance requested? (Examples include, but are not limited to, any changes the owner/applicant made to the structure(s), lot lines, or land, or changes in use of the Property)? Yes ____ No X If "yes," describe any and all such prior action(s), and state the month/year taken.

5. State any and all facts to support your position that the applicant is not seeking the variance(s) primarily in order to obtain greater financial gain.

The variance is being sought to construct a project that is economically feasible and the project benefits the Town by providing 56 Acres of conservation land and eventually the entire property.

6. State any and all facts that support your position that you are seeking the least relief necessary to lessen or eliminate the hardship (for example, why there are no viable alternatives to your proposed plan).

The applicant is providing the Town with approximately 56 Acres of conservation land and some of this area is upland area which the applicant could put solar on but has chosen not to.

APPLICATION # _____

MEETING DATE: _____

Town of North Smithfield

Office of the Building and Zoning Official

7. If you are seeking a USE VARIANCE, set forth all facts that demonstrate that the Property cannot have any beneficial use if you are required to use it in a manner allowed in the zoning district.

NA

8. If you are seeking a DIMENSIONAL VARIANCE, set forth all facts that indicate that if the variance is not granted, the hardship the owner/applicant will suffer is more than a mere inconvenience.

NA

APPLICATION # _____

MEETING DATE:_____

Town of North Smithfield

Office of the Building and Zoning Official

APPENDIX B

APPLICATION(S) FOR SPECIAL USE PERMIT

1. Identify the section(s) of the Ordinance that provides for the special use permit.

5.4.9.10 - Special Use Permit for ground-mounted solar photovoltaic systems for commercial use in a RR (also known as RA and RA-65) District

2. State all facts that demonstrate that the proposed special use will not substantially injure the use and enjoyment of neighboring property.

There are no residential homes within sight of the proposed solar array area. The closest home is 348' +/- to the south. All homes, in all directions, are screened by existing wooded area.

3. State all facts that demonstrate that the proposed special use will not significantly devalue neighboring property.

Wetlands are present bordering the site to the north and east, thickly wooded areas to the south and west. Area of solar array will be unseen.

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4. State all facts that demonstrate that the proposed special use will not be detrimental or injurious to the health or welfare of the community.

The proposed solar array will no detrimental of injurious effects on the health and welfare of the surrounding community

APPLICATION # _____

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Town of North Smithfield

Office of the Building and Zoning Official

AUTHORIZATION FOR REPRESENTATION

I/We Bel Air Realty, LLC (Owner) of (company)

_____ authorize Anthony Delvicario (Applicant) to

represent me/us in the matter before the North Smithfield Zoning Board of Review

regarding(address) 0 Mattity Road Plat 10 Lot 218.

Owner (Print) DAVID M GOLD (Sign) David M Gold

Date 12/10/2019

Owner (Print) _____ (Sign)_____

Date_____

Notary Public (Sign):_____

My term expires:_____

ROBYN F. FOSTER NOTARY PUBLIC My Commission Expires September 11, 2023 STATE OF RHODE ISLAND

Date 12/10/2019


ROBYN E. FOSTER
NOTARY
PUBLIC
STATE OF RHODE ISLAND

TOWN of NORTH SMITHFIELD
PLANNING DEPARTMENT

One Main Street
Slatersville, RI 02876
Phone: 767-2200 Fax: 766-0016

APPENDIX B: APPLICATION FOR SUBDIVISION AND LAND DEVELOPMENT PROJECTS

The undersigned owner of land hereby requests to be placed on the agenda of the North Smithfield Planning Board and state that the required information detailed in the Subdivision Regulations of the Town of North Smithfield have been presented to the Administrative Officer.

_____ of _____
is hereby designated as the person to whom legal process may be served in condition with any proceedings arising out of this application. I/We also certify that the undersigned is the owner of the property designed below:

Name of Project: Douglas Pike Solar **Date:** 11-25-2019

Classification	**Type of Project**	**Review Stage**
[X] Minor	[ ] Administrative	[ ] Pre-Application/Concept
[ ] Major	[ ] Subdivision	[X] Master Plan
	[X] Land Development Project	[ ] Preliminary Plan
		[ ] Final Plan

1. Assessor's Plat(s) 10 Assessor's Lot(s) 218
2. Number of Lots: 1 3. Zoning Designation(s): RA
4. Street Name: Mattity Road
5. Divider/ Developer: Anthony Delvicario
6. Divider's/ Developer's Name: _____
(Please Print)
Divider's/ Developer's Name: _____
(Signature)
7. Names, addresses, and signatures of all persons with 10% or more interest:

_____ David M Gold
(Signature) (Please Print)

_____ _____
(Signature) (Please Print)

8. Surveyor/ Engineer/ Attorney/ Representative: DiPrete Engineering
Name: Dave Russo, P.E.
Address: 2 Stafford Court, Cranston, RI
Daytime Telephone # 401-943-1000 Facsimile # _____

(The owner hereby grants permission to Planning Board members and other Town officials to enter the designated property for the purpose of inspection after notifying the owner 48 hours in advance of site visit.)

H. MASTER PLAN CHECKLIST
MAJOR LAND DEVELOPMENT PROJECTS AND MAJOR SUBDIVISIONS
CONSERVATION DEVELOPMENTS

The applicant shall submit to the Administrative Officer at least ten (10) blueline or photocopies of all master plan maps and information required below. Plans must be no larger than 24" x 36". The scale and number of all plans shall be sufficient to clearly show all of the information required and shall be subject to the approval of the Administrative Officer. All plan sheets and related documents must be provided in portable document format (PDF) files as well. Plans shall include a certification that all plans and improvements conform to a minimum Class IV standard of the State of Rhode Island and Providence Plantations, Board of Registration for Professional Engineers and Board of Registration of Land Surveyors.

The following information shall be presented in the form of a written narrative report, supplemented as necessary with drawings, sketches or plans to convey intent. The narrative report shall include reduced sets of all drawings and plans required below on maximum 11" x 17" sheets. Initially, the applicant shall submit to the Administrative Officer at least ten (10) blueline or photocopies of preliminary plan maps required below. The number of reduced copies of the plans and narrative report shall be determined by the Administrative Officer, based upon the required distribution to the Planning Board, and other agencies listed in Supporting Materials, below.

Every submission must also be accompanied by an Application for Approval of a Major Land Development Project or Major Subdivision, as contained in Appendix B.

At a minimum, required information includes the following:

1. Site Base Map (see below).
2. Existing Resources and Site Analysis Map. See Section 4-1 (O).
3. Site Context Map. See Section 4-1 (F).
4. Sketch Plan Overlay Sheet. See Section 4-1 (E).*
5. Conventional Yield Plan. See Section 4-1 (H).*

* Required for Conservation Developments only

6. Proposed Conditions Map (Conventional Subdivisions only).

BASE MAP

All Master Plan Drawing(s) required by this Checklist shall show the following information (if applicable):

A. All maps required by this Checklist shall show the following information (if applicable):

1. x Name and location of the proposed subdivision.

2. x Name and address of property owner and applicant.

3. x Name, address and telephone number of engineer and/or land surveyor.

4. x Date of plan preparation, with revision date(s) (if any).

5. __x___ Graphic scale and true north arrow. Legend to explain any graphic representations or symbols on the plan.

6. x _____ Inset locus map at 1" = 2000' exact or approximate scale so labeled.

7. x _____ Plat and lot number(s) of the land being subdivided.

8. x _____ Zoning district(s) of the land being subdivided. (If more than one district, zoning boundary lines must be shown.)

9. __x___ Perimeter boundary lines of the subdivision, in heavy shaded line, drawn so as to distinguish them from other property lines.

10. __x___ Area of the subdivision parcel(s) and proposed number of buildable lots.

11. __x___ Location and dimensions of existing property lines within or forming the perimeter of the subdivision parcel(s).

12. x _____ Easements and rights-of-way within or adjacent to the subdivision parcel(s).

13. __x___ Location, width and names of existing streets within and immediately adjacent to the subdivision parcel.

14. __x___ Names of abutting property owners and property owners immediately across any adjacent streets.

EXISTING RESOURCES AND SITE ANALYSIS MAP

The information required in Section 4-1 (O) shall be shown on the Existing Resources and Site Analysis Map(s), and shall be subject to the approval of the Administrative Officer. This information may be based on the information provided at the Pre-application stage of review (Checklist C), with updates as required.

A. Topography and Slopes

15.__x__ Existing contours at intervals of two or five feet elevation relative to sea level.
16.__x__ Slope map, with slopes grouped according to three categories based on development suitability: <15%, 15-25% and over 25%. Steeper slopes should be shown in progressively darker colors or shades of gray.

B. Natural Resource Inventory

17.x___ Location of land unsuitable for development as defined in the Zoning Ordinance, including wetlands, ponds, streams, ditches, drains, special aquatic sites, vernal pools. Wetland locations do not need to be verified by RIDEM.
18.x___ Vegetative cover on the property, indicating any unfragmented forest tracts
19.__x__ Soils map, indicating any prime farmland soils, and any land in active agricultural use.
20.__x__ Geologic formations
21.__x__ Ridge lines of existing hills
22.__x__ Wellhead protection areas for public or community drinking water wells
23.__x__ Groundwater Aquifer Overlay District (Town)
24.__x__ 100-year floodplains as shown on federal flood protection maps

25. x State, regional, or community greenways and greenspace priorities
26. x State-designed Natural Heritage Sites (RIDEM)

C. Cultural Resource Inventory

27. x Approximate location of man-made features such as roads, structures, outbuildings, roads or trails, and other such features on the parcel
28. x Historically significant sites or structures
29. x State or locally-designated historic sites, districts, cemeteries or landscapes
30. x Location of any stone walls within or forming the perimeter of the site
31. x Archaeological sites
32. x Scenic road corridors and state-designated scenic areas
33. x Viewshed analysis

D. Recreational Resource Inventory

34. x Existing hiking, biking and bridle trails within and adjacent to site
35. x Boat launches, lake and stream access points, beaches and water trails
36. x Existing play fields and playgrounds on or adjacent to the site

E. Utilities and Infrastructure

37. x Size and approximate location of public or private water lines
38. x Size and approximate location of public or private sewer lines
39. x Gas service
40. x Electrical service
41. x Telephone, cable, and other communication services
42. x Width and surfacing material of existing road(s) at access points
43. x Existing drainage and drainage structures, such as culverts and pipes, etc.

SITE CONTEXT MAP

The Contextual Analysis process is described in detail in Section 4-1 (F) and in the design process Section 4-1 (D), Step 2 of these Regulations. This information may be based on the information provided at the Pre-application stage of review (Checklist C), with updates as required.

44. x Site Context Map
45. x Soils Map of surrounding area. See Supporting Materials, No. 4.

SKETCH PLAN OVERLAY SHEET (Conservation Developments)

The applicant shall present initial proposals for development, using a conceptual sketch plan(s) for development. This information may be based on the information provided at the Pre-application stage of review (Checklist C), with updates as required.

46. N/A Identification of areas proposed for development
47. N/A Location of proposed open space areas
48. N/A Initial layout of streets
49. N/A Land Unsuitable for Development, as defined in the Zoning Ordinance

CONVENTIONAL YIELD PLAN (Conservation Developments)

An updated Conventional Yield Plan, as discussed at the Pre-application stage of review shall be presented for further review by the Planning Board, if required.
50. N/A Conventional Yield Plan, if modified from Pre-application review

PROPOSED CONDITIONS MAP(S) (Conventional Subdivisions)

For conventional subdivisions, the applicant shall submit the following information in lieu of a Sketch Plan Overlay Sheet and Conventional Yield Plan:

1. N/A Proposed improvement including streets, lots, lot lines, with approximate lot areas and dimensions. Proposed lot lines shall be drawn so as to distinguish them from existing property lines.

2. N/A Grading plan in sufficient detail to show proposed contours for all grading proposed for onsite construction of drainage facilities and grading upon individual lots if part of proposed subdivision improvements (if applicable).

3. N/A Proposed utilities plan, including sewer, water, gas, electric, phone, cable TV, fire alarm, hydrant, utility poles, or other proposed above or underground utilities, as applicable.

4. N/A Location, dimension and area of any land proposed to be dedicated to the Town for use as open space, conservation or recreation.

5. N/A Base flood elevation data

6. N/A Certification by a Registered Land Surveyor that all interior and perimeter lot lines and street lines of the land being subdivided have been designed to conform to Class 1 survey requirement and are certified as being correct

7. N/A Rectangular box showing zoning district(s), dimensional requirements for each district, and the minimum dimensions actually provided.

SUPPORTING MATERIALS

The applicant shall submit to the Administrative Officer a narrative report providing a general description of the existing physical environment and existing use(s) of the property along with a general description of the uses and type of development proposed by the applicant. The narrative report shall include reduced copies of all plan required above plus items 3-11, below:

1. x Administrative (filing) Fee: _____ Plus No. of Lots _____ x Per/lot Fee $25.00= _____ Total Fee

2. x Project Review Fee (if required)

3. x An aerial photograph or blue line copy of an existing aerial photograph of the proposed subdivision parcel and surrounding area

4. x A copy of the soils map of the subdivisions parcel and surrounding area, and general analysis of soil types and suitability for the development proposed. If any prime agricultural soils are within the subdivision parcel(s), the soils map shall be marked to show the location of said prime agricultural soils

5.N/A An estimate of the approximate population of the proposed subdivision

6.N/A An estimate of the number of school-aged children to be housed in the proposed subdivision

7.N/A Fiscal impact statement (if required)

8.N/A Proposed phasing, if any

9.__x__ A narrative detailing potential neighborhood impacts

10.N/A Open Space Use and Management Plan. See Section 4-1 (K) 5. (Required for Conservation Developments only)

11.N/A Written request for waivers of subdivision standards as per Section 7-2.

12.x Copy of Plan in digital format. (AutoCAD 2007 or newer)

13.x Initial written comments on the Master Plan from the following agencies

A.____	Planning Department	Date:_____
B.____	Public Works Department	Date:_____
C.____	Sewer Department	Date:_____
D.____	Building Inspector	Date:_____
E.____	Fire Department	Date:_____
F.____	Town Solicitor	Date:_____
G.____	Conservation Commission	Date:_____
H.____	Police Department	Date:_____
I.____	Other (specify)_____	Date:_____

Adjacent Communities (specify):

A. _____ Date:_____
B. _____ Date:_____
C. _____ Date:_____
D. _____ Date:_____
E. _____ Date:_____

State Agencies:

A.____ Environmental Management Date:_____
B.____ Transportation Date:_____
C.____ Other (specify) Date:_____

Federal Agencies:

A.____ U.S. Army Corps Engineers Date:_____
B.____ FEMA Date:_____

Anthony DelVicario
43 Creston Way
Warwick, R.I. 02886

EZShield℠ Check Fraud Protection for Business
57-12/115

005941

PAY TO THE ORDER OF Town of North Smithfield

DATE 6/10/19

$ 600.00

Six Hundred

DOLLARS

Security features included. Details on back.

Citizens
821 Main Street
East Greenwich, R.I 02818

MEMO Application - Master Gold property plan

⑈005941⑈ ⑆011500120⑆ 1885909?⑈

MP

November 8, 2019

Mr. Anthony Delvicario
43 Creston Way
Warwick, RI 02886
Sent via email to: a.delvicario@att.net

RE: Supplemental Information in Support of Special-Use Permit Submission
Douglas Pike Solar (A.P. 10, Lots 24 & 218)
North Smithfield, Rhode Island
SAGE Project No. M909

Dear Mr. Delvicario:

This correspondence is being provided for the Special-Use permit application for the Douglas Pike Solar Photovoltaic System Development located at Assessors Plat 10 Lots 24 and 218 (hereinafter the Site); and provides supplemental information related to the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Specifically:

- Section 5.7.4 (d, e, and f) – Fencing, Signs, Visual, Safety, and Environmental Impacts
- Section 5.7.4 (h) and Section 5.7.5 (e) – Solar Reflection and Noise
- Section 5.7.5 (a) – Historic Structure Local
- Section 5.7.5 (f) – Wildlife, Fauna Access and Migratory Patterns
- Section 5.7.5 (g) – Visual Buffer and Setback
- Section 5.7.6 (d)(8) – Environmental Factors

Site plans used for preparing this supplemental information was provided by DiPrete Engineering.

Section 5.7.4 (d, e, and f) – Fencing, Signs, Visual, Safety, and Environmental Impacts

The perimeter of the solar panels will be enclosed with 7-foot-tall fences with 6 inch raised fabric to allow passage of small animals. All applicable signage per National Grid, National Electric Code and/or state requirements will be affixed on the fences. In addition, there will be signage identifying the owner and will have a 24-hour phone contact for emergencies.

Once installation of the arrays is complete and the solar development is in operation, maintenance of the vegetation in the solar array fields would occur regularly to control growth and prevent the shading of the solar panels. Vegetative maintenance would occur at the Site primarily in the form of mechanical methods (i.e. lawn mowers and weed whackers). Any use of chemical control methods (i.e. herbicides) would be done in strict conformance with state and federal guidelines.

In general, the proposed Site layout will focus on maintaining as much existing vegetation as possible at the Site perimeters to obscure construction and operational activities from the view of adjacent properties, homes, and roadways. The construction activity would change the appearance of the site by the presence of heavy equipment, removal of vegetation, grading, installation of the security fencing, PV racking systems, PV panels, electrical connections, inverters and transformers, as well as the electrical interconnection entering and leaving the Site. Note that the visual presence of construction would occur for any commercial or residential development. Once construction is completed, there would be minimal traffic entering and leaving the Site. The goal of the overall site design is to minimize any visual impacts of the proposed facility and ensure that all components of the facility are obscured from view from adjacent properties, homes, and roadways. In addition, no lighting is planned or required for the site operations, and as such, no light pollution is projected.

Natural Resource Services, Inc. (NRS) conducted an Environmental Impact Analysis and concludes that the Doulas Pike solar development meets the environmental standards outlined in the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Please refer to NRS's "Project Narrative in Support of Master Plan Submittal" dated October 16, 2019 for additional details regarding the environmental impact for the Douglas Pike solar development (**Attachment 1**).

Section 5.7.4 (h) and Section 5.7.5 (e) – Solar Reflection and Noise

The Solar Photovoltaic System is bordered by forested area, and the site design is to minimize any visual impacts of the proposed facility. The goal of the overall site design is to ensure that all components of the facility are obscured from view from adjacent properties, homes, and roadways. As such, it is not expected that neighboring properties would be impacted by solar reflection.

Noise impacts associated with the development of the proposed solar farm would primarily occur during construction activities. Construction equipment produces a range of sounds while operational. The use of particular pieces of construction equipment would vary during the construction period, with most earthmoving equipment used early in the construction period and trenching and pile-driving equipment used later. Construction would take place over approximately a 6 to 9-month period, normally occurring during daylight hours. Depending on the construction schedule and other factors, limited weekend and/or night-time construction could occur. Construction noise would be present for any commercial or residential development that would occur at the Site.

Following the completion of construction activities, the ambient sound environment would be expected to return to existing levels. The only sound emitting equipment would be the inverters and transformers. A pre-construction noise assessment will be conducted to evaluate potential noise levels to ensure Solar Photovoltaic System does not generate noise above ambient beyond the lot line of the Site.

Section 5.7.5 (a) – Historic Structure Local

There are three identified historical structures at the Site:

- Augustus Fields Swinery / Field's Railroad Station
- Historic Cemetery Number 41

- Sterry Young Lot Cemetery

None of these historic structures are located within a 500 foot radius from the nearest part of any of the solar photovoltaic system. **Attachment 2** provides a map displaying the location of historic structures located within the lot line of the Site and near the Site overlaid with the location of the solar photovoltaic system.

The location of these historical structures were confirmed by the North Smithfield Heritage Association (NSHA). When confirming, the NSHA stated the following: "The massive stonewall enclosures, the stone bridge over the stream and the stone stairs up the steep slope to the railroad station are all remarkably well preserved.". The location of the stone walls were mapped and are provided in **Attachment 3**. Note that there are no stone walls located where the solar photovoltaic system is proposed.

Section 5.7.5 (f) – Wildlife, Fauna Access and Migratory Patterns

NRS conducted a habitat assessment and concluded that the Doulas Pike solar development meets the environmental standards outlined in the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Please refer to NRS's "Project Narrative in Support of Master Plan Submittal" dated October 16, 2019 for additional details regarding the environmental impact for the Douglas Pike solar development (**Attachment 1**).

Land Management Services (LMS) conducted a forest assessment which provides a description of the existing forest resources (**Attachment 4**). The health conditions of the woodlands include some moderate impacts to the oak component of the overstory. However, the pine-dominated forested area does not appear to have any significant health concerns, although there are some low quality, multiple-stemmed, open-grown pines. Please refer to LMS's "Forest Assessment - Proposed Douglas Pike Solar Project" dated October 21, 2019 for additional details regarding the existing forest resources at the Site (**Attachment 4**).

Section 5.7.5 (g) – Visual Buffer and Setback

NRS evaluated the visual buffer and setback and concluded that the Doulas Pike solar development meets the standards outlined in the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Please refer to NRS's "Project Narrative in Support of Master Plan Submittal" dated October 16, 2019 for additional details regarding the environmental impact for the Douglas Pike solar development (**Attachment 1**).

Section 5.7.6 (d)(8) – Environmental Factors

NRS conducted an Environmental Impact Analysis and concludes that the Doulas Pike solar development meets the environmental standards outlined in the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Please refer to NRS's "Project Narrative in Support of Master Plan Submittal" dated October 16, 2019 for additional details regarding the environmental impact for the Douglas Pike solar development (**Attachment 1**).

It is of SAGE's opinion that this correspondence meets the requirements outlined in Section 5.7.4 (d, e, and f), Section 5.7.4 (h), Section 5.7.5 (e), Section 5.7.5 (a), Section 5.7.5 (f) and Section 5.7.5 (g) of the Town of North Smithfield's Solar Photovoltaic System Installation zoning ordinance. Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,
SAGE Environmental, Inc.

Nicole Mulanaphy, P.E.
Senior Project Manager

Attachments:

Attachment 1: Natural Resource Services, Inc. Assessment
Attachment 2: Map of Historical Structures
Attachment 3: Map of Stonewalls
Attachment 4: Land Management Service Forest Assessment

Attachment 1: Natural Resource Services, Inc. Assessment

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Natural Resource Services, Inc.

Project Narrative in Support of Master Plan Submittal

Douglas Pike Solar
A.P. 10, Lots 24 & 218
North Smithfield, Rhode Island

Prepared for:

Anthony Delvicario
43 Creston Way
Warwick, RI 02886

Project Narrative Prepared by:

Scott P. Rabideau, PWS
Principal

October 16, 2019

P.O. Box 311 Harrisville, RI 02830 401-568-7390 FAX 401-568-7490

Table of Contents

Appendix

Introduction

Natural Resource Services, Inc. (NRS) has been retained by Anthony Delvicario (hereafter the applicant) to provide habitat analysis services and to assist with the preparation of a project narrative. This project narrative is being submitted in support of the Master Plan Review process before the North Smithfield Planning Board regarding the proposed ground-mounted photovoltaic arrays.

The project narrative prepared by NRS shall specifically address standards 5.7.5(f - g) and 5.7.6(d)(8) of the Town's Master Plan submittal requirements. This narrative shall discuss the existing and proposed habitat conditions within the proposed limit of disturbance. The proposed development represents an approximate 41.9 acre portion of the 122.5 acre subject property, or approximately 34.2 percent of the subject lots.

DiPrete Engineering has prepared the site plans referenced throughout this narrative. These plans are to be considered standalone documents which have been included in the submission package as required.

Existing Conditions

The tax assessor's database for the Town of North Smithfield lists the subject parcels as a combined approximate 122.5-acre area that is situated along Douglas Pike. The proposed limit of disturbance amounts to approximately 41.9 acres within the overall parcel. The habitat assessment by NRS focused on the 122.5 acre subject property referred to in this narrative as the "project site." The habitat assessment also considers the project site in the context of its broader landscape of contiguous habitat. This area of contiguous habitat is referred to as the "assessment area" and consists of approximately 371.7-acres (which includes the 122.5 acres of the project site).

The project site is comprised of non-jurisdictional uplands, freshwater wetlands, and the jurisdictional limits applied to these features. The upland areas are comprised of the following habitats: mixed oak/white pine forest, ruderal forest, ruderal grass/shrubland, and agricultural land. The existing upland habitats are mature extant forests alongside former agricultural fields that have reverted toward wild conditions. Cart paths and equestrian paths wind throughout the uplands.

Freshwater wetlands within the project site include portions of a swamp, forested wetland, a pond and rivers/streams. The on-site river is known locally as Rankin Brook (Waterbody ID: RI0001002R-24). This watercourse functions as a cold water fishery. Tarkiln Pond (Waterbody ID: RI0001002L-08) and Tarkiln Brook (Waterbody ID: RI0001002R-13C) are located west of the project site within the western and northwest part of the assessment area. Tarkiln Brook is a warm water fishery. Neither Rankin Brook nor Tarkiln Brook are listed with any water quality impairments, though Tarkiln Pond is listed with impairment related to non-native aquatic plants (RI DEM, 2016; RIGIS, 2018).

Habitat Assessment

NRS performed a habitat assessment within the project site on August 1, 2019. The depicted habitats are classified according to the Rhode Island Ecological Communities Classification (RIECC). The RIECC uses natural vegetative communities to organize habitat types according to ecological details in order to serve various conservation needs. The RIECC was developed by collaboration between the RIDEM, University of Rhode Island, The Nature Conservancy and the Rhode Island Natural History Survey (Enser et al, 2011). A total of eight (8) habitat assessment points were collected and evaluated to provide the following descriptions as well as the appended geographic information systems (GIS) graphics.

There is an important difference between the regulatory terms of the wetland delineation and the ecological classifications of the habitat assessment. While the wetland delineation separates swamps and forested wetlands according to size, the habitat assessment does not make this distinction. Therefore, in terms of the habitat assessment, all the wetlands on the project site (and immediately off-site) are categorized as "red maple swamp" or "shrub swamp" habitat. This classification will be explained in detail below.

HA1 represents a portion of red maple swamp in the easterly portion of the project site, within the proposed conservation area. This area is generally vegetated with red maple (*Acer rubrum*), sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), skunk cabbage (*Symplocarpus foetidus*), cinnamon fern (*Osmundastrum cinnamomeum*), tussock sedge (*Carex stricta*), jewelweed (*Impatiens capensis*), meadow rue (*Thalictrum*), sensitive fern (*Onoclea sensibilis*), blue marsh violet (*Viola cucullata*), cinna reed (*Cinna arundinacea*), Canada goldenrod (*Solidago canadensis*), marsh fern (*Thelypteris palustris*), sphagnum moss (*Sphagnum sp.*) and tall rattlesnake root (*Nabalus altissimus*).

A river known as Rankin Brook flows through this portion of the swamp complex. The streambed is generally gravelly and is surrounded by the mucky swamp bottom. Buttressed roots and organic/woody debris are abundant in the understory. Small cavities within overstory species may provide wildlife nesting and feeding sites. The river is capable of supporting fish and other aquatic species. Some wildlife species observed within this habitat assessment point include gray squirrel (*Sciurus carolinensis*), white-tailed deer (*Odocoileus virginianus*), gray catbird (*Dumetella carolinensis*), cardinal (*Cardinalis cardinalis*), black-capped chickadee (*Poecile atricapillus*), dragonflies (*Anisoptera* sp.), damselflies (*Zygoptera sp.*), moths and butterflies (*Lepidoptera sp*.), bottle flies (*Calliphoridae sp*.), wasps (*Vespidae sp.*) and mosquitos (*Culicidae sp.*), among other species.

HA2 is located within a portion of the ruderal grass/shrubland interior of the proposed limit of disturbance. This area is a former agricultural field/cleared area regenerating with a mix of native and non-native plants growing in variable densities (some dense thickets among sparsely vegetated areas). This habitat is vegetated with big-tooth aspen (*Populus grandidentata*), eastern red cedar (*Juniperus virginiana*), quaking aspen (*Populus tremuloides*), autumn olive (*Elaeagnus umbellata*), Asiatic bittersweet (*Celastrus orbiculatus*), white pine (*Pinus strobus*), tall goldenrod (*Solidago altissima*), deertongue (*Dichanthelium clandestinum*), English plantain (*Plantago lanceolata*), Timothy (*Phleum pratense*), Queen Anne's lace (*Daucus carota*), wild rye (*Elymus*),

sheep dock (*Rumex acetosella*), bentgrass (*Agrostis*), mullein (*Verbascum*), purple vetch (*Vicia cracca*), American aster (*Symphyotrichum novae-angliae*), foxtail (*Setaria*) and knapweed (*Centaurea*). Wildlife observed within this area include various pollinator insects, rabbits, cicadas (*Cicadoidea sp.*) and blue jay (*Cyanocitta cristata*).

HA3 is situated within a portion of ruderal forest that is located to the immediate south of the proposed limit of disturbance. The ruderal forest is similar to the ruderal grass/shrubland with a history of former agricultural use, but is dominated by densely growing young white pines (*Pinus strobus*). Among the white pines are quaking aspen (*Populus tremuloides*), gray birch (*Betula populifolia*), red maple (*Acer rubrum*), white oak (*Quercus alba*), autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*), Asiatic bittersweet (*Celastrus orbiculatus*), purple clover (*Trifolium pratense*), poison ivy (*Toxicodendron radicans*), Pennsylvania sedge (*Carex pensylvanica*), bentgrass (*Agrostis*), path rush (*Juncus tenuis*), smooth brome (*Bromus inermis*), tall goldenrod (*Solidago altissima*) and glossy buckthorn (*Frangula alnus*).

Cart and equestrian paths are present within the ruderal forest and extend into the mixed oak/white pine forest. Additional white-tailed deer (*Odocoileus virginianus*) browse paths and tracks were observed along with moderate amounts of woody debris. Plant diversity is greatest along the paths through the ruderal forest, likely due to the greater availability of sunlight in these areas. Additional species noted in the ruderal forest beyond HA3 included smooth sumac (*Rhus glabra*), clubmoss (*Dendrolycopodium obscurum*), chokecherry (*Prunus virginiana*), bracken fern (*Pteridium aquilinum*) and Japanese barberry (*Berberis thunbergii*), among other species.

HA4 represents a portion of the mixed oak/pine forest located within the proposed limit of disturbance. This area is vegetated with white pine (*Pinus strobus*), red oak (*Quercus rubra*), sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), lowbush blueberry (*Vaccinium angustifolium*), eastern spicy wintergreen (*Gaultheria procumbens*), spotted wintergreen (*Chimaphila umbellata*) and Canada mayflower (*Maianthemum canadense*). Black oak *(Quercus velutina),* scarlet oak *(Quercus coccinea),* and white oak *(Quercus alba),* are also abundant in the mixed oak/white pine forest. The habitat is characterized by mature trees, though sapling oaks and pines are plentiful in the understory.

This oak/pine forest features rolling topography with steep slopes in some areas. The understory is generally open, with patches of young pine saplings among low bush blueberry bushes. Abundant wooded debris and a moderate amount of tree cavities provide wildlife habitat within this area. Wildlife species directly observed within this area include blue jay (*Cyanocitta cristata*), black-capped chickadee (*Poecile atricapillus*), American crow (*Corvus brachyrhynchos*) and tufted titmice (*Baeolophus bicolor*), among other species.

HA5 identifies a portion of the mixed oak/pine forest located in the northwest corner of the lot (within the proposed conservation area) to the southeast of Tarkiln Pond. This portion of the forest is vegetated with white pine (*Pinus strobus*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), sweet birch (*Betula lenta*), lowbush blueberry (*Vaccinium angustifolium*), starflower (*Trientalis borealis*), eastern spicy wintergreen (*Gaultheria procumbens*) and partridge berry (*Mitchella repens*).

Abundant woody debris is present within this portion of the forested cover. Several dead oaks (*Quercus sp*.) and other trees were also observed in this location, possibly the result of the gypsy moth (*Lymantria dispar dispar*) infestation in prior years due to the state of decay/decomposition. The northwest part of the project site forms a bluff that slopes sharply down to the pond to the northwest and north, and to the shrub swamp to the east. Trees are generally shorter in this area than in the broader mixed oak/pine forest interior of the project site. Stands of young pine and birch are present among the more mature oaks.

HA6 depicts a portion of the shrub swamp along the boundary of the mixed oak/pine forest within the proposed conservation area. This portion of the wetland is vegetated with red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), blue huckleberry (*Gaylussacia frondosa*), winterberry (*Ilex verticillata*), broadleaf cattail (*Typha latifolia*), skunk cabbage (*Symplocarpus foetidus*), tussock sedge (*Carex stricta*), sphagnum moss (*Sphagnum sp.*), marsh fern (*Thelypteris palustris*) and sweet pepperbush (*Clethra alnifolia*).

The swamp in the northern part of the project site is dominated by trees along its periphery with dense shrub swamp habitat in its interior. Snags are abundant within the habitat. Portions of this wetland are saturated or flooded; the habitat is increasingly flooded toward the north and eastern extent of the habitat. The blueberry and huckleberry understory is particularly dense in these flooded areas. Wildlife observed within this portion of the swamp include hairy woodpecker (*Leuconotopicus villosus*) and red-tailed hawk (*Buteo jamaicensis*).

HA7 represents an isolated portion of shrub swamp with bog-like characteristics that is located to the north of the proposed limit of work. The wetland lies in a steep bowl-like depression surrounded by mixed oak/white pine forest. Red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), skunk cabbage (*Symplocarpus foetidus*), sphagnum moss (*Sphagnum sp.*), leatherleaf (*Chamaedaphne calyculata*), hazelnut (*Corylus*) and gray birch (*Betula lenta*) are present.

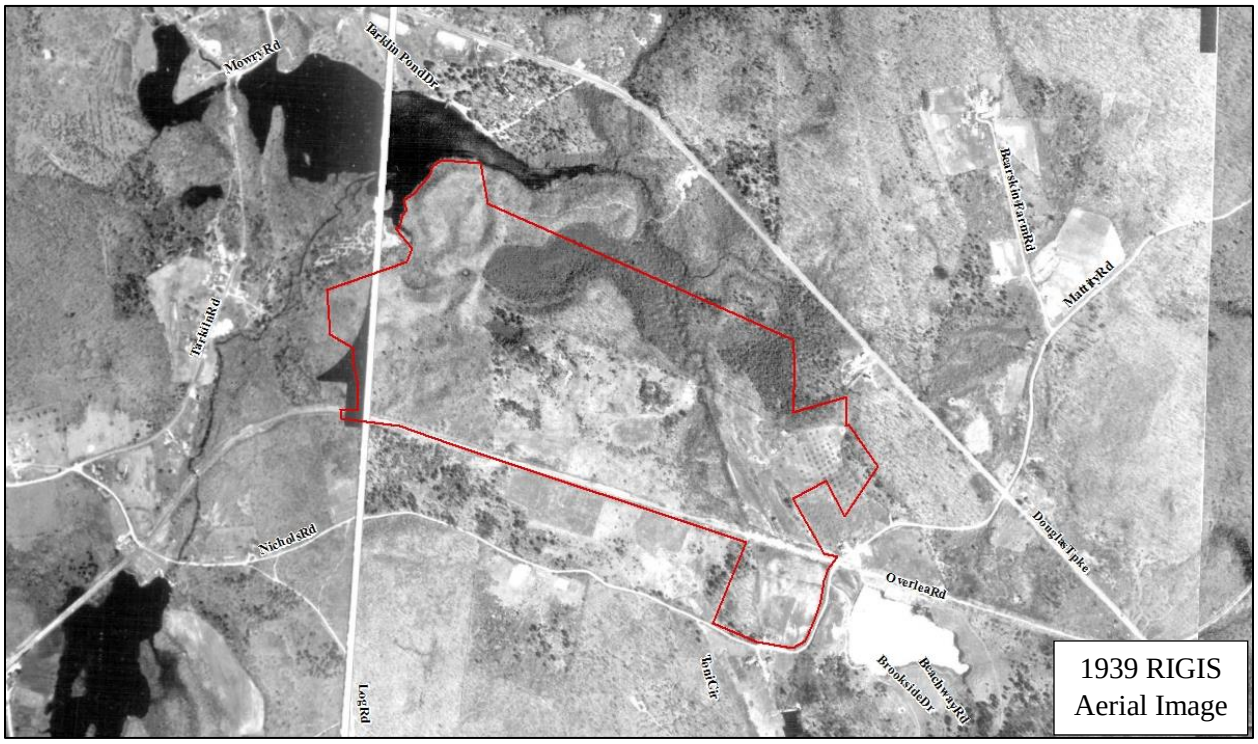
The substrate in this isolated shrub swamp habitat takes the form of a deep surface layer of peat (over four feet deep). The habitat is flooded, with a thick carpet of sphagnum moss underlain by the peat. Wildlife identified within this shrub swamp at the time of the assessment included black-capped chickadee (*Poecile atricapillus*), mockingbird (*Mimus polyglottos*) and wood frog (*Lithobates sylvaticus*).

HA8 was recorded within a portion of mixed oak/pine forest situated between the proposed limit of disturbance and the contemplated conservation area. This upland forested area is generally vegetated with white pine (*Pinus strobus*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), sweet birch (*Betula lenta*), lowbush blueberry (*Vaccinium angustifolium*), starflower (*Trientalis borealis*), eastern spicy wintergreen (*Gaultheria procumbens*), Pennsylvania sedge (*Carex pensylvanica*) and partridge berry (*Mitchella repens*). Abundant woody debris and coyote (*Canis latrans*) scat was observed within this area along with several snags. This habitat is generally very similar to that by HA4. The topography slopes downwards steeply to the north.

Project Scope

The primary purpose of this project is to site utility-scale solar arrays within the project site. The proposed work area encompasses an approximately 41.9-acre area of which the majority is forested. The panel clusters, or 'strings', shall be situated within the forested areas. These locations for the solar arrays seeks to minimize the amount of mature forest disturbance to the greatest extent practicable while still creating an economically viable renewable energy project. This project will also require the installation of an access driveway, a transformer pad, equipment pad, underground electric lines, new utility poles and other features.

The site plans depict a final, post-construction tree line to illustrate the amount of disturbance to the forested cover required for this project. This includes the removal of specific trees surrounding the arrays, a necessary element to alleviate the impact of shading on the panels.



Master Plan Submittal Requirements

The Master Plan Submittal Requirements state that all ground-mounted solar photovoltaic systems shall meet or exceed the following requirements and shall be addressed in the application:

5.7.5(d)(2) Water Bodies and Wetlands: Setbacks must comply with state environmental regulations.

Portions of the project site are occupied by state regulated resource areas in the form of freshwater wetlands. Wetlands are regulated within the Town of North Smithfield under the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (effective July 16, 2014; Recodified December 2018). These rules, administered by the RI Department of Environmental Management, Office of Water Resources (DEM, OWR), provide jurisdictional limits to these wetlands based on their designation. The features which meet the regulatory definitions of swamps and ponds each receive 50-foot perimeter wetlands. The on-site streams receive 100-foot riverbank wetlands because the mean width of the watercourse is less than ten (10) feet. No additional regulatory setbacks are applied to the forested wetlands (i.e., that which is less than three acres in size).

The applicant has configured the photovoltaic arrays and associated clearing and earthwork activities to achieve complete avoidance of the biological wetlands and the watercourses. Access to the interior of the property will utilize the existing access roads.

In addition to the applicable wetland regulations, the project shall require a permit under the RI Pollutant Discharge Elimination System (RIPDES) for the purposes of stormwater management and erosion control. This permit, including the Water Quality Certification, will be sought for this project prior to the start of work as required. Under the RIPDES permit, all erosion and sediment controls shall be subject to frequent inspection by the applicant's site operator following any rainfall event of the intensity stipulated in the RI Soil Erosion and Sediment Control Handbook (Rev. 2016).

5.7.5(f) Wildlife, fauna access and migratory patterns to remain unaffected. A solar photovoltaic system and its required fencing shall not have an unreasonable adverse effect on fauna's natural access for feeding, nesting, breeding, transit and migratory patterns. A solar photovoltaic system and its required fencing shall not have an unreasonable adverse effect on rare, threatened or endangered wildlife habitat, rare, threatened or endangered plants and rare and exemplary plant communities. In making its determination under this subsection, the Zoning Board of Review shall consider pertinent application materials and the written comments and/or recommendations, if any, of the North Smithfield Conservation Commission, Planning Board, and other environmental groups or organizations the Board deems, in its discretion, credible in such matters.

The project shall be designed to maintain and promote the migratory patterns of wildlife to the greatest extent possible. While this project shall require the conversion of forested cover in support of the new array and appropriate fencing, best management practices shall be utilized to minimize and mitigate disturbances to wildlife habitat and travel corridors. As demonstrated by the NRS habitat assessment and the site plans, over 60% of the overall property will be preserved as conservation area with varying wetland and upland habitat types.

Cutting is proposed in the central block of mixed oak/white pine forest, ruderal grass/shrubland and ruderal forest interior of the project site. However, this habitat type shall remain abundant outside the areas of proposed fencing. By maintaining this open portion of the site, wildlife movement through the interior of the property surrounding the array shall remain largely unrestricted. Because the existing mixed oak/white pine habitat is already in close proximity to the more exposed ruderal forest and ruderal grass/shrubland, wildlife currently using the habitat are likely tolerant of such complexes of forest canopy, edge, and open fields. Species requiring large uninterrupted blocks of closed forest canopy (certain passerine birds and large mammals) are less likely to be using the existing habitat. The existing wildlife movement between the freshwater wetlands and the adjacent habitat shall remain unimpeded under the proposed conditions.

As a best management practice for wildlife mobility, the applicant has configured the base of the perimeter fence several inches above grade to support the passage of small mammals and herptiles. The bottom of the chain link fence shall be situated approximately six (6) inches above grade (with the exception of the mounting posts) to allow for small mammals and herpetile species to travel between the proposed limits of disturbance and the remaining areas of the site. While the fence may be a barrier to some larger mammals, certain larger wildlife species such as white tailed deer are likely to be able to bound over the top of the fence. The fence shall not be barbed in order to

limit potential wildlife injury. The fence is a required component of the project to protect the project area for safety reasons.

NRS staff reviewed designated Natural Heritage Areas portrayed in the DEM's Environmental Resource Map. Based on these data layers, the westernmost portion of the proposed limit of disturbance does lie within a Natural Heritage Area (Reference ID: 23). A second polygon designating a Natural Heritage Area (Reference ID: 28) extends into the property to the east but outside of the project area. Based on a correspondence from DEM GIS Coordinator Paul Jordan dated August 23, 2019, species within these Natural Heritage Areas include scarlet bluet (*Enallagma pictum*) in #23 (by Tarkiln Pond) and eastern hog-nosed snake (*Heterodon platirhinos*) in #28 (by Bel-Air Pond, off-site to the southeast).

The scarlet bluet is a species of damselfly native to the state. These damselflies are usually found in acidic and sandy ponds which sustain an abundance of floating vegetation throughout the summer. The adults of the species spend most of their time in flight over open water, alighting on lily pads.

Tarkiln Pond is the habitat available for the scarlet bluet. The proposed project preserves with a conservation easement a nine (9) acre portion of the site with direct frontage on Tarkiln Pond. The project as proposed would not negatively impact the anticipated habitat of any scarlet bluet populations in the area.

The potential eastern hog-nosed snake population, documented in the state database as a species of concern, is located off-property in the vicinity of Bel-Air Pond. This waterbody was not included in the NRS assessment area due to the development around the pond.

The project as proposed retains the riverine wetland associated with Rankin Brook as a fully naturalized buffer between Bel-Air Pond and any solar panels. It is our opinion that this expanse of undisturbed swamp provides ample distance to protect any hog-nose snake population which may exist around Bel-Air Pond.

5.7.5(g) Visual Buffer and Setback – All components of the solar photovoltaic system shall be set back from the property line a minimum of 100 feet. Within the 100-foot minimum setback a permanent all season green buffer shall be planted. The green buffer shall be comprised of evergreen vegetation. The green buffer shall completely obscure the solar photovoltaic system and fencing from all neighboring properties. The green buffer shall be planted with mature plants/trees such that the buffer is complete upon proposed startup of the solar photovoltaic system. The permission to operate [Certificate of Occupancy] shall not be issued until the green buffer is complete.

Where necessary, the applicant shall establish screening vegetation to conceal the panels from abutting properties and conventional public vantage points where the naturally vegetated tree line does not satisfy this 100-foot buffer requirement. Due to the project's location, minimal screening

is anticipated. In addition to meeting the requirements of a visual buffer under the town's design standards, these evergreens shall maintain some habitat value for small mammals and avian species for nesting opportunities, escape cover and other functions. Where screening vegetation is to be established in close proximity to the on-site perimeter wetlands, the applicant's vegetated buffer shall follow the guidance of the RI Wetland BMP Manual (2010). The applicant may also elect to establish privacy screening along the chain-link fence to further obscure the panels.

Environmental Impact Analysis

5.7.6 (d)(8) Environmental Factors. The environmental impact of the proposed solar photovoltaic system shall be analyzed by a professional environmental company. The impact analysis shall be performed and paid for by the Applicant. The analysis shall be specific to the site in terms of at risk species of concern and their habitats. The following shall be addressed:

i. Constraints imposed by environmental and archeological regulations.

NRS has conducted an impact analysis of the project by comparing the existing habitat with the habitats under the proposed conditions post-construction of the proposed project. By utilizing aerial photo interpretation and field handheld GPS verification of the various on-site habitat types, NRS has prepared the appended set of GIS graphics. The NRS habitat assessment will continue through the planning phases of the proposed project to complete our environmental analysis. If the project is approved, NRS can provide ongoing monitoring of the project's environmental impact and habitat management activities.

The depicted habitats are classified according to the RIECC. The RIECC uses natural vegetative communities to organize habitat types according to ecological details in order to serve various conservation needs. The classified habitat types and field observation by NRS staff informed our analysis of the functions and values of these habitat types and impact of the project on these habitats and the wildlife species that utilize the project site.

The GIS graphics were built by NRS in ArcMap (Esri), a software program that allows complex analysis and measurement of geographic areas and resources. This GIS program references data available through RIGIS (Rhode Island Geographic Information Systems) such as Natural Heritage Areas, streams and rivers, aerial photographs, land uses, watershed information, and conservation land, among other data resources. The NRS impact analysis considered these GIS data layers as well as GPS data collected by NRS staff on-site in developing our analysis of the ecological impacts of the proposed project. The GIS graphics and environmental analysis also incorporate information depicted on the site plans for the proposed project prepared by DiPrete Engineering.

As detailed in previous sections of this narrative, the environmental impact of the proposed solar photovoltaic system primarily consists of the reduction of the mixed oak/white pine forest and ruderal forest. The extent of the ruderal grass/shrubland will broaden in portions of the site where

trees in the mixed oak/white pine forest and ruderal forest are to be cut in order to avoid shading issues surrounding the proposed solar arrays.

The following table (Table 1) provides detail on the existing habitat areas (in acres) of the project site, including the proposed conservation area, and what percentage each habitat is of the total acreage. Table 1 also shows the acreages of the habitats under the post-construction conditions for the proposed project, and what percent each habitat would be under the proposed conditions. The acreage by which each habitat type changes is also listed. Note that the wetlands do not change in size. The habitat area percent increase/decrease column is a measure of how much each individual habitat type is reduced or expanded from existing to proposed conditions. The developed land category is listed as "n/a" in this column because a percent increase cannot be calculated when the starting value is zero.

Table 1. Project Site Existing and Proposed Habitat Areas and Percentages

Project Site Douglas Pike North Smithfield	**Existing Habitat Areas (acres)**	**Existing Habitat Percentages**	**Proposed Habitat Areas (acres)**	**Proposed Habitat Percentages**	**Habitat Area Change (acres)**	**Habitat Area Percent Increase/ Decrease**
Forested Swamp	14.3	12%	14.3	12%	0	0%
Shrub Swamp	17.4	14%	17.4	14%	0	0%
Mixed Oak/Pine Forest	62.3	52%	32	26%	-30.3	-26%
Agricultural Land	6.9	6%	6.9	6%	0	0%
Ruderal Forest	18.7	15%	14	11%	-4.7	-4%
Ruderal Grass/Shrubland	3.1	3%	0.6	1%	-2.5	-2%
Developed Land	0	0	37.4	30%	+37.4	+30%
TOTAL AREA	122.7	100%	122.7	100%		

The environmental constraints imposed upon this project include the applicant's need to avoid, minimize and mitigate wetland impacts to the greatest extent possible. The applicant has achieved this through the site design. However, the consequence of avoiding freshwater wetlands is that the arrays will require disturbances to the ruderal grass/shrubland, ruderal forest, and mixed oak/white pine forest habitat areas which support an array of wildlife. To ameliorate this habitat loss, the applicant contemplates preserving a significant portion of the forested cover of the property through what the site plan references as the final tree line. Furthermore, by clustering the panels together into two areas near the center of the site, this project shall avoid significant impacts of habitat fragmentation.

The applicant is not anticipating any hardship imposed by archeological regulations regarding the proposed land use within the subject property.

ii. The presence of animal species of concern and/or critical habitat for these species.

The project shall not result in significant adverse impacts to animal species of concern or critical habitat for such species. No work is proposed in the wetlands or their regulatory setbacks. The protection of these areas maintains these habitats for any species of special concern that may occur on-site and/or critical habitat for these species within wetlands. This element of the site design will protect habitat for species of greatest conservation need (SGCN) such as mammals, herptiles, birds, and invertebrates that breed in and otherwise utilize wetland areas.

The site is mapped within two Natural Heritage Areas (#23 & #28) as mapped by the DEM. Rare species documented in these areas on/near the site include scarlet bluet (*Enallagma pictum*) in #23 (by Tarkiln Pond) and eastern hog-nosed snake *(Heterodon platirhinos)* in #28 (by Bel-Air Pond, off-site to the southeast). Scarlet bluets are a kind of damselfly and reproduce on the undersides of lily pads. Tarkiln Pond provides good habitat for scarlet bluets with aquatic and emergent vegetation. The forests and wetlands on-site potentially provide habitat for eastern hog-nosed snakes in the eastern section of the property close to Bel-Aire Pond. As noted in the NRS response to Section 5.7.5(f), the applicant has taken steps to avoid impacts to the hog-nosed snake habitats and preserve areas which are important to the scarlet bluet.

The following species were observed by NRS staff during the habitat assessment. Among mammals: white tailed deer *(Odocoileus virginianus),* eastern chipmunk *(Tamias striatus),* gray squirrel *(Sciurus carolinensis),* and woodchuck *(Marmota monax).* Among herptiles: garter snake *(Thamnophis sirtalis)* and red-backed salamander *(Plethodon cinereus)*. Among birds: black capped chickadee *(Poecile atricapillus),* northern cardinal *(Cardinalis cardinalis),* gray catbird *(Dumetella carolinensis)*, hairy woodpecker *(Leuconotopicus villosus)*, red tailed hawk *(Buteo jamaicensis),* American robin *(Turdus migratorius)*, veery *(Catharus fuscescens)*, tufted titmouse *(Baeolophus bicolor)*, wild turkey *(Meleagris gallopavo),* blue jay *(Cyanocitta cristata)*, and American crow *(Corvus brachyrhynchos)*. Various invertebrates species not identified to the species level included various mosquitoes, flies, moths, butterflies, skippers, bees, damselflies, dragonflies, crickets, and beetles.

It is the recommendation of NRS that the site work be subject to time of year restrictions to eliminate the possibility of disturbing hibernacula associated with the northern long-eared bat during the designated breeding season (June 1 – July 31 of any calendar year) (USFWS, 2018). The provision to not work during the breeding season of the northern long-eared bat also protects breeding birds (including migratory birds) that also breed during this time.

In addition to supporting wildlife species common in Rhode Island, the habitats of the project site may be capable of supporting rare, endangered, threatened, or species of special concern. According to the Rhode Island Wildlife Action Plan (2015), the forested swamps, shrub swamps, mixed oak/white pine forest, ruderal forest, and ruderal grass/shrubland are considered key habitats for which SGCN have been specifically identified.

The forested swamps are characterized as supportive of: northern goshawk (*Accipiter gentilis*), wood duck (*Aix sponsa*), Canada warbler (*Cardellina canadensis*), Northern waterthrush (*Parkesia noveboracensis*), prothonotary warbler (*Protonotaria citrea*), four-toed salamander (*Hemidactylium scutatum*), wood frog (*Lithobates sylvaticus*), blackwater bluet (*Enallagma weewa*), American water shrew (*Sorex palustris*), Mitchell's sedge (*Carex mitchelliana*), and bent sedge (*Carex styloflexa*). The on-site swamp habitats, particularly areas with dense sphagnum moss, provide excellent habitat for four-toed salamander and the listed warblers. Wood duck may occur in Tarkiln Pond and wetlands along the pond and rivers. Wood frog were observed near HA7.

Shrub swamps and wet meadows are characterizeds as supportive of: Willow Flycatcher (*Empidonax traillii*), Northern Leopard Frog (*Lithobates pipiens*), Meadow Fritillary (*Boloria bellona*), Sharp Angle Shades Moth (*Conservula anodonta*), Unexpected Cycnia (*Cycnia inopinatus*), Hydrangea Sphinx (*Darapsa versicolor*), Elderberry Borer (*Desmocerus palliatus*), Sharp-lined Powder Moth (*Eufidonia discospilata*), Black Dash (*Euphyes conspicua),* Lost Sallow Moth (*Eupsilia devia*), Little Virgin Tiger Moth (*Grammia virguncula*), American Brindle Moth (*Lithomoia germana*), Bronze Copper (*Lycaena hyllus*), Coastal Swamp Metarranthis (*Metarranthis pilosaria*), Chain Fern Borer Moth (*Papaipema stenocelis),* Included Cordgrass Borer Moth (*Photedes includens*), Acadian Hairstreak (*Satyrium acadicum),* Chalky Wave Moth (*Scopula purata*), Sulphur Angle Moth (*Speranza sulphurea*), Aphrodite Fritillary (*Speyeria aphrodite*), Hermit Sphinx (*Sphinx eremitus*), and Shrubby Poplar (*Populus heterophylla*).

Because the on-site shrub swamp shares characteristics of emergent marsh habitat, the following SGCN may also be supported by the wetland habitat on the project site or in the broader assessment area: American Black Duck (*Anas rubripes*), Northern Harrier (*Circus cyaneus*), Marsh Wren (*Cistothorus palustris*), Wilson's Snipe (*Gallinago delicata*), Least Bittern (*Ixobrychus exilis*), Hooded Merganser (*Lophodytes cucullatus*), Sora (*Porzana carolina*), Virginia Rail (*Rallus limicola),* Red-spotted Newt (Notophthalmus viridescens viridescens), Curved Halter Moth (*Capis curvata*), Louisiana Owlet Moth (*Macrochilo louisiana*), Umber Shadowdragon (*Neurocordulia obsoleta*), Golden Ambersnail (*Succinea wilsoni*), and Southern Bog Lemming (*Synaptomys cooperi*). Northern leopard frog and northern harrier are unlikely to occur on-site due to their restricted ranges in Rhode Island.

The river and lake habitat of Rankin Brook, Tarkiln Brook, and Tarkiln Pond may also support SGCN. Northern Pintail (*Anas acuta*), Canada Goose (*Branta canadensis*), Common Shiner (*Luxilus cornutus*), Triangle Floater (*Alasmidonta undulata*), Predaceous Diving Beetle (*Cybister fimbriolatus*), Eastern Pond Mussel (*Ligumia nasuta*), and Eastern Pearlshell (*Margaritifera margaritifera*) are listed in the Wildlife Action Plan for lakes (waterbodies >10 ac such as Tarkiln Pond) in Rhode Island. Inland ponds and river shores are characterized as supportive of: Spotted Sandpiper (*Actitis macularia*), Lampmussel (*Lampsilis radiata*), Round Sand Beetle (*Omophron tesselatum*), Rotala (*Rotala ramosior*), and Sclerolepis (*Sclerolepis uniflora*).

Rivers are characterized as supportive of the following SGCN species: Atlantic Sturgeon (*Acipenser oxyrinchus*), Blueback Herring (*Alosa aestivalis*), Alewife (*Alosa pseudoharengus*), American Shad (*Alosa sapidissima),* American Eel (*Anguilla rostrata*), Weakfish (*Cynoscion regalis*), American Brook Lamprey (*Lampetra appendix*), Redbreast Sunfish *(Lepomis auritus*), Inland Silverside (*Menidia beryllina*), White Perch (*Morone americana*), Bridle Shiner (*Notropis bifrenatus*), Rainbow Smelt (*Osmerus mordax*), Blacknose Dace (*Rhinichthys atratulus*), Atlantic Salmon (*Salmo salar*), Brook Trout (*Salvelinus fontinalis*), Wood Turtle (*Glyptemys insculpta*) Alewife Floater (*Anodonta implicata),* Watersnipe Flies (*Atherix spp*.), Giant Stonefly (*Attaneuria ruralis*), Yellow Stonefly (*Eccoptura xanthenes*), Sallflies (*Haploperla sp*.), Brook Snaketail (*Ophiogomphus aspersus*), Maine Snaketail (*Ophiogomphus mainensis*), Golden Stoneflies (*Paragnetina sp*.), Coppery Emerald (*Somatochlora georgiana*), Squawfoot (*Strophitus undulatus*), Arrow Clubtail (*Stylurus spiniceps*), Delta-spotted Spiketail (*Cordulegaster diastatops*), Twin-spotted Spiketail (*Cordulegaster maculata*), Spine-crowned Clubtail (*Gomphus abbreviatus*), Mustached Clubtail (*Gomphus adelphus*), American Rubyspot (*Hetaerina americana*), Mayflies (little Maryatts) (*Epeorus sp*.), Small Minnow Mayflies (*Heterocloeon sp*.), Southern Pygmy Clubtail (*Lanthus vernalis*), and Zebra Clubtail (*Stylurus scudderi*). However, the diadromous fish in this list are unlikely to occur in the area due to restrictions from dams and other anthropogenic barriers to fish movement.

The mixed oak/white pine forest are characterized as support of: Northern goshawk, least flycatcher (*Empidonax minimus),* purple finch (*Haemorhous purpureus*), yellow-rumped warbler (*Setophaga coronata*), blackburnian warbler (*Setophaga fusca*), blue-headed vireo (*Vireo solitarius*), scarlet-winged lichen moth (*Hypoprepia miniata*), silver-haired bat (*Lasionycteris noctivagans*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), eastern small-footed myotis (*Myotis leibii*), northern long-eared bat (*Myotis septentrionalis*), tri-colored bat (*Perimyotis subflavus*), and New England cottontail (*Sylvilagus transitionalis*). No bat hibernacula were observed on-site, however, roost trees may be present on-site. The listed birds may be present, but are likely limited in their use of the on-site habitat due to its proximity to nearby human activities such as the relatively nearby extractive industries. The New England cottontail is most likely not present on-site due to its restricted range, but suitable habitat is present on-site.

The ruderal forests are characterized as supportive of: gray catbird (*Dumetella carolinensis*), American woodcock (*Scolopax minor*) and blackpoll warbler (*Setophaga striata*). The ruderal grass/shrubland are characterized as supportive of: American kestrel (*Falco sparverius*), eastern towhee (*Pipilo erythrophthalmus*), eastern bluebird (*Sialia sialis*), field sparrow *(Spizella pusilla*), tree swallow (*Tachycineta bicolor*), barn owl (*Tyto alba*), dusted skipper (*Atrytonopsis hianna*), rusty-patched bumble bee (*Bombus affinis*), yellowbanded bumblebee (*Bombus terricola*), olive hairstreak (*Callophrys gryneus*), bay underwing (*Catocala badia*), waved sphinx (*Ceratomia undulosa*), 9-spotted lady beetle (*Coccinella novemnotata*), monarch butterfly (*Danaus plexippus*) pink streak moth (*Dargida rubripennis*), spotted datana (*Datana perspicua*), achemon sphinx (*Eumorpha achemon*), cobweb skipper (*Hesperia metea*), pink-border yellow (*Phytometra rhodarialis*), four-spotted speranza moth (*Speranza coortaria*), Block Island meadow vole (*Microtus pennsylvanicus provectus*), Nantucket shadbush (*Amelanchier nantucketensis*), and wild

coffee (*Triosteum perfoliatum*). Several of these bird and invertebrate species may occur on-site; however the Block Island meadow vole, Nantucket shadbush, and wild coffee are almost certainly not present because their restricted ranges do not include North Smithfield.

Three bird species and one amphibian listed as SGCN were observed on-site including veery, gray catbird, hairy woodpecker, and wood frog. None of these species are considered rare, but the Wildlife Action Plan (2015) lists them as species whose habitats are in decline. While the site does not represent habitat of critical importance to these species, it does support these wildlife among other species. The proposed work is not likely to extirpate these species from the site because the project maintains portions of the existing habitats. While species may experience a higher level of disturbance during the construction phase, the solar arrays represent a relatively low-intensity use because human activity on-site during the operational phase of the solar arrays will be low.

iii. The impact on access ways for fauna transit and access to feeding/nesting/watering areas.

The perimeter fencing surrounding the proposed solar arrays shall be designed with wildlife transit in mind, including the establishment of a six (6) inch gap between the base of the fence and the final grade. This shall allow for small mammals and herpetiles to pass into the proposed project area uninhibited while still satisfying the security needs in its ability to function as security fencing.

The travel corridors associated with the wetlands and waterbodies shall not be inhibited by this project due to the siting of the project outside any wetland, river, or pond. Therefore, wildlife movement along wetland movement corridors in order to access the wetland habitat resources such as feeding, nesting, watering, and escape cover habitat shall remain unimpeded by the project. Because the project is also sited outside the regulatory setback areas such as the perimeter wetlands, riverbank wetlands, and lot setbacks, movement along the habitat ecotones at the borders between wetland and upland habitats will be maintained in post-construction conditions. Movement through the interior of the site will also be maintained since the fencing around the solar arrays shall be separated into two areas, allowing passage between the two areas of arrays unimpeded.

Although some loss in forested and grass/shrubland cover will result from this project, portions of these areas have been colonized by invasive species. This project will result in a net reduction in the presence of such invasives, and the frequent mowing within the proposed limit of work shall ensure that such species do not become dominant.

The impact to wildlife movement within the upland habitat includes an increase in forest “edge” along the created habitats. This habitat change is likely to impact how certain woodland species such as select songbirds and other wildlife navigate the remaining forested habitat. It is important to note that portions of existing forest, particularly the more mature mixed oak/white pine forest in the western side of the lot will remain on the Project Site post-construction.

iv. Presence of plant communities of concern.

Pursuant to the representations on the DEM's Environmental Resource Map and the field data gathered by NRS, there are no such plant communities of concern that will be disturbed by the proposed limit of work. The habitat communities of the freshwater wetlands shall be avoided in their entirety by this project. No rare upland plants or plant communities are present on-site.

v. Presence of critical areas of species congregation, such as; maternity roosts, hibernation sites, staging areas, winter ranges, nesting sites, and migration stopovers.

The project is not anticipated to adversely impact the overall capacity of the site to provide maternity roosts, hibernation sites, staging areas, winter ranges, nesting sites or migratory stopovers. As described in the preceding section of this report, significant areas of existing habitat shall remain within the property and will be capable of proportionally providing the existing habitat functions and values. The approximate acreages of the habitats under proposed conditions are listed in Table 1. The extent to which the wetlands provide the above-mentioned functions and values will be maintained as under existing conditions.

vi. The potential impact of habitat fragmentation.

The applicant has considered the potential impacts of habitat fragmentation to result from the proposed project. The project will alter the existing forested landscape by removing approximately 35 acres of ruderal forest and mixed/oak white pine forest and converting these areas into a combination of developed land and ruderal grass/shrubland. The impact of the habitat fragmentation will be mitigated in part by habitat management activities such as planting screening vegetation, maintaining and expanding the extent of the ruderal grass/shrubland (valuable for many wildlife species as detailed in preceding sections of this report), and maintaining a significant portion of the existing forested cover.

As designed, the only structural obstruction to wildlife movement between the various habitat areas shall be that of the perimeter fencing. However, the design of this fencing shall be configured in such a way as to provide passage for small mammals and herptiles. This shall be accomplished by elevating the base of the fence above grade to support passage. Many disturbance-tolerant species such as white-tailed deer (*Odocoileus virginianus*) will be able to maintain existing or similar movement patterns throughout the site (outside the solar arrays) as there are to be no obstructions such as retaining walls prohibiting their movement. Fencing will also be placed in two sections surrounding the two areas of solar arrays to allow wildlife movement through the interior of the site between the arrays.

The creation of developed land in part of the project site is an unavoidable component of the project in order to achieve the project purpose. However, the habitat management plan illustrates the ways in which this work may be accomplished while simultaneously supporting the various ecosystem

functions of the upland areas within the proposed scope of work and mitigating the impacts of habitat fragmentation to the greatest extent practicable.

Comparison of Project Site and Assessment Area

It is important to consider the broader environmental landscape when evaluating habitats on a particular project site. In order to provide context for this broader environmental landscape, NRS evaluated an area surrounding the project site within the boundaries of the nearest major roads. This area is termed the "Assessment Area" and is bounded on the north by Douglas Pike, on the west by Mowry Road and Tarkiln Road, and on the south and east by Mattity Road. The extent of the Assessment Area is selected based on these roads because the roads function as major points of habitat fragmentation.

While the habitats of the Project Site were evaluated in detail through review of aerial imagery and GIS databases coupled with field observations, the evaluation of the Assessment Area was performed solely through aerial photo interpretation. Therefore, the scale and precision of the habitat classifications and measurements for the Assessment Area are broader and more conceptual than those for the Project Site. The following calculations are present for general comparison only, and are intended only for preliminary and conceptual planning purposes. The existing and proposed conditions of the Assessment and Project Site are included in GIS graphics included as appendices to this narrative.

This Assessment Area totals approximately 371.7 acres, of which approximately 122.7 acres are the Project Site. The Project Site represents approximately 33% of the Assessment Area. The Assessment Area shares the habitat types of the Project Site: red maple swamp, shrub swamp, mixed oak/white pine forest, ruderal forest, ruderal grass/shrubland, and agricultural land, as well as the additional habitats of open freshwater (ponds/lakes), oak forest, and developed land. The developed areas are not formally described in the RIECC, but have lower habitat value than the other habitats due to human-related uses of these areas. Importantly, the RIECC also does not provide detail on describing or assessing aquatic habitats of rivers, streams, and open water bodies. We have included these aquatic areas in order to more fully represent the habitats of the Assessment Area and its diversity. The open water bodies (ponds) are measured separately, while the rivers and streams are considered a part of the calculated areas for the wetlands in which they flow.

The following table (Table 2) provides detail on the existing habitat areas (in acres) of the Assessment Area and what percentage of the whole Assessment Area each habitat is. Table 2 also shows the acreages of the habitats under the post-construction conditions for the proposed project, and what percent each habitat would be under the proposed conditions. The acreage by which each habitat type changes is also listed. Note that some of the habitats do not change in size, particularly the wetlands. The habitat area percent increase/decrease column is a measure of how much each individual habitat type is reduced or expanded from existing to proposed conditions.

Table 2. Assessment Area Existing and Proposed Habitat Areas and Percentages

Project Site Douglas Pike North Smithfield	**Existing Habitat Areas (acres)**	**Existing Habitat Percentages**	**Proposed Habitat Areas (acres)**	**Proposed Habitat Percentages**	**Habitat Area Change (acres)**	**Habitat Area Percent Increase/ Decrease**
Forested Swamp	50.4	13%	50.4	13%	0	0%
Mixed Oak/Pine Forest	125.9	34%	95.6	26%	-30.3	-8%
Oak Forest	18.1	5%	18.1	5%	0	0%
Ruderal Forest	58.8	16%	54.1	15%	-4.7	-1%
Ruderal Grass/Shrubland	3.1	1%	0.6	.01%	-2.5	-1%
Shrub Swamp	28.9	8%	28.9	8%	0	0%
Open Freshwater	26.6	7%	26.6	7%	0	0%
Agricultural Land	10.1	3%	10.1	3%	0	0%
Developed Land	49.8	13%	87.2	23%	+37.4	+10%
TOTAL AREA	371.7	100%	371.7	100%		

The proposed project involves changes to the mixed oak/white pine forest, ruderal forest, and ruderal grass/shrubland in order to build the proposed solar facility.

The Assessment Area is a complex assortment of habitats including higher value habitats of the forested swamps, shrub swamps, pond, and rivers, mixed oak/white pine forest, oak forest, ruderal forests, and ruderal grass/shrublands. The lower value habitats in the Assessment Area are the developed lands and agricultural lands. While these areas are not negligible because wildlife will use them to a limited extent, they are less biodiverse and provide fewer functions and values for wildlife than the other habitats listed above.

The proposed project reduces the forest cover in the assessment area by approximately 35 acres. This represents a 14% cumulative effect to habitat loss within the Assessment Area. The Assessment Area has shifted in land use over the last century with increased residential (developed) areas along the road frontages and decreased agricultural use. Most of the former agricultural land has shifted back into ruderal grass/shrubland and ruderal forest areas. The wetland areas have stayed consistent throughout this time period (RIGIS, 1939-2019).

The Project Site has a history of its own with varied land use of forests and former agricultural land in the area of proposed solar arrays. The proposed project continues this trend of varied use in this area by "setting back the clock" on forests and ruderal grass/shrubland habitats to conditions more similar to the agricultural use when portions of the Project Site were cleared of forest.

Compared with the existing developed lands in the Assessment Area including permanent land use alterations for the residential properties, the proposed project is a land use that can be more readily reverted to conditions similar to the existing conditions. Wildlife tolerant of human disturbance are likely to continue to use the Project Site. However, habitat conversion and/or loss of habitat is never without changes to the functions and values the habitat provides. The proposed mitigation actions of screening vegetation, creation of new ruderal grass/shrubland with native plants, fencing accommodations for wildlife, and maintenance of forested areas on-site serve to ensure the functions and values of the habitat are impacted to the least extent practicable.

Conclusion

This narrative provides habitat analysis by Natural Resource Services (NRS) on the project site along Douglas Pike (A.P. 10, Lots 24 & 218) for the applicant, Anthony Delvicario. This project narrative is being submitted in support of the Master Plan Review process before the North Smithfield Planning Board regarding the proposed ground-mounted photovoltaic arrays. DiPrete Engineering prepared the site plans referenced throughout this narrative. These plans are to be considered standalone documents which have been included in the submission package as required.

The project narrative prepared by NRS specifically addresses standards 5.7.5(f - g) and 5.7.6(d)(8) of the Town's Master Plan submittal requirements. The project area represents an approximate 41.9-acre portion of the subject property in the central portion of the site. The existing habitat conditions include a complex of red maple swamps, shrub swamps, mixed oak/white pine forest, ruderal forest, and ruderal grass/shrubland. The proposed habitat conditions include changes in size to the existing habitats including reduction in the mixed oak/white pine forest and ruderal forest, expansion of the ruderal grass/shrubland, and creation of the developed area for the solar arrays and associated features.

The proposed project avoids the wetlands, watercourses, and their jurisdictional setbacks in their entirety. Approximately 35 acres of forest are proposed to be cleared in the uplands in order to create the proposed solar array areas. The remainder of the area beyond the arrays and associated features to the proposed tree line shall be maintained as ruderal grass/shrubland habitat. In addition to these avoidance and management actions, mitigation features are proposed including planting screening vegetation and placing fences in order to maintain wildlife movement patterns throughout the site. This project shall employ best management practices for stormwater management and erosion control in accordance with state and municipal standards.

Based on these factors and the project's ability to satisfy the Town's standards for Master Plan Review, NRS contends that the plan for the Doulas Pike solar field meets the environmental standards outlined in the planning regulations for Master Plan Approval from the North Smithfield Planning Board.

References

DeGraaf, R. M. and Yamasaki, M. 2001. *New England Wildlife: Habitat, Natural History, and Distribution.* University Press of New England, Hanover and London. Print.

Enser, R., D. Gregg, C. Sparks, P. August, P. Jordan, J. Coit, C. Raithel, B. Tefft, B. Payton, C. Brown, C. LaBash, S. Comings, and K. Ruddock. 2011. Rhode Island Ecological Communities Classification. Technical Report. Rhode Island Natural History Survey, Kingston, RI. (available at: www.rinhs.org)

RI Department of Environmental Management, Office of Water Resources. 2015. *Rhode Island stormwater design and installation standards manual*. Providence, Rhode Island.

RI Department of Environmental Management. 2014. *Rules and regulations governing the administration and enforcement of the fresh water wetlands act.* Retrieved from: http://www.dem.ri.gov/pubs/regs/regs/water/wetlnd14.pdf

Ibid. 2010. *Wetland BMP Manual: techniques for avoidance and minimization*. Providence, Rhode Island.

Ibid. 2016. Soil Erosion and Sedimentation Control Handbook. *Rhode Island State Conservation Committee With the Support from Rhode Island Department of Environmental Management Rhode Island Coastal Resources Management Council Rhode Island Department of Transportation The University of Rhode Island.* Retrieved from: http://www.dem.ri.gov/programs/bnatres/water/pdf/riesc-handbook16.pdf.

RI Department of Environmental Management, Division of Fish and Wildlife. 2015. Rhode Island Wildlife Action Plan. Prepared in conjunction with The Nature Conservancy and the University of Rhode Island. Retrieved from: http://www.dem.ri.gov/programs/fishwildlife/wildlifehuntered/swap15.php

RI Department of Environmental Management, Office of Water Resources. 2016. State of Rhode Island 2016 Impaired Waters Report. Retrieved from: http://dem.ri.gov/programs/benviron/water/quality/surfwq/pdfs/iwr16.pdf

Rhode Island Geographic Information System (RIGIS) Data Distribution System. 2014. *Topo map & aerial photoviewer*. RI Department of Environmental Management.

Ibid. 2016. Natural Heritage Areas. Updated December 12, 2018. Data layer retrieved from: http://data.rigis.org/bio/natHeritage16.zip

Ibid. 2018. RIGIS Surface Water Data Layer. Updated July 31, 2018. Retrieved from: http://ridemgis.maps.arcgis.com/home/item.html?id=80fac72e00774b71a64830ad4c14a3e1

United States Fish and Wildlife Service. 2018. Northern Long-Eared Bat Final 4(d) Rule – Questions and Answers Retrieved from https://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html

Appendix

Habitat Assessment Graphics:

Sheet 1: Habitat Assessment Sketch Depicting Project Site Existing Conditions
Sheet 2: Habitat Assessment Sketch Depicting Project Site Proposed Conditions
Sheet 3: Habitat Assessment Sketch Depicting Assessment Area Existing Conditions
Sheet 4: Habitat Assessment Sketch Depicting Assessment Area Proposed Conditions

Legend

- Approximate Site Location (+/- 122.7 ac)
- Approx. Proposed "Usable Area" (+/- 37.4 ac)
- Approx. Proposed Conservation Area (+/- 64 ac)
- Approx. Habitat Assessment Point
- Approx. Shrub Swamp (+/- 17.4 ac)
- Approx. Forested Swamp (+/- 14.3 ac)
- Approx. Agricultural Land (+/- 6.9 ac)
- Approx. Ruderal Grass/Shrubland (+/- 3.1 ac)
- Approx. Ruderal Forest (+/- 18.7 ac)
- Approx. Mixed Oak/White Pine Forest (+/- 62.3 ac)
- Approx. River/Stream Location

HA5
HA6
HA7
HA8
HA4
HA2
HA3
HA1
up25
up26-S

Bearskin Farm Rd
Douglas Pike
Matity Rd
Nichols Rd
Log Rd
Toni Cir
Brookside Dr
Beachway Rd
Overlea

FOR ILLUSTRATIVE PURPOSES ONLY
NOT A SURVEY PLAN

Habitats classified according to:
Enser, et al. 2011 Rhode Island Ecological Communities Classification. Technical Report. Rhode Island Natural History Survey, Kingston, RI.

Wetland edges, streams, usable area, and conservation area referenced from "Usable Area Plan Douglas Pike Solar" by DiPrete Engineering dated June 12, 2019

Habitat Assessment Sketch Depicting Project Site Existing Conditions Douglas Pike; A.P. 10, Lot 218

North Smithfield, RI

Performed by Carolyn Decker 8/1/19
using handheld Trimble Geo7X
and aerial photo interpretation

0 200 400 800 Feet

N W E S

April 2019 aerial
RI DEM Mapping

RIGIS
Natural Resource Services, Inc.
PO Box 311
180 Tinkham Lane
Harrisville, RI 02830
p: (401) 568-7390
f: (401) 568-7490

Legend

- Approximate Site Location (+/- 122.7 ac)
- Approx. Proposed "Usable Area" (+/- 37.4 ac)
- Approx. Proposed Conservation Area (+/- 64 ac)
- Approx. Habitat Assessment Point
- Approx. Shrub Swamp (+/- 17.4 ac)
- Approx. Forested Swamp (+/- 14.3 ac)
- Approx. Agricultural Land (+/- 6.9 ac)
- Approx. Ruderal Grass/Shrubland (+/- 0.6 ac)
- Approx. Ruderal Forest (+/- 14 ac)
- Approx. Mixed Oak/White Pine Forest (+/- 32 ac)
- Approx. Developed Land (+/- 37.4 ac)
- Approx. River/Stream Location

HA5
HA6
HA7
HA8
HA4
HA2
HA3
HA1

Bearskin Farm Rd
Douglas Pike
Matity Rd
Nichols Rd
Log Rd
Tonic Cir
Brookside Dr
Beachway Rd
up25
up26-S

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North Smithfield, RI

Performed by Carolyn Decker 8/1/19
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0 200 400 800 Feet

N W E S

April 2019 aerial
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Legend

- Approximate Site Location (+/- 122.7 ac)
- Approx. Assessment Area (+/- 371.7 ac)
- Approx. Proposed "Usable Area" (+/- 37.4 ac)
- Approx. Proposed Conservation Area (+/- 64 ac)
- Approx. Habitat Assessment Point
- Approx. River/Stream Location
- Approx. Open Freshwater Habitat (Pond) (+/- 26.6 ac)
- Approx. Shrub Swamp (+/- 28.9)
- Approx. Forested Swamp (+/- 50.4 ac)
- Approx. Developed Land (+/- 49.8 ac)
- Approx. Agricultural Land (+/- 10.1 ac)
- Approx. Ruderal Grass/Shrubland (+/- 3.1 ac)
- Approx. Ruderal Forest (+/- 58.8 ac)
- Approx. Oak Forest (+/- 18.1 ac)
- Approx. Mixed Oak/White Pine Forest (+/- 125.9 ac)

MowryRd
Pound HillRd
Tarklin PondDr
Old OxfordRd
Bearskin FarmRd
MattityRd
HA5
HA6
HA7
HA8
HA4
HA2
HA3
HA1
up25
up26-S
Tarklin Rd
Smith HillRd
NicholsRd
DouglasTpke
OverleaRd
LeonardDr
LogRd
FranconiaDr
ChristinaWay
ToniCir
NarragansettDr
BrooksideDr
BridgeWalk
SpringRd
Ridge HillRd
DavenportLn

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Habitat Assessment Sketch Depicting Assessment Area Existing Conditions Douglas Pike; A.P. 10, Lot 218

North Smithfield, RI

Performed by Carolyn Decker 8/1/19
using handheld Trimble Geo7X
and aerial photo interpretation

0 300 600 1,200 Feet

N W E S

April 2019 aerial
RI DEM Mapping

Natural Resource Services, Inc.
PO Box 311
180 Tinkham Lane
Harrisville, RI 02830
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Legend

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- Approx. Assessment Area (+/- 371.7 ac)
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- Approx. Proposed Conservation Area (+/- 64 ac)
- Approx. Habitat Assessment Point
- Approx. River/Stream Location
- Approx. Open Freshwater Habitat (Pond) (+/- 26.6 ac)
- Approx. Shrub Swamp (+/- 28.9)
- Approx. Forested Swamp (+/- 50.4 ac)
- Approx. Developed Land (+/- 87.2 ac)
- Approx. Agricultural Land (+/- 10.1 ac)
- Approx. Ruderal Grass/Shrubland (+/- 0.6 ac)
- Approx. Ruderal Forest (+/- 54.1 ac)
- Approx. Oak Forest (+/- 18.1 ac)
- Approx. Mixed Oak/White Pine Forest (+/- 95.6 ac)

MowryRd
Pound HillRd
Tarklin PondDr
Old OxfordRd
Bearskin FarmRd
MattityRd
HA5
HA6
HA7
HA8
HA4
HA2
HA3
HA1
Tarklin Rd
Smith HillRd
NicholsRd
Douglas Pike
up25
up26-S
OverleaRd
LeonardDr
Log Rd
FranconiaDr
ChristinaWay
Tonti Cir
NarragansettDr
BrooksideDr
BridgeWalk
SpringRd
Ridge HillRd
DavenportLn

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Habitat Assessment Sketch Depicting Assessment Area Proposed Conditions Douglas Pike; A.P. 10, Lot 218

North Smithfield, RI

Performed by Carolyn Decker 8/1/19
using handheld Trimble Geo7X
and aerial photo interpretation

Feet
0 300 600 1,200

N W E S

RIGIS
April 2019 aerial
RI DEM Mapping

Natural Resource Services, Inc.
PO Box 311
180 Tinkham Lane
Harrisville, RI 02830
p: (401) 568-7390
f: (401) 568-7490

Attachment 2: Map of Historical Structures

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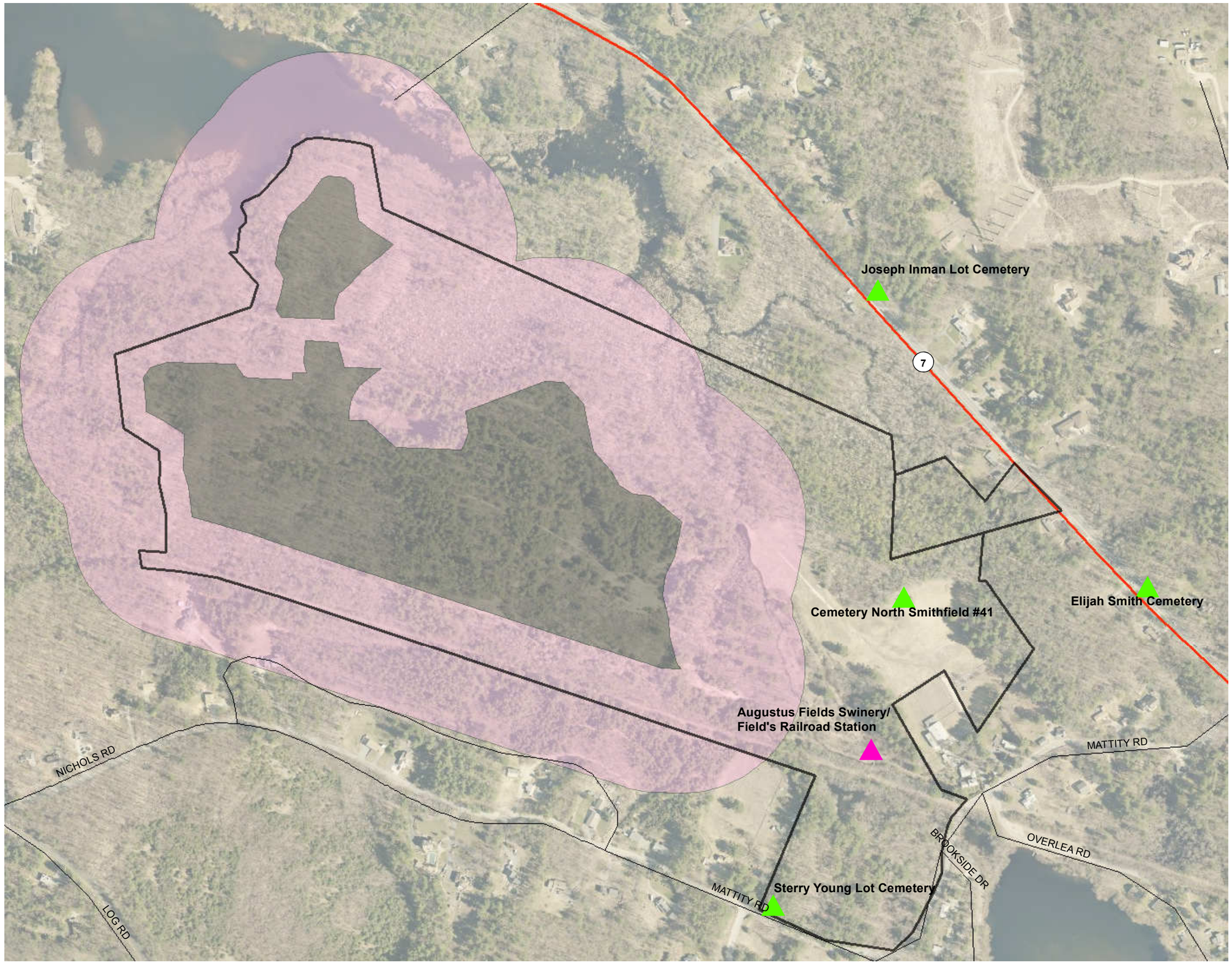

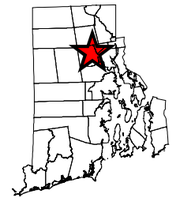

Site Location

Legend

- Approximate Property Boundary
- 500' Buffer from Solar Panels
- Solar Panel Locations
- Historical Cemeteries
- Historic Sites

N

0 87.5 175 350 Feet

Data Provided by RIGIS
Orthoimagery provided by nearmap.com

Cultural/Historic Resources (2019)

Douglas Pike Solar
AP 10, Lot 218
North Smithfield, Rhode Island

Date: 09/20/2019

Job#:

Created By: ALM

Figure

SAGE ENVIRONMENTAL

Attachment 3: Map of Stonewalls

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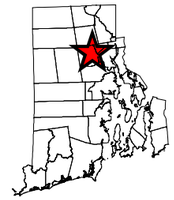

Site Location

Legend

- Approximate Property Boundary
- Historic Stonewall Locations
- Solar Panel Locations

N

0 75 150 300 Feet

Data Provided by RIGIS
Orthoimagery provided by nearmap.com

Stonewall Locations

Douglas Pike Solar
AP 10, Lot 218
North Smithfield, Rhode Island

Date: 11/06/2019

Job#: M909

Created By: ALM

Figure

SAGE ENVIRONMENTAL

Attachment 4: Land Management Service Forest Assessment

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LAND MANAGEMENT SERVICES
303 Courthouse Lane, Pascoag, RI 02859
401-568-3410
mstremb@cox.net

October 21, 2019

Forest Assessment
Proposed Douglas Pike Solar Project

Subject Property:

AP 10, Lot 218
Bel Air Realty, LLC
North Smithfield, RI

Purpose:

This forest assessment is provided to document the forest resources on the 122.5-acre subject property that is involved in the currently proposed development of a solar array. The above-referenced project currently involves approximately 37.5 +/- acres that would be cleared of trees for the solar arrays, although this estimate is subject to change as the project proposal is refined.

General Site Description:

The subject property is located westerly of Douglas Pike (RI Route 7), northerly of Mattity Road and the abandoned railway line, to the southern shore of Tarkiln Pond, in the west-central portion of the town of North Smithfield. The property is situated on the lower slopes of a hill that lies between the Tarkiln Brook and Rankin Brook valleys, with the eastern portions of the property that includes significant wetlands associated with Tarkiln Pond and Rankin Brook, and the western portions consisting of gravelly, upland sites interspersed with glacial features that includes eskers and kettle hole sites.

According to the USDA Soil Survey, the existing soil conditions underlying the wooded upland areas of the property that will be subjected to the clearing for this project are primarily the excessively well-drained Hinckley gravelly sandy loams, 8 to 25 percent slopes, with rolling and hilly terrain, which are typically found on terraces and glacial features such as outwash plains, kames, and eskers.

The available water capacity of these soils is low, and runoff rate is slow. The upland sites are typically too droughty for agricultural uses, with the Hinckley gravelly soils suitable for pasture or hayfields. They are all suited to trees, with limitations for community development due to the steep slopes. These soils have a woodland productivity rating of 5s, which is low due to sandiness. They have a Site Index value that ranges from 49 for Red oak and 60 for White pine. The gravelly, sandy loam of the Hinckley soils are best suited to growing White pine, where it regenerates readily. Site Index value is an indication of how well trees will grow in that soil

type, and those values are poor in the upland areas, with slightly better conditions in the lower slope sites due to the available soil moisture in the bottom of the coves, in relation to other Rhode Island soils.

The USDA Soil Survey includes information on depth to bedrock, soil texture, seasonal water table influences, and suitability for certain tree species. A copy of the USDA Soil Survey report for the subject property is attached to this assessment.

There is access to the site along the abandoned railroad line along the southern edge of the property, with frontage on Mattity Road. This railroad includes a bridge over Rankin Brook. There are numerous access roads that run through the old gravel bank and fields located in the eastern portion of the subject site, and then up into the wooded areas of the western and northern portions of the property.

Forest Cover Descriptions:

The forest cover on the subject site is a mix of upland oaks (Scarlet oak, Black oak, and White oak), White pine, and Pitch pine. The sandy, gravelly soils that are present have a major influence on the tree species mix and the relative health and productivity of the forest resource, as does past land use of the property. The western areas that were likely open pasture in the 18th and 19th centuries are currently dominated by low-grade oaks and Pitch pines. The eastern areas have a more recent open field and gravel bank use, with old-field White pine established on the hills and slopes to the north of the open field site, and even more recently established pioneer hardwoods on the southern half of the eastern area where gravel mining had taken place.

More recently, defoliations by Gypsy moth caterpillars has resulted in a significant amount of oak mortality. The 2016 Aerial imagery illustrates the amount of defoliation that occurred (light-colored patches that should be green with foliage), with defoliation in the upland areas of the western, upland oak-dominated hills of the project area.

Beyond the upland oaks and pine that are present within the project sites, the property also includes wooded swamps and stream valleys that are stocked with a mix of hardwoods, including Red maple, Yellow birch, Black gum, and Northern red oaks.

Methodology:

The preparation of this Forest Assessment has included a forest resource inventory, the results of which are included in each of the Stand Descriptions that will follow. Forest stands are determined through a combination of forest cover and geographic features, with soil types, slope, and aspect each having a major influence on the delineation of these stands.

This forest inventory was conducted by the randomized distribution of variable radius sampling plots, with the use of a 10-factor prism and measuring the diameters of all “in” trees. Extrapolation of the recorded data provides average diameter and stocking data (e.g. numbers of trees and relative density) across the stand. Data recorded includes species, size classes,

understory vegetation, and any additional site factors that influences the health and viability of the stand.

Stand Descriptions:

The woodland has been delineated into four (4) upland stands that will be subject to the solar arrays, with additional areas of stream and wetland valleys indicated that are not subject to clearing for the solar arrays, as shown on the attached Forest Stand Map, with descriptions that follow. The acreage for each of these stands includes only the acreages within the proposed limit of disturbance as provided by DiPrete Engineering's Site Plan. This is the area to be cleared within the proposed fence line of the arrays and associated stormwater management facilities.

Stand 1 – Upland Oaks/Pine Acres: 10+/-

TREES/A: 213 AVG. DBH: 7.8" AGE: 80- 90 years

(DBH = Diameter Breast Height = @4.5' above ground)

SOIL TYPE: Hinckley gravelly sandy, 8 – 15 percent slopes

SITE INDEX: Red oak = 49 White pine = 60

Located in the northwestern portion of the project area, this stand is situated on the top of a gravelly knoll, with relatively gently sloping terrain that runs to the edge of the steep slopes that descend into the surrounding Tarkiln Pond and associated wetlands in the landscape. Within the southeast portion of this stand there is a glacial depression, or kettle hole, with steep slopes and a dry bottom.

The overstory is fully-stocked with Scarlet oak, Black oak, White oak and Northern red oak in the 8 to 14 inch dbh size classes. These oaks are generally short in height and poorly-formed due to the gravelly texture and low productivity of the soils. There is some White pine present in the 6 to 10 inch dbh size classes, that with time will develop into the overstory between gaps in the oak overstory. There is also a minor amount of Red maple in a suppressed and intermediate position, in the 4 to 8 inch dbh size classes.

The oaks comprise most of the stocking, representing about 60% of the total stocking. Some recent oak mortality from the Gypsy moth defoliations has reduced the composition of oak, but not in a significant amount. The gaps created by the scattered dead oaks will fill in with the White pines and Red maples that are interspersed in the intermediate positions of the stand.

The understory includes White pine and Red maple saplings. Shrubs include a lowbush blueberry/huckleberry heath. In addition to the oaks that have died from the defoliations, there are a significant number of small diameter White pines that have also died as a result of the heavy presence of Gypsy moth caterpillars.

The current health condition of the dominant trees is moderate, with storm-damaged crowns and broken stems of some of the pines, and moderate mortality of the oaks and small diameter pines throughout the stand due to recent gypsy moth defoliations.

. . . . . .

Stand 2 – Upland Oaks/Mixed pine Acres: 17.5

TREES/A: 140 AVG. DBH: 9.3" AGE: 80 - 90 years

SOIL TYPE: Hinckley gravelly sandy, 8 – 25 percent slopes

SITE INDEX: Red oak = 49 White pine = 60

Located in the southwestern upland areas of the project site, the overstory of this hilly stand is a mix of upland oaks (Scarlet oak is the dominant species) and both White pine and Pitch pine. The eastern edge of this stand is obvious in the aerial photographs, with an old stone wall break between it and the eastern pine stand, field and gravel bank.

The oaks are found mostly in the 10 and 12 inch dbh size classes, with some scattered larger diameter stems up to 18 inches dbh, which are typically found on the lower slopes of the hills, and some suppressed small diameter stems below 10 inches dbh. These oaks include some White oak and a few Black oaks, and together they represent about 55% of the total stocking.

The pines include some scattered White and Pitch pines, along with a few small clumps of pines. They are found in the 10 to 20 inch dbh size classes. The White pine is more prevalent, particularly in the northeast portion of the stand, where the small clumps of pines tend to be found.

A minor presence of small diameter Red maple, in the 4 and 6 inch dbh size classes, is also present. These suppressed stems in the gravelly soils are not in a position to develop into the overstory, despite the gaps that are present from oak mortality.

The oak mortality is more significant in this stand, representing about 30 sq. ft. of Basal Area per acre, or about 30% of the original, pre-defoliation stocking. (Not to be confused with 30% of the original number of trees per acre, since stocking level is a correlation between number of trees and average diameter, expressed in sq. ft. of basal area).

The understory includes Red maple and Black birch saplings, along with scattered White pine saplings and seedlings. American chestnut sprouts were also noted. A heath layer of Lowbush blueberry and Black huckleberry is present. Increased sunlight from the recent mortality of overstory oaks has resulted in an understory response in some areas of the stand, where huckleberry shrubs have filled in along with some Green briers and ferns.

. . . . . .

Stand 3 – White Pine Acres: 12

TREES/A: 190 AVG. DBH: 13” AGE: 70+ years

SOIL TYPE: Hinckley gravelly sandy, 8 – 25 percent slopes

SITE INDEX: White pine = 60

Located on hilly, old-field areas in the northern half of the eastern portion of the project site, this stand is dominated by White pine, which represents about 80% of the total stocking. The hardwoods in this stand include mixed oaks and small diameter Black birch and Red maples.

The density and conditions of the pine is fairly consistent throughout the stand, with some large diameter stems found on the lower slope sites of the eskers that cut through the stand, particularly in the northern portion of the stand adjacent to the large wetland complex. The pines that are found at the top of the ridges tend to be shorter and limby, due to the lower soil moisture conditions and more open-grown establishment of those stems. Much of the pine is of good quality for timber purposes, and the stand includes a significant volume of pine timber.

The pines are found in all size classes, from 10 inches dbh up to larger, mature stems up to 30 inches dbh.

The oaks include Black and Scarlet oak in the upper slope sites, and some Northern red oak in the mid- to lower slope sites. White oak is also found, but mostly in the smaller, suppressed size classes of 6 to 12 inches dbh. There are some scattered large diameter oaks which may have been pasture oaks over 100 years ago.

Oak mortality from the gypsy moth defoliations is present, with some medium-sized oaks that have died, although the preponderance of pine in this stand would have minimized the population impact of the caterpillars. Not all dead trees are attributable to gypsy moth defoliations, and the shading effect of a mature pine canopy will have a consistent impact on the survival of oaks in a stand.

Other hardwoods include some small diameter Black birch, Red maple, and Black cherry in the 6 to 10 inch dbh size classes, which tends to get established in canopy gaps from dying trees.

The understory includes pine saplings and small diameter trees in the 2 to 4 inch dbh size classes, and scattered clumps of Black birch and Red maple saplings. There are scattered patches of Mountain laurel, along with Witch hazel, Highbush blueberry, and Lowbush blueberry/Huckleberry shrubs, but most of the understory is relatively open due to the shady conditions of the heavily-stocked pine canopy.

. . . . . .

Stand 4 – Mixed Hardwoods/Conifers Acres: 8

TREES/A: 249 AVG. DBH: 6” AGE: 20 - 30+ years

SOIL TYPE: Hinckley gravelly sandy, 8 – 15 percent slopes; Gravel pit.

SITE INDEX: White pine = 60

Located in the southeastern area of the project site, this stand includes a diversity of conditions, with abandoned gravel banks and strips of abandoned fields within the stand.

The pioneer species of trees that are present include Quaking aspen (poplar), Grey birch, Black cherry, Eastern redcedar, White pine, and Pitch pine, with some Scarlet oaks and Red maples becoming established between the pioneer species and beginning to develop into the crown-level positions of the stand.

Most of the stems are found in the 2 to 8 inch dbh size classes, with some White and Pitch pines in the 10 to 14 inch dbh size classes. These pines are relatively short, limby, and open-grown. A significant crop of younger White pine seedlings and saplings are found throughout the stand and are in a position to develop into the dominant species of this old gravel bank hillside.

The open field strips tend to be narrow and occupy the level terrain in the northern portion of the stand, with access roads running through them. These grassy areas are populated with open-grown pines and Quaking aspen, Black cherry, and Eastern redcedars.

Shrubs that are present are primarily the non-native invasive plants, including Autumn-olive and Japanese barberry, and some native species such as ground juniper.

Summary of Observations:

The overall condition of this forested tract includes upland acreage in a fully-stocked condition despite the mortality of some of the oak due to Gypsy moth defoliations. The northwestern and western upland areas are stocked with low-grade, small diameter oaks on gravelly soils, while the northeastern portion of the project site is well-stocked with a maturing stand of White pine. Old gravel bank and field sites in the southeastern portion of the project site has a developing stand of pioneer hardwoods and pines, along with a variety of non-native invasive shrubs and vines.

Much of the forest soil and slope conditions are better suited to growing White pine, which is commonly found on sandy, upland sites. These sites are poorly suited with low productivity for oaks and other hardwoods due to the droughty conditions on the upland terraces and side slopes that limits the ability of the trees to attain any significant height or growth rates.

The drainages, lower slope sites, and riparian zones of the pond edges and brook, with transition zones where soil moisture conditions improve to provide a more productive site capability, are the sites that are best suited to more diverse deciduous tree and shrub species and wildlife habitat conditions. These areas are not subject to the proposed clearing for installation of solar arrays.

The health conditions of the woodlands include some moderate impacts to the oak component of the overstory due to recent defoliations by Gypsy moth and/or Forest tent caterpillars, and by several previous years of moderate drought conditions. Additional mortality of the oaks may yet occur from these impacts and due to the presence of the two-lined Chestnut borer and shoestring root rot that attacks weakened and stressed oaks.

The pine-dominated forest stand that is found within the project area (Stand 3), with its underlying sandy loams, does not appear to have any significant health concerns, although there are some low quality, multiple-stemmed, open-grown pines due to the old-field origin of the pine establishment. High stocking levels in some areas of this un-managed stand of pine has led to natural mortality of small diameter pines due to competition. Scattered oaks within this pine stand have suffered from the gypsy moth defoliations, with some light mortality present. In other, oak-dominated upland areas where gypsy moth defoliations were severe, the understory pines were also defoliated, leading to high mortality of small diameter stems in the 2 to 6 inch dbh size classes.

Prepared By: Marc J. Tremblay, CF

MA Forester Lic. #239, CT Certified Forester #F-517, RI Lic. Arborist #104

Certification: I hereby attest that the above Forest Assessment Report prepared for the referenced property has been prepared according to the appropriate standards and information available, and the information provided is as accurate as current forestry practices allow.

Marc J. Tremblay, CF

Attachments:

- 2018 Imagery with Forest Stands
- 2016 Imagery showing GM Defoliation Impacts
- Topographical Map
- USDA Web Soil Survey Map & Report (Forestland Productivity) (13pp)

2018 AERIAL IMAGERY WITH FOREST STANDS

DOUGLAS PIKE SOLAR PROJECT

NORTH SMITHFIELD, RI

LAND MANAGEMENT SERVICES
MARC J. TREMBLAY, CF
(401)568-3410
October, 2019

2016 AERIAL IMAGERY
SHOWING GYPSY MOTH DEFOLIATION EXTENT
DOUGLAS PIKE SOLAR PROJECT
NORTH SMITHFIELD, RI

N

1"=415'

LAND MANAGEMENT SERVICES
MARC J. TREMBLAY, CF
(401)568-3410
October, 2019

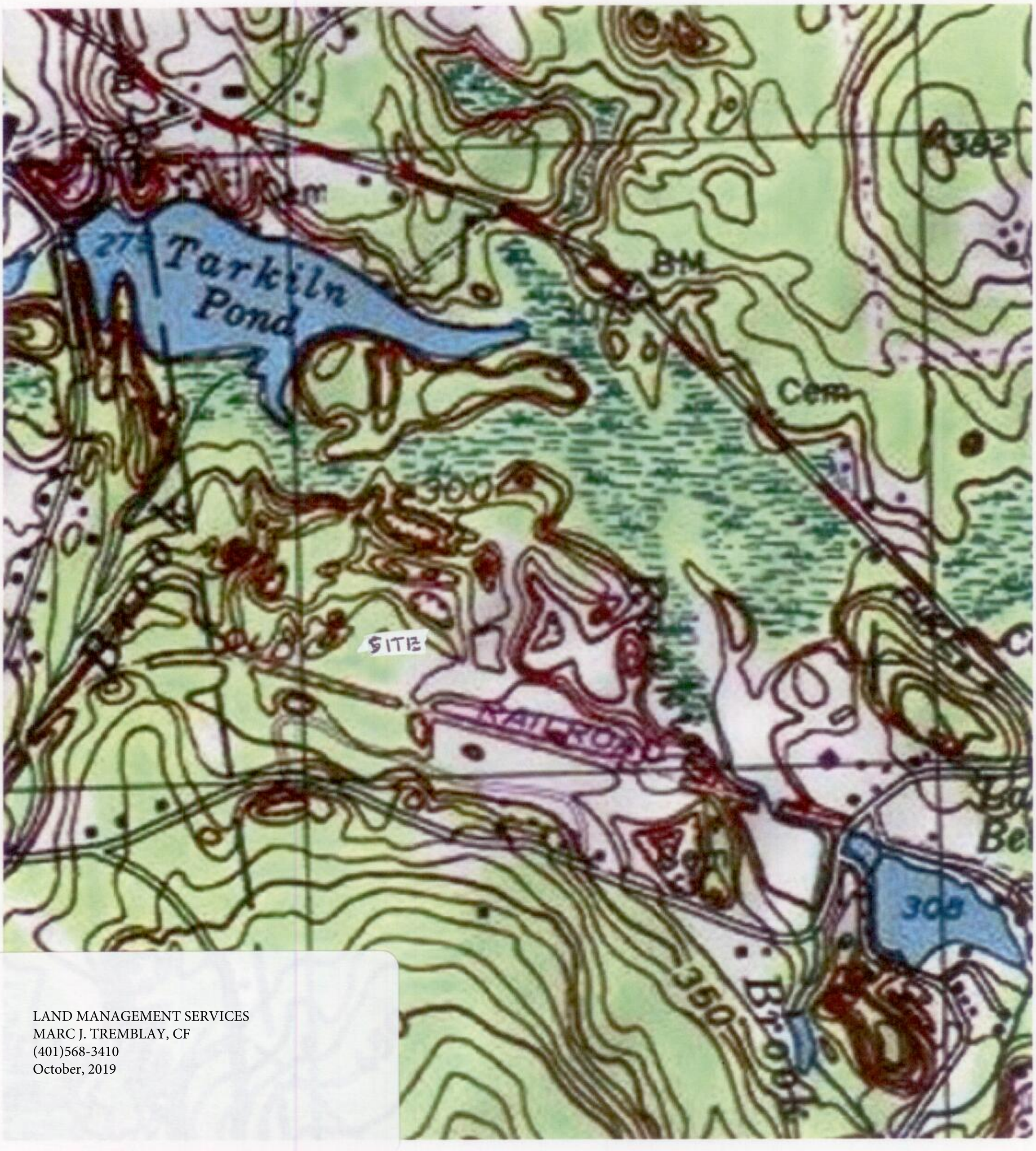
TOPOGRAPHIC MAP

DOUGLAS PIKE SOLAR PROJECT

NORTH SMITHFIELD, RI

N

1"=580'



LAND MANAGEMENT SERVICES
MARC J. TREMBLAY, CF
(401)568-3410
October, 2019

United States Department of Agriculture

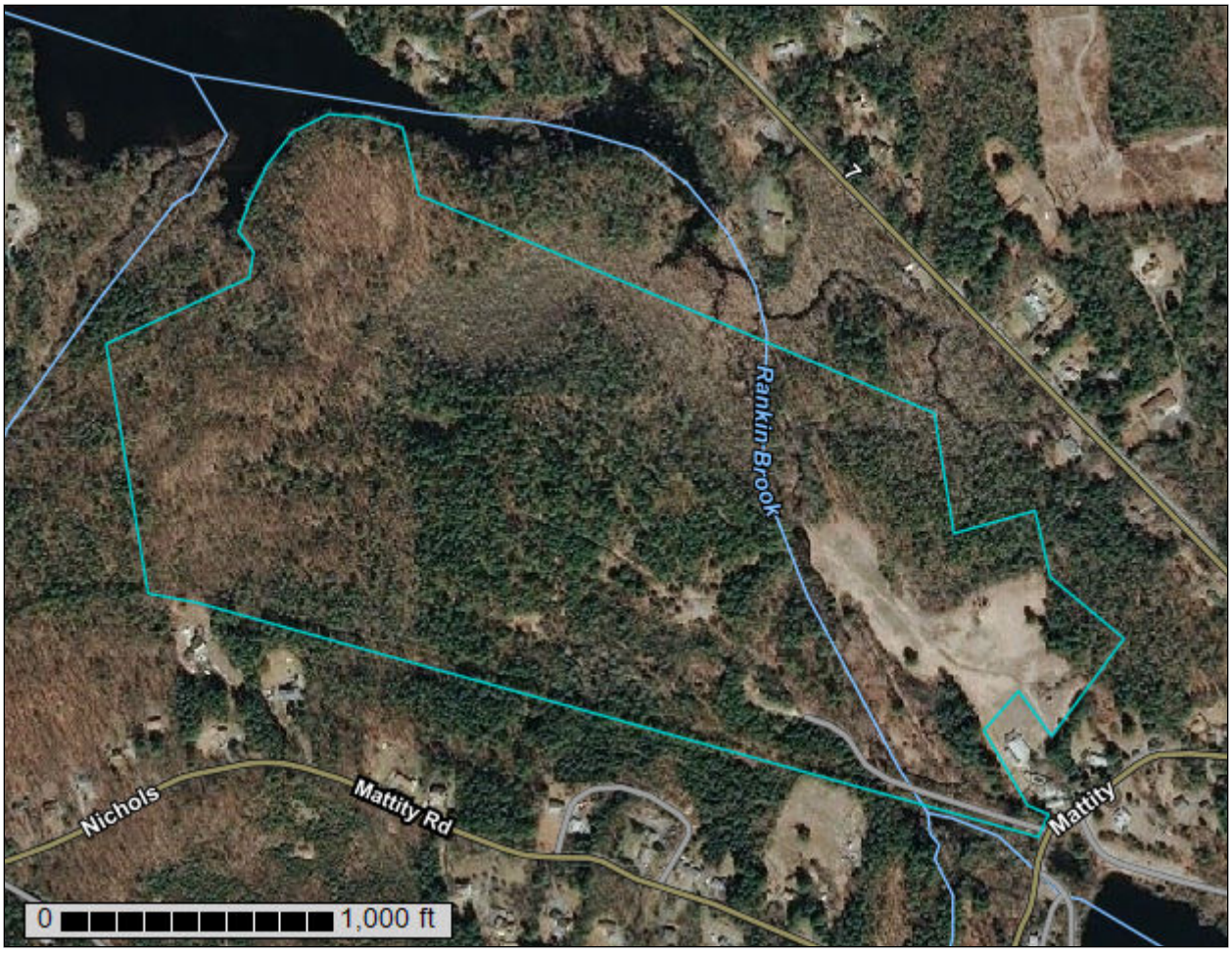
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties

Bel Air Realty - Douglas Pike Solar, North Smithfield, RI



October 17, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

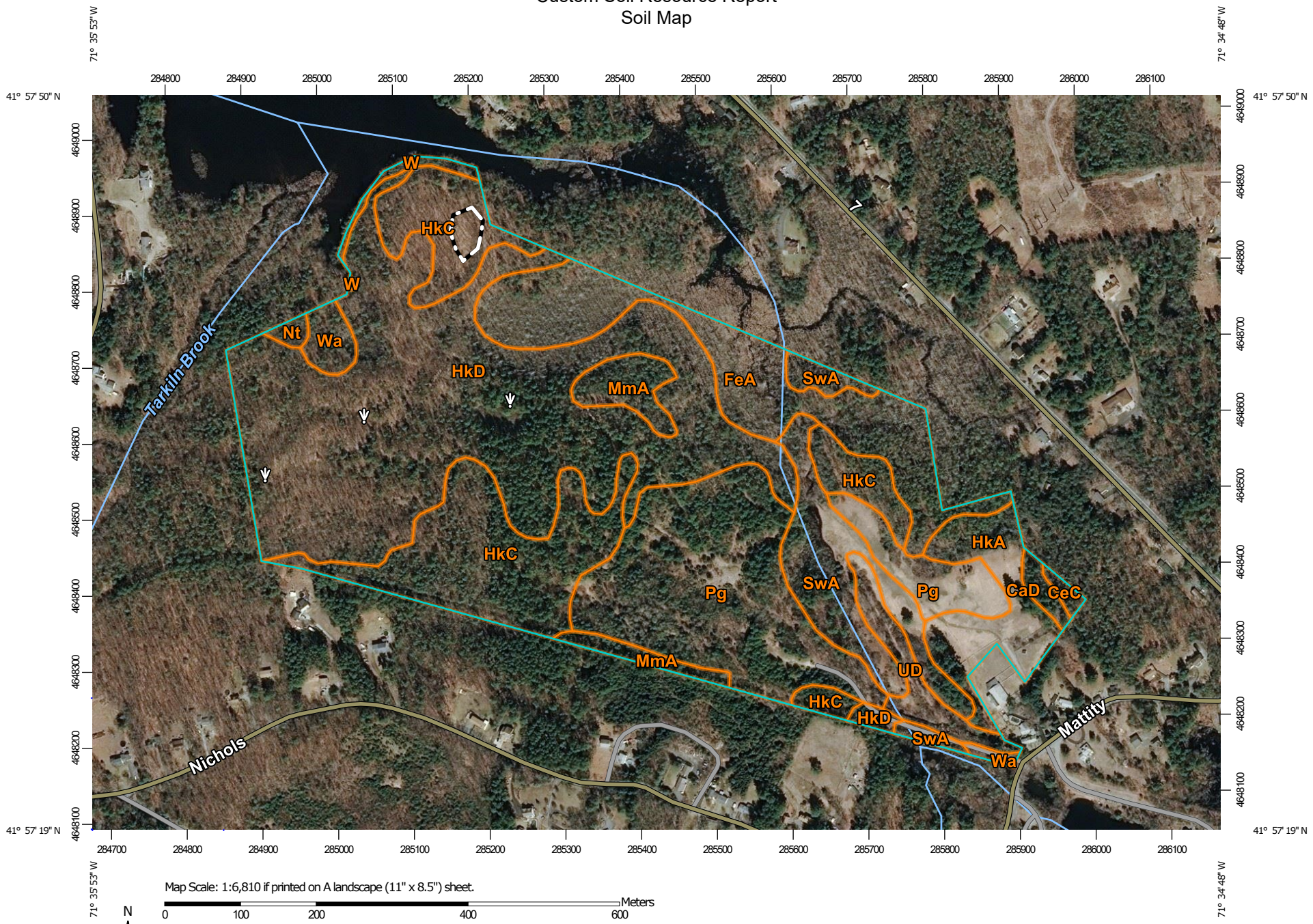
alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

Soil Survey Area: State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
Survey Area Data: Version 19, Sep 12, 2019

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

Date(s) aerial images were photographed: Apr 3, 2019—Apr 29, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CaD	Canton-Charlton-Rock outcrop complex, 15 to 35 percent slopes, very stony	0.7	0.6%
CeC	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, very rocky	0.3	0.3%
FeA	Freetown muck, 0 to 1 percent slopes	12.9	11.0%
HkA	Hinckley loamy sand, 0 to 3 percent slopes	5.6	4.8%
HkC	Hinckley loamy sand, 8 to 15 percent slopes	19.0	16.1%
HkD	Hinckley loamy sand, 15 to 25 percent slopes	41.8	35.6%
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes	3.1	2.6%
Nt	Ninigret fine sandy loam, 0 to 3 percent slopes	0.4	0.3%
Pg	Pits, gravel	20.4	17.4%
SwA	Swansea muck, 0 to 1 percent slopes	8.4	7.1%
UD	Udorthents-Urban land complex	2.7	2.3%
W	Water	0.6	0.5%
Wa	Walpole sandy loam, 0 to 3 percent slopes	1.5	1.3%
Totals for Area of Interest		**117.4**	**100.0%**

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Vegetative Productivity

This folder contains a collection of tabular reports that present vegetative productivity data. The reports (tables) include all selected map units and components for each map unit. Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Forestland Productivity

This table can help forestland owners or managers plan the use of soils for wood crops. It shows the potential productivity of the soils for wood crops.

Potential productivity of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity–State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac/yr	
CaD—Canton-Charlton-Rock outcrop complex, 15 to 35 percent slopes, very stony				
Canton, very stony	Eastern white pine	58	100.00	Eastern white pine, White spruce
	Northern red oak	52	29.00	
Charlton, very stony	Eastern white pine	65	114.00	Eastern hemlock, Eastern white pine, European larch, Northern red oak, Norway spruce, Red pine, Scarlet oak, Sugar maple, Tuliptree, White ash, White oak, White spruce
	Northern red oak	65	43.00	
	Red maple	55	29.00	
	Red pine	70	129.00	
	Red spruce	50	114.00	
	Shagbark hickory	—	0.00	
	Sugar maple	55	29.00	
Rock outcrop	—	—	—	—

Forestland Productivity–State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac/yr	
CeC—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, very rocky				
Canton, very stony	Eastern hemlock	—	—	Beech, Bitternut hickory, Black oak, Eastern hemlock, Eastern white pine, Gray birch, Mockernut hickory, Northern red oak, Pignut hickory, Red maple, Shagbark hickory, Sugar maple, White ash, White oak, Yellow birch
	Eastern white pine	58	100.00	
	Northern red oak	52	29.00	
	Red maple	55	29.00	
	Shagbark hickory	—	0.00	
	Sugar maple	55	29.00	
	White oak	—	—	
Charlton, very stony	Eastern white pine	65	114.00	Eastern white pine, European larch, Northern red oak, Norway spruce, Red pine, Scarlet oak, Sugar maple, Tuliptree, White ash, White oak
	Northern red oak	65	43.00	
	Red maple	55	29.00	
	Red pine	70	129.00	
	Red spruce	50	114.00	
	Shagbark hickory	—	0.00	
	Sugar maple	55	29.00	
FeA—Freetown muck, 0 to 1 percent slopes				
Freetown	American elm	55	0.00	—
	Atlantic white cedar	60	0.00	
	Balsam fir	45	86.00	
	Eastern hemlock	55	0.00	
	Green ash	35	29.00	
	Red maple	50	29.00	
	Red spruce	50	114.00	
HkA—Hinckley loamy sand, 0 to 3 percent slopes				
Hinckley	Eastern white pine	61	100.00	Black oak, Eastern white pine, Pitch pine
	Northern red oak	49	29.00	
	Paper birch	60	54.00	
	Pitch pine	60	—	
	Red pine	54	92.00	
	Red spruce	39	86.00	
	Sugar maple	59	30.00	
	White spruce	52	114.00	

Forestland Productivity–State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac/yr	
HkC—Hinckley loamy sand, 8 to 15 percent slopes				
Hinckley	Eastern white pine	61	100.00	Black oak, Eastern white pine, Pitch pine
	Northern red oak	49	29.00	
	Paper birch	60	54.00	
	Pitch pine	60	—	
	Red pine	54	92.00	
	Red spruce	39	86.00	
	Sugar maple	59	30.00	
	White spruce	52	114.00	
HkD—Hinckley loamy sand, 15 to 25 percent slopes				
Hinckley	Eastern white pine	61	100.00	Black oak, Eastern white pine, Pitch pine
	Northern red oak	49	29.00	
	Paper birch	60	54.00	
	Pitch pine	60	—	
	Red pine	54	92.00	
	Red spruce	39	86.00	
	Sugar maple	59	30.00	
	White spruce	52	114.00	
MmA—Merrimac fine sandy loam, 0 to 3 percent slopes				
Merrimac	—	—	—	—
Nt—Ninigret fine sandy loam, 0 to 3 percent slopes				
Ninigret	Eastern white pine	75	143.00	Bigtooth aspen, Black cherry, Black oak, Eastern white pine, Gray birch, Hemlock, Northern red oak, Paper birch, Pitch pine, Red maple, Sugar maple, Sweet birch, White ash, White oak
	Northern red oak	65	43.00	
	Red maple	60	43.00	
	Sugar maple	55	29.00	
	White oak	—	—	
Pg—Pits, gravel				
Pits	—	—	—	—

Forestland Productivity–State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties				
Map unit symbol and soil name	**Potential productivity**			**Trees to manage**
	Common trees	**Site Index**	**Volume of wood fiber**	
			Cu ft/ac/yr	
SwA—Swansea muck, 0 to 1 percent slopes				
Swansea	American elm	55	0.00	Balsam fir, Eastern hemlock, White spruce
	Atlantic white cedar	60	0.00	
	Balsam fir	45	86.00	
	Eastern hemlock	55	0.00	
	Green ash	35	29.00	
	Red maple	50	29.00	
	Red spruce	50	114.00	
UD—Udorthents-Urban land complex				
Udorthents	—	—	—	—
Urban land	—	—	—	—
W—Water				
Water	—	—	—	—
Wa—Walpole sandy loam, 0 to 3 percent slopes				
Walpole	Eastern hemlock	54	114.00	—
	Eastern white pine	68	114.00	
	Red maple	75	43.00	
	White ash	61	43.00	

DiPrete Engineering

December 13, 2019

Mr. Tom Kravitz
Town Planner
North Smithfield Town Hall
One Main Street, P.O. Box 248
Slatersville, RI 02876

RE: Douglas Pike Solar
AP 10 Lot 218
North Smithfield, RI
Project #: 2482-008

Dear Mr. Kravitz:

On behalf of the applicant, Anthony Delvicario, DiPrete Engineering has prepared this narrative in support of the Master Plan and Special Use Submission to the Town of North Smithfield for approval from the Planning Commission. This narrative describes the existing conditions of the property and the proposed scope of the solar development.

Existing Conditions:

The subject property is situated on Douglas Pike and listed in the Town of North Smithfield tax assessor's database as plat 10, Lot 218. The lot is owned by Bel Air Realty, LLC and is approximately 124.72 acres zoned RA, however only approximately 25% lot coverage is proposed for development. The proposed work on site is not located in a natural heritage area. The site is located in FEMA flood zone X and zone A (Map 4407C0280G-Revised March 2, 2009). Zone X unshaded are areas determined to be outside the 0.2% annual chance flood plain. Zone A are areas of 100-year flood; base flood elevations and flood hazard factors not determined. It is important to note that all Zone A FEMA areas are located outside of the limit of work for the proposed solar arrays.

The southwestern portion of the property (proposed array area) has topography sloping toward the surrounding onsite wetlands in the northern and eastern portions of the site but is all within the 310-330 elevation range. The topography consists of mainly wooded area that is currently vacant and a bike path that runs along the south edge of the site. Rankin Brook runs north to south through the east edge of the site. There are multiple wetlands within the north and east portions of the site and in the southwest there is a local conservation area.

Local Land-Use Restrictions:

The site is zoned as RA Rural Agricultural. The minimum lot size for development within this district is 65,000 square feet. A front yard setback of 100 feet, a side yard setback of 100 feet and a rear yard setback of 100 feet are required for solar arrays within this designation. These setbacks have been incorporated in the plan set for planning purposes. The maximum lot coverage for solar within this district is 30% of the gross lot area or to exceed six acres, whichever is less. Variance is being requested

from the maximum 6 acres of coverage but the 30% maximum coverage for a solar development will be met. The applicant is providing the Town with approximately 56 Acres of Conservation Land at no consideration from the Town.

According to the posted Zoning Ordinance for the Town of North Smithfield, solar facilities are permitted in a RA District by Special Use Permit. Systems, equipment and structures shall not exceed 15 feet in height when ground-mounted. Ground-mounted solar energy systems as part of a solar facility shall meet the minimum zoning setbacks for the zoning district in which it is located.

Proposed Scope:

The applicant proposes to construct an approximately 9 MW AC and 12 MW DC solar energy project on Douglas Pike in North Smithfield, Rhode Island. The solar installation will consist of ground-mounted solar panel arrays, transformers, switch-gears, and electrical equipment. The final number of panels and module wattage placed on-site may vary from current plans, though the footprint and acreage required will remain the same. Project work will be undertaken in a single phase and is anticipated to begin Fall 2020 depending on when receipt of all final approvals are received.

Proposed facilities will also include a 6-foot security fence surrounding the facility at a minimum distance of 20 feet from the array. The gate has been proposed in a manner to allow critters to pass through the middle of the two solar fields. The site will be accessed using an 18' wide permeable driveway connecting into Mattity Road and there will be 8 onsite parking spaces to allow visitors to utilize the trails within the conservation area. The applicant will locate these trails along with the survey of the property so that they can be depicted on the Preliminary Submission plans. Multiple 12-foot-wide gates with a Knox-Box will provide access to the site for emergency services and maintenance personnel alike.

The project does not include any proposed buildings and does not require water service, sewer service, or on-site wastewater treatment systems. Therefore, written confirmations from municipal authorities are not deemed required. The proposed development will require minimal grading.

Solar photovoltaic system will not cause any solar reflection as the panels are made to accept light and reflect less than 2% and there will be a green buffer surrounding the perimeter of the site within the 100-foot setback. The solar photovoltaic system will be tested for noise generation to confirm no increase in ambient noise.

The installation will require approximately 32 acres of clearing. The Solar Photovoltaic system is currently a wooded area but the area of the solar field has been historically disturbed through a former gravel operation. The system will be buffered by wetlands bordering the site to the north and east and buffered by existing thickly wooded areas to the south and west. Vegetative visual screening will be planted within sightlines of existing residences as necessary, although there are no residential homes within sight of the proposed solar array area and all homes in all directions are screened by existing wooded areas.

The site is designed with environmental preservation in mind by providing the Town with 56 Acres of conservation land and eventually the entire property.

The only proposed signage will be security signs (or similar) installed on the system perimeter fence and will identify the site owner and a 24-hour contact phone number.

No new lighting installations are proposed for the facility.

To allow emergency vehicles to access the site, 20 feet of spacing has been provided between the solar array and the fence around the perimeter of the development. The applicant will work with the fire department to address any concerns prior to the Preliminary application to the Town.

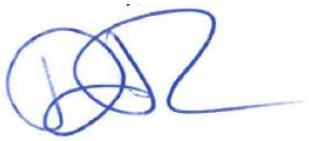
After successful procurement of a master plan and special use permit approval a Preliminary Determination will be submitted to RIDEM which will include a Soil Erosion and Sediment Control Plan, Operation and Maintenance Plan, and a Stormwater Management Report per current state regulations. A copy of these reports and detailed hydrologic analysis will be submitted during preliminary plan review as required by the town.

A 200' radius abutters map and list has been prepared in support of this project and the applicant. Anthony Delvicario fully acknowledges that he is responsible for all costs associated with abutter notifications.

The proposed development is in compliance with Section 5.7 Solar Photovoltaic System Installations of the Town of North Smithfield Zoning Ordinance besides the variance being sought for greater than 6 acres of coverage. There will be no significant environmental impacts from the proposed development. The proposed development will be reviewed by the Rhode Island Department of Environmental Management. No new lots are being proposed within the proposed development. The proposed development has adequate and permanent physical access to Mattity Road, a public street.

If you have any further questions on this matter, please feel free to contact me at your earliest convenience.

Sincerely,



David Russo, PE
Project Manager
DiPrete Engineering

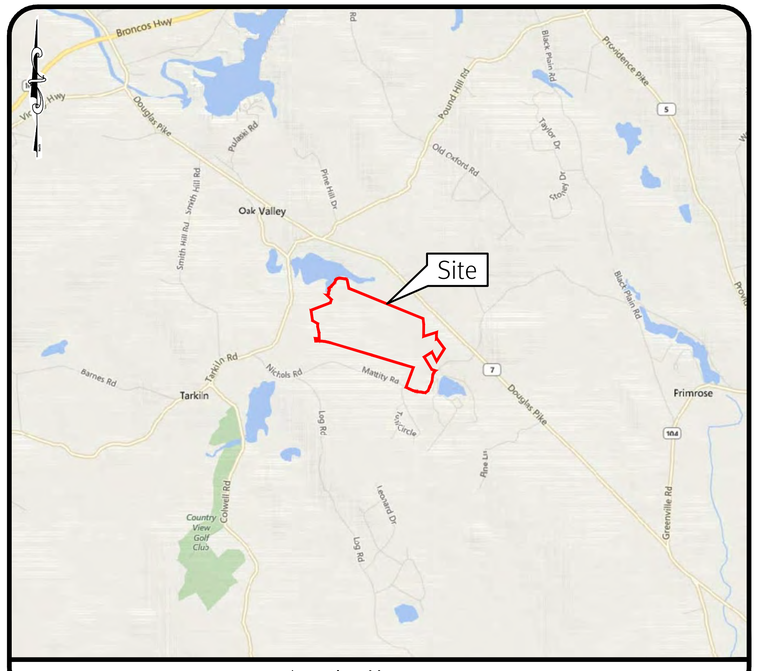
Master Plan and Special Use Submission

Douglas Pike Solar

Douglas Pike

North Smithfield, Rhode Island

Assessor's Plat 10 Lot 218



Location Map 1" = 2,000'

Sheet Index

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6036 www.diprete-eng.com
Boston • Providence • Newport

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

No.	Date	Description	By:
2	12-09-2019	Master Plan and Special Use Submission	T.L.S.
1	11-25-2019	Natural Grid Exhibit Plan	N.D.K.
0	09-16-2019	Pre-Application Submission	J.A.R.

Drawn By: J.A.R. Design By: D.A.R.

Cover Sheet

Douglas Pike Solar

AP 10, Lot 218
North Smithfield, Rhode Island

Applicant
Anthony Delvicario
43 Creston Way, Warwick, Rhode Island 02886
tel. 401-821-8978

SHEET 1 OF 5

z:\deman\projects\2482-008 douglas pike solar\autocad drawings\2482-008 cvsr.dwg Plotted: 12/5/2019

North Smithfield Auto Recycling Inc.

Douglas Turnpike

Doering Equipment Company Inc.

1/2 Mile Radius

Air National Guard

Old Oxford Road

Pond Hill Road

Tarkiln Pond

Douglas Pike

Site

Tarkiln Road

Mattity Road

Nichols Pond

Nichols Road

Rankin Brook

West Main Road

Toni Circle

Lake Bel Air

Douglas Pike

Christina Way

Brookside Drive

Colwell Road

1/2 Mile Radius

North

USGS Map Scale: 1"=1000'

Photo Obtained from RIGIS 2014 database.

Scale: 1"=500'

0 250' 500' 1000'

DiPrete Engineering

Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6036 www.dipreteeng.com

Boston • Providence • Newport

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

No.	Date	Description	By:
2	12/5/2019	Master Plan/Special Use Submission	L.L.S.
1	11/5/2019	National Grid Exhibit Plan	N.D.K.
0	09-16-2019	Pre-Application Submission	J.A.R.

Drawn By: J.A.R. Design By: D.A.R.

Aerial Half-Mile Radius and USGS Map

Douglas Pike Solar

AP 10, Lot 218
North Smithfield, Rhode Island

Applicant
Anthony Delvicario
43 Creston Way, Warwick, Rhode Island 02886
tel 401-821-8978

SHEET 2 OF 5

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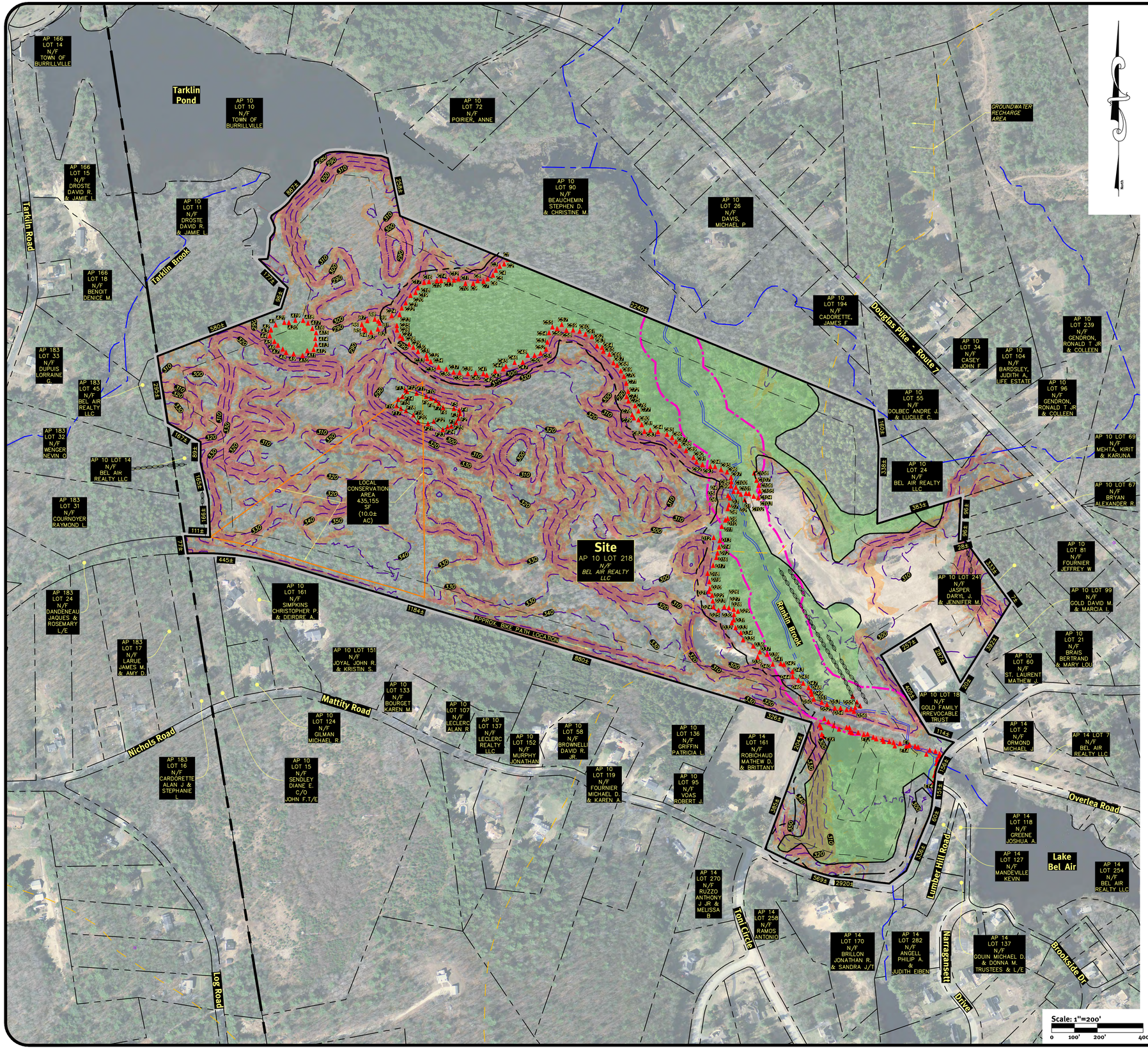

General Notes:

1. THE SITE IS LOCATED ON THE TOWN OF NORTH SMITHFIELD'S AP 10 LOT 218.
2. THE SITE IS APPROXIMATELY 124.72± ACRES AND IS ZONED RA (RURAL AGRICULTURE).
3. THE OWNER OF AP 10 LOT 218 IS:
   BEL AIR REALTY LLC
   PO BOX 998
   PAWTUCKET, RI 02862
4. THIS SITE IS LOCATED IN FEMA FLOOD ZONES X AND A. REFERENCE FEMA FLOOD INSURANCE RATE MAP 44007C0155G REVISED MARCH 2, 2009.
4. TOPOGRAPHY WAS OBTAINED FROM LIDAR MAPS. ELEVATIONS ARE APPROXIMATE AND REFERENCED TO THE NAVD '88 US FEET DATUM. PRIOR TO ANY DEVELOPMENT ON THE SITE, THE OWNER SHALL VERIFY ELEVATIONS USING FIELD SURVEY.
5. SOIL MAPPING OBTAINED FROM SOIL SURVEY OF RHODE ISLAND, PREPARED BY U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
6. THE SITE IS WITHIN A:
   NATURAL HERITAGE AREAS (RIDEM)
   GROUNDWATER RECHARGE AREA (RIDEM)
7. TO THE BEST OF OUR KNOWLEDGE, THE SITE DOES NOT CONTAIN ANY HISTORICALLY SIGNIFICANT SITES OR STRUCTURES, STATE OR LOCAL HISTORIC SITES, DISTRICTS, CEMETERIES, ARCHAEOLOGICALLY SIGNIFICANT SITES, OR STATE DESIGNATED SCENIC AREAS. THIS WAS DETERMINED THROUGH FILE REVIEW.
8. THIS PLAN IS SUBSTANTIALLY CORRECT IN ACCORDANCE WITH A CLASS IV STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.
9. WETLAND EDGES WERE DELINEATED BY DIPRETE ENGINEERING ON 06-06-2019.

Lidar Note:

CONTOUR DATA SHOWN ON THIS PLAN CONFORMS TO A T-4 TOPOGRAPHICAL SURVEY STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS; SAID DATA IS BASED ON ELEVATION INFORMATION THAT WAS COLLECTED WITH AIRBORNE LIDAR TECHNOLOGY FOR THE ENTIRE AREA OF RHODE ISLAND BETWEEN APRIL 22 AND MAY 6, 2011 AS PART OF THE NORTHEAST LIDAR PROJECT. THIS DATA'S POSITIONAL ACCURACY AND RELIABILITY HAS NOT BEEN VERIFIED BY DIPRETE ENGINEERING AND IS SUBJECT TO CHANGES AN AUTHORITATIVE FIELD SURVEY MAY DISCLOSE.

Soil Information:

(REFERENCE: WEB SOIL SURVEY, USDA NATURAL RESOURCES CONSERVATION SERVICE)

SOIL NAME	DESCRIPTION
AfB	AGAWAM FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
CoD	CANTON-CHARLTON-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT
CeC	CANTON AND CHARLTON FINE SANDY LOAMS, VERY ROCKY, 3 TO 15
FeA	FREETOWN MUCK, 0 TO 1 PERCENT SLOPES
HkC	HINCKLEY GRAVELLY SANDY LOAM, ROLLING – **STATEWIDE IMPORTANT**
HkD	HINCKLEY GRAVELLY SANDY LOAM, HILLY
HnC	HINCKLEY-ENFIELD COMPLEX, ROLLING
MmA	MERRIMAC SANDY LOAM, 0 TO 3 PERCENT SLOPES – **PRIME FARMLAND**
Nt	NINIGRET FINE SANDY LOAM
Pg	PITS, GRAVEL
SwA	SWANSEA MICK, 0 TO 1 PERCENT SLOPES
UD	UDORTHENTS-URBAN LAND COMPLEX
Wa	WALPOLE SANDY LOAM

Abbreviations:

EXISTING	EX
PROPOSED	PR
TYPICAL	TYP
ASSESSOR'S PLAT	AP
NOW OR FORMERLY	N/F
UTILITY POLE	U.P.

Existing Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON PLANS

PROPERTY LINE
ASSESSORS LINE
SETBACK LINE
2 MINOR CONTOUR LINE
10 MAJOR CONTOUR LINE
SOILS LINES
50' PERIMETER WETLAND
100' RIVERBANK WETLAND
FEMA BOUNDARY
STREAM
STREAM (RI-GIS)
WETLAND LINE & FLAG
WETLAND LINE (RI-GIS)
WETLAND HATCH
NATURAL HERITAGE AREA
GROUNDWATER RECHARGE AREA
RIDGELINE

Slopes Table			
	MIN SLOPE	MAX SLOPE	COLOR
1	15.00%	25.00%	
2	25.00%	Vertical	

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6036 www.diprete-eng.com
Boston • Providence • Newport

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

No.	Date	Description	By:
1	12-20-2019	Master Plan and Special Use Submission	N.D.K.
2	11-25-2019	Natural and Exhibit Plan	J.A.R.
0	09-26-2019	Pre-Application Submission	J.A.R.

Drawn By: J.A.R. Design By: D.A.R.

Existing Analysis Plan
Douglas Pike Solar

AP 10, Lot 218
North Smithfield, Rhode Island

Applicant
Anthony Delvicario
43 Creston Way, Warwick, Rhode Island 02886
tel. 401-821-8978

SHEET 3 OF 5

DE Job No. 2482-008 Copyright 2019 by DiPrete Engineering Associates, Inc.

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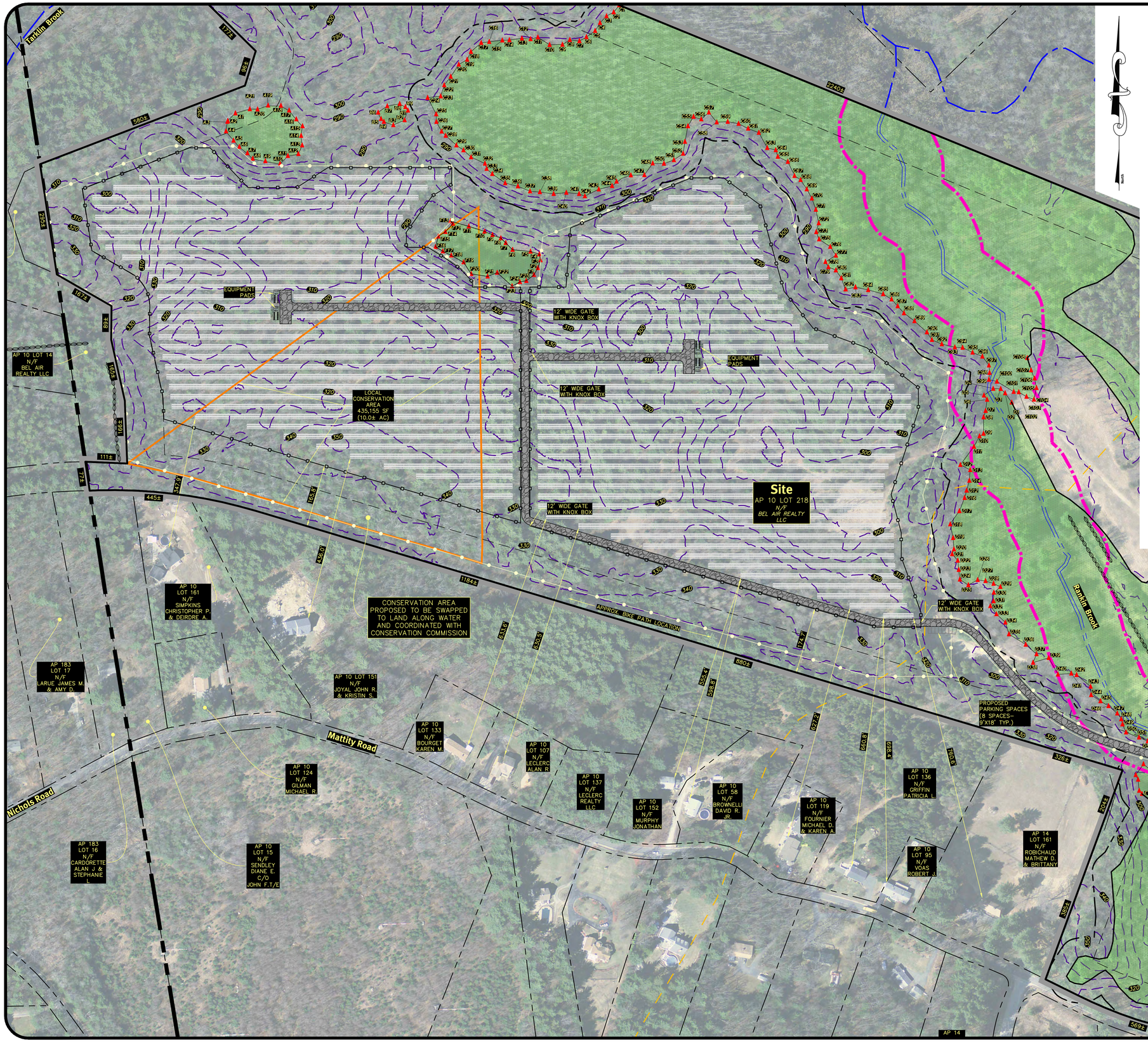

Site Layout Notes:

1. THE SITE IS LOCATED ON THE TOWN OF NORTH SMITHFIELD'S AP 10 LOT 218.
2. DETAILED SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL CONFORM TO RIDEM BEST MANAGEMENT PRACTICES.
3. NO NEW WELLS OR OWTS PROPOSED. THE SITE IS NOT PROPOSED TO BE SERVICED BY PUBLIC WATER.
4. ALL ELECTRICAL CONNECTION AND DISTRIBUTION LINES WITHIN THE FACILITY SHALL BE UNDERGROUND. ELECTRICAL EQUIPMENT BETWEEN THE FACILITY AND THE UTILITY CONNECTION MAY BE ABOVE GROUND IF REQUIRED BY THE UTILITY.
5. NO LIGHTING IS PROPOSED AT THIS TIME. FOR THE PROPOSED SOLAR FACILITY, NATIONAL GRID MAY REQUIRE LIGHTING AT THE SUBSTATION.
6. PROPOSED SIGNAGE IS LIMITED TO SECURITY SIGNS AND VOLTAGE WARNING SIGNS (OR SIMILAR) INSTALLED ON THE FACILITY PERIMETER FENCING.
7. PROJECT WORK WILL BE UNDERTAKEN IN MULTIPLE PHASES AND SUB–PHASES AND MAY BE BUILT OUT OF SEQUENCE.
8. NO PRIME AGRICULTURAL SOILS ARE TO BE REMOVED DURING CONSTRUCTION AND INSTALLATION OF THE SYSTEM.
9. THE SOLAR ARRAY SHALL BE ENCLOSED BY A 6' HIGH PERIMETER FENCE WITH A 12' WIDE GATE WITH KNOX BOX.
10. GROUND MOUNTED SOLAR INSTALLATIONS SHALL NOT EXCEED 15 FEET IN HEIGHT
11. (ZONING ORDINANCE 5.7.5.j). TYPICALLY, HEIGHT OF PROPOSED SOLAR PANEL INSTALLATION RANGES FROM 3 FEET TO 12 FEET.
12. THE DRAINAGE SYSTEM WILL MEET THE NORTH SMITHFIELD SUBDIVISION AND LAND DEVELOPMENT REGULATIONS WITH THE USE OF SWALES, DRAINAGE BASINS, AND INFILTRATION TRENCHES. THE STORMWATER MANAGEMENT SYSTEM WILL MEET THE RIDEM BEST MANAGEMENT PRACTICES.
13. A DETAILED LANDSCAPE PLAN WILL BE SUBMITTED AT THE PRELIMINARY STAGE.

Dimensional Regulations:

CURRENT ZONING:	RA (RURAL AGRICULTURE)
MINIMUM LOT AREA:	65,000 SF
MINIMUM FRONTAGE AND LOT WIDTH:	200'
MINIMUM FRONT YARD:	~~40'~~ 100' *
MINIMUM SIDE YARD:	~~25'~~ 100' *
MINIMUM REAR YARD:	~~40'~~ 100' *
MAXIMUM STRUCTURE HEIGHT:	35'
MAXIMUM LOT COVERAGE:	~~25%~~ 30% or 6 ACRES, WHICHEVER IS LESS **

* – ZONING ORDINANCE SECTION 5.7.5 (d) SETBACKS:
(1) CONSISTENT WITH SECTION 5.7.5 (g) VISUAL BUFFER AND SETBACK, ALL SOLAR ARRAYS MUST BE SET BACK A MINIMUM OF 100' FROM PROPERTY LINES.

** – VARIANCE SOUGHT FOR ZONING ORDINANCE SECTION 5.7.5 (c).

Proposed Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON PLANS

- LIMIT OF DISTURBANCE – NO EROSION CONTROL
- FILTREXX SEDIMENT CONTROL, SILT FENCE (RIDOT STD 9.2.0) OR APPROVED EQUAL AT LIMIT OF DISTURBANCE
- 6' HIGH PERIMETER FENCE
- SOLAR ARRAY
- 20' WIDE GRAVEL ACCESS ROAD

Viewshed Analysis:

THE PROPOSED SOLAR DEVELOPMENT WILL BE SCREENED FROM ADJACENT STREETS AND NEIGHBORING PARCELS WITH AN EXISTING VEGETATED BUFFER AND/OR LANDSCAPE SCREENING ALONG WITH EXISTING UNDISTURBED TREELINE.

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Boston • Providence • Newport

DAVID A. RUSSO
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REGISTERED PROFESSIONAL ENGINEER
CIVIL

No.	Date	Description	By:
2	12-05-2019	Major Plan pre-Special Use Submission	L.L.S.
1	11-25-2019	National Grid Exhibit Plan	N.D.K.
0	09-18-2019	Pre-Application Submission	J.A.R.

Drawn By: J.A.R. Design By: D.A.R.

Site Layout Plan
Douglas Pike Solar

AP 10 , Lot 218
North Smithfield, Rhode Island

Applicant
Anthony Delvicario
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tel 401 821 8978

SHEET 4 OF 5

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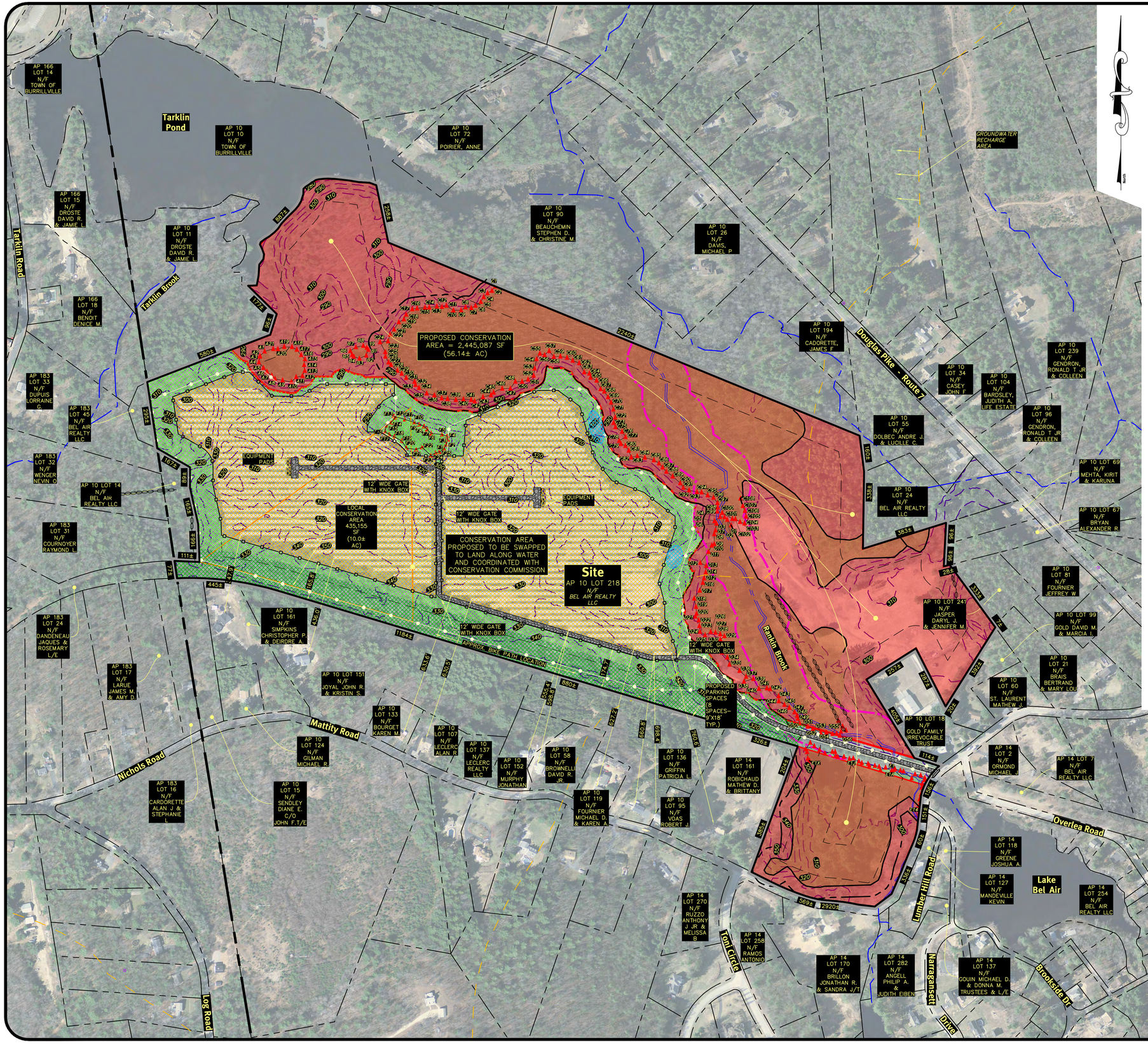

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4. ALL ELECTRICAL CONNECTION AND DISTRIBUTION LINES WITHIN THE FACILITY SHALL BE UNDERGROUND. ELECTRICAL EQUIPMENT BETWEEN THE FACILITY AND THE UTILITY CONNECTION MAY BE ABOVE GROUND IF REQUIRED BY THE UTILITY.
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- 6' HIGH PERIMETER FENCE
- SOLAR ARRAY
- 20' WIDE GRAVEL ACCESS ROAD
- Pollinator Meadow
- Unmanaged Brush
- Conservation Seed Mix (Concept Drainage Areas)
- Green Buffer

Notes:

1. WILDFLOWER/POLLINATOR MEADOW SEED SHALL BE SHOWY NORTHEAST NATIVE WILDFLOWER & GRASS MIX–ERNMX–153 AVAILABLE AT ERNST CONSERVATION SEEDS IN MEADVILLE, PA (WWW.ERNSTSEED.COM) OR EQUAL.
2. UNMANAGED AREAS BRUSH AREAS SHALL BE ALLOWED TO REVEGETATE NATURALLY.

Viewshed Analysis:

THE PROPOSED SOLAR DEVELOPMENT WILL BE SCREENED FROM ADJACENT STREETS AND NEIGHBORING PARCELS WITH AN EXISTING VEGETATED BUFFER AND/OR LANDSCAPE SCREENING ALONG WITH EXISTING UNDISTURBED TREELINE.

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No.	Date	Description	By:
3	12-09-2019	Master Plan of Special Use Submission	L.L.S.
2	11-25-2019	Natural Gas Exhibit Plan	N.J.K.
1	09-16-2019	Pre-Application Submission	J.A.R.

Drawn By: J.A.R. Design By: D.A.R.

Site Plan With Conserv. Areas
Douglas Pike Solar
AP 10, Lot 218
North Smithfield, Rhode Island

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SHEET 5 OF 5

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