Application to Alter a Freshwater Wetland

Revolution Wind Project

June 30, 2021

Submitted to

Rhode Island Coastal Resources Management Council

Submitted by

Revolution Wind | Powered by Ørsted & Eversource

and

The Narragansett Electric Company

Prepared by

vhb

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COASTAL RESOURCES MANAGEMENT COUNCIL
APPLICATION TO ALTER A FRESHWATER WETLAND

Revolution Wind Interconnection Facility

North Kingstown, Rhode Island

PREPARED FOR

Revolution Wind | Powered by Ørsted & Eversource

Revolution Wind, LLC
56 Exchange Terrace, Suite 300
Providence, RI 02903

The Narragansett Electric Company
280 Melrose Street
Providence, RI 02907

PREPARED BY

vhb

1 Cedar Street, Suite 400
Providence, RI 02903

JUNE 2021

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Assent Application Form

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State of Rhode Island and Providence Plantations
Coastal Resources Management Council
Oliver H. Stedman Government Center
4808 Tower Hill Road, Suite 3
Wakefield, RI 02879-1900

(401) 783-3370
Fax (401) 783-2069

FRESHWATER WETLANDS IN THE VICINITY OF THE COAST
APPLICATION PACKAGE

Purpose of Application (Part A)

☐	Request to Determine Presence of Wetland Only	§ 2.8(B)
☐	Request to Verify Wetland Edge	§ 2.8(C)
☐	Request for Regulatory Applicability	§ 2.8(D)
☐	Request for Preliminary Determination	§ 2.9
☒	Application to Alter	§ 2.10
☐	Application for Permit Extension – Part D required	§ 2.11(B)
☐	Application for Permit Modification	§ 2.11(C)
☐	Application for Permit Transfer – Part E required	§ 2.11(D)

Applicant Information (Part B)

File No. (CRMC use only):

Owner's Name: Kenneth Bowes, Vice President ISO, Siting and Compliance, Eversource
Michael Ryan, Vice President, The Narragansett Electric Company

Contact Number:
Michael Ryan: 401-784-7515
Ken Bowes: 860-883-5830

Mailing Address: Kenneth Bowes: 107 Seldon Street, Berlin, CT 06307
Michael Ryan: 280 Melrose Street, Providence, RI 02907

City/Town: State: Zip Code:

Location of Property Subject to this Application:

North Kingstown, RI	Camp Avenue	109 Circuit Drive
City/Town	Street Abutting Site	Street Address (if applicable)

Direction to site from abutting street: ☒ North ☐ South ☐ East ☐ West
Nearest intersection & distance from site: Camp Ave & Windward Walk, 0.17 mi east
Nearest Utility Pole & number: 48-8

Plat: 179
Lot(s): 005

General Information (Part C)

Any previous applications for this site? ☐No ☑Yes Application No.: 1985-10-013, 1991-03-065, 1996-03-034, 2012-03-075, 2021-02-031

Any previous Enforcement action? ☑No ☐Yes File No.(s): _____

Amount of Wetland Area to be altered (§ 2.10(D)): Square Feet: 16,100(0.37 ac)

Linear Feet of Watercourse: 145 linear ft.

Amount of Fee Submitted for Application (§ 2.7(K)): $ 6,000.00

For Permit Extension (Part D)

Name of Original/Subsequent Permitee: _____

Application/Permit No.: _____ **Expiration Date:** _____

Number of Previous Extensions: _____

Statement of Applicant: *I hereby state that I am requesting extension of the original or subsequently modified permitted project under Application/Permit No.:* _____. *I fully understand the permit limitations and will comply with any and all conditions of the permit.*

Applicant's Name: _____

Applicant's Signature: _____

For Change in Owner During Application Processing Only (Part E)

Application No.: _____

Name of Original Applicant: _____

NOTE: A certified copy of the deed of transfer must be enclosed for Applications to Alter only.

Certification of Professional (if applicable) (Part F)

Note: Any professional (engineer, biologist, landscape architect etc.) who participated in the submission and/or preparation of this Application and supporting documentation must sign below.

I hereby certify that I have been authorized by the applicant to prepare documentation to be submitted in support of this application; that such documentation is in accordance with the CRMC Rules and Regulations for the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast; and that such documentation is true, accurate and complete to the best of my knowledge.

Name of Professional: Susan E. Moberg, PWS Title: Principal

Address: 1 Cedar Street, Suite 400, Providence, RI 02903 Company: VHB

Signature: Susan Moberg Date: June 30, 2021

Certification of Applicant (Part G)

I hereby certify that I have requested and authorized the investigation, compilation, and submission of all the information, in whatever form, contained in this Application; that I have personally examined and am familiar with the information submitted herein; and that such information is true, accurate and complete to the best of my knowledge.

See § 2.7(B) Regarding Signatories to Applications

Applicant's Signature: Michael Ryan Kenneth Bowes

Applicant Name: Kenneth Bowes and Michael Ryan Date: 6/17/2021

Building Official Form

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TO: **Coastal Resources Management Council**
4808 Tower Hill Road Suite 3
Wakefield, RI 02879
Phone: (401) 783-3370

FROM: Building Official DATE: 6.22.21

SUBJ: Application of: Revolution Wind Interconnection Facility (Application to Alter Freshwater Wetlands)

Location: Property is located off of Camp Avenue in North Kingstown, RI within the same parcel as the existing Davisville Substation

Address: 109 Circuit Drive, North Kingstown, RI 02852 Plat No. 179 Lot No. 005

To Construct: Revolution Wind (a 50/50 joint venture between Orsted North America Inc. ("Orsted") and Eversource Investment LLC ("Eversource") and Narragansett Electric Company d/b/a National Grid ("TNEC") propose to construct an interconnection facility (ICF) and associated overhead interconnection circuits that will convey electricity from the proposed offshore Revolution Wind Farm to the regional electrical transmission grid via the existing Davisville Substation.

I hereby certify that I have reviewed _____ foundation plan(s).
_____ plan(s) for entire structure
_____ site plans
Titled: Revolution Wind Proposed Interconnection Facility; 13 sheets; prepared by Vanasse Hangen Brustlin, Inc.; dated May 27, 2021

Date of Plan (last revision): May 27, 2021

___ and find that the issuance of a local building permit is not required as in accordance with Section _____ of the Rhode Island State Building Code.

✓ and find that the issuance of a local building permit is required. I hereby certify that this permit shall be issued once the applicant demonstrates that the proposed construction/activity fully conforms to the applicable requirements of the RISBC.

___ and find that a Septic System Suitability Determination (SSD) must be obtained from the RI Dept. of Environmental Management.

___ and find that a Septic System Suitability Determination (SSD) need not be obtained from the RI Dept. of Environmental Management.

___ and find that said plans conform with all elements of the zoning ordinance, and that if said plans require zoning board approval, that the applicant has secured such approval and that the requisite appeal period has passed with no appeal filed or appeal is final. The Zoning Board approval shall expire on _____.

Building Official's Signature 6.22.21 Date

___ and find that said plans conform with all elements of the zoning ordinance, and that if said plans require zoning board approval, that the applicant has secured such approval and that the requisite appeal period has passed with no appeal filed or appeal is final.

Zoning Officer's Signature Date

rev. 5/11/2001

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Coastal Hazard Assessment Form

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CRMC File Number:

RI CRMC COASTAL HAZARD APPLICATION WORKSHEET

APPLICANT NAME: Revolution Wind, LLC and The Narragansett Electric Company

PROJECT SITE ADDRESS: 109 Circuit Drive, North Kingstown

STEP 1. PROJECT DESIGN LIFE

☐ A. For properties in a FEMA-designated **A** or **X** Zone, provide the first floor elevation (FFE) of the proposed structure referenced to NAVD88, **OR**
For properties in a FEMA-designated **V** or **Coastal A** Zone, please provide the elevation of the lowest horizontal structural member (LHSM) referenced to NAVD88.

FFE ____ **ft**

OR

LHSM elevation 20.3 **ft**

☐ B. How long do you want your project to last? Identify the expected design life for the project (CRMC recommends a **minimum of 30 years**)

Design Life: 35 **yrs**

☐ C. Add the number of years you identified in 1B to the current year. (For example, if you are completing this form in the year 2020, and you want your project to last 30 years, your design life year will be 2050.)

Design Life Year: 2058

☐ D. **CHECK** beneath the sea level rise (SLR) projection that matches or comes closest to project design life year.

Year	2020	2030	2040	2050	2060	2070	2080	2090	2100
SLR	1.05	1.67	2.33	3.25	4.20	5.35	6.69	8.14	9.61
	○	○	○	○	◉	○	○	○	○

Source: Sea Level Rise (SLR) Projections (Feb. 2017). NOAA High Curve, 83% Confidence Interval. Newport, RI Tide Gauge. All values are expressed in feet relative to NAVD88. http://www.corpsclimate.us/ccaceslcurves.cfm

NOTE: The STORMTOOLS sea level rise scenarios depict how high the water will be above the average height of the daily high tide over the 19-year period between 1983 and 2001. There have been between 4 and 5 inches of sea level rise in Rhode Island since then. The higher modeled water level accounts for the uncertainties in ice sheet and ocean dynamics.

STEP 2. SITE ASSESSMENT

☐ A. Open *RICRMC Coastal Hazard Mapping Tool*. Following the tutorial along the left side of the screen, enter the project site address and turn on the sea level layer closest to the number you circled in 1D.

☐ B. **ENTER** the STORMTOOLS SLR map layer closest to the SLR value you checked in Step 1D above. If the value falls between the available STORMTOOLS SLR map layers, round up to the closest of these sea level rise (SLR) numbers: 1ft, 2ft, 3ft, 5ft, 7ft, 10ft, or 12ft

5 **ft**

☐ C. Does the STORMTOOLS SLR map layer you circled above expose your project site to future tidal inundation? **CHECK YES or NO**

○ **YES**
◉ **NO**

☐ D. List any **roads or access routes** that are potentially inundated from SLR. To do this, ZOOM OUT from your project location, change BASEMAP on the viewer to "street view" – see Step 2A.

none

*****Please be advised that CRMC staff may also review the implications of sea level rise in combination with nuisance storm flooding and discuss these potential project concerns with the applicant. Nuisance flooding impacts may be viewed in STORMTOOLS here.***

STEP 3. STORMTOOLS DESIGN ELEVATION (SDE)

☐ A. Based on the project location, CHECK the SDE Viewer for your site, and open the corresponding tab in Mapping Tool:

○ **South Coast SDE Viewer: Napatree to Pt. Judith** ◉ **Narragansett Bay SDE Viewer: North and East of Pt. Judith**

☐ B. Follow the tutorial included along the left panels of the viewer to enter the address of your project site. Select the tab across the top that corresponds to the sea level rise projection you identified in STEP 1

☐ C. Click on the map at project site to identify **STORMTOOLS Design Elevation (SDE)** from the pop up box. **Enter the SDE value:** 19.0 **ft**

RI CRMC COASTAL HAZARD APPLICATION WORKSHEET

STEP 4. SHORELINE CHANGE

■ A. Using the *CRMC Shoreline Change maps*, indicate the transect number closest to your site, and erosion rate listed for that transect. **Transect Number:** N/A

Erosion Rate: **ft/year**

■ B. **CHECK** below the Projected Erosion Rate that corresponds to the design life you identified above.

Year	2050	2060	2070	2080	2090	2100
Projected Future Erosion Multiplier	1.34	1.45	1.57	1.70	1.84	2.00
	○	◉	○	○	○	○

Source: Projected Shoreline Change Rate multipliers. (Oakley et al., 2016)

■ C. **COMPLETE EROSION SETBACK CALCULATION:**

Historic shoreline change rate, STEP 4A		Design Life, STEP 1C		Projected Future Erosion Multiplier, STEP 4B		Erosion Setback (ft) 4A x 1C x 4B
	X		X		=	

***NOTE:** Setbacks are required per the CRMC Red Book, Section 1.1.9. **A minimum setback of 50-feet is required,** but a greater setback may be necessary and/or desirable based on this analysis.*

STEP 5. CERI & OTHER SITE CONSIDERATIONS

■ A. If you live in a community where a Coastal Environmental Risk Index (CERI) has been completed (Barrington, Bristol, Charlestown, Narragansett, South Kingstown, Warren, Warwick, Westerly), CHECK the level of projected damage to your location, as indicated on the map that corresponds to the design life identified in STEP 1.

CERI Level:	Moderate	High	Severe	Extreme	Inundated by 2100	Not applicable
	○	○	○	○	○	◉

■ B. Consider and discuss with your design consultant other forces or factors that might impact the development, such as coastal habitats, shoreline features, public access, wastewater, storm water, depth to water table/groundwater dynamics, saltwater intrusion, or other issues not listed above. In addition, pressure from rising sea levels will result in rising subsurface groundwater levels ultimately effecting wells and septic systems.

STEP 6. LARGE PROJECTS

This step is for Large Projects and Subdivisions only, six (6) or more units, as defined by the CRMC Red Book Section 1.1.6.I(1)(f). This step may be skipped for other projects.

☐ A. Use the Sea Level Affecting Marshes Model (SLAMM) Maps to assess potential impacts to large projects and subdivisions from salt marsh migration resulting from projected sea level rise. CRMC SLAMM maps can be accessed here. ○ **YES** ○ **NO**

The CRMC recommends using the 5-foot SLR projection within SLAMM to assess future potential project impacts on migrating marshes. Does the SLAMM map that corresponds to the design life you identified in STEP 1 expose your project site to future salt marsh migration? **CHECK YES or NO**

STEP 7: DESIGN EVALUATION

☐ A. Using Chapter 7 of the RI Shoreline Change SAMP as a guide, investigate mitigation options for the exposure identified above and include that in the final application.

This fully completed Coastal Hazard Application Guidance worksheet must accompany the application. If you are a design or engineering professional, please print and sign here that you have discussed the findings of this worksheet with the Owner.

DESIGN/ENGINEER SIGNATURE: Susan Mahoney **DATE:** 6/28/2021

OWNER'S SIGNATURE: Michael Ryan **DATE:** 6/17/2021

Kenneth Bowes 06/28/2021

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Executive Summary

Revolution Wind, LLC (formerly known as DWW Rev I, LLC) ("Revolution Wind"), which is a 50|50 joint venture partnership between Orsted North America Inc. ("Orsted") and Eversource Investment LLC ("Eversource"), proposes to construct the Revolution Wind Project ("Project"), an offshore wind farm that will deliver approximately 704 megawatts ("MW") of renewable energy to the States of Rhode Island and Connecticut. The Project will provide clean, reliable offshore wind energy that will significantly increase the renewable energy pool available to Rhode Island and Connecticut and reduce carbon emissions across the region. The Project will displace electricity generated by fossil fuel-powered plants, improve energy system reliability and security, and enhance economic competitiveness by attracting new investments and job growth opportunities.

Revolution Wind developed the Project in direct response to the ambitious clean energy goals of the State of Rhode Island. The Project significantly advances Rhode Island's renewable energy directives set forth in the State energy plan—Energy 2035, which calls for Rhode Island to "increase sector fuel diversity, produce net economic benefits, and reduce greenhouse gas emissions by 45 percent by the year 2035" in part "through support for state and federal offshore wind projects." The Project plays an integral role in advancing Rhode Island's goal of procuring 1,000 MW of renewable energy by 2020 and a 100 percent Renewable Energy Future by 2030, as set forth in former Governor Gina Raimondo's Executive Order No. 20-01. Moreover, the Project helps to meet the State of Rhode Island's needs under the Resilient Rhode Island Act to reduce greenhouse gas emissions to eighty percent (80%) below 1990 levels by the year 2050 (Executive Climate Change Coordinating Council [EC4], 2016).

Rhode Island and Connecticut have awarded Revolution Wind five Power Purchase Agreements ("PPAs") to-date, totaling approximately 704 MW of generation capacity. These PPAs help meet the region's expressed need and demand for additional renewable energy resources. The Project will fulfill Revolution Wind's obligations to both Connecticut and Rhode Island in accordance with the PPAs and provide substantial environmental and economic benefits.

The Project includes an offshore wind farm in federal waters on the Outer Continental Shelf ("OCS") and within the designated Bureau of Ocean Energy Management ("BOEM") Renewable Energy Lease Area OCS-A 0486 ("Lease Area"), which at its closest edge, is

approximately 15 miles southeast of the Rhode Island coast. The boundaries of this Lease Area were established by BOEM utilizing the diverse and detailed research data sets commissioned for the preparation of the National Oceanic and Atmospheric Administration ("NOAA") Office of Coastal Management federally-approved Coastal Resources Management Council ("CRMC") Ocean Special Area Management Plan ("Ocean SAMP"). The Project's two subsea export cables (referred to as the Revolution Wind Export Cable ("RWEC")) travel north from the Lease Area before trending in a northwest direction after entering Rhode Island State Waters. The RWEC travels north through the West Passage of Narragansett Bay to a landfall location at Quonset Point in the Town of North Kingstown. The Project's point of interconnection is The Narragansett Electric Company's ("TNEC") Davisville Substation, also in North Kingstown.

Revolution Wind and TNEC are submitting this Application to Alter Freshwater Wetlands ("Application") in compliance with the Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast (650-RICR-20-00-2) ("Freshwater Wetland Rules"). This Application addresses the Interconnection Facility ("ICF") and TNEC right-of-way ("ROW") portion of the Project (collectively referred to as the "ICF Project"). Revolution Wind and TNEC propose to construct and operate the ICF and overhead infrastructure within the TNEC ROW to support the interconnection of the Project to the regional electrical transmission grid. The ICF and TNEC ROW are located on property owned by TNEC and, as co-applicants, Revolution Wind is responsible for the design, permitting and construction of these facilities while TNEC will be the owner and operator. Based on consultation with CRMC, Revolution Wind filed other Project components within CRMC's jurisdiction, including the portion of the RWEC in Rhode Island State Waters, Landfall Work Area, Onshore Transmission Cable, Onshore Substation, and Interconnection ROW, under a separate Category B Assent Application with Revolution Wind as the sole applicant (filed with CRMC on June 30, 2021). This application approach was described in the Project's Preliminary Determination Application (File No. 2021-02-031) and CRMC's written response dated April 20, 2021 confirmed that this Application and the Category B Assent Application will be heard together before the Council (**Appendix A CRMC Preliminary Determination Report of Findings**).

Revolution Wind and TNEC believe the ICF Project complies with the letter and spirit of the policies and regulations contained within the Freshwater Wetland Rules and offers a meaningful opportunity to reduce future carbon emissions in the Rhode Island region. Revolution Wind and TNEC respectfully request that the CRMC approve this Application to Alter Freshwater Wetlands.

1 Introduction

1.1 Project Summary

Revolution Wind LLC (formerly known as DWW Rev I, LLC) ("Revolution Wind"), a 50|50 joint venture partnership between Orsted North America Inc. ("Orsted") and Eversource Investment LLC ("Eversource"), proposes to construct the Revolution Wind Project ("Project"). The Project involves installation of an offshore wind farm and associated transmission facilities that will deliver approximately 704 MW of clean wind power to the States of Rhode Island and Connecticut. This Project will provide clean, reliable offshore wind energy that will significantly increase the renewable energy delivered to Rhode Island and Connecticut, reducing carbon emissions across the region. The Project will displace electricity generated by fossil fuel-powered plants, improve energy system reliability and security, and enhance economic competitiveness by reducing energy costs to attract new investments and job growth opportunities.

The State of Rhode Island has set ambitious clean energy goals. Consistent with the State Guide Plan Energy 2035, former Governor Gina Raimondo proposed to increase the State's clean energy portfolio ten-fold to 1,000 MW by 2020, in large part through support for state and federal offshore wind projects. Building on this foundation, the Governor issued an Executive Order in January 2020 committing Rhode Island to be powered by 100 percent renewable electricity by 2030. Executive Order No. 20-01, Advancing a 100% Renewable Energy Future for Rhode Island by 2030 (Jan. 17, 2020). These goals have made Rhode Island a national leader with respect to climate change resiliency. The Project will play an integral role in meeting these aggressive targets and was developed in direct response to Rhode Island's and Connecticut's needs to increase the renewable energy load serving each State. Beyond mere consistency with State policies, the Project will facilitate the plans of both Rhode Island and Connecticut to meet their targets for renewable energy, economic growth in the renewable energy sector, and greenhouse gas reductions.

Project components include wind turbine generators ("WTGs"), a network of inter-array cable ("IAC"), offshore substations ("OSSs"), and an OSS-Link cable in federal waters on the Outer Continental Shelf ("OCS") and within the designated Bureau of Ocean Energy Management ("BOEM") Renewable Energy Lease Area OCS-A 0486 ("Lease Area"), which at its closest edge,

is approximately 15 miles southeast of the Rhode Island coast. The boundaries of this Lease Area were established by BOEM utilizing the diverse and detailed research data sets commissioned for the preparation of the NOAA Office of Coastal Management federally approved Coastal Resources Management Council ("CRMC") Ocean Special Area Management Plan ("Ocean SAMP"). The Project's subsea export cable (referred to as the Revolution Wind Export Cable ("RWEC"; "RWEC-RI") for the portion in Rhode Island State Waters) travels north from the Lease Area before trending in a northwest direction after entering Rhode Island State Waters. The RWEC-RI travels north through the West Passage of Narragansett Bay to a landfall location at Quonset Point in the Town of North Kingstown. The Project's point of interconnection ("POI") is The Narragansett Electric Company's ("TNEC") existing Davisville Substation, also located in North Kingstown (see **Appendix B Proof of Ownership**). To facilitate interconnection of the Project to the Davisville Substation, a new onshore substation ("OnSS") and interconnection facility ("ICF"), along with associated interconnection circuits, will be constructed as part of the overall Project. **Figure 1** and **Figure 2** in **Appendix C Site Figures** depict locations of the Onshore Facilities and the Interconnection Facility in particular.

This Application to Alter Freshwater Wetlands ("Application") addresses the ICF and associated overhead interconnection circuits within the TNEC right-of-way ("ROW") connecting to the Davisville Substation (collectively referred to herein as the "ICF Project"). **Figure 2** in **Appendix C** depicts the Project location outlined in orange. Revolution Wind and TNEC propose to construct and operate the ICF Project to support the interconnection of the Project to the regional electrical transmission grid. The ICF Project is located on property owned by TNEC and, as co-applicants, Revolution Wind is responsible for the design, permitting and construction of these facilities while TNEC will be the owner and operator. Based on consultation with CRMC, Revolution Wind filed other Project components within the CRMC's jurisdiction, including the portion of the RWEC-RI, Landfall Work Area, Onshore Transmission Cable, OnSS, and Interconnection ROW under a separate Category B Assent Application with Revolution Wind as the sole applicant (filed with CRMC on June 30, 2021). This application approach was described in the Project's Preliminary Determination Application (File No. 2021-02-031) and CRMC's written response dated April 20, 2021 confirmed that this Application and the Category B Assent application will be heard together (**Appendix A**). The Category B Assent application covering the RWEC-RI, Landfall Work Area, Onshore Transmission Cable, OnSS and Interconnection ROW was filed with CRMC on June 30, 2021.

The ICF Project includes the construction of the ICF and overhead transmission circuits within the new TNEC ROW located principally within North Kingstown Assessor's Plat (AP) 179 Lot 005, which includes the existing Davisville Substation, and small segments of the new TNEC ROW will extend into adjacent AP 179 Lot 020 and AP 179 Lot 030 (the "Project Area"). The ICF Project includes work within regulated freshwater wetlands, including disturbance of Special Aquatic Site ("SAS"), Marsh, Area of Land within 50-feet, and Area Subject to Stormwater Flowage ("ASSF"). This proposed work is considered a regulated activity under the Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast (650-RICR-20-00-2) ("Freshwater Wetland Rules") because it will include tree clearing and construction within regulated freshwater wetland

resources (Freshwater Wetland Rules § 2.5). This narrative, supporting documents, and the accompanying plan set serve as the application package. The following sections describe the existing conditions, proposed ICF Project activities, alternatives analysis, and CRMC regulatory requirements associated with the components of the ICF Project that fall under CRMC jurisdiction.

Resumes of the qualified professionals that are responsible for the preparation of this application and some of its contents are included in **Appendix D Resumes.** The following professionals have contributed to this application:

VHB: Application preparation, field investigations and assessments

- Susan Moberg, PWS
- Jeffrey Peterson, PWS
- Chelsea Glinka, ENV SP
- Carissa Mills, CFM

LEC Environmental Consultants, Inc.: Wetland delineation

- Andrew Johnson
- Claire Hoogeboom

POWER Engineers: Rare plant assessment

- Patrick Fellion

1.2 Purpose and Need

The ICF Project is integral to the larger Revolution Wind Project because it is needed to support the connection of the power generated from the offshore Revolution Wind Farm to the regional Independent System Operator of New England ("ISO-NE") Transmission System via POI at the Davisville Substation. The System Impact Study that was developed in accordance with the ISO-NE Interconnection Process identified that the Davisville Substation must be expanded into a six (6) breaker ring bus configuration to enable connection between the Project OnSS and the ISO-NE Transmission System. The ICF, therefore, is technically an expansion of the existing Davisville Substation, but due to the system configuration within the existing Davisville Substation yard and the development limitations related to the presence of wetland resources to the west, northwest, and east of the existing substation yard, the ICF has been designed as a Stand-Alone Network Upgrade ("SANU") and will be built without affecting day to day operations of the ISO-NE Transmission System.

1.3 Application to Alter Requirements

The CRMC has jurisdiction over certain inland freshwater wetlands pursuant to the Freshwater Wetland Rules (650-RICR-20-00-2) which includes wetlands within the ICF Site. Relevant sections of 650-RICR-20-00-2 are addressed for work activities related to construction and operation of the ICF.

- Sections 2 and 3 of this narrative address §§ 2.10(B)(1),(2), and (3) regarding the Project Scope, General Application Provisions, and the Written Evaluation of the proposed Project in the context of the Freshwater Wetland Rules.
- Section 4 of this narrative addresses § 2.10(B)(5) regarding the evaluation of wetland functions, values, and impacts.
- Section 5 of this narrative addresses § 2.10(B)(4) Avoidance, Minimization, and Mitigation Requirements and §2.10(E) Review Criteria.

1.4 Other Project Approvals and Permits

In addition to this Application for the ICF Project, the Project requires permits and approvals from other state and federal regulatory agencies. Table 1-1 provides a summary of the other required approvals and permits.

Table 1-1 Summary of Other Project Permits, Approvals, and Consultations

Regulatory Authority	Permit, Approval, or Consultation	Date of Approval or Anticipated Approval
Federal Permits, Approvals, and Consultations		
BOEM	Commercial Lease of Submerged Lands for Renewable Energy Development on the OCS, in accordance with the Outer Continental Shelf Lands Act ("OCSLA") (43 U.S.C. §§ 1331 et seq.); Section 388 of the Energy Policy Act of 2005, BOEM implementing regulations (30 CFR § 585)	OCS-A 0486 Lease effective on October 1, 2013
	Site Assessment Plan ("SAP") approval pursuant to 30 CFR §§ 585.610-618	Approved October 12, 2017
	Construction and Operations Plan ("COP") approval pursuant to 30 CFR §§ 585.621-627	Anticipated between Q1 and Q3 2023
	Facility Design Report ("FDR") approval pursuant to 30 CFR 585.701 (33 U.S.C. § 1221)	To be reviewed by a Certified Verification Agent ("CVA") and submitted to BOEM after COP approval
	Fabrication and Installation Report ("FIR") approval pursuant to 30 CFR § 585.700	To be reviewed by a CVA and submitted to BOEM after COP approval
	Consultation pursuant to Section 7 of the Endangered Species Act ("ESA") (16 U.S.C. §§ 1531 et seq.), with National Oceanic and Atmospheric Administration ("NOAA") National Marine Fisheries Service ("NMFS") and USFWS	Anticipated between Q1 and Q3 2023

Regulatory Authority	Permit, Approval, or Consultation	Date of Approval or Anticipated Approval
	Essential Fish Habitat ("EFH") Consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act ("MSFCMA") (16 U.S.C. §§1801 et seq.)	Anticipated between Q1 and Q3 2023
	Consultation pursuant to the Migratory Bird Treaty Act ("MBTA") (16 U.S.C. §§ 703 et seq.) and Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668 et seq.)	Anticipated between Q1 and Q3 2023
	Review pursuant to the National Environmental Policy Act ("NEPA") (42 U.S.C. §§4321 et seq.), BOEM regulations (30 CFR §§ 585.646,585. 648(b)), and other relevant regulations in consultation with the United States Army Corps of Engineers ("USACE"), Department of Defense ("DoD"), Advisory Council on Historic Preservation, and other cooperating regulatory agencies	Anticipated between Q1 and Q3 2023
United States Army Corps of Engineers ("USACE") New England District	Section 10 Individual Permit pursuant to the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. §§ 401 *et seq.*)	Anticipated between Q1 and Q3 2023
	Section 404 Individual Permit pursuant to the Clean Water Act ("CWA") (33 U.S.C. § 1344)	Anticipated between Q1 and Q3 2023
United States Coast Guard ("USCG"), District 1	Private Aids to Navigation ("PATON") Permit pursuant to 33 CFR § 66 (49 U.S.C. § 44718)	Issued four weeks prior to offshore construction
	Local Notice to Mariners ("LNM")	Issued two weeks prior to vessel mobilization for offshore construction
United States Environmental Protection Agency ("EPA") New England (Region 1)	OCS Air Quality Permit pursuant to 40 CFR § 55 (Clean Air Act., 42 U.S.C. § 7627)	Anticipated between Q1 and Q3 2023
Federal Aviation Administration ("FAA")	Determination of No Hazard to Air Navigation pursuant to 14 CFR §77	Anticipated between Q3 and Q4 2022
NOAA NMFS	Request Incidental Take Authorization pursuant to the Marine Mammal Protection Act ("MMPA") (16 U.S.C. §§ 1361 et seq.)	Anticipated between Q1 and Q3 2023
	Request for Incidental Take Statement ("ITS") pursuant to Section 7 of the ESA of 1973 (16 U.S.C. §§ 1531 *et seq.*)	
State Permits, Approvals, and Consultation		
Rhode Island Energy Facility Siting Board ("RI EFSB")	License pursuant to the Energy Facility Siting Act (Rhode Island General Laws [RIGL] §§ 42-98-1 *et seq.*) and certain associated advisory opinions	Anticipated between Q4 2021 and Q1 2022

Regulatory Authority	Permit, Approval, or Consultation	Date of Approval or Anticipated Approval
CRMC	Federal Consistency Determination pursuant to Section 307 of the Coastal Zone Management Act ("CZMA") (16 U.S.C. § 1456) and § 11.10 of RI OSAMP (650-RICR-20-05-2.1 *et seq.*)	Anticipated between Q1 and Q3 2023
	Category B Assent and Submerged Lands License pursuant to RI CRMC Management Procedures (the "Red Book") (650-RICR-20-00-1 *et seq.*; consultation as required with the Rhode Island Department of Environmental Management ("RIDEM") regarding the Rhode Island Endangered Species of Animals and Plants Act (Rhode Island ESA) (RIGL § 20-37-3); Rhode Island Bureau of Natural Resources, Division of Fish and Wildlife; and Rhode Island Historical Preservation and Heritage Commission ("RIHPHC") (RIGL 42-45-1 *et seq.*)	Anticipated between Q4 2022 and Q2 2023
RIDEM Office of Water Resources	Water Quality Certification ("WQC") pursuant to RIGL § 46-12-3 and 250-RICR-150-05-1.1 *et seq.* (federal authority delegated to the State pursuant the CWA, 33 U.S.C. §§ 1341-1342). To be filed concurrently with Rhode Island Pollutant Discharge Elimination System ("RIPDES") Authorization (below).	Anticipated between Q1 and Q3 2022
	Authorization under the RIPDES General Permit for Stormwater Discharge Associated with Construction Activity (Construction General Permit or CGP). To be field concurrently with WQC Application.	Anticipated between Q1 and Q3 2022
RIDEM and CRMC	Dredge permit pursuant to the Rules and Regulations for Dredging and the Management of Dredged Materials (250-RICR-150-05-2.1 *et seq.*).	Anticipated between Q1 and Q3 2022

2

Existing Conditions

2.1 Site Location and Environmental Setting

The ICF Project will be located within the property that includes the existing TNEC Davisville Substation which has frontage on Camp Avenue within the Quonset Business Park in North Kingstown, Rhode Island. The existing Davisville Substation operates at 115-kV and connects to the regional transmission grid via two 115-kV transmission tap lines. The existing substation is located within North Kingstown AP 179 Lot 005 (referred to as the Davisville Substation parcel and owned by TNEC) and small segments of the new TNEC ROW will extend into adjacent AP 179 Lot 020 and 179 Lot 030 (collectively referred to as the Project Area). The Project Area is characterized by significant levels of historic human land use. The Davisville Substation parcel is partially developed with the existing Davisville Substation and transmission line ROW in the northeast corner of the parcel while the remainder of the parcel is undeveloped and includes Marsh, Swamp, SAS, ASSF, coastal floodplain, Area of Land within 50-feet of Marsh and Swamp and forested upland (see **Appendix E Site Photos**). The portions of AP 179 Lot 020 and AP 179 Lot 030 that are included within the Project Area are undeveloped and include forested upland and existing TNEC ROW within AP 179 Lot 020 and forested Area of Land within 50-feet of Marsh in AP 179 Lot 030. These parcels are owned by the Rhode Island Commerce Corporation and managed by the Quonset Development Corporation ("QDC"), refer to **Appendix B** for the lease agreement for these parcels.

A description of the existing environmental conditions is provided below. Refer to **Figure 3** in **Appendix C** for locations of some of the environmental resources that are addressed below.

2.1.1 Site History

The Project Area is within a parcel of land that was formerly owned and operated by the Quonset Point Naval Air Station ("NAS") as the Camp Avenue Dump. NAS used the Camp Avenue Dump for mining operations and later, between the 1950s and 1970, waste materials, including construction debris, roofing tar, ship parts, and presumably other wastes resulting from naval operations were interred at locations surrounding the Camp Avenue

Dump. In 1978, the property containing the Camp Avenue Dump was conveyed by the NAS to the Rhode Island Port Authority. In 1988, TNEC acquired an approximately 6.1-acre portion of the former NAS property from the Rhode Island Port Authority and the Economic Development Corporation to construct the Davisville Substation (RIDEM, 2009). Construction of the Davisville Substation was permitted by the CRMC in 1991 under Permit No. 1991-03-065 (CRMC Permit Database).

Previous environmental investigations of the Project Area have determined that the soil and groundwater are impacted by past land use and as such the land is subject to the conditions of an Environmental Land Usage Restriction ("ELUR"), as recorded by the RIDEM (2009). A Soil and Groundwater Management Plan will be developed in consultation with the RIDEM Office of Land Revitalization and Sustainable Materials Management ("OLRSMM") to document how the Project will adhere to requirements set by the ELUR and facilitate construction of the ICF Project.

2.1.2 Geological Resources

The geological framework of the southern Rhode Island region is characterized by a mix of Mesozoic-aged metamorphic and plutonic igneous bedrock. In the Narragansett Basin, which includes the Davisville Substation parcel, Narragansett Bay and much of Rhode Island Sound, this basement crystalline rock is locally superimposed with deposits of softer, dark, carbon-rich, sedimentary rock of Pennsylvanian-age up to hundreds of feet thick. In terrestrial settings, this parent material imparts a dark color on the soils which are derived from this minerology. The Davisville Substation parcel is situated in pitted ice-contact stratified drift.

Based on the Web Soil Survey Map hosted by the Natural Resources Conservation Service ("NRCS") (2019) the Project Area is mapped as a combination of Merrimac-Urban land complex with 0 to 8 percent slopes (MU), Walpole sandy loam with 0 to 3 percent slopes (Wa), Windsor loamy sand with 3 to 8 percent slopes (WgB), and Quonset gravelly sandy loam (QoC).

2.1.3 Groundwater

The RIDEM Groundwater Quality Rules (RIDEM 250-RICR-150-05-03, Effect 2019) identify groundwater in the vicinity of the Davisville Substation parcel as Class GA and Class GB. Class GA waters are presumed to be suitable for drinking without treatment and Class GB may not be suitable for drinking without treatment. The Quonset Business Park is served by a public water supply.

2.1.4 Freshwater Wetlands

Freshwater wetlands are present within the Davisville Substation parcel and were delineated by LEC Environmental Consultants, Inc. ("LEC") (see **Appendix D** for resumes) on December 10, 2019 as detailed within the Site Evaluation Report ("SER") provided in **Appendix F1.** A follow-up SER was conducted in July 2020 and that follow-up SER is included in **Appendix F2.** Mapped wetland resources are shown on **Figure 3** in **Appendix C**. These wetlands are

subject to regulation as Freshwater Wetlands in the Vicinity of the Coast (650-RICR-20-00-02) and include Swamp and Marsh with associated Area of Land Within 50-feet of the Wetland, SAS, and ASSF. Descriptions of the wetland resources are provided below. The boundaries of Wetlands 3 and 4 delineated by LEC represent a continuation of the wetland boundaries identified by VHB during summer 2019[1] on the adjacent AP 179 Lot 030 and AP 179 Lot 001 where the OnSS is proposed.

- Wetland 3 (LEC A-series) is a Swamp along the northeastern boundary of the Davisville Substation parcel and continues north off site to Roger Williams Way and has been delineated by flags A-1 through A-8. This Swamp is forested with common canopy dominants consisting of red maple (*Acer rubrum*), American elm (*Ulmus americana*) and tupelo *(Nyssa sylvatica)*. The shrub stratum includes highbush blueberry (*Vaccinium corymbosum*), winterberry *(Ilex verticillata)* and sweet pepperbush *(Clethra alnifolia*). The heavily shaded herbaceous stratum is dominated by skunk cabbage (*Symplocarpus foetidus*) and cinnamon fern (*Osmunda cinnamomea*) with sensitive fern (*Onoclea sensibilis*) also present.

  Soils within this wetland are mapped as Swansea muck, a very poorly drained soil that classifies with the Order of soils characterized by thick accumulations of organic matter at the surface, Histosols. In Rhode Island all Histosols are hydric soils. These soils remain saturated near the surface or flooded for most if not all the growing season.

- Wetland 4 (LEC B-series) is a Marsh with open water, few trees and shrub cover types scattered throughout the wetland interior and a forested margin. This isolated wetland is within the northwestern corner of the Davisville Substation parcel where it has been delineated by flags B-1 through B-9 and extends into the adjacent AP 179 Lot 030 where the OnSS is proposed. This wetland is confined by steep fill slopes along its southern limits and the natural steep slopes of a kame to the north. Scattered debris and fill are present in and around this wetland which apparently date back to the time when this site was part of the Quonset Point NAS.

  Alder (*Alnus* sp.) and willow (*Salix* sp.) are common shrubs scattered around the semipermanent shallow open water. Red maple is common around the wetland perimeter. Skunk cabbage, jewelweed (*Impatiens capensis*), field horsetail (*Equisetum arvense*), and sensitive fern are common herbaceous plants occupying exposed substrates.

  Soils are mapped as poorly drained Walpole sandy loam, which is poorly drained, but investigations by VHB found soils in most of the wetland interior to be more similar to the very poorly drained Scarboro mucky sandy loam and Swansea muck. Based on observations of staining on concrete, adventitious roots, and water stained leaves water levels may fluctuate two to three feet from the winter to late growing season.

  Wetland 4 also functions as a cryptic vernal pool based on the findings of a vernal pool survey conducted by VHB in spring 2020. VHB biologists identified three obligate vernal pool species within Wetland 4: wood frog *(Lithobates sylvaticus),* spotted salamander *(Ambystoma maculatum)*, and fairy shrimp (*Eubranchipus sp*.). Wetland 4 is

1 Wetlands 1 and 2 were delineated by VHB and do not occur within the ICF Project Area. Wetlands 3 and 4 extend beyond the boundary of the ICF parcel into the adjacent OnSS parcel.

therefore also classified as a SAS. A memo documenting the vernal pool survey is included in **Appendix G Vernal Pool Memos**.

Based on observations of this wetland over two field seasons in 2020 and 2021, the extent of pooling varies. Under maximum flooding, the entire footprint of the wetland is flooded, as was observed in early spring of 2020. In spring of 2021, pooling was concentrated towards the middle of the wetland.

- Wetland 5 (LEC C-series) is a SAS southwest of the Davisville Substation which has been delineated with flags C-1 through C-11. This small forested wetland is a topographic depression that floods seasonally with maximum water depths of three to four feet. Red maple and cottonwood (*Populus deltoides*) are the dominant tree species and provide approximately 50 percent canopy closure over the wetland. Shrubs that populate the perimeter of the wetland include Morrow's honeysuckle (*Lonicera morrowii*), green brier (*Similax rotundifolia*), multiflora rose (*Rosa multiflora*), sweet pepperbush, and highbush blueberry. Dominant species within the herb stratum include fox grape (*Vitis labrusca*) and poison ivy (*Toxicodendron radicans*).

  VHB conducted vernal pool surveys in Wetland 5 in the spring of 2021 and identified two obligate vernal pool species: wood frog and fairy shrimp. Based on field investigations and documentation from LEC, the pool floods seasonally and dries up during late summer and fall. As with Wetland 4, solid waste and debris is present within Wetland 5, including several monitoring wells and an abandoned storage tank, indicate previous anthropogenic disturbance. Although Wetland 5 exhibits indicators of anthropogenic disturbance it provides vernal pool habitat. The depth of the pool indicates that its hydroperiod during an average rainfall year is likely sufficient to allow obligate species such as wood frog to complete their metamorphosis. A memo documenting the findings of this vernal pool survey is included in **Appendix G**.

- An ASSF appears to provide a surface hydrological connection that may convey discharge from Wetland 5 into Wetland 4. This ASSF occupies an old excavated ditch with the spoils cast above the northeast bank. This feature is not visible in the 1962 aerial photograph which shows land grading activity in the general area but is clearly visible and complete in the 1972 aerial (RIDEM Environmental Resource Map ("ERM") accessed 5/7/2021). This suggests that these activities predated the Rhode Island Freshwater Wetland Act and federal wetland regulation under the 1972 CWA.

  VHB scientists examined this feature on the morning of May 6, 2021 after two days of rain totaling 0.96 inches[2] to evaluate the resource area's classification. There was no flow at the time of the investigation and no evidence of recent flow. The bottom of the ditch was lined with leaves accumulated from the previous year's leaf fall suggesting the absence of any substantial flow since fall 2020. VHB scientists looked for features that would suggest a sustained, directional flow of an intermittent stream and found none. The ditch bottom does not have a defined channel, and there was no evidence of drift lines, evidence of scour, algae staining, or sediment accumulations. The ditch bottom is sporadically vegetated and includes Japanese honeysuckle (*Lonicera japonica*), multiflora rose, Morrow's honeysuckle, and Asiatic bittersweet (*Celastrus orbiculatus*). Photos are included

2 https://www.wunderground.com/dashboard/pws/KRINORTH52/

in **Appendix E**. Based on these observations, the ditch appears to meet the criteria to be regulated as an ASSF as it could convey flow in response to extreme rainfall events or sudden snow melt. VHB scientists concur with the classification provided by LEC that this feature, if regulated, would be properly classified as an ASSF.

› Portions of the Davisville Substation parcel occurs within the one-percent annual flood hazard area (Zone AE) which is a coastal flood zone. Coastal flood zones are not freshwater wetlands; however, flood zones associated with rivers and stream are.

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3

Project Siting, Alternatives Analysis, Proposed Activities, and Impacts

3.1 Project Siting and Alternatives Analysis

The ICF Project will be principally sited within AP 179 Lot 005 which contains the existing Davisville Substation that is owned and operated by TNEC and small segments of the new TNEC ROW will extend into adjacent AP 179 Lot 020 and Lot 030 which are owned by the Rhode Island Commerce Corporation and managed by the Quonset Development Corporation ("QDC"). The ICF Project must be sited within the same parcel as the existing Davisville Substation because it is an expansion of the existing substation and therefore proximity to the existing substation is a prerequisite of the ICF design.

The ICF Project has been proposed jointly by Revolution Wind and TNEC. Under the proposal, Revolution Wind will be responsible for the design, permitting and construction the ICF Project and TNEC will be the owner and operator. This arrangement was developed in accordance with Article 5 of the Interconnection Facilities Engineering, Procurement, and Construction of the ISO-NE Proforma Large Generator Interconnection Agreement which allows the Interconnection Customer (Revolution Wind) to have the option to assume responsibility for the design, procurement, and construction of the new SANU while the Interconnecting Transmission Owner (TNEC) will operate the SANU.

The ICF Project is needed to support the connection of the power generated from the offshore Revolution Wind Farm to the regional ISO-NE Transmission System via the POI at the Davisville Substation. The System Impact Study that was developed in accordance with ISO-NE Interconnection Process identified that the Davisville Substation must be expanded into a six (6) breaker ring bus configuration to enable connection between the Project OnSS and the ISO-NE Transmission System. The ICF, therefore, is technically an expansion of the existing Davisville Substation, but due to the system configuration within the existing Davisville Substation yard and the development limitations related to the presence of wetland resources to the west, northwest, and east of the existing substation yard, the ICF has been designed as a Stand-Alone Network Upgrade ("SANU") and will be built without

affecting day to day operations of the ISO-NE Transmission System. Descriptions of the alternatives analysis and the proposed design are provided below.

3.1.1 No Build Option

The no-build option was rejected because it would not meet the Project purpose to provide an interconnection to the regional electrical transmission grid. Without the Interconnection infrastructure the energy produced from the Revolution Wind Farm would not have a way to reach consumers in Rhode Island and Connecticut.

3.1.2 Build Alternatives

Given that the ICF Project must be built within the TNEC property and that space constraints within that parcel restrict location variants for the ICF and transmission routing into the ICF, alternatives to the proposed ICF location are limited. Alternatives to the proposed ICF included three options. The first alternative considered would place the ICF in a north-south orientation adjacent to the existing substation. This alternative would require filling of Wetland 5.

A second alternative angled the orientation of the ICF in a slightly more east-west angle, but the location of the proposed equipment yard would still require filling most of Wetland 5.

The third alternative places the ICF in an east-west orientation avoiding Wetland 5. This alternative was selected as the preferred alternative based on its avoidance of Wetland 5, and the detailed description of this alternative is provided in Section 3.2.

3.2 Proposed Project Activities and Project Impacts

The ICF Project has been designed to meet Rhode Island State Building Code/2015 International Building Code, American Society of Civil Engineers ("ASCE") Standard 7-10, ASCE 113, ASCE 24-14, all applicable Institute of Electrical and Electronics Engineers ("IEEE") standards, and local climate and geotechnical conditions.

The ICF Project includes the following components:

- An Interconnection ROW between the OnSS on the adjacent AP 179 Lot 030 and ICF consisting of two underground transmission lines. The northern cable (cable a) is approximately 375 feet (114.3 m) long and the southern cable (cable b) is approximately 527 feet (160.6 m) long. Approximately 188 feet (57.3 m) of cable a and 327 feet (99.7 m) of cable b of the Interconnection ROW will be within AP 179 Lot 005 (the Davisville Substation parcel). The underground transmission line will have an approximate 40-foot-wide ROW subject to periodic vegetation management.
- An ICF that consists of a 115kV ring-bus with an operational footprint[3] of 1.6 ac (0.6 ha). Maximum height of ICF equipment will be up to 45 ft (13.7 m) with shielding masts measuring up to 55 ft (16.7 m) tall. The ICF will also include a paved access road,

3 The operational footprint includes the fenced yard surrounding the ICF equipment.

stormwater management features, and associated landscaped or managed vegetated areas within the approximate 4 ac (1.6 ha) construction footprint. This construction footprint includes the Interconnection ROW discussed above and the TNEC ROW discussed below.

› The reconfiguration of overhead segments of the existing Davisville Transmission Tap lines (approximately 122 feet) and new overhead lines approximately 744 feet long between the ICF and the Davisville Substation on property owned by TNEC proximate to the TNEC Davisville Substation in North Kingstown, Rhode Island.[4] The transmission lines from the ICF to the Davisville Substation will be up to 474 ft (144 m) in length and will be supported on single circuit structures measuring up to 80 ft (18 m) tall. The transmission line from the ICF to the Davisville Transmission Tap will be up to 712 ft (217 m) in length. The two circuits will be supported on a combination of single and double circuit structures measuring up to 95 ft (24.4 m) tall. The TNEC ROW will have up to 120-feet-wide centered on each circuit where vegetation will be periodically managed.

Project plans for the ICF are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under Access to Public Records Act ("APRA"; RIGL § 38-2-1) or Freedom of Information Act ("FOIA"; 5 USC § 552) in **Appendix H Site Plans**.

The proposed ICF will include a six-breaker ring bus that will be an air-insulated system consisting of circuit breakers, disconnect switches, structural steel, instrument and station service transformers, and associated miscellaneous equipment (i.e. insulators, surge arresters, electrical fittings and hardware). To support more timely cutovers, a new prefabricated control house will also be installed. Major equipment associated with the ICF is summarized in **Table 3-1.**

Table 3-1 Interconnection Facility Equipment

Equipment	Maximum Number Required
115 kV breakers	6
Breaker Disconnect switches	12
Line disconnects	4
Line traps	2
CCVTs (3-phase sets)	6
Open air bus work	1 (Lot)
Control building	1
Station Service Transformer	2

Construction of the ICF Project will require clearing approximately 2.8 acres (1.1 ha) of vegetation within the construction footprint while the overall site disturbance will be

4 Upgrades to the existing Davisville Substation and electrical grid beyond the substation may be necessary. Potential upgrades are not known at this time as the required Independent System Operator System Impact and Facility studies have not been finalized. The execution of any upgrades at the existing substation and of the broader electrical grid, and the specific, permitting, engineering, and design requirements to achieve the upgrades, will be performed by TNEC.

approximately 4 acres (1.6 ha). The approximately 1.2 acres that are not subject to vegetative clearing include areas with existing grass cover and graveled areas adjacent to the existing substation and access road. The proposed clearing will primarily take place within the Davisville Substation parcel but will also partially occur within AP 179 Lot 030 and Lot 020.

Some of the proposed clearing will occur within regulated freshwater wetland resources. Disturbance related to the clearing is considered temporary because it will occur only during the construction period, however, the change in habitat cover type from forested to a managed herbaceous and scrub-shrub cover type will be permanent because the cleared areas will subject to a periodic vegetation management cycle to maintain safe clearances between vegetation and electrical equipment. Specific impact areas and the management schedule is provided below.

Construction of the TNEC ROW will temporarily effect approximately 3,470 square feet (0.08 ac) of an isolated wetland (Wetland 5) by removing the forested perimeter of the wetland, 900 square feet (0.02 ac) of forested cover in Marsh (Wetland 4) will be cleared, and 11,680 square feet (0.2 ac) of forested area within the Area of Land within 50-feet of Wetland 4 will be cleared. The Project layout area and the proposed wetland impacts are shown in **Figure 4** in **Appendix C.** Additionally, a new gravel access road on the Davisville Substation parcel for access to the TNEC ROW will cross the ASSF. The ASSF will be culverted to maintain drainage under the roadway, which will result in approximately 40 linear feet (12.2 m) of impact, though the entire 145-foot (44 m) length will be cleared of vegetation. The proposed 24-inch reinforced concrete culvert will include a flared end section at the upgradient end and a headwall with stone outlet protection at the down gradient end. Proposed culvert inverts will maintain positive flow from east to west, consistent with existing grades. Aside from the proposed culvert, grading activities associated with the ICF Project are sited such that they avoid impact to wetland resources. All temporarily disturbed areas within wetland resources will be restored with a native seed mix and the cleared areas within Wetland 4 and the perimeter of Wetland 5 will be replanted with native shrubs once construction is complete in accordance with the Wetland Mitigation Plan provided on sheet W-1.0 in **Appendix H**. Note that Site Plans in **Appendix H** are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

Methods for tree removal involve the use of tree shears, skidder bucket equipment, aerial saws and tree harvesting machinery. The location of the work, type of work and the degree or amount of work dictates the type of crew and equipment to be employed.

Operation of the facilities will require the vegetative community to be converted and maintained as herbaceous and scrub-shrub habitats. In accordance with National Electric Safety Code[5] ("NESC") requirements and TNEC vegetation management procedures, vegetation within the ICF and the TNEC ROW will be managed through integrated procedures combining removal of danger trees, hand cutting, targeted herbicide use,

5 The NESC is an ANSI standard which covers basic provisions for safeguarding of persons from hazards arising from the installation, operation, or maintenance of conductors and equipment in electrical supply stations, and overhead and underground electric supply and communication lines. It also includes work rules for the construction, maintenance, and operation of electric supply and communication lines and equipment.

mowing, selective trimming, and side trimming. These procedures involve the cyclical management of vegetation along the active transmission line ROW and surrounding the perimeter of the fenced ICF yard. The vegetation maintenance cycle follows a five-year timeline and encourages the growth of low-growing shrubs and other vegetation which provide a degree of natural vegetation control. This vegetation management is necessary to allow for the proper clearance between vegetation and electrical conductors.

Summary of Impacts to Freshwater Wetlands

Table 3-2 provides a summary of the temporary and permanent impacts to the freshwater wetlands within the Project Area. Permanent impacts are reported in terms of vegetation clearing/conversion. No permanent fill is proposed within wetlands or the Area of Land within 50-feet of Wetlands. Wetland impact areas are depicted in **Figure 4** in **Appendix C.**

Table 3-2 Temporary and Permanent Impacts During the Project

CRMC Resource	Temporary Impact (Area SF/Ac)	Temporary Impact (Vol.)	Permanent Impact (Area SF/Ac)	Permanent Impact (Vol.)
Wetland 3	0	0	0	0
Wetland 4	0	0	900/0.02	0
Wetland 5	0	0	3,470/0.08	0
Area of Land within 50-Feet of Wetlands	0	0	11,680/0.27	0
ASSF	0	0	145 Linear Feet*	
Floodplain	0	0	0	0

* 145 linear feet reflect the entire length of the ASSF that will be impacted due to vegetation clearing. 40 linear feet of the ASSF will be culverted.

3.2.1 Mitigation and Management Measures

Revolution Wind and TNEC propose to mitigate for the effects of the construction phase through the implementation of specific construction methodologies and schedule considerations that are designed to minimize impacts to the surrounding environment.

A Wetland Mitigation Plan suitable to the location and operation of the ICF Project has been developed to address impacts to the freshwater wetlands (see Sheet W-1.0 in **Appendix H**). Note that Site Plans in **Appendix H** are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). The Wetland Mitigation Plan has been developed with the understanding that the ICF Project is within a wooded area with no visible frontage on Camp Avenue and with the understanding that scrub-shrub habitat cover not exceeding 20-feet must be maintained to ensure safe clearances between vegetation and electrical equipment.

The following avoidance, minimization, and mitigation measures are proposed:

- The ICF and proposed transmission structures within the TNEC ROW have been sited to avoid wetland impact to the maximum extent possible. Wetland impacts are limited to vegetation clearing within Wetland 5, a small portion of Wetland 4, the Area of Land within 50-feet of Wetland 4, and the ASSF between Wetlands 4 and 5. This clearing is necessary to maintain safe clearances for the operation of the ICF and TNEC ROW consistent with the NESC. The vegetation layer in these impacted areas will be planted with native seed mixes and the impacted areas within Wetlands 4 and 5 will be replaced with native shrubs.
- The stormwater management design that addresses the requirements for water quality treatment and runoff management that complies with the Stormwater Management, Design and Installation Rules (RIDEM 250-RICR-150-10-8, effect 2018).
- The removal of surficial solid waste within Wetlands 4 and 5 that is left over from the site's previous usage as a landfill. Existing solid waste within these wetlands include items such as an abandoned storage tank, kitchen appliances, concrete and brick rubble, metal, and tires. Removal of such debris will enhance the habitat of these wetlands. Any other solid waste encountered during construction of the ICF and TNEC ROW will similarly be removed and disposed at an appropriately licensed facility.
- Compliance with the existing ELUR and a project specific SMP developed in consultation with the RIDEM OLRSMM.
- The use of appropriate erosion and sediment control measures installed to minimize impacts to wetlands from adjacent disturbed areas. These measures are detailed on the Soil Erosion and Sediment Control ("SESC") Plan in **Appendix I** which is provided under confidential cover to this Application to Alter because it contains confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). The following SESC measures are included:
  - Installation of silt sock erosion control barrier at the limit of disturbance;
  - Temporary dewatering basins or frac tanks will be used to filter any collected stormwater and/or groundwater prior to discharging the filtered water in upland areas;
  - A stabilized construction exit to prevent tracking of debris onto local roadways; and
  - Establish vegetated ground cover in disturbed areas through the use of native seed mixes.
- To the extent feasible, tree and shrub removal within the Project Area will occur outside the avian nesting and bat roosting period: May 1 through August 15. If tree and shrub removal cannot avoid this season, Revolution Wind will coordinate with appropriate agencies to determine appropriate course of action.
- The removal of invasive vegetation within the affected wetland areas during construction. The affected areas of Wetlands 4 and 5 will be replanted with native shrubs based on the Rhode Island Coastal Plant Guide, including silky dogwood (*Cornus amomum*), swamp rose (*Rosa palustris*), and buttonbush (*Cephalanthus occidentalis*). A native seed mix will be applied to all disturbed areas as provided in the Mitigation Plan Sheet (see Sheet W-

1.0 in **Appendix H**). Note that Site Plans in **Appendix H** are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). Vegetation will be managed on five-year cycles following TNEC management requirements, as described above.

- Occurrences of sickle-leaved golden aster will be flagged during the summer flowering season prior to commencement of construction so that they may be avoided during construction.

These mitigation and avoidance measures will be included in contract specific documents so that the selected contractor will adhere to these measures.

3.3 Stormwater Management

The Applicants have developed a site-specific Stormwater Management Report including an SESC Plan and a Long-Term Stormwater Operation And Maintenance Plan And Pollution Prevention and Source Control Plan in accordance with the Stormwater Management, Design and Installation Rules (RIDEM 250-RICR-150-10-8, effect 2018). The SESC Plan, Stormwater Management Report, and Long-Term Stormwater Operation and Maintenance Plan are provided in **Appendices I, J and K**, respectively.

3.3.1 Water Quality and Quantity

The stormwater management design has been developed, and emphasizes the following low impact development practices:

- Match or reduce peak discharge rates to the design points under the 1.2", 1-year, 10-year and 100-year storm events.
- Emphasize infiltration of stormwater through the use of Qualified Pervious Areas ("QPAs") and Infiltration Basins.

Further information regarding water quality treatment is included in **Appendix J Stormwater Management Report**.

3.3.2 Soil Erosion and Sediment Control

An SESC Plan has been prepared which outlines the practices that will be followed during construction and is attached for review. The contractor in charge of construction will certify that they are familiar with the SESC Plan (**Appendix I**). Note that **Appendix I** is provided under confidential cover to this Application to Alter because it contains confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). All construction personnel will attend an Environmental Field Issue ("EFI") training with Revolution Wind and TNEC. The SESC Plan outlines the SESC measures that the operator must implement, inspect, and maintain during the entire construction process until the entire worksite is permanently stabilized by vegetation or other means. The measures employed in the SESC Plan minimize the opportunity for turbid discharges leaving a construction work area. The plan also includes specific measures for handling dewatering

discharges and measures for refueling equipment to minimize the opportunities for uncontrolled spills.

Several measures will be used during construction to control erosion and sedimentation and are briefly reviewed in this section. First soil exposure (area open and length of time exposed) will be minimized. Where possible, such as for the TNEC ROW, which includes the Area of Land within 50-feet of Wetland 4, tree clearing will not involve stump grubbing. Crushed stone will be installed in the ICF yard as final grades are achieved to minimize the length of time the earth fill or cut surfaces are exposed to rainfall impact or overland flow. Riprap will be installed in the diversion swale south and west of the ICF, and between the access driveway and the ICF.

Structural erosion control measures include temporary and permanent diversions, stone check dams, and the use of rolled erosion control products to cover exposed soils on slopes. Compost-filled filter sock staked at the work perimeter will be the most extensive temporary structural sediment control measure. Other structural measures include sediment traps and dewatering basins to remove suspended sediments before discharge and an anti-tracking pad is proposed at the construction entrance.

Permanent stabilization will rely on establishing compatible vegetation. The contractor will be responsible for ensuring vegetation is established and removing these BMPs once work is completed and the site is stabilized by vegetative cover. The contractor will also be required to manage the site until vegetative cover has achieved 75%.

3.3.3 Long-Term Stormwater Operation and Maintenance Plan

A Long-Term Stormwater Operation and Maintenance Plan and Pollution Prevention and Source Control Plan has been developed which outlines the Owner/Operator responsible for Operation and Maintenance; specific management requirements for structural and non-structural stormwater management features, and Pollution Prevention and Source Control measures. Refer to **Appendix K Long-term Stormwater BMP Operations and Maintenance Plan, Pollution Prevention and Source Control**.

3.4 Property Abutter Notification

The properties listed in **Table 3-3** abut the ICF Project parcels. A figure depicting the locations of the abutters is included in **Appendix L Abutter Figure**. Abutting properties include those that abut the Davisville Substation Parcel/Project Area within AP 179 Lot 005 as well as those that abut AP 179 Lot 030 and Lot 020 because the proposed TNEC ROW expansion crosses onto these parcels. Property records hosted on the Town of North Kingstown Internet Mapping Server was used to develop this list (Town of North Kingstown, 2021).

Table 3-3 Property Abutters to the ICF Project

Property Owner Name	Street Address	Plat Number	Lot Number	Mailing Address
RI Commerce Corporation	594 Camp Avenue	179	030	95 Cripe St North Kingstown, RI 02852
RI Commerce Corporation	574 Camp Avenue	179	001	
RI Commerce Corporation	614 Camp Avenue	179	020	
N Kingstown Camp Ave Real Estate Inc	646 Camp Avenue	179	003	2425 New Holland Pike Lancaster, PA 17605
Kiefer Park Associates LLC	75 Circuit Drive	179	017	50 Whitecap Dr, Suite 302 North Kingstown, RI 02852
QPS Associates	51 Circuit Drive	179	016	50 Whitecap Dr, Suite 302 North Kingstown, RI 02852
Grey Ledge Holdings LLC	21 Circuit Drive	179	009	C/O Kennedy Inc 21 Circuit Dr North Kingstown, RI 02852
Mill Creek LLC C/O The Grossman Companies Inc	Mill Creek Drive	178	002	One Adams Place 859 Willard St, Suite 501 Quincy, MA 02169
Mill Creek LLC C/O The Grossman Companies Inc	Mill Creek Drive	178	003	

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4

Written Evaluation of Impacts to Wetland Functions and Values

Section 650-RICR-20-002-2.10(B)(5)(d) of the Freshwater Wetland Rules mandates that applicants submitting an Application to Alter Freshwater Wetlands must describe the functions and values provided and maintained by the subject freshwater wetland and evaluate the impacts of the proposed Project on these functions and values. There are six functions and values of the wetland that must be considered: (1) Wildlife and wildlife habitat, (2) Recreation and aesthetics, (3) Flood protection, (4) Groundwater and surface water supplies, (5) Water quality, and (6) Soil erosion and sediment control. These same functions and values are addressed by other regionally applied systems of wetland evaluation including the USACE Highway Methodology Workbook Supplement (USACE, 1999).

4.1 Methodology

The Highway Methodology Workbook Supplement recognizes 13 Wetland Functions and Values (USACE, 1999). These eight functions and five values can be grouped into four general categories as provided below.

Biological Functions

These functions would fall under the grouping of Wildlife and Wildlife Habitat under the Freshwater Wetland Rules and are separated into:

- **Fish and Shellfish Habitat** – Evaluates the effectiveness of seasonal and permanent water bodies and streams for providing fish and shellfish habitat. Water quality and physical characteristics of the stream, pond or lake are assessed.
- **Wildlife Habitat** – Evaluates the suitability of the wetland to provide habitat for wetland-dependent species. Wetland size, diversity of cover types, interspersion, and connectivity with other wildlife habitats are important factors contributing to wildlife cover, foraging, reproduction, and nursery habitat. Both resident and migrating species must be considered.

› **Production Export (Nutrient)** – This function evaluates the effectiveness of the wetland to produce food for ecosystem support.

Hydrologic Functions

This grouping would include the Surface Water and Groundwater and Flood Protection functions provided in the Freshwater Wetland Rules.

› **Groundwater Recharge/Discharge** – This function considers the potential for a wetland to serve as groundwater recharge and/or discharge area. Recharge evaluates the wetlands contribution to an aquifer. Discharge relates to the potential of the wetland to provide hydrologic support to downstream wetlands and water bodies by discharging groundwater to the surface.

› **Flood Alteration** – Evaluates the wetland's ability to reduce downstream flooding. The wetland size, form (large level storage area with a restricted outlet), position in the watershed, and presence of a potential downstream damage area are evaluated.

Water Quality Functions

This grouping would include the Water Quality and Soil Erosion and Sediment Control functions provided in the Freshwater Wetland Rules.

› **Sediment/Toxicant/Pathogen Retention** – Evaluates the wetland's ability to remove pollutants (sediment, toxins, pathogens) from runoff entering surface waters. Potential upstream pollutant sources, the ability of the wetland to impound water to enhance sedimentation, and the wetland size are factors that are evaluated.

› **Nutrient Removal/Retention/Transformation** – This function relates to the wetland's ability to attenuate nutrients in influent waters to minimize adverse effects on water bodies and aquifers.

› **Sediment/Shoreline Stabilization** – Evaluates the wetland's ability to protect shorelines from wave erosion (especially streams, lakes, and large ponds).

Societal Values

These values are addressed under Recreation and Aesthetics by the Freshwater Wetland Rules.

› **Recreation** – Evaluates wetland's suitability for swimming, boating, fishing, etc.

› **Educational/Scientific Value** – Evaluates the wetland's value as an educational resource. Combines ecological integrity, proximity of schools and ease of access to assess educational opportunity. Also considered are the suitability of the wetlands for scientific study or research.

› **Uniqueness/Heritage** – This value evaluates the potential for former use of the wetland by Indigenous People and historic industry and habitations, unique plants, animals, or geologic features.

- **Visual Quality /Aesthetics** – Evaluates visual and/or aural quality of the wetland. High values are associated with wetlands with multiple cover types and landforms in settings that are accessible to the public yet removed from development.
- **Threatened or Endangered Species Habitat** – Evaluates the wetland for special heritage values such as critical habitat or the presence of protected species or other intrinsic qualities.

Freshwater wetlands are ecological systems performing functions that directly benefit the health, welfare and general wellbeing of people and the environment (CRMC, 2018). The evaluation of wetland functions and values provided in this Section follows the "Descriptive Approach" provided in the USACE Highway Methodology Workbook Supplement (USACE, 1999). The functions and values of the Project Area wetlands were identified and evaluated by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions or values at a significant level.

The determining factors that affect the level of function provided by a wetland can often be broken into one of two categories. The effectiveness of a wetland to provide a specified function is generally dependent on factors within the wetland, whereas the opportunity to provide a function is often influenced by the wetland's position in the landscape and adjacent land uses. For example, a large wetland depression with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff. Therefore, the wetland is considered to have a little opportunity for providing this function.

A principal function or value is an important physical component of a wetland ecosystem, and/or considered of special value or significant to society, from a local, regional, and/or national perspective.

4.2 Freshwater Wetlands Functions and Values Assessment

Table 4-1 provides a summary of the functions and values the wetlands present within the Davisville Substation Parcel and discussions of primary functions and values are detailed below.

Table 4-1 Functions & Values of Freshwater Wetlands in the Project Area

	Biological			Hydrologic		Water Quality			Societal Values	
	Fish/Shellfish Habitat	Wildlife Habitat	Production Export	Groundwater Discharge/ Recharge	Flood Alteration	Sediment Toxicant Removal	Nutrient Removal/ Transformation	Sediment Stabilization	Recreation & Aesthetics	Rare, Threatened and Endangered (" RTE") Species
Wetland 3	-	P	X	P	P	P	X	X	-	-
Wetland 4	-	P	X	P	-	P	-	-	-	-
Wetland 5	-	P	X	X	X	X	X	X	-	-
ASSF	-	-	-	-	-	-	X	-	-	-
Floodplain	-	X	-	-	P	X	-	-	-	-

Notes: P=Primary Function; X = Secondary Function; - = Not provided

4.2.1 Fish/Shellfish Habitat

Fish and shellfish habitats were not identified on site during field surveys conducted in 2019, 2020 or 2021.

4.2.2 Wetland Wildlife Habitat

Wetlands 4 and 5 function as vernal pools and provide important wetland and wildlife habitat for obligate vernal pool species including wood frog, spotted salamander, and fairy shrimp that were observed during vernal pool surveys completed in 2020 and 2021 (see **Appendix G** for vernal pool memos). Adult wood frog and spotted salamander use these pools to breed in the spring and once the young have metamorphized they disperse into the surrounding upland habitats where they prey on insects and other invertebrates and in turn become prey species for reptiles and mammals.

In CRMC's response to the Project's Preliminary Determination Application (File No. 2021-02-031), CRMC suggested the ASSF may potentially function as an amphibian migration corridor. VHB scientists posit that the ASSF is unlikely to perform this function for the two obligate amphibians present on the Site, wood frog and spotted salamander, because once the breeding and metamorphosis period has been completed, adults spend their lives in uplands. Migration out of the pools by adults would be radial back toward the upland habitats of origin and there would seemingly be no ecological benefit of traveling back and forth between pools. There is the potential for the ASSF to be used as a migration corridor by facultative amphibians; however, amphibian species would likely be able to adapt to an at-grade road crossing that is proposed because the gravel access road will support very little traffic. It is worth noting that the functions of Wetlands 4 and 5 as vernal pools does not appear to be hindered given their proximity to the existing Davisville Substation, existing TNEC ROW, and the access roads connected to this infrastructure.

Wetlands present within the Davisville Substation parcel also provide habitat for facultative vernal pool species, such as spring peeper (*Pseudacris crucifer*), and attract other wildlife that

may utilize the wetlands as foraging grounds such as eastern garter snake (*Thamnophis sirtalis sirtalis*), racoon (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*).

Refer to the list in **Appendix M Observed and Potential Wildlife in the Project Area**.

4.2.3 Production Export

Wetlands 4 and 5 are vernal pools and provide production export in terms of egg masses and larvae providing food sources for wildlife. Species such as newts and other amphibians feed on egg masses and larvae provide a food source for birds and other amphibians. Additionally, Wetlands 3, 4, and 5 all support vegetation that provide mast for songbirds.

4.2.4 Groundwater and Surface Water Supply

The wetland setting in stratified drift indicates that wetlands and uplands within the Project Area serve as groundwater recharge sites during periods of depressed groundwater and wetlands serve as discharge sites when groundwater levels are elevated. Groundwater discharge from the wetlands on and adjacent to the Project Area support flows in Mill Creek.

Camp Avenue and Quonset Point are served by the North Kingstown public water supply. The groundwater at the Davisville Substation parcel is classified as GB due to the presence of a closed solid waste facility. This precludes any likely future use of the groundwater for public drinking.

4.2.5 Flood Alteration/Floodplain

According to the Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") No. 44009C0104J the northeast and northwest corners of the Davisville Substation parcel occur within the one percent coastal annual flood hazard area (Zone AE) with a base flood elevation of 13 ft above the North American Vertical Datum of 1988 ("NAVD88.") This floodplain is established from models assessing the impact projected inland from the one percent annual chance coastal storm rather than modeled from riparian flooding. The only area within the Davisville Substation parcel where the grade are below 13 feet is within Wetland 4. The ICF Project Area is outside of the Limit of Moderate Wave Action associated with the coastal flood event as indicated on the referenced FIRM.

4.2.6 Water Quality

All of the wetlands in the project area are presumed to provide significant water quality functions.

- Wetland 4 traps sediment from some of the unstable slopes along its southern edge along with wash off from discarded demolition including concrete slabs.
- Wetland 5 likely filters sediment from stormwater runoff.

4.2.7 Recreation and Aesthetics

The ICF Project Area is within private property therefore a recreational value is not provided. Views into Project Area wetlands from public rights of way are limited, therefore an aesthetic value is not provided.

4.2.8 RTE Species

VHB reviewed online data hosted by the RIDEM ERM (accessed on December 28, 2020 and June 7, 2021). There are no Natural Heritage Database records of state-listed species within the ICF Project Area; however, during field investigations conducted by POWER Engineers Consulting, PC. (see resume in **Appendix D)** in December 2020, biologists identified potential habitat for sickle-leaved golden aster, a plant species of state concern within Rhode Island, in a disturbed upland along the small sliver of land that connects the parcel to Camp Avenue (refer to **Figure 3** in **Appendix C**). VHB biologists had previously identified occurrences of the same plant within adjacent parcels during summer surveys in 2019 and 2020 along the southeast boundary of the AP 179 Lots 001 030 (refer to **Figure 3** in **Appendix C**). These observations were made within a habitat type identified as a ruderal pitch pine barren which is an apparent former gravel excavation pit that sits at a lower elevation than the surrounding grade and has transitioned to a sand barren over time. Sickle-leaved golden aster is a highly restricted endemic plant that is found only on sandy glacial deposits (Native Plant Trust, 2021). This plant is identifiable by its yellow tubular disk flowers in the center and yellow ray flowers around the center. The ICF Project avoids occurrences of this rare plant.

In addition to review of state-managed databases, VHB generated an Official Species List (List) from the USFWS using the IPaC tool on September 28, 2019 and December 28, 2020 for onshore portions of the Project and the List indicated that the federally threatened northern long-eared bat (*Myotis septentrionalis*; "NLEB") has the potential to occur within the Project Area. The List indicated that there are no Critical Habitats associated with the NLEB within the Project Area. The List is provided at **Appendix N USFWS Official Species List**.

VHB biologists conducted a presence/potential absence acoustic survey targeting NLEB during July 2020 in accordance with survey guidelines developed by USFWS. Five full-spectrum detectors were deployed within suitable summer habitat along the Onshore Transmission Cable route and within the parcels adjacent to the Davisville Substation parcel that have been proposed for the development of the OnSS. The survey spanned two consecutive calendar nights from July 29-31, 2020 for a total of 10 detector nights. A detector-night spans the evening and early morning hours of two calendar dates. Call data was auto classified with Bat Call Identification East and priority calls (e.g. those auto classified within the *Myotis* genus and call classified as unknown by the software) were manually reviewed to analyze call characteristics to determine if they were consistent with NLEB. The qualitative analysis confirmed that there was no indication of NLEB occurring within the survey area and a determination of potential absence was made by VHB and submitted to USFWS. The survey area did not include the Davisville Substation parcel because it was not considered part of the Project at the time; however, the survey findings can be extrapolated to the Davisville Substation parcel because it expands the footprint of the Project's onshore components by only 6 acres and the survey effort was sufficient to cover the USFWS

minimum survey effort for non-linear projects which is eight detector nights per 123 acres of suitable habitat. Including the Davisville Substation parcel the total footprint of the onshore Project components is 34 acres. Therefore, the completed survey satisfied the survey USFWS guidelines.

These results are consistent with records kept by RIDEM regarding the known records of NLEB in Rhode Island. According to the RIDEM's lead bat biologist, Charlie Brown, hibernating NLEB have been identified on Jamestown, but no surveys have been conducted by RIDEM to identify maternity roosting trees in Rhode Island. Occurrences of NLEB within Rhode Island are tracked by the RIDEM and no new occurrences were recorded during the 2020 summer survey season (pers. comm. Charlie Brown, 2021).

4.3 Impacts to Freshwater Wetlands Functions and Values

4.3.1 Fish/Shellfish Habitat

Fish and shellfish habitat is not present within the Project Area therefore there will not be any impact to this resource.

4.3.2 Wetland Wildlife Habitat

Habitat alteration and land disturbance resulting from the construction of the ICF Project will create habitat conversion when the forested wetland and upland habitat within the Project Area is cleared and the land graded for construction of the facilities. A small portion of Wetland 4, the Area of Land within 50-feet of Wetland 4, and all of Wetland 5 will be cleared of trees and managed in accordance with TNEC's ROW Integrated Vegetation Management ("IVM") practices to accommodate the new infrastructure. The ICF Project will not discharge any fill within wetlands and the proposed mitigation which includes the removal of debris in and around the wetlands will improve habitat conditions within Wetlands 4 and 5.

Assessing the benefit of converting existing forested wetland to shrubland wetland is complicated when the change may be detrimental to species reliant on forest habitat but beneficial to other species that are more suited to the newly converted habitat (e.g. passerines adapted to grassland and shrubland such as Gray Catbird (*Dumetella carolinensis*) and Common Yellowthroat (*Geothlypis trichas*). Historically, the occurrence and distribution of shrublands and other early successional cover types in the Northeast were largely influenced by humans. While there is some debate about the extent of Native American influence (Lorimer 2001, Foster and Motzkin 2003), there is widespread agreement that European settlers created a spike in grassland and other early successional cover types between the late 1600s and early 1900s by converting millions of acres of northeastern forests to farmland and pastures and by cutting forests for timber and fuel (Askins 2000, Foster and Motzkin 2003). The widespread abandonment of these farms in the early half of the 20th Century (Litvaitis 1993, Askins 2000), coupled with an increase in suburban development and human control of stochastic events such as fire, caused the amount of

early successional cover types in the Northeast to consistently decline through most of the 20th Century (Litvaitis 1993, Litvaitis 2003, Brooks 2003). The decline of shrublands and other early successional cover types in the Northeast has contributed to the significant decline of shrubland-dependent bird species that require such cover types for breeding (Witham and Hunter 1992).

Today, forest is the dominant cover type in New England, accounting for 81 percent of the total land area (Trani et al. 2001, Schlossberg and King 2007), while all early successional cover types together are estimated to comprise just 12 percent of the land area (Schlossberg and King 2007). With this understanding, the portion of forested habitat removal that will occur as a result of the ICF Project will be small relative to the available forested habitat in the surrounding area. In addition, the conversion to early successional habitat is beneficial to bird species and other wildlife that are specialized to this type of habitat. The functions of Wetlands 4 and 5 as vernal pools will not change because the proposed Project will not directly impact these wetlands and the once constructed the ICF and associated infrastructure will occupy a relatively small space of upland habitat surrounding the vernal pools.

The habitat conversion that will result from the proposed Project may create habitat that is better suited to shrubland species than the existing forested landscape but the overall function and value of the wetland habitat for wildlife will not change.

A potential indirect impact to wildlife species resulting from land disturbance and habitat alteration resulting from construction of the ICF and TNEC ROW includes displacement or avoidance behavior of individuals. Impacts from construction, such as vegetation removal and noise generated by construction equipment can create avoidance behavior in individuals. However, any avoidance behavior is expected to be temporary and normal wildlife usage of wetland habitat within the Project Area is expected to resume following completion of construction.

The area cleared for the TNEC ROW and the perimeter surrounding the fenced ICF will be converted from forested to shrub habitat. Power lines managed in shrub cover provide an early succession habitat cover type sought by several bird and small mammal species (DeGraaf and Yamasaki 2001).

4.3.3 Production Export

The production function of Wetlands 4 and 5 as food sources related to their function as vernal pools will not be impacted by the proposed Project. Wetlands 4 and 5 are expected to continue to function as vernal pools once the ICF Project is operational and will therefore continue to provide an export function in terms of food resources related to egg masses and larvae. Additionally, although forested areas surrounding Wetland 5 and within a small portion of Wetland 4 will be cleared and managed as an herbaceous and scrub-shrub cover type, the proposed native plantings will still provide mast for songbirds and other wildlife.

4.3.4 Groundwater and Surface Water Supply

The Davisville Substation parcel is located in an outwash plain that consists primarily of proglacial outwash near the coast and pitted ice-contact stratified drift. Holocene deposits of freshwater peat and mucks and alluvium are also present at the Davisville Substation parcel. Quonset Point is characterized by high levels of disturbance of the original Pleistocene-aged surficial deposits by previous development. The site is a portion of the former Quonset Point Naval Air Station originally commissioned in 1941, later demolished, and converted to an important industrial manufacturing area for the State of Rhode Island.

There is very limited water quality data available for the Davisville Substation parcel except for Rhode Island Surface Water Quality Standards (RIDEM 250-RICR-150-05-1, Effect 2018). If groundwater is encountered during construction, BMPs will be in place and any contaminated groundwater would be managed in accordance with the RIPDES Remediation General Permit (RIPDES Permit No. RIG850000) and the Soil and Groundwater Management Plan developed in accordance with the conditions set by the ELUR.

4.3.5 Flood Alteration/Floodplain

The Project Area is beyond the Limit of Moderate Wave Action identified on FEMA FIRM Panel No. 44009C0104J. Impacts to flood storage are avoided by constructing above projected flood elevations with adequate safety factors. No compensation will be required for displaced coastal floodplain.

4.3.6 Water Quality

The ICF Project is designed using low impact development measures consistent with the Stormwater Management, Design, and Installation Rules (RIDEM 250-RICR-150-10-8, effect 2018) to treat the required water quality volume for all of the new impervious surfaces. Most of the ICF yard will remain pervious by providing a crushed stone surface. Spill prevention and control countermeasures have been incorporated into the design of the transformers. The transformers that will be used in the station are designed with intrinsic self-containment as a precaution against spills of the oil used to insulate and cool the transformer.

Stormwater from the site will pass through the best management practices described in the Stormwater Report and depicted on the Grading and Drainage Plans before being discharged. This compliance is further documented in the Stormwater Report.

Tree clearing within the TNEC ROW for the transmission tap lines will require trees to be cut, but stumps will not be grubbed and the existing duff layer will be preserved to the extent feasible to minimize soil exposure and risks for erosion. Tree clearing and grubbing will be necessary for the operational footprint of the ICF and associated stormwater management features.

Once the ICF Project is operational, any runoff flows that may be generated by larger storms will travel overland to collect in the stormwater infiltration basin on the eastern edge of the property. From this location, treated stormwater will evaporate or infiltrate and be transpired from the root zone or recharge the groundwater. According to the most recent Integrated

Water Reports List (2018-2020), Mill Creek and its tributaries are classified as Category 3 waters, meaning that there is insufficient or no data and information available to determine if the designated uses are attained or impaired (RIDEM, 2021).

During operation, the ICF Project will not withdraw any surface water or groundwater. During construction, dewatering may be necessary, and any dewatering effluent would be managed within the construction site in temporary basins or frac tanks. The ICF Project is not anticipated to negatively impact the water quality functions and values listed in § 2.10(E)(3)(l).

4.3.7 Recreation and Aesthetics

The ICF Project is situated on private property that has not afforded recreational opportunities to the general public in the past and this situation will not change with the proposed development. The aesthetic quality of the property will be preserved by locating the ICF Project set back from the road, screened from public view. Views from Camp Avenue will be largely unchanged.

4.3.8 RTE Species

The ICF Project has been designed to avoid occurrences of sickle-leaved golden aster. No impacts to this species are expected.

Acoustic bat surveys targeting the NLEB resulted in a determination of potential absence for this species. These results have been communicated to the USFWS and will be used to support the Section 7 ESA consultation for the complete Revolution Wind Project. Section 7 consultation under the ESA is on-going as part of the NEPA process lead by BOEM. An effect determination is anticipated between Q1 and Q3 of 2023.

5

Wetland Impact: Avoidance, Minimization, and Mitigation

5.1 Impacts to Freshwater Wetland

As described in Section 3.2, the ICF Project will result in permanent impacts to SAS, Marsh, and Area of Land within 50-feet of Wetlands, in terms of vegetation clearing and habitat cover type conversion and ASSF in terms of vegetation clearing and grading for the installation of a culvert. No permanent fill is proposed within palustrine wetlands or the Area of Land within 50-feet of Wetlands.

5.2 Avoidance

The following section addresses issues associated with §2.10(B)(4).

(a). Avoidance: All persons must satisfactorily demonstrate to the CRMC in the form of a written narrative that all probable impacts to freshwater wetlands functions and values have been avoided to the maximum extent possible. The written narrative must describe what steps were taken to avoid impacts to freshwater wetlands. At a minimum, applicants must consider and address the following issues:

(1) Whether the primary proposed activity is water-dependent, or whether it requires access to freshwater wetlands as a central element of its primary purpose (e.g., a pier);

The ICF Project is not water dependent.

(2) Whether any areas within the same property or other properties owned or controlled by the applicant could be used to achieve the project purpose without altering the natural character of any freshwater wetlands;

Because the ICF is an expansion of the Davisville Substation, only the Davisville Substation parcel was evaluated for the location of the ICF and the expansion of the TNEC ROW. Section 3.1 of this application narrative details the design alternatives for

the ICF that were evaluated. The proposed design includes the least amount of impact to freshwater wetlands.

(3) Whether any other properties reasonably available to, but not currently owned or controlled by, the applicant could be used to achieve the project purpose while avoiding wetland alterations. A property is reasonably available if, in whole or in part, it can be acquired without excessive cost, taking individual circumstances into account, or, in the case of property owned or controlled by the same family, entity, group of affiliated entities, or local, state or federal government, may be obtained without excessive hardship;

The Davisville Substation parcel is the only property that is reasonably available for the ICF Project. The adjacent parcels owned by QDC (AP 179 Lot 001 and 030) are being used for the development of the OnSS and the design would not be able to also accommodate the ICF infrastructure without further encroachment into regulated freshwater wetland resources. As described above, proximity to the Davisville Substation must be maintained as part of the ICF design so it is not reasonable to consider the ICF Project on other properties.

(4) Whether alternative designs, layouts or technologies could be used to avoid freshwater wetlands or impacts on functions and values on the subject property or whether the project purpose could be achieved on other property that is reasonably available and would avoid wetlands;

The ICF Project must be designed, built and maintained consistent with all applicable safety codes so that the health and safety of the public are protected. As such, the layout of the equipment must follow certain design criteria. For example, all the equipment spacing within the substation and distances from the perimeter fences have been designed in accordance with the NESC which provides for the safety of the general public as well as the utility personnel that will operate and maintain the station. Other codes that govern the design and maintenance of the ICF Project include the IEEE, the ASCE, the American Concrete Institute, and the American National Standards Institute. These standards control the design of the fence, the separation distance of the fence to energized equipment, safe clearance distances between energized equipment above ground, and the grounding of all equipment, fencing and surfaces within the yard and around the perimeter of the yard. Following these design criteria, the ICF layout and TNEC ROW expansion that are presented herein avoid permanent fill to palustrine wetlands but will include vegetation clearing and management within Wetland 5, a small portion of Wetland 4, and the Area of Land within 50-feet of Wetland 4. Approximately 145 linear feet of the ASSF will be cleared of vegetation and 40 linear feet will be culverted beneath the proposed access road to the TNEC ROW. Other alternative layouts were evaluated which were found to cause greater impacts to wetlands and were consequently rejected.

(5) Whether the applicant has made any attempts (and if so what they were) to avoid alterations to freshwater wetlands by overcoming or removing constraints imposed by zoning, infrastructure, parcel size or the like; and

These factors are not relevant here and are not constraints that cause a freshwater wetland to be impacted for the ICF Project. A separate application for a Development Plan must be submitted to the QDC for review and approval as part of the advisory opinion process under the EFSB.

(6) Whether feasible alternatives that would not alter the natural character of any freshwater wetlands on the subject property or on property that is reasonably available, if incorporated into the proposed project, would adversely affect public health, safety or the environment.

The ICF Project must abide by safety code standards described above and must be built at the proposed scale to achieve the Project purpose of interconnecting the new OnSS with the existing Davisville Substation and the regional transmission grid. Other locations and designs of the ICF and TNEC ROW expansion were evaluated within the Davisville Substation parcel but were not selected for reasons described previously.

5.3 Minimization

(b) *Minimization: For any impact to freshwater wetlands that cannot be avoided, the applicant must satisfactorily demonstrate to the CRMC in the written narrative that the impact to wetland functions and values have been reduced to the maximum extent possible. At a minimum, applicants must consider and address the following issues*:

(1) Whether the proposed project is necessary at the proposed scale or whether the scale of the wetland alteration could be reduced and still achieve the project purpose;

The ICF Project must be built at the proposed scale to achieve the Project purpose of interconnecting the power supply from the new OnSS with the existing Davisville Substation. As part of the System Impact Study in accordance with ISO-NE's Open Access Transmission Tariff, the Project requires the 115-kV side of Davisville Substation to be converted to a 115-kV six-breaker ring bus to enable a connection between the OnSS (two 115-kV underground duct bank connections), the existing two 115-kV overhead Transmission Tap lines, the existing Davisville Substation, and the ISO-NE Transmission System. The design selected to achieve this connection minimizes the impact to the surrounding freshwater wetland resources. The proposed Project does not place any structures within palustrine wetland or the Area of Land within 50-ft of Wetlands, though it does necessitate vegetation removal and management to ensure the safe operation of the transmission infrastructure.

(2) Whether the proposed project is necessary at the proposed location or whether another location within the site could achieve the project purpose while resulting in less impact to the wetland;

As described in Section 3.1 of this narrative, the ICF is an expansion of the Davisville Substation and must be located proximate to the substation to fulfill the ICF Project purpose of interconnection between the proposed OnSS and the regional transmission grid. The proposed placement and design of the ICF and TNEC ROW within the Davisville substation parcel has the least impact on freshwater wetland resources while still achieving the ICF Project purpose.

(3) Whether there are feasible alternative designs, layouts, densities or technologies, that would result in less impact to the wetland while still achieving the project purpose; and

See above responses to items 1 and 2.

(4) Whether reduction in the scale or relocation of the proposed project to minimize impact to the wetland would result in adverse consequences to public health, safety or the environment.

The scale of the ICF Project cannot be reduced and still fulfill its purpose. A summary of the equipment needed is provided in Table 3-1. The NESC dictates separation distances between equipment within the ICF and the proposed transmission towers within the TNEC ROW. This design ensures that the safe transmission of power from the OnSS to the existing Davisville Substation for distribution to consumers in southern New England.

5.4 Mitigation

c. *Mitigation measures. Measures, methods, or best management practices to avoid alterations of and minimize impacts to wetlands are described in § 2.9(B)(1)(d)(3) of the Freshwater Wetland Rules.*

AA. *Preserving natural areas in and around wetlands*;

Although the ICF Project will require vegetation clearing and management within 900 square feet (0.02 ac) of Wetland 4, 3,470 square feet (0.08 ac) within Wetland 5, and 11,680 square feet (0.27 ac) Area of Land within 50-feet of Wetland 4, the work will not require the placement of structures or fill within these regulated areas. This vegetation clearing is necessary to maintain safe clearances for the structures within the TNEC ROW and for the equipment within the ICF yard. The 145-ft (44 m) length of ASSF will also be cleared and 40-ft (12 m) of it will be culverted beneath a new gravel access road to the TNEC ROW to maintain drainage under the roadway.

Disturbed areas not proposed to be surfaced with crushed stone or riprap will be planted with native seed mix and the impacted area of Wetland 4 and perimeter of Wetland 5 will be planted in native shrubs in accordance with the Wetland Mitigation Plan included on Sheet W-1.0 in Appendix H. Note that Site Plans in Appendix H are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). Vegetation will be maintained periodically in accordance with TNEC's IVM procedures.

BB. *Minimizing the extent of disturbed areas and encouraging the preservation of land in its natural state*;

The ICF Project is designed to meet the requirements of the ISO-NE System Impact Study. There are no unnecessary components to the ICF Project that can be separated from the design presented that would preserve additional land. The wetlands that will be impacted by vegetation management will be cleared of invasive species in accordance with TNEC protocols and will be planted with native shrubs and seed mix in

accordance with Wetland Mitigation Plan included on Sheet W-1.0 in Appendix H. Note that Site Plans in Appendix H are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

CC. *Designing dense plantings of shrubs and trees between the developed areas and the remaining natural areas*: (i). *to "buffer" impacts from loss of wildlife habitat and loss of natural areas and* (ii). *to reduce the impacts of noise, lighting and other disturbances upon wildlife and the remaining natural areas*;

Once constructed, the ICF will not create traffic activity that would be disruptive to wildlife usage or the aesthetics of the wetlands as viewed from Camp Avenue. The area cleared for the TNEC ROW will be converted from forested to herbaceous and scrub-shrub habitat. Power lines managed in shrub cover provide an early succession habitat cover type sought by several bird and small mammal species (DeGraaf and Yamasaki 2001).

(DD) *Maintaining unrestricted fish and wildlife passage*;

The ICF Project will not impact any habitat occupied by fish. The ICF will be fenced but wildlife will be free to navigate around the ICF once it is operational. The TNEC ROW will be maintained in shrub-level vegetation that will be accessible by wildlife.

(EE) *Designing structures and alterations so that they are located outside of flood plain, floodway, areas subject to flooding, flowing bodies of water or other freshwater wetlands*;

The ICF Project avoids the placement of structures within palustrine freshwater wetlands, Area of Land within 50 Feet, and floodplain. To maintain the function of the ASSF, which supports drainage from isolated Wetland 5 to the larger Wetland 4, approximately 40 linear feet (12 m) of the ASSF will be conveyed through a reinforced concrete culvert under the proposed gravel access roadway. SESCs will be maintained during construction to minimize impact to freshwater wetland resources.

(FF) *Using best management practices for the stabilization of disturbed areas and the selection, use, and maintenance of temporary or permanent soil erosion and sediment controls in accordance with the latest version of the RI Soil Erosion and Sediment Control Handbook and the RI DEM "Stormwater Management, Design and Installation Rules", 250-RICR-150-10-8*;

The Stormwater Management Report prepared for this application followed the BMP selection guidance and design criteria provided in the Stormwater Management, Design and Installation Rules (RIDEM 250-RICR-150-10-8, effect 2018). See the discussion about Stormwater Management in Section 3.3 of this application narrative and see the Stormwater Management Report in Appendix J and the SESC Plan in Appendix I. Note that Appendix I is provided under confidential cover to this Application to Alter because it contains confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

(GG) *Using best management practice selection and design criteria in accordance with the latest version of the RI DEM "Stormwater Management, Design and Installation Rules," 250-*

RICR-150-10-8, to reduce post-development stormwater flows and maximize the control, treatment and maintenance of systems that reduce stormwater impacts to acceptable levels;

The Stormwater Management Report details Project compliance with 250-RICR-150-108.

(HH) *Minimizing impervious surface areas such as roads, parking, paving or other surfaces*;

Impervious surface will be minimized by using crushed stone for the 16-foot access drive between the ICF and the Davisville Substation. Impervious surfaces are limited to the bituminous pavement drive within the fenced perimeter of the ICF and the proposed control building. The interior yard of the ICF and the exterior perimeter of the paved access drive will be surfaced in crushed stone which is designed as QPA as defined in 250-RICR-150-10-8.

(II) *Incorporating compensatory flood storage area(s) where necessary and in compliance with these Rules*;

Compensatory flood storage is not required because the ICF Project will not displace existing flood storage.

(JJ) *Encouraging infiltration of non-contaminated run-off into uncontaminated soils*;

The perimeter drive around the ICF structures will have a slight crown to convey stormwater to either side of the access drive and into the exterior or interior stone and gravel shoulders which are designed as QPAs. A stone and gravel basin will be constructed to provide stormwater retention and groundwater recharge. The perimeter of the ICF has been designed with riprap swales to allow the stormwater runoff from the offsite (south and southeast) abutting properties to drain around the ICF. As designed, the ICF Project will infiltrate 100 percent of the stormwater runoff up to and including the 100-year storm. These measures are detailed on the plans in the Stormwater Management Report which is included in Appendix J.

(KK) *Preventing channelization or piping of run-off and encouraging sheet flow*;

Stormwater is designed to flow overland across the access drives and into the exterior or interior stone and gravel shoulders where it will contribute to groundwater recharge. A low gradient diversion swale will intercept run on from adjacent properties and convey it around the ICF. The swale gradually widens toward its terminus to encourage sheet flow across vegetated areas upon discharge.

(LL) *Landscaping with gradual slopes to maximize sheet flow and infiltration while minimizing channelization*;

Landscaping is not proposed; however, the Wetland Mitigation Plan in Appendix H includes native shrub plantings within the cleared area of Wetland 4 and the perimeter of Wetland 5. Note that Site Plans in Appendix H are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

(MM) *Minimizing or eliminating the use or increase of any pollutants, fertilizers, pesticides, herbicides, or any other chemical or organic application which increase pollutant and nutrient loadings*;

These products will not be used for the construction of the ICF Project; however, herbicides may be used for future vegetation maintenance within the perimeter of the ICF and within the TNEC ROW. Any herbicide applications will be conducted by a licensed professional.

(NN) *Maximizing setbacks of septic systems and other land disturbances from wetlands; and*

Not applicable. The ICF Project does not include a septic system.

(OO) *Minimizing the withdrawal of surface water or groundwater from wetlands or uplands adjacent to wetlands, especially during dry periods, and minimizing any reduction in river or stream flow*.

Not applicable. There will be no withdrawals of water for the ICF Project.

5.5 Review Criteria

1. The CRMC will evaluate all projects to determine the extent to which the proposed project will have an impact, either individually or cumulatively, upon wetland functions or values as described in this Rule.

2. All such projects shall:

a. *Be subject to all of the review criteria contained herein and must incorporate those best management practices, best available technologies, and any maintenance or inspection schedules necessary to comply with the applicable criteria*;

Each individual criterion is addressed below.

b. *Not adversely affect any wetland so as to cause any of the impacts identified in § 2.10(E)(3) of this Part below; and*

This criterion is addressed below.

c. *Shall not result in any random, unnecessary, or undesirable alteration of freshwater wetland.*

The Project is not random or unnecessary because the ICF Project is a necessary component to support the interconnection of electricity generated from the offshore Revolution Wind Project to the existing Davisville Substation and regional transmission grid so that it may be distributed to consumers in Rhode Island and Connecticut.

The Project has been proposed in response to the renewable energy directives in Rhode Island and Connecticut. In response to this expressed need and demand, the Project has been awarded PPAs totaling 704 MW of generation capacity with Rhode Island and Connecticut. The Project is being developed to fulfill its obligations to Connecticut and Rhode Island in accordance with the PPAs.

3. *Before issuing a permit, the CRMC must be satisfied that a proposed project or alteration will not result in*:

a. *Significant reduction in the overall wildlife production or diversity of a wetland*;

The impacts of the ICF Project on Wetlands 4 and 5 and the Area of Land within 50-ft of Wetland 4 are limited to vegetation removal and management for the safe operation of the ICF and the TNEC ROW. These impacts to vegetation have been minimized to the maximum extent practicable and are unlikely to have a significant reduction in the overall wildlife production or diversity associated with Wetland 4. Construction activities may temporarily displace individuals, though this impact is expected to be short-term with wildlife usage likely to resume after the project is operational.

b. *Significant reduction in the ability of a wetland to satisfy the needs of a particular wildlife species*;

The proposed wetland alteration will not reduce the ability of Wetlands 4 or 5 and the Area of Land within 50-ft of Wetland 4 to support the needs of wildlife species. Both Wetlands 4 and 5 will continue to provide vernal pool habitat for obligate species.

c. *Significant displacement or extirpation of any wildlife species from a wetland or surrounding areas due to the alteration of the wetland*;

The proposed wetland alterations are minor and designed to minimize impacts to wildlife that may be utilizing habitat in the Project Area. The ICF Project will not cause significant displacement or extirpation of wildlife.

d. *Any reduction in the ability of the wetland to ensure the long-term viability of any rare animal or rare plant species*;

There are no known rare animal or plants species within Wetlands 4 or 5 or the Area of Land within 50-ft of Wetland 4. Occurrences of sickle-leaved golden aster that occur in uplands within the Project Area are avoided by the ICF Project.

e. *Any degradation in the natural characteristic(s) of any rare wetland type*;

In accordance with the definitions provided in §2.4 of the Freshwater Rules, "rare" refers to freshwater wetland types that are listed as threatened, endangered, of special interest or of special concern under the Natural Heritage Program, by the RIDEM Division of Fish and Wildlife, or under the federal ESA. There are no such rare wetland types within or adjacent to the Project Area.

f. *Significant reduction in the suitability of any wetland for use by any resident, migratory, seasonal, transient, facultative, or obligate wildlife species, in either the short- or long-term as a travel corridor; feeding site; resting site; nesting site; escape cover; seasonal breeding or spawning area*;

Construction activities may temporarily reduce habitat utilization patterns by wildlife. Once construction is complete, wildlife usage of the area surrounding Wetlands 4 and 5 is expected to resume. The overall distribution of the cover type within these

wetlands will be changed only slightly due to the Project and wildlife are anticipated to habituate to the new ICF and TNEC ROW and re-establish habitat usage.

g. *Any more than a minimal intrusion of, or increase in, less valuable, invasive or exotic plant or animal species in a wetland*;

There are several invasive plants species present within and adjacent to the Project Area. The proposed construction will follow TNEC protocols that will minimize the opportunity to introduce or exacerbate the establishment of invasive species.

h. *Significant reduction in the wildlife habitat functions and values of any wetland which could disrupt the management program for any game or non-game wildlife species carried out by state or federal fish, game, or wildlife agencies*;

No significant loss of existing wildlife habitat values is anticipated to result from the implementation of the project that could disrupt the management of programs for any game or non-game species.

i. *Significant reduction in overall current or potential ability of a wetland to provide active or passive recreational activities to the public*;

The wetlands are located on private property and there is no public access.

j. *Significant disruption of any on-going scientific studies or observations*;

The wetlands in the Project Area are not known to be used for any on-going scientific studies or observations.

k. *Elimination of, or severe limitation to traditional human access to, along the bank of, up or down, or through any rivers, streams, ponds, or other freshwater wetlands*;

There is no public access to the wetlands near the Project Area.

l. *Any reduction in water quality functions and values or negative impacts to natural water quality characteristics, either in the short- or long-term, by modifying or changing: water elevations, temperature regimes, volumes, velocity of flow regimes of water; increasing turbidity; decreasing oxygen; causing any form of pollution; or modifying the amount of flow of nutrients so as to negatively impact wetland functions and values*;

The removal of forested vegetation along edge of Wetlands 4 and 5 will allow for more sun exposure in these small areas of the wetland. However, based on the overall size of Wetland 4 this vegetation removal is not expected to have a significant effect on the overall function and values of the water quality within this wetland. Increased sun exposure within Wetland 5 may increase water temperatures temporarily until the ROW vegetation reestablishes and provides shading.

The only other potential impact to water quality within the project area wetlands is the temporary increase of turbidity during construction, however, erosion and sedimentation controls will be used to minimize these impacts. Regular site inspections will occur in accordance with the project's SESC Plan.

m. *Any placement of any matter or material beneath surface water elevations or erection of any barriers within any ponds or flowing bodies of water which could cause any hazards to safety*;

The ICF Project will not create any hazards to safety in this manner.

n. *Significant loss of important open space or significant modification of any uncommon geologic features or archaeological sites that are listed on the National Register of Historic Places or eligible for listing*;

In accordance with BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585, avoidance and mitigation actions for cultural resources will be developed through Section 106 consultation with BOEM as the lead federal agency, the Rhode Island Historic Preservation and Heritage Commission ("RIHPHC") and Native American Tribes. Coordination with RIHPHC and Native American Tribes regarding potential archaeological features is on-going. The site does not contain uncommon geologic features.

o. *Significant modification to the natural characteristics of any wetland area of unusually high visual quality*;

Wetlands within the ICF Project Area are not visible from Camp Avenue.

p. *Any decrease in the flood storage capacity of any freshwater wetland which could impair the wetland's ability to protect life or property from flooding or flood flows*;

The ICF Project will not reduce flood storage capacities.

q. *Significant reduction of the rate at which flood water is stored by any freshwater wetland during any flood event*;

The ICF Project will not significantly reduce the rate at which flood water is stored by freshwater wetlands.

r. *Restriction or significant modification of the path or velocities of flood flows for the 1-year, 10-year, or 100-year frequency, 24-hour, Type III storm events so as to cause harm to life, property, or other functions and values provided by freshwater wetlands*;

The ICF Project will not significantly modify the path of flood flows. As described above, no significant changes to drainage patterns within the project area are proposed. No restrictions to path of flood flows are proposed.

s. *Placement of any structure or obstruction within a floodway so as to cause harm to life, property, or other functions and values provided by freshwater wetlands*;

The ICF Project will not place any structures or obstructions within a floodway.

t. *Any increase in run-off rates over pre-project levels or any increase in receiving water/wetlands peak flood elevations for the 1-year, 10-year, or 100-year frequency, 24-hour, Type III storm events which could impair the wetland's ability to protect life or property from flooding or flood flows*;

The ICF Project will result in an increase in impervious surface; however, there will be no increase in stormwater runoff peak flows. Documentation of the pre- and postconstruction drainage analyses is provided in the Stormwater Management Report (Appendix J).

u. *Any increase in run-off volumes and discharge rates which could, in any way, exacerbate flooding conditions in flood-prone areas*;

No increase in stormwater runoff peak flows are proposed for the 1, 10, and 100-yr storm events. See the Stormwater Report for details.

v. *Significant changes in the quantities and flow rates of surface or groundwater to or from isolated wetlands (e.g., those wetlands without inflow or outflow channels)*;

There will not be any significant changes in the quantities and flow rates of surface or groundwater to or from isolated wetlands. The existing ASSF that conveys discharges from isolated Wetland 5 to the larger Wetland 4 will be culverted beneath the proposed gravel access road to maintain the drainage pattern between these two wetlands.

w. *Placement of any structural best management practices within wetlands, or proposal to utilize wetlands as a detention or retention facility*;

Revolution Wind and TNEC do not propose to place any structural BMPs within wetlands or use wetlands as a detention or retention facility.

x. Any more than a short-term decrease in surface water or groundwater elevations within any wetland;

Existing drainage patterns have been maintained. The ICF Project will not withdraw any water from the site.

y. *Non-compliance with the Rhode Island Department of Environmental Management "Water Quality Regulations," 250-RICR-150-05-1; or*

The ICF Project is designed in accordance with *250-RICR-150-10-8* and as such complies with *250-RICR-150-05-1.*

z. *Any detrimental modification of the wetland's ability to retain or remove nutrients or act as natural pollution filter.*

The ICF Project will not result in the loss of wetland areas that currently provide nutrient removal and water quality functions.

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Summary

Revolution Wind proposes to construct the Revolution Wind Project which includes the installation of an offshore wind farm and associated transmission facilities that will deliver approximately 704 MW of clean wind power to the States of Rhode Island and Connecticut. This Project will provide clean, reliable offshore wind energy that will significantly increase the renewable energy delivered to Rhode Island and Connecticut, reducing carbon emissions across the region.

The offshore windfarm is proposed within the designated BOEM Renewable Energy Lease Area OCS-A 0486, which at its closest edge, is approximately 15 miles southeast of the Rhode Island coast. Project components include offshore WTGs, IAC, OSSs, an OSS-Link cable in federal waters, RWEC and RWEC-RI which traverses the West Passage of Narragansett Bay to the landfall location at Quonset Point in North Kingstown. The POI is the TNEC existing Davisville Substation, also located in North Kingstown. To facilitate interconnection of the Project to the Davisville Substation, a new OnSS and ICF, along with associated interconnection circuits, will be constructed as part of the overall Project.

This Application addresses the ICF and associated overhead interconnection circuits within the TNEC ROW connecting to the Davisville Substation (refer to **Figure 2** in **Appendix C**) with TNEC and Revolution Wind as joint applicants, while other Project components which include the RWEC-RI, Landfall Work Area, Onshore Transmission Cable, OnSS, and Interconnection ROW have been filed concurrently as a separate Category B Assent Application with Revolution Wind as the sole applicant.

The ICF Project has been designed to avoid impacts to freshwater wetlands to the greatest extend possible. The ICF layout and TNEC ROW expansion avoid permanent fill to palustrine wetlands but will include vegetation clearing and management within Wetland 5, a small portion of Wetland 4, and the Area of Land within 50-feet of Wetland 4. Approximately 145 linear feet of the ASSF will be cleared of vegetation and 40 linear feet will be culverted beneath the proposed access road to the TNEC ROW. Disturbance related to the clearing is considered temporary because it will occur only during the construction period, however, the change in habitat cover type from forested to a managed herbaceous and scrub-shrub cover type will be permanent because the cleared areas will be subject to a periodic vegetation management cycle to maintain safe clearances between vegetation and electrical equipment.

A summary of the wetland impacts is provided in **Table 6-1** below. **Figure 4** in **Appendix C** depicts the wetland impact areas.

Table 6-1 Temporary and Permanent Impacts During the Project

CRMC Resource	Temporary Impact (Area SF/Ac)	Temporary Impact (Vol.)	Permanent Impact (Area SF/Ac)	Permanent Impact (Vol.)
Wetland 3	0	0	0	0
Wetland 4	0	0	900/0.02	0
Wetland 5	0	0	3,470/0.08	0
Area of Land within 50-Feet of Wetlands	0	0	11,680/0.27	0
ASSF	0	0	145 Linear Feet*	
Floodplain	0	0	0	0

* 145 linear feet reflect the entire length of the ASSF that will be impacted due to vegetation clearing. 40 linear feet of the ASSF will be culverted.

The Wetland Mitigation Plan (Sheet W-1.0 in **Appendix H**) proposes to plant native shrubs within the impacted area of Wetland 4 and the perimeter of Wetland 5. Note that Site Plans in **Appendix H** are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552). Disturbed areas not proposed to be surfaced with crushed stone or riprap will be planted with native seed mix. Vegetation will be managed on a five-year cycle through integrated procedures combining removal of danger trees, hand cutting, targeted herbicide use, mowing, selective trimming, and side trimming. This vegetation management is necessary to allow for the proper clearance between vegetation and electrical conductors.

This proposed work is considered a regulated activity under the Freshwater Wetland Rules because it will include tree clearing and construction within regulated freshwater wetland resources (Freshwater Wetland Rules § 2.5). Revolution Wind and TNEC believe the ICF Project complies with the letter and spirit of the policies and regulations contained within the Freshwater Wetland Rules and offers a meaningful opportunity to reduce future carbon emissions in the Rhode Island region. Revolution Wind and TNEC respectfully request that the CRMC approve this Application to Alter Freshwater Wetlands.

7

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Appendix A: CRMC Preliminary Determination Report of Findings

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RHODE ISLAND COASTAL RESOURCES MANAGEMENT COUNCIL
REPORT OF FINDINGS -- PRELIMINARY DETERMINATION

STATEMENT OF LIMITATIONS

The contents of this staff determination report shall be valid only for the period on and preceding the date of this report. This report is neither an approval nor denial of the subject proposal. It is an evaluation of CRMC regulations in effect as of 4/20/2021 as they pertain to the below stated proposal, including preliminary staff recommendations.

Modifications to the below stated proposal may, upon the discretion of the CRMC, render this determination null and void.

APPLICANT INFORMATION

NAME: Ørsted & Eversource **CRMC FILE NO.** A2021-02-031
LOCATION/POLE: Camp Avenue, Circuit Drive and Burlingham Avenue
CITY/TOWN: North Kingstown, Quonset Business Park
PLAT: 185,179 **LOT**: Lots 001, 005, 011 and 030, & Lots 001, 004 and 008

CONTACT PERSON(S) & ADDRESS:

Mark Roll
Revolution Wind Permitting Manager, Ørsted North America
Revolution Wind, LLC
Onshore Facilities
North Kingstown, Rhode Island

PRELIMINARY REVIEW INFORMATION

PROPOSAL: Construction of associated upland transmission into facilities related to the Revolution Wind offshore wind farm by Ørsted. These transmission facilities will include a new substation and interconnection facility.

PLAN(S) REVIEWED: Ørsted

INVESTIGATOR	DATE	TIME
Justin Wolf Skenyon	Office Review Only	
David Ciochetto	"	
David Reis	"	
Rich Lucia	"	

MEASUREMENTS & OBSERVATIONS:

This CRMC staff review is primarily based on familiarity with the site location and collateral data sources. These included state GIS mapping for eel grass and mapping for FEMA Special Flood Hazard Area, along with both aerial and satellite mapping.

NAME: **Ørsted**
CRMC FILE NUMBER:**D 2021-02-031**

PREVIOUS CRMC ACTIONS FOR SITE:

The proposed cable route affects the following activities previously approved by the CRMC:

- Plat 185, Lot 008: File No. 2014-04-089, 2012-11-099, 2009-08-054, and 2004-10-009. CRMC permitted a patio and an office building. Ørsted has an easement area depicted in exhibit 'A' Premises, Easement Area & Utility Permit Area. This easement area overlaps the office building.
- Plat 179, Lot 001: File No. 1996-03-034, CRMC permitted underground line by the Narragansett Energy Company in 1996.
- Plat 179, Lot 011, 021: File No. 1997-10-061 & 1998-09-096, CRMC permitted a stormwater infiltration system filed. There are two stormwater infiltration system

SUMMARY OF FINDINGS

CRMC JURISDICTION: **(YES)** NO

TYPE WATER: Type 6; Industrial Waterfronts and Commercial Navigation Channels, Narragansett Bay in the vicinity of Quonset Point

COASTAL FEATURE(s): For the purpose of this review the coastal feature(s) at the cable landing site shall be the coastal beach and manmade shoreline (revetment) and the inland edge of coastal feature shall be the top of the revetment.

Applicability of CRMP and SAM Plans (as amended): See Red Book 650-RICR-20-00-1

CRMP Sections: **1.1.4(D)**, 1.1.7, 1.1.8, **1.1.9**, 1.1.10, **1.1.11**, **1.2.1(G)**, **1.2.2(A)**, 1.2.2(B), **1.2.2(C)**, 1.2.2(D), **1.2.2(E)**, 1.2.2(F), **1.3.1(A)**, **1.3.1(B)**, 1.3.1(C), 1.3.1(D), 1.3.1(E), 1.3.1(F), **1.3.1(G)**, **1.3.1(H)**, 1.3.1(I), **1.3.1(J)**, 1.3.2, **1.3.3**, 1.3.4, 1.3.5, other.

SAMP(s): Ocean Special Area Management Plan 650-RICR-20-05-11

STAFF CONCERNS/COMMENTS/INFORMATION REQUIREMENTS:

A. Comments regarding the proposed Inland Cable Route after landfall and Submerged Cable Route in State Waters:

1. Designs: Please clarify what methods and designs are being considered for the cable landfall location and onshore cable route.

NAME: **Ørsted**
CRMC FILE NUMBER:**D 2021-02-031**

2. Stormwater infiltration system concerns: The submitted plans indicate the proposed cable will cut through, and/or will be constructed in very close proximity to an existing stormwater infiltration system. As shown in figures 1 through 5. Excavation and open trench construction within the basin has the potential of permanently damaging the system by compacting soils and liberating fine soil particles. Accordingly, CRMC would recommend avoiding entirely any infiltration systems (ref. Sheet PG-17 of the proposed plans).

Figure 1 Stormwater infiltration system highlighted in Red along Circuit Drive

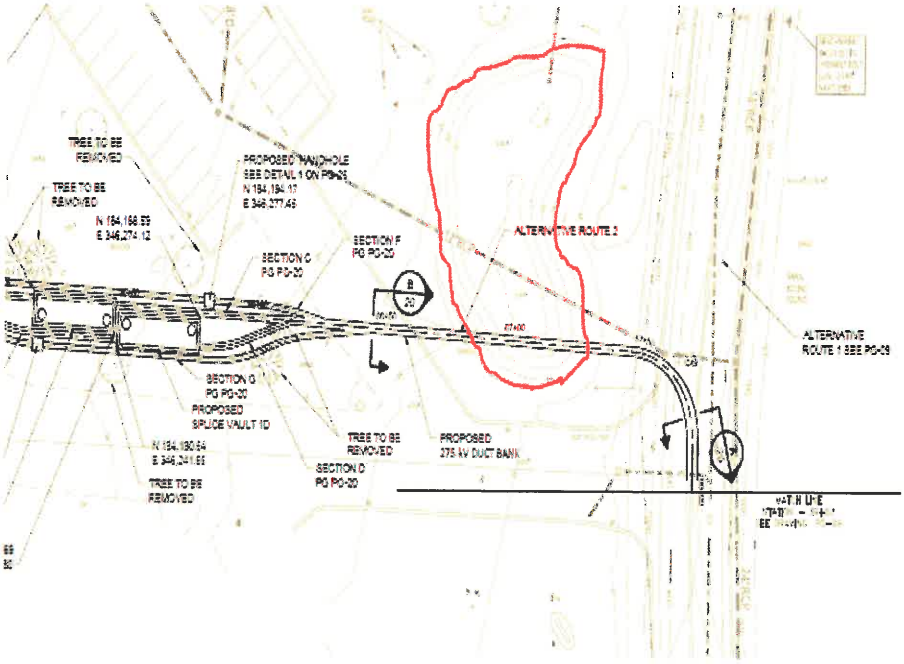

Figure 2 Stormwater infiltration system highlighted in Red Seen in Sheet PG-17

NAME: **Ørsted**
CRMC FILE NUMBER:**D 2021-02-031**

Please be advised the proposed cable route also passes in close proximity to a second stormwater infiltration system (see figure 3 below and sheet PG-08 of the proposed plans). Any earthwork within the basin or any sediment discharge to the infiltration basin may permanently damage the infiltrative capacity of the system by introducing soil fines. Accordingly, appropriate soil erosion and sediment controls should be used to avoid impacts to the existing stormwater system.

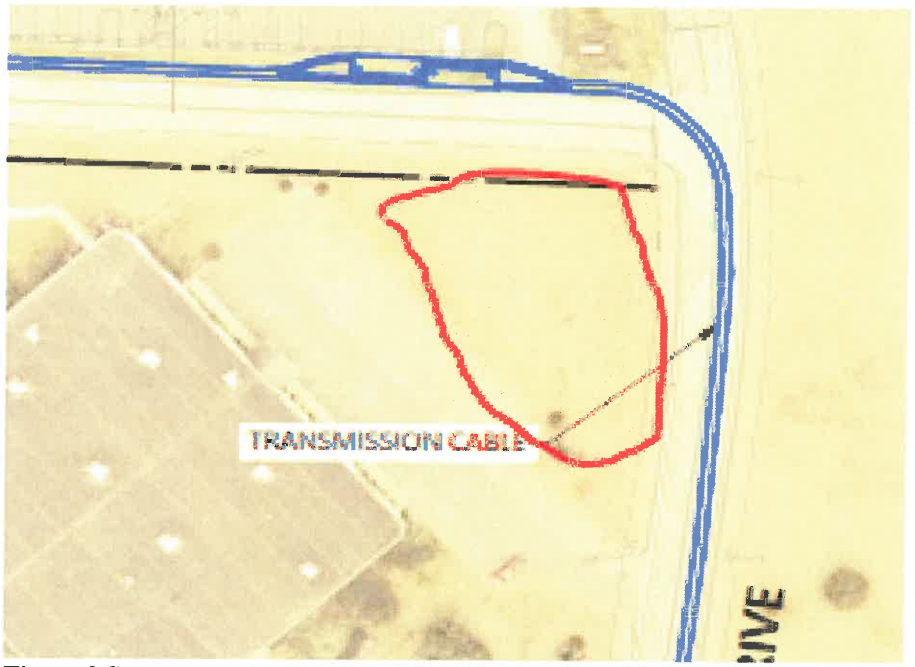

Figure 3 Stormwater infiltration system highlighted in Red along Circuit Drive

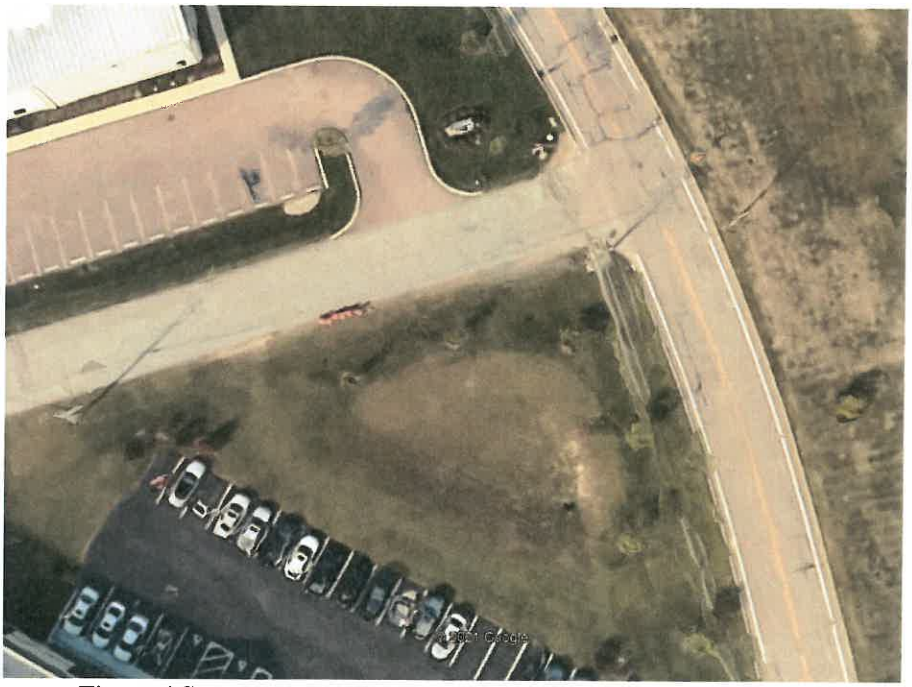

Figure 4 Stormwater infiltration system as seen from google earth

NAME: **Ørsted**
CRMC FILE NUMBER:**D 2021-02-031**

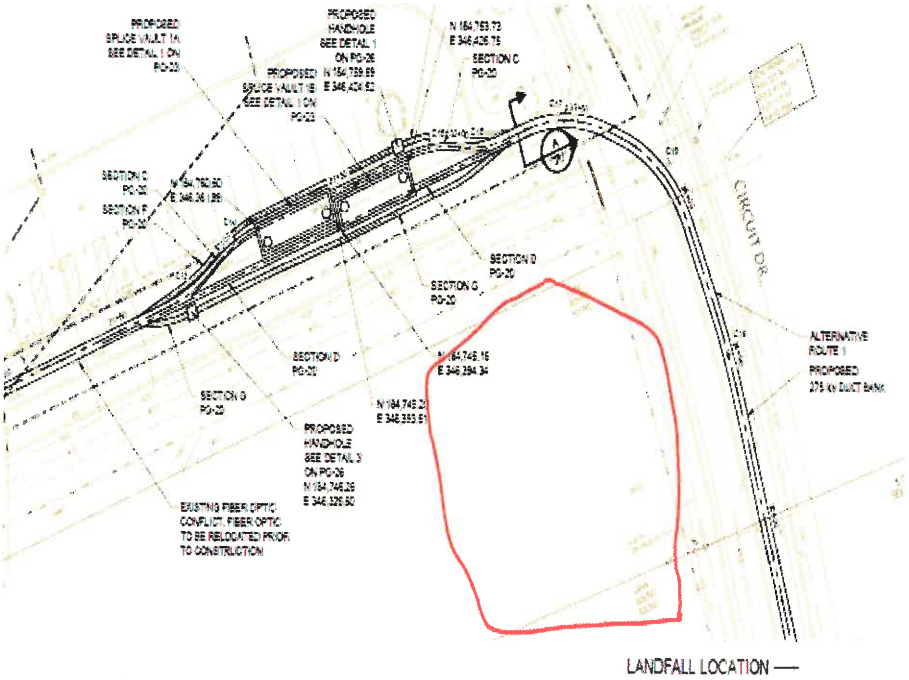

Figure 5 Stormwater infiltration system highlighted in Red Seen in PG-08

3. On Shore Landing: The proposed cable landing is located within CRMC designated Type 6 waters: Industrial Waterfronts and Commercial Navigation Channels. The cable landing is considered to be consistent with the designated priority of use for Type 6 waters. However, Ørsted will be required to minimize impact to the shoreline as much as is possible. In addition, erosion and sedimentation impacts and disturbance of the coastal buffer zone present at the landing location should be minimized.

4. Cable Installation Method: It is CRMC opinion that horizontal directional drilling would minimize impacts to the shoreline and existing shoreline protection. Directional drilling from offshore will minimize the risk associated with open trench installation and sand migration causing the cables to become exposed. If the cables become exposed CRMC will require corrective action and mitigation similar to what has been required for the Block Island Wind Farm. The landside cable emergence point should be landward of the CRMC defined coastal feature. The use of the adjacent parking lot designated in the easement should meet this requirement.

5. Shoreline Restoration: Open trench cable installation method will require that any damage to the coastal feature be repaired. The stone and rip rap removed during the open trench excavation will need to be returned or replaced and meet the standards of the shoreline protection section of the Red Book (§ 1.3.1(G).

6. Building to be Demolished near cable shore landing: Please clarify what the purpose of demolishing the buildings on Plat 185, Lot 008. Who would be responsible for the demolition and is it related to the easement? As described in Option in Easement Agreement page 3 section 5 and displayed in Exhibit 'D' (the Demolition).

7. **CRMC proposed Regulations for Submerged Cable Route in State Waters**: Please be advised that CRMC has issued an Advanced Notice of Proposed Rulemaking for submerge cables in state waters. The posting is on the Secretary of State website. See: https://rules.sos.ri.gov/promulgations/organization/650

Any application submitted after the rule adoption will be required to meet the applicable regulatory standards in effect at that time.

B. Freshwater Wetland Impact Review Comments:

1. The following Wetland description was provided by the applicant:

Two wetlands characterized as forested swamp are present in the northern and western portion of the proposed OnSS site (wetlands 3 and 4). Refer to attached **Figure 3 Wetland Resources**. Vegetation along the wetland boundary includes a mixture of red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), sweet pepperbush (*Clethra alnifolia*), glossy buckthorn (*Frangula alnus*), Asiatic bittersweet (*Celastrus orbiculatus*), greenbrier (*Smilax* sp.) and poison ivy (*Toxicodendron radicans*). There is Area of Land within 50-feet of the wetland boundary (Wetland Buffer) associated with the wetlands in accordance with the Freshwater Wetland Rules. Wetland 3 drains via narrow stream channels north and west of the parcel boundary to Mill Creek. Wetland 4 is isolated with no surficial hydrological connection to nearby wetlands or waterways.

Wetland 2 is an isolated forested wetland formed in a depression south of the capped landfill. Wetland 5 is an isolated wetland characterized by standing water with a sapling fringe. Wetland 5 drains to wetland 4 via an Area Subject to Storm Flowage (ASSF). There are no surface waters within the OnSS or ICF limit of work, with the closest stream being approximately 192 feet to the northwest of the OnSS limit of work.

Wetland 4 contains a vernal pool that was confirmed by a survey for vernal pool obligate species in the spring of 2020. Wetland 5 may provide suitable vernal pool habitat, but a vernal pool survey has not been performed yet. Vernal pool survey for wetland 5 is planned for spring 2021.

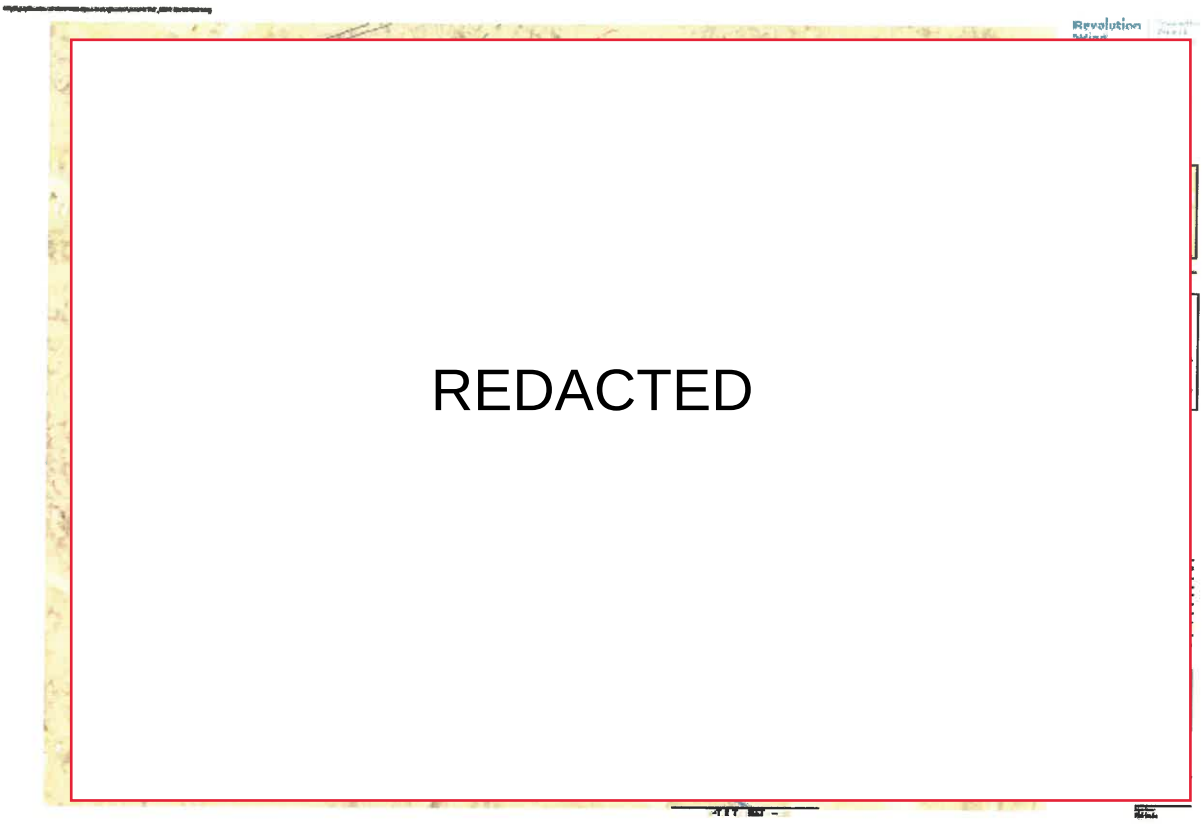

Figure 6 Proposed Onshore Facilities

2. The following Wetland Impact description from applicant:

Construction of the OnSS will impact approximately 21,127 square feet (0.5 ac) of Wetland Buffer from grading, retaining wall construction, access road construction, and substation equipment. Of this, approximately 8,197 square feet (0.2 ac) is permanent and 12,930 square feet (0.3 ac) is temporary. Construction of the ICF and TNEC ROW will temporarily impact approximately 3,800 square feet (0.09 ac) of an isolated wetland (wetland 5), 800 square feet (0.02 ac) of a forested swamp (wetland 4), and 8,600 square feet (0.2 ac) of Wetland Buffer due to clearing of vegetation. In addition, the new access road on the ICF parcel for the TNEC ROW will cross the ASSF between wetlands 4 and 5. The ASSF will be culverted to maintain drainage under the roadway, which will result in approximately 40 linear feet (12.2 m) of impact to ASSF. Fill alterations to palustrine wetlands have been avoided by the proposed design.

3. CRMC Wetland Comments and Concerns: Based on the wetland description and impact assessment information provided by the applicant, the following comments and recommendations are provided:

a) The degree of wetland impact appears to warrant a significant alteration under CRMC's FW wetland rules. The requirements for an application to alter should be met.

b) Kindly be advised that wetland edges have not been confirmed for purposes of the preliminary review. However, CRMC staff will conduct an inspection of the site prior to processing an application to alter and all wetland flagging must be present in order to allow for a wetland edge

confirmation. A CRMC Staff inspection will be scheduled after the spring emergence of vernal pool breeding amphibians.

c) Mitigation should be proposed by increasing the perimeter/buffer to FW wetlands where it can be accommodated to compensate for wetland buffer lost. The wetlands, remaining wetland buffers not disturbed, and mitigation/compensation buffers should be placed in a conservation easement to provide permanent protection. While the CRMC understands the applicant's interest in not determining mitigation measures at this time, the CRMC must consider Rhode Island's FW Wetland rules state (in part) under "mitigation measures":

"Measures, methods, or best management practices to avoid alterations and minimize impacts to wetlands include but are not limited to:

- Preserving natural areas in and around wetlands.
- Minimizing the extent of disturbed areas and encouraging the preservation of land in its natural state."

In this regard, the applicant should consider that the rules do not provide for other types of mitigation such as "mitigation banking" or off-site enhancement or preservation of wetlands. Adherence to these mitigation measures must be implemented on-site to be considered consistent with the rules. Please see: 650-RICR-20-00-02 §2.10(B)(4)(c) & § 2.9(B)(1)(d)(3).

d) Vernal Pool(s): The wetland descriptions provided indicate a confirmed vernal pool exists in Wetland # 4 but it is not shown on the plans. The description further indicates Wetland # 5 may provide vernal pool habitat and a survey is planned for spring 2021. CRMC staff concurs a 2021 survey is necessary, and any confirmed vernal pools **must be shown on the plans**. Please consider that CRMC Staff may not be able to support project clearing and development in close proximity to confirmed vernal pools (special aquatic sites). Please see the review criteria in § 2.10(E).

e) Describe how the flowage connection between FW Wetland # 4 and FW Wetland # 5 was determined to be an ASSF as opposed to an intermittent stream. Please investigate this area for evidence of flow before or after a rain event to determine if there is flow absent precipitation. Please also determine if this area provides a travel corridor for amphibians.

f) Wetland impact plans - The following concerns are noted:

- Please clearly label the wetland impact area(s) provided by the narrative descriptions on the plans.

- Please describe why a UT Pole must be installed immediately adjacent to FW Wetland # 5 with an OHW over the wetland. Also describe impacts to the wetland associated with maintaining an OHW over the wetland.

- Please describe the need for an OHW immediately adjacent to the 50' wetland buffer (Area of Land Within 50 feet) of FW Wetland #4. Describe any impacts on this buffer needed to install and maintain an OHW in this location. Describe any impact on the confirmed vernal pool in FW Wetland # 4 including any removal of vegetation which may protect breeding amphibians from predators.

C. Stormwater Management approach

1. QPAs: Please note these areas are not considered as QPAs but the washed crushed stone yards (this should not be a gravel but a washed stone at a depth of 6" minimum) can be considered as a pervious pavement in this case, assuming that they can be considered to be low traffic areas (i.e. only used for infrequent inspection and maintenance activity). The distance to the Seasonal High Ground Water table should be indicated. 3' separation is required. Protection is required of this stone surface from sediments during the construction phase

Also treat the required WQv for all impervious areas (including equipment pads and gravel roads) according to Minimum Standard 3 (Water Quality) of the Stormwater Rules with appropriate water quality Best Management Practices (BMPs). It appears that a infiltration trench is proposed. The design should meet the latest RI Stormwater Design and Installation manual.

2. Hydrologic Analysis: Additionally, address the following in the existing vs. proposed condition hydrologic analysis:

Model the pre-and post-project 1, 10, and 100-year Type III 24-hour rainfall events and the post-project 1.2" Type III 24-hour water quality rainfall event.

3. Regulated Wetlands: For culverts involving regulated wetlands, address any increases in peak water levels up-gradient of the culvert. Include the peak water levels up-gradient of each proposed culvert in the 1, 10, and 100-year 24-hour Type III storm events

a) The design must address Minimum Standard 4 (Conveyance and Natural Channel Protection) of the Stormwater Rules for flow which is released in a concentrated source (i.e., pipe, swale or basin outlet) for each waterbody ID number by providing extended detention of the total runoff volume from the 1-year 24-hour Type III storm event. Drainage areas that collectively have concentrated discharges from an area that totals less than 5 acres can be excluded from this requirement.

b) Provide peak runoff discharge rate control of 10- and 100-year Type III storm events in accordance with Minimum Standard 5 (Overbank Flood Protection, Qp) of the Stormwater Rules.

c) If the amount of proposed disturbance exceeds 50 acres, a downstream analysis is required for each design/analysis point.

d) It is recommended to avoid any new concentrated discharges from stormwater BMPs to adjacent and/or down-gradient properties.

D. CRMC Responses to Questions submitted to the CRMC by Orsted:

1. Confirm Permitting approach: CRMC Category B Assent for Offshore Export Cable in state waters, Landfall, Onshore Transmission Cable, and Onshore Substation (Applicant: Revolution Wind)

This application will be processed as a single Category "B" application for the above noted activities.

2. Confirm Stormwater Management approach (e.g., modeling OnsSS/ICF yard as qualifying previous area for water quality treatment and recharge requirements).

See section C Stormwater Management approach for CRMC response.

3. CRMC Freshwater wetland permit for Interconnection Facility and associated transmission system improvements (Applicant: Revolution Wind and TNEC.)

The application may be processed as a single Category B application. However, please address the freshwater wetland rules for jurisdictional activities bordering freshwater wetlands and the coastal program rules for other aspects of this overall project. The TNEC may apply for a separate FW Wetlands permit if needed.

4. Identify CRMC and Rhode Island Department of Environmental Management (RIDEM) jurisdiction over Onshore Facilities.

All work associated with the cable landing and route to the onshore substation and interconnection facility appears to be on CRMC's side of the freshwater wetlands' jurisdiction line and therefore only subject to CRMC jurisdiction. CRMC has jurisdiction south of Roger Williams Way. See Figure 7 below, CRMC jurisdiction is highlighted below in blue and RI DEM is highlighted in green.

Figure 7 Juridical lines between CRMC (Blue) and RIDEM (Green)

NAME: **Ørsted**
CRMC FILE NUMBER:**D 2021-02-031**

5. Confirm that the Category B Assent application and the Freshwater Wetland Permit application be processed under the same CRMC docket to allow for consolidated hearing process.

Yes, the Freshwater Wetland application requirements (application to alter) may be combined with the Red Book (coastal zone application) requirements into one CRMC Category B application. Please complete only the CRMC Assent application form but provide responses to the regulatory requirements of both programs.

6. Confirm floodplain status (coastal/riverine) and applicable compensation requirements

CRMC has determined that the project has a coastal floodplain status. FEMA Special Flood Hazard Areas indicates this area is Zone AE 13. This will not require flooding compensation for the affected area

E. Additional Comments and Concerns:

1. Coastal Hazard Worksheet: CRMC requires that the Coastal Hazard Worksheet must be completed and submitted with the application in accordance with 650-RICR-20-00-1.1.6(I). The Coastal Hazard Worksheet is an informative exercise that is recommended to be completed for the cable landing and the inshore facilities.
See: http://www.crmc.ri.gov/coastalhazardapp.html

2. Public Notice: The CRMC will issue a 30 day public notice for the project and will require a subsequent 20 day notice in a newspaper of wide distribution once the staff review and reports are complete. A public hearing will be required before the Coastal Council. Currently, due to health concerns regarding the spread of COVID-19 (Coronavirus) in RI, the CRMC is hosting virtual Council meetings only at this time in accordance with the Governor's Executive Orders.

SIGNATURE: _____ STAFF ENGINEER

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Appendix B: Proof of Ownership

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North Kingstown, Rhode Island

Property / 109 CIRCUIT DR

Zoom To | Share | Property Quick Search

Back To Property

North Kingstown GIS

Google Maps Link

Property Record Card

Details

Print

Property

Address	109 CIRCUIT DR
ID	179-005

Ownership

Owner	NARRAGANSETT ELECTRIC CO
Address	C/O PROPERTY TAX DEPT
	40 SYLVAN RD
	WALTHAM, MA 02451

Valuation

Total Value	$257,600
Land Value	$229,700
Improvements Value	$27,900

Land

Lot Size	6.10 Acres

10:54 AM

Back To Property

North Kingstown GIS

Google Maps Link

Property Record Card

Details

Print

Property

Address	594 CAMP AV
ID	179-030

Ownership

Owner	R I COMMERCE CORPORATION
Address	95 CRIPE ST
	N KINGSTOWN, RI 02852

Valuation

Total Value	$183,000
Land Value	$183,000
Improvements Value	$0

Land

Lot Size	10.48 Acres

EXECUTION VERSION

Upon recordation, return to:

Charles F. Rogers, Jr., Esq.
Locke Lord LLP
2800 Financial Plaza
Providence, RI 02903

MEMORANDUM OF OPTION TO LEASE

THIS MEMORANDUM OF OPTION TO LEASE (this "Memorandum") is made as of January 28, 20 20, by and between **RHODE ISLAND COMMERCE CORPORATION, ACTING BY AND THROUGH ITS AGENT AND ATTORNEY IN FACT QUONSET DEVELOPMENT CORPORATION** ("**QDC**") and **DWW REV I, LLC**, a Delaware limited liability company ("DWW").

W I T N E S S E T H

WHEREAS, QDC and DWW have entered into that certain Option to Lease Agreement dated January 28, 20 20 (the "Option Agreement") pursuant to which QDC has granted to DWW an option to lease certain land located at Quonset Business Park, North Kingstown, Rhode Island identified as Assessor's Plat 179, Lots 1 and 30 (the "Premises"), which Premises are further described on Exhibit A attached hereto and made a part hereof; and

WHEREAS, the parties desire to set forth certain terms and provisions contained in the Option Agreement for recording purposes.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto make reference to the following provisions:

1. **Definitions; Incorporation.** Capitalized terms used herein which are not otherwise defined herein shall have the respective meanings ascribed to them in the Option Agreement. This Memorandum is executed pursuant to the provisions contained in the Option Agreement and is not intended to vary the terms and conditions of the Option Agreement.

2. **Option to Lease.** The Option Agreement grants DWW an option to lease the Premises during a period commencing on the date hereof and expiring on the fifth (5^{th}) anniversary of the date hereof, and subject to payment by DWW to QDC of annual Option Payments.

3. **Option Agreement Terms**. This Memorandum does not purport to set forth all of the terms, covenants and conditions of the complete Option Agreement between the parties and the sole purpose of this instrument is to give notice of the Option Agreement and all of its terms, covenants and conditions to the same extent as if the Option Agreement were fully set forth herein.

4. **Termination**. The recording by QDC of a notice that DWW has failed to make the Option Payments or to exercise the Option in each case in accordance with the terms of the Option Agreement shall be conclusive evidence of the termination of DWW's rights under the Option Agreement and that DWW has no further rights with respect to the Premises.

5. **Counterparts.** This Memorandum may be executed in counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument.

6. **Successors in Interest**. The conditions, covenants and agreements contained in this instrument shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

[Signatures on Next Page]

IN WITNESS WHEREOF, the parties have executed this Memorandum as of the day and year first above written.

WITNESS:

C Andrews
Print Name Christine Andrews

RHODE ISLAND COMMERCE CORPORATION, ACTING BY AND THROUGH ITS AGENT AND ATTORNEY IN FACT QUONSET DEVELOPMENT CORPORATION

By: _____
Seven J. King
Managing Director

WITNESS:

J. Maitland
Print Name
J. Maitland

DWW REV I, LLC

By: _____
Print Name: MIKE AUBERE
Title: VP, BUS DEV

STATE OF RHODE ISLAND
COUNTY OF Washington

On January 28, ~~2019~~ 2020, before me, the undersigned notary public, personally appeared Steven J. King, Managing Director of Quonset Development Corporation, proved to me through satisfactory evidence of identification, being (check whichever applies): driver's license or other state or federal governmental document bearing a photographic image, oath or affirmation of a credible witness known to me who knows the above signatory, or my own personal knowledge of the identity of the signatory, to be the person whose name is signed above, and acknowledged the foregoing to be signed by him voluntarily for its stated purpose.

Christine Marie Andrews
Notary Public
Print Name Christine Marie Andrews
My commission expires April 19, 2020
Affix Seal #36799

CHRISTINE MARIE ANDREWS
Notary Public
State of Rhode Island

STATE OF Connecticut
COUNTY OF Hartford

On January 27, ~~2019~~ 2020, before me, the undersigned notary public, personally appeared Mike Ausere, the VP-Bus Dev of DWW REV I, LLC proved to me through satisfactory evidence of identification, being (check whichever applies): driver's license or other state or federal governmental document bearing a photographic image, oath or affirmation of a credible witness known to me who knows the above signatory, or my own personal knowledge of the identity of the signatory, to be the person whose name is signed above, and acknowledged the foregoing to be signed by him voluntarily for its stated purpose.

Notary Public
Print Name Patricia C Larson
My commission expires 4/30/2021
Affix Seal

PATRICIA C. LARSON
NOTARY PUBLIC - CONNECTICUT
MY COMMISSION EXPIRES
APRIL 30, 2021

EXHIBIT A

DESCRIPTION OF THE PREMISES

[Attached]

DEED DESCRIPTION

AP 179 LOT 30

Camp Avenue - North Kingstown, Rhode Island

That certain lot or parcel of land located on a portion of the former Quonset Point Naval Air Station, in the Town of North Kingstown, County of Washington, State of Rhode Island; said parcel being designated as 5.19± acres as depicted on a plan entitled "Plan of Land for Quonset Development Corporation acting as agent and attorney in fact for the Rhode Island Commerce Corporation formerly known as the Rhode Island Economic Development Corporation 5.19 acre± parcel A.P. 179 lot 1 and 10.48 acres± parcel A.P. lot 30, 574 & 594 Camp Avenue North Kingstown, Rhode Island", Kiefer Park District, prepared by the Quonset Development Corporation drawing number 26639, sheet 1 of 1 dated January 29, 2018.

Said parcel being further bounded and described as follows:

Beginning at a granite bound on the northerly line of said Camp Avenue, said bound being the southwesterly corner of land now or formerly of the Narragansett Electric Company and Town of North Kingstown assessor's plat 179 lot 5;

Thence proceeding north 18°29' east± a distance of three hundred forty (340.00') feet more or less to a point, said point being the southeasterly corner and point of beginning of the herein describe parcel;

Thence continuing north 18°29' east± a distance of four hundred five and 47/100(405.47') feet more or less to a granite bound;

Thence proceeding north 89°49' east± a distance of two hundred twenty and 05/100 (220.05') feet more or less to an iron rod, the last three courses being bounded easterly and southerly by said land of Narragansett Electric Company;

Thence proceeding north 54°15' west± a distance of six hundred sixty-six and 85/100 (666.85') feet more or less to a granite bound, said point being the northwesterly corner of the herein describe parcel and being bounded northerly by land now or formerly of the R.I. Commerce Corporation;

Thence proceeding south 56°31' west± a distance of three hundred seventy-four and 96/100 (374.96') feet more or less to a granite bound and being bounded westerly in part by land of Mill Creek Limited Liability Co and in part by land of Mill Creek LLC;

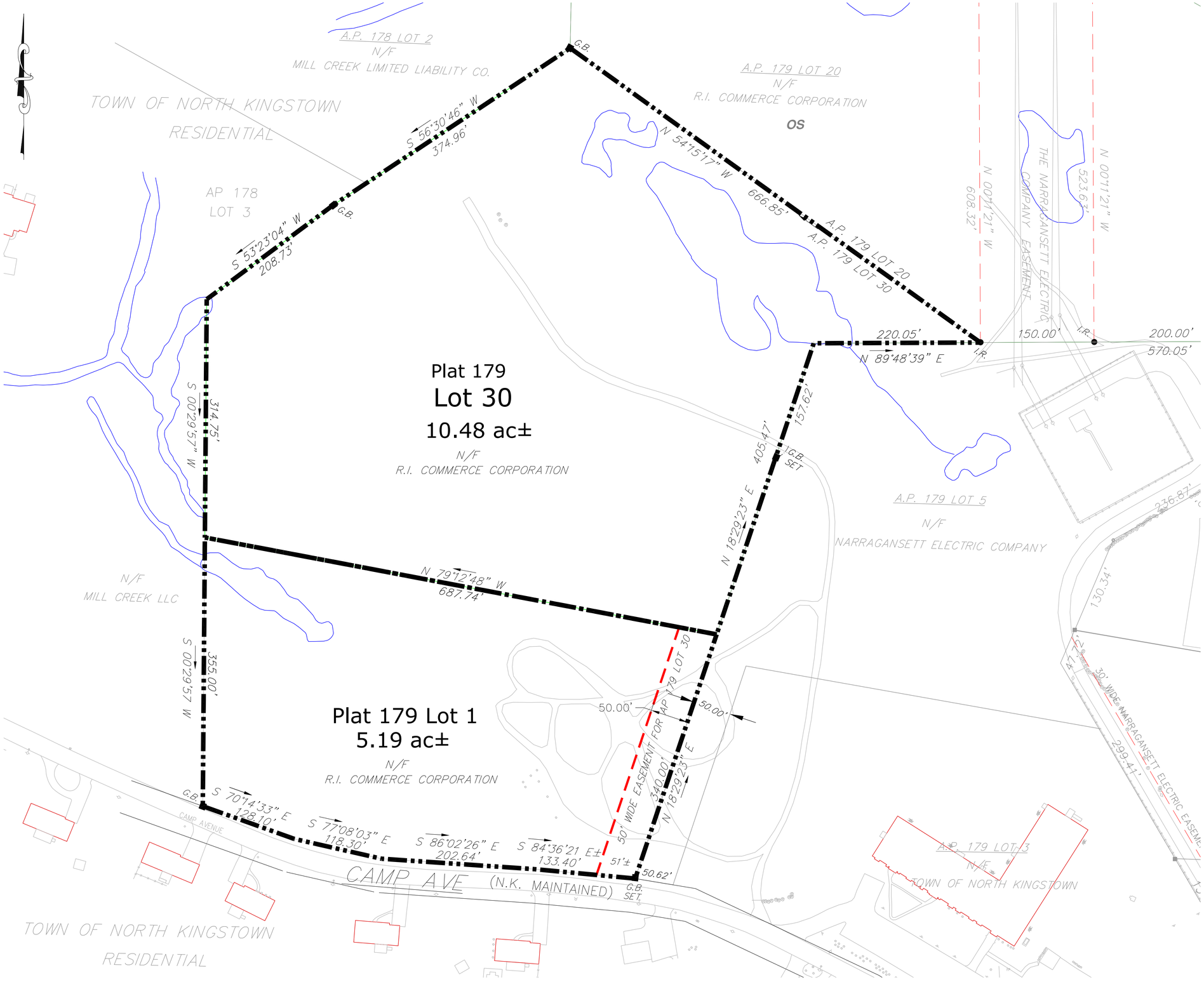
Thence proceeding south 53°23' west± a distance of two hundred eight and 73/100 (208.73') feet more or less to a point, said point being the northwesterly corner of the herein described parcel;

Thence proceeding south 00°29' west± a distance of three hundred fourteen and 75/100 (314.75') feet more or less to a point, said point being the southwesterly corner of the herein described parcel, the last two courses being bounded northwesterly and westerly by land of Mill Creek LLC;

Thence proceeding south 79°13' east± a distance of six hundred eighty-seven and 74/100 (687.74) feet more or less to a point, said point being the southwesterly corner of the herein described parcel and point and place of beginning. The last course being bounded southerly by land now or formerly of the R.I. Commerce Corporation.

The above described parcel of land contains 10.48 Acres, more or less.

The parcel is subject to Easements as depicted on the above referenced plan and any easements of record.



QUONSET
DEVELOPMENT CORPORATION

Development Services
95 Cripe Street
North Kingstown, RI 02852
Tel: (401) 295-0044
Fax: (401) 268-9885

PLAN REFERENCES

1. DEVELOPMENT PLAN KIEFER PARK QUONSET DAVISVILLE PORT & COMMERCE PARK BY GAROFALO & ASSOC., INC. APPROVED BY TOWN OF NORTH KINGSTOWN AND FILED 9-15-06 DWG. NO. 25726. BK 2153 PG. 20 LATEST REVISION OF 6-03.

1. PLAN ENTITLED "ADMINISTRATIVE SUBDIVISION ASSESSOR'S MAP 179 LOT 1" ROGER WILLIAMS WAY & CAMP AVENUE IN NORTH KINGSTOWN, R.I. PREPARED FOR R.I. ECONOMIC DEVELOPMENT CORP., BY MARC NYBERG ASSOCIATES, INC. SLATERSVILLE, R.I. REVISION OF 5-24-00, DWG. NO. 25702 SCALE 1"=100'.

NO.	REVISION	DATE	APP.
2.	Revised for legal description	1/29/18	RAS
1.	Revised Parcels AP 179 Lots 20&30	6/17/14	AJA

DESIGN BY	CHECKED BY
DRAWN BY AJA, RAS	ENGINEER
SCALE 1"=100	PROJECT NO.
CONTRACT NO.	
FILE NAME	

APPROVED

EDWARD J. SPINARD, JR., P.E.
QDC DEVELOPMENT SERVICES DIRECTOR

DATE 1-17-18

PLAN OF LAND

For

QUONSET DEVELOPMENT CORPORATION

ACTING AS AGENT AND ATTORNEY IN FACT FOR
RHODE ISLAND COMMERCE CORPORATION
F.K.A.
RHODE ISLAND ECONOMIC DEVELOPMENT CORPORATION

Of

5.19 Acre± Parcel
A.P. 179 Lot 1
and
10.48 Acre± Parcel
A.P. 179 Lot 30

Kiefer Park District
Quonset Business Park

SHEET NO.	DRAWING NO.
1 OF 1 SHEETS	26639

QUONSET
DEVELOPMENT CORPORATION

June 28, 2021

Coastal Resources Management Council
4808 Tower Hill Road, #116
Wakefield, RI 02879

RE: Revolution Wind Interconnection Facility
Expansion of The Narragansett Electric Company Right-of-Way
614 Camp Avenue, North Kingstown, RI 02852
North Kingstown Tax Assessors Plat 179, Lot 020

To Whom It May Concern:

The Quonset Development Corporation (QDC) acknowledges that Revolution Wind, LLC and The Narragansett Electric Company (TNEC) are filing an application with the Coastal Resources Management Council (CRMC) requesting approval for the expansion of the cleared TNEC right-of-way (ROW). The expansion will require clearing within an "Area of Land within 50-feet of a Wetland" on the parcel identified as North Kingstown Tax Assessor' Plat 179 Lot 020 (AP 179-020), which is owned by the RI Commerce Corporation by and through its agent and attorney in fact, the Quonset Development Corporation. The expansion of the cleared ROW is needed to support the interconnection of the electricity generated from the offshore Revolution Wind Farm to the point of interconnection at the existing TNEC Davisville Substation. My signature, below, indicates that QDC has received and reviewed the enclosed site plans entitled "Revolution Wind Proposed Interconnection Facility," prepared by Vanasse Hangen Brustlin, Inc. and dated June 30, 2021, and that QDC does not object to TNEC and Revolution Wind filing the application with CRMC requesting their approval of the activity within AP 179-020 for the above stated purpose.

Sincerely,

Steven J. King, PE
Managing Director

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Appendix C: Site Figures

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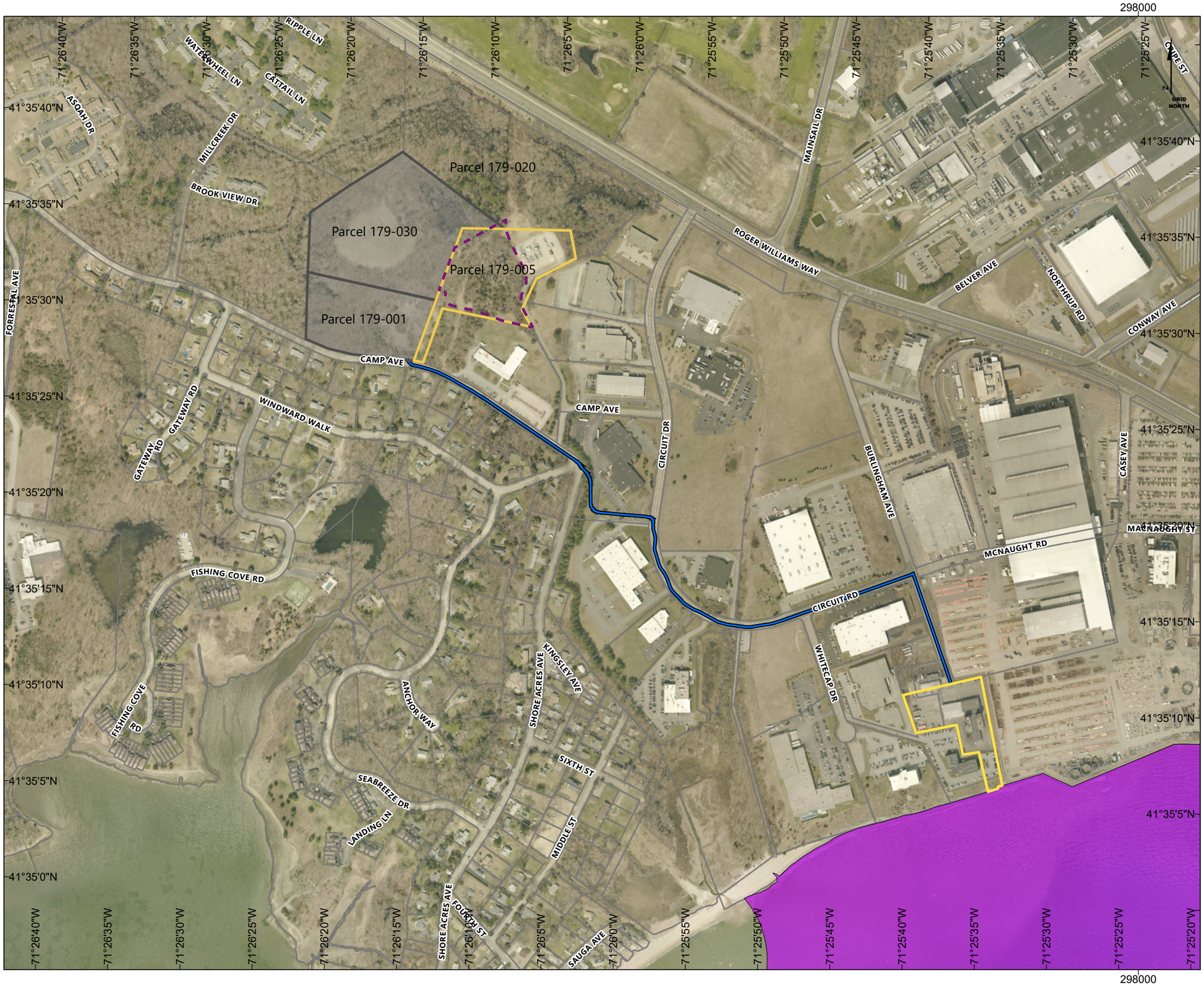

Revolution Wind

Figure 1
Project Location - Revolution Wind Onshore Facilities
NORTH KINGSTOWN, RI

Legend

- Onshore Transmission Cable
- Landfall Work Area
- RWEC-RI State Waters
- ICF Limit of Work
- Other Project Parcel Boundary*
- ICF Project Parcel Boundary
- Parcel Boundary

*Refer to the separate Category B Assent Application filed on June 30, 2021 for work that is proposed on Parcels 179-001 and 179-030.

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 60 120 180 Meters

0 200 400 600 Feet

Date: 6/29/2021
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: MROLL

Revolution Wind | Powered by Ørsted & Eversource

Revolution Wind

Figure 2
Project Location - Interconnection Facility
NORTH KINGSTOWN, RI

Legend

- Onshore Transmission Cable
- Other Project Parcel Boundary*
- ICF Project Parcel Boundary
- Parcel Boundary

*Refer to the separate Category B Assent Application filed on June 30, 2021 for work that is proposed on Parcels 179-001 and 179-030.

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 25 50 75 Meters

0 80 160 240 Feet

Date: 6/29/2021
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: MROLL

Revolution Wind | Powered by Ørsted & Eversource

Revolution Wind

Figure 3
Environmental Resources
NORTH KINGSTOWN, RI

Legend

- Onshore Transmission Cable
- Other Project Parcel Boundary*
- ICF Project Parcel Boundary
- Parcel Boundary
- One-Percent Annual Chance Flood Hazard Area
- Delineated Wetland Edge
- Approximate Wetland Edge
- Area Subject to Storm Flowage
- Approximate Stream
- 50' Perimeter Wetland
- 100' Riverbank Wetland
- Delineated Wetland Resources
- Interpolated Wetland by VHB
- Vernal Pool Area
- Wetland (NWI)
- State Species of Special Concern: Sickle-leaved golden aster occurrence
- Potential Habitat for Sickle-leaved golden aster

*Refer to the separate Category B Assent Application filed on June 30, 2021 for work that is proposed on Parcels 179-001 and 179-030.

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):

Source: FEMA FIRM Panel 44009C0108J

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 25 50 75 Meters

0 80 160 240 Feet

Date: 6/29/2021
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: MROLL

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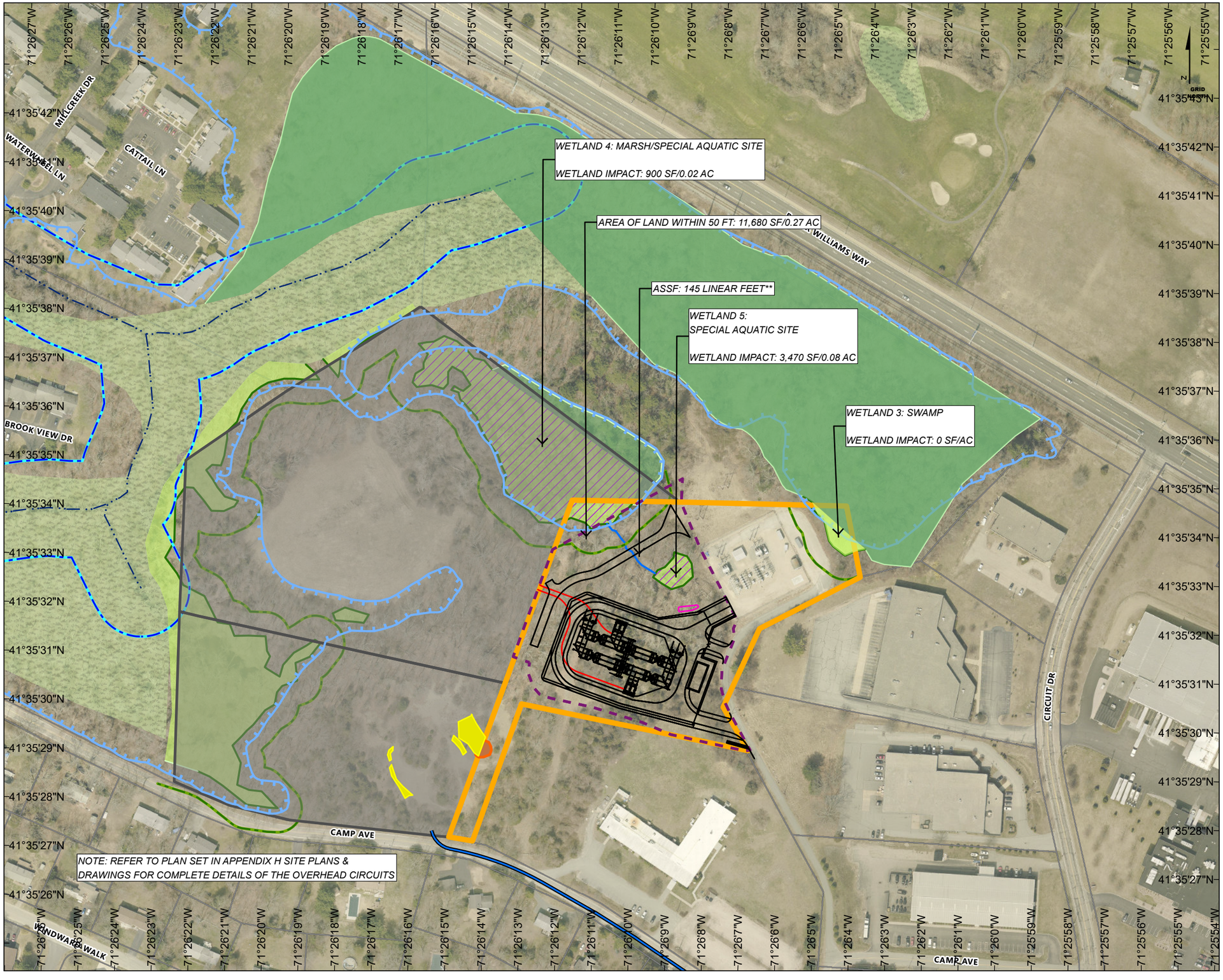

Revolution Wind

Figure 4
Project Layout and Wetland Impacts
NORTH KINGSTOWN, RI

Legend

- Onshore Transmission Cable
- ICF Limit of Work
- Proposed Infiltration Basins
- Underground Interconnection Cables
- ICF Layout
- Other Project Parcel Boundary*
- ICF Project Parcel Boundary
- Parcel Boundary
- One-Percent Annual Chance Flood Hazard Area
- Delineated Wetland Edge
- Approximate Wetland Edge
- Area Subject to Storm Flowage
- Approximate Stream
- 50' Perimeter Wetland
- 100' Riverbank Wetland
- Delineated Wetland Resources
- Interpolated Wetland
- Vernal Pool Area
- Wetland (NWI)
- State Species of Special Concern: Sickle-leaved golden aster occurrence
- Potential Habitat for Sickle-leaved golden aster

Note: All impact areas are limited to vegetation clearing and on-going vegetation maintenance. No structures are proposed within wetlands or the Area of Land within 50-feet

*Refer to the separate Category B Assent Application filed on June 30, 2021 for work that is proposed on Parcels 179-001 and 179-030.

**145 linear feet reflect the entire length of the ASSF that will be impacted due to vegetation clearing. 40 linear feet of the ASSF will be culverted.

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 25 50 75 Meters

0 80 160 240 Feet

Date: 6/29/2021
Document no:

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Approved by: MROLL

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Appendix D: Resumes

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Susan Moberg, PWS, CFM

Principal

Susan leads VHB's Environmental Sciences Group in Rhode Island. Her work focuses on environmental site assessments, wetland delineation, soil analysis, and environmental permitting with a particular emphasis on the energy sector and the coastal environment. Susan has extensive experience in successfully managing large complex projects requiring diverse skill sets.

28 years of professional experience

Education

BS, Soil and Water Science, University of Rhode Island, 1993

Registrations/Certifications

Professional Wetland Scientist (Wetland Science)

Professional Soil Scientist (Soil Science)

Certified Floodplain Manager

RI Coastal Resources Management Council Certified Invasive Manager (Coastal Buffer Zone Management), RI

Affiliations/Memberships

Association of State Floodplain Managers

Society of Soil Scientists of Southern New England

Society of Wetland Scientists, New England

South Fork Wind Farm, East Hampton, NY

For the Deepwater Wind South Fork Wind Farm, Susan contributed to the preparation of the Construction and Operations Plan (COP) submitted to the Bureau of Ocean Energy Management and Assisted with the preparation of the Article VII application submitted to the NY Public Service Commission. Susan performed a quality assurance/quality control (QA/QC) review of the COP and prepared several amendments to the COP survey plan for various survey activities planned on the outer continental shelf. She supervised the development of an Acoustic Analysis for the proposed onshore substation, as well as supervising the review and analysis of various potential cable landfall locations and potential cable routes to the proposed substation. Route analysis included a review for sensitive receptors including wetlands, rare species, and land use, as well as potential use conflicts including tourism, transportation and noise impacts.

Alstom PowerGE, Temporary Logistics Hub, Providence, RI

Susan provided due diligence, design and permitting services for a temporary logistics hub facility at the Port of Providence that is being used for partial assembly of the Block Island Wind Farm Turbines.

DWW Solar Due Diligence Assessments, Simsbury, and Litchfield CT; Johnston, RI

Susan provided environmental and zoning due diligence including preparation of a permitting matrix, site constraints, and mapping of seven parcels for potential Deepwater Wind Solar sites.

DWW Solar Project, Foster, RI

Susan is VHB's Project Manager for the Deepwater Wind Solar 2.8 MW solar array project in Foster, RI. Services included wetland delineation and permitting, site layout, grading and drainage design, local permitting and landscape architecture services.

Fusion Solar Center, Sprague CT

Sue is Project Manager for the Fusion Solar Center in Sprague, Connecticut. Following the issuance of a Notice of Violation from CT Department of Energy and Environmental Protection (CT DEEP), VHB was requested by the client to provide Qualified Stormwater Professional services to oversee construction phase site stabilization and weekly erosion and sediment monitoring of the construction site. Sue coordinated with project personnel to identify appropriate solutions for soil stabilization and directed subcontractors in the application of hydroseed and various erosion control technologies as winter conditions approached. Following issuance of a Cease and Desist from CT DEEP, Sue worked with the client team in negotiations with

CT DEEP regarding compliance measures needed to satisfy the C&D. Sue met with abutting property owners and local Inland Wetland Commissioners to inspect, evaluate and discuss impacts to proximate wetland resources and vernal pools, and to develop corrective actions to restore these sensitive areas.

Algonquin Gas Transmission Company, Wetlands Delineation, Burrillville, RI and Cromwell, CT

Under various contracts with the Algonquin Gas Transmission Company, Susan has delineated wetlands a total of 13 miles of transmission line rights-of-way in Burrillville, Rhode Island and Cromwell, Connecticut.

Central Hudson H-SB Rebuild, Kingston, NY

As project manager, Susan is providing comprehensive environmental survey and permitting services for a 23-mile long transmission rebuild project. This project includes an Article VII application to the NYSPSC, as well as state and federal permitting efforts. VHB is responsible for comprehensive environmental analyses, permit applications, development of EM&CP, and post-construction support.

National Grid Rhode Island Reliability Project, Rhode Island

Susan manages VHB's licensing, permitting, and engineering contract with National Grid on the Rhode Island Reliability Project, which is a 24-mile transmission line improvement project. The project spans six Rhode Island municipalities and involves reconstruction of existing facilities within the right of way, which include an existing 345 kV line and two 115 kV transmission lines, and construction of a new 345 kV transmission line. Improvements to West Farnum Substation, Hartford Avenue, Drumrock and Kent County Substation are also planned. Susan has overseen the preparation of the Energy Facility Siting Board (EFSB) Environmental Report, state and federal wetland permit applications, various plans and graphics to support local planning and zoning applications, state and local traffic permit applications, and local stormwater/erosion control applications. She provided expert testimony regarding the project impacts during the EFSB evidentiary hearings, and was cross examined by counsel from the RI Attorney General's office and project Interveners.

Narragansett Electric Company, On-Call Services, Rhode Island

Susan manages VHB's on-call services contract with the Narragansett Electric Company in Providence, Rhode Island. Services rendered under this contract have included wetland delineations at substation and transmission line sites; freshwater wetland permitting for Spill Prevention Control and Countermeasures projects at several substations in Rhode Island; permitting at substation sites undergoing site remediation work; preparation of evaluations and Best Management Practice Plans for maintenance work conducted under the utility exemption of the Rhode Island Freshwater Wetlands Regulations; and providing construction/compliance monitoring at both permitted and exempt construction activity sites.

Carissa T. Mills, CFM

Hazard Mitigation/Resiliency Planner

Carissa is an effective team player and communicator with a strong understanding of regional climate change issues, hazard mitigation, emergency management, stormwater management challenges, and a broad range of geographical information system (GIS) skills used in natural resource management, urban planning, and other environmental analyses. As a Certified Floodplain Manager, she is also familiar with floodplain management issues and current FEMA regulations.

15 years of professional experience

Education

MA, Marine Affairs, University of Rhode Island, 2005

BA, Environmental Studies, Dickinson College, 1998

Registrations/Certifications

Certified Floodplain Manager

Affiliations/Memberships

American Planning Association, Rhode Island

Association of State Floodplain Managers

Rhode Island Flood Mitigation Association

Revolution Wind Farm Permitting, RI-MA WEA, RI

As Deputy Project Administrator for the Revolution Wind Farm proposed by Ørsted North America in the Bureau of Ocean Energy Management Lease Area OCS-A 0486, Carissa is currently managing the delivery of Construction and Operations Plan (COP) data and write-ups from the internal team and subconsultants. Strong organizational skills have helped VHB meet deadlines and coordinate distribution of information from the client.

Vermont Wind Project, NEPA Environmental Impact Statement, Deerfield, VT

Responsibilities include project maps for an EIS in conformance with the NEPA requirements as the third-party contractor to the U.S. Forest Service for the Deerfield Wind Project in southeastern Vermont. Data overlays of proposed turbine location, elevation, potential wind speeds, and existing transmission lines aid in finalizing project site location. This work was performed prior to joining VHB.

Westfield Land Development Company, Pioneer Valley Energy Center – Energy Facility Permitting, Westfield, MA

Environmental and visual studies for a proposed 400-MW combined cycle, dual-fueled generating facility located in western Massachusetts for an Environmental Notification Form (ENF) and Draft Environmental Impact Report (DEIR) required under the Massachusetts Environmental Policy Act (MEPA). Carissa assisted with visual simulations based on viewshed analysis, visually sensitive areas (recreational resources) investigation, and field verification utilizing GPS/GIS/CAD technology. This work was performed prior to joining VHB.

National Grid GrowthPoint- Southern Rhode Island Growth Reinforcement Project, Docket No. SB-2018-6

Carissa prepared chapters within the Project/Environmental Report for the submission to the Rhode Island Energy Facility Siting Board (RI EFSB) for the National Grid on the GrowthPoint- Southern Rhode Island Growth Reinforcement Project (SGRI), which is a 5.1-mile new 20-inch steel gas main installation Project. The project spans three Rhode Island municipalities. The Project/Environmental Report described the project, purpose and need, the affected natural and social environment, impacts, and mitigation measures.

Environmental Impact Assessment, Cat Island Beach Resort, Cat Island, The Bahamas

The proposed project encompassed approximately 1,906 contiguous acres and includes a residential community comprised of single-family homes, townhomes, and golf cottages; and a resort component consisting of several hotels, condominiums, a village center, beach club, 36 holes of golf, and associated infrastructure. Carissa created GIS analysis of the site location including geology, shoreline characteristics, hurricane history, and topography mapping for an Environmental Impact Statement (EIS). She also authored a section on hazard mitigation for the Environmental Management Plan (EMP) for the proposed Cat Island Beach Resort. This work was performed prior to joining VHB.

Confidential Client, New York Public Service Commission Article VII Application, Jefferson and Oswego Counties, NY

Carissa has performed GIS analyses for a 48-mile long (8 miles subaquatic, 40 miles terrestrial overhead) electric transmission line Article VII application to the New York State Public Service Commission. The project includes routing analysis, environmental analysis (cultural, geologic, wetland, habitat, and rare species) and visual analysis. Carissa was also responsible for managing the Article VII post-filing information requests from active parties. This work was performed prior to joining VHB.

Confidential Energy and Carbon Sequestration Project, Northeast U.S.

An integrated gasification combined cycle plant with carbon capture and sequestration capabilities is being developed. Carissa's responsibilities included desktop GIS analysis for routing evaluation of the proposed pipeline which will transport sequestered CO2 to an offshore storage facility. This work was performed prior to joining VHB.

Hazard Mitigation Plans/Updates

Carissa has managed the VHB team in assisting numerous municipalities throughout Rhode Island in creating and updating Hazard Mitigation Plans. Carissa works closely with local officials and stakeholders to guide them through the planning process, which includes identifying natural hazards of concern, identifying risks and vulnerable areas, and proposing strong mitigation actions, leading to a more robust, FEMA approved plan. Municipalities Carissa has worked with to date include City of Warwick, Town of West Warwick, Town of Hopkinton, Town of Coventry, Town of Tiverton, Town of Westerly, City of Woonsocket, Town of Portsmouth, Town of South Kingstown, Town of Foster, City of Cranston*, Town of Lincoln*, Town of North Providence*, Town of Richmond*, and Town of Scituate*. *Completed prior to VHB.

Jeffrey C. Peterson, CPSS, PWS, CPESC, ENV SP

Senior Soil & Wetland Scientist

Jeff is a Soil Scientist and Plant Ecologist with VHB specializing in soil classification and mapping, soil sedimentation and erosion control, soil chemistry, plant taxonomy, and delineation and evaluation of wetland resources. As a senior member of the Environmental Staff, his responsibilities include the delineation and documentation of wetland resources by state and federal criteria, wetland functional value assessments, site selection and design of wetland creation and restoration projects, and wetland monitoring. He has extensive NEPA experience preparing natural resource sections for EA and EIS studies for large transportation project.

44 years of professional experience

T.F. Green Airport, Environmental Impact Statement, Warwick, RI

VHB was retained by Rhode Island Airport Corp (RIAC) to complete an Environmental Impact Statement (EIS) in support of the T.F. Green Airport Improvement Program. The program consisted of the extension of the main Runway 5-23 and improvements to the Runway 16-34 safety areas. The safety improvements to Runway 16-34 included unavoidable wetland impacts. Jeff directed a team of VHB scientists who collected EIS-level data on existing biotic communities, wetlands, threatened and endangered species, farmland, and floodplain for the approximately 2,000-acre study area. He authored many sections of the EIS including the existing wetland functional analysis based on the USACE Highway Methodology and assessed the effects of each the alternatives on natural resources in the study area. He coordinated with the RIAC, Federal Aviation Administration, U.S. Environmental Protection Agency, RI Department of Environmental Management, and U.S. Army Corps of Engineers to develop a compensatory wetland mitigation program involving a combination of on-site, in-kind wetland creation and restoration sites. He conducted onsite investigations of soils and developed a monitoring program for groundwater and surface waters to characterize groundwater hydrology and the flood response of wetland systems south of Runway 16-34. These data were used to design wetland mitigation areas for the Runway 34 safety improvements that would compensate for the loss of floodplain without creating a potentially hazardous wildlife attractant. Jeff also coordinated with VHB water resources engineers to develop a HEC-RAS model of the upper Buckeye Brook watershed to verify the effectiveness of the wetland mitigation design.

T. F. Green Runway 16-34 Safety Improvements Wetland Mitigation Monitoring Project, Warwick, RI

After collecting baseline data on stream morphology, soils, and wetland hydrology, VHB designed, permitted and oversaw the successful construction of four of the five wetland mitigation areas that compensated for the Runway 16-34 safety improvements. The fifth mitigation involved a culvert replacement prepared by a structural engineering consultant. The USACE approved VHB to complete the project by providing monitoring of the wetland mitigation areas. Jeff installed a network of groundwater and surface water level recording devices designed to document: the successful achievement of wetland hydrology; the provision of compensatory floodplain compensation, and record the duration of mitigation site flooding to ensure compliance with FAA AC 150/5200-33B on Hazardous Wildlife Attractants on or Near

Education

Graduate Level Studies Soil Science, University of Massachusetts, 2000

Graduate Level Studies in Soil Science, University of Connecticut, 1997

BS, Biology, University of Connecticut, 1977

Registrations/Certifications

Certified Professional Soil Scientist, 2001 (reg# 25010)

Certified Professional in Erosion and Sediment Control, 2003 (reg# 2696)

Professional Wetland Scientist, 2015 (reg# 2579)

Licensed Soil Evaluator (Soil Evaluation), RI, (Lic# D4039)

Envision™ Sustainability Professional, 2013

Affiliations/Memberships

Society of Soil Scientists of Southern New England, 1986

Society of Wetland Scientists, 2015

Soil and Water Conservation Society, SNEC, 2006

Soil Science Society of America, 1993

VHB Office

Providence, RI

Airports. Jeff and staff completed five years of monitoring filing reports with the USACE been described as "thorough and well written" by the USACE regulatory staff. The USACE also evaluated the 700-foot restored segment of Buckeye Brook in 2017 utilizing the Stream Visual Assessment Protocol (SVAP2). This evaluation determined that the stream was in "good" condition. This impressed the USACE evaluators as the stream reconstruction had been completed for just two years. This project was presented at the 2019 Society of Wetland Scientists Annual Conference in Baltimore.

Tobacco Valley Solar Project, Simsbury CT

VHB was retained to prepare materials for the filing of a Petition for Declaratory Ruling from the Connecticut Siting Council for the for this 26-megawatt ground-based solar project. The application was supported by several technical reports that Jeff authored. Jeff delineated the on-site wetlands and watercourses subject to state-jurisdiction under the Connecticut Inland Wetlands and Watercourses Act and prepared the soil scientists report. He coordinated with the Connecticut Department of Energy and Environmental Protection Natural Diversity Database Program to survey for the presence of rare taxa and develop a conservation management plan approved by the state. He completed a vernal pool survey and prepared a report of findings. Jeff also authored several of the application's sections dealing with natural resources, agricultural soils, soil evaluation for stormwater management, and characterized existing forest types and the potential impacts associated with the project. Jeff provided expert witness testimony during the public hearing process which contributed to the project being approved unanimously by the full Council.

Fusion Solar Center, Sprague CT

Jeff has provided Fusion Solar LLC with compliance assistance during the construction of the Fusion Solar Center in Sprague, Connecticut. Following the issuance of a Notice of Violation from CT Department of Energy and Environmental Protection (CT DEEP), VHB was requested by the client to provide Qualified Stormwater Professional services to oversee construction phase site stabilization and weekly erosion and sediment monitoring of the construction site. Jeffrey coordinated with project personnel to identify appropriate solutions for soil stabilization and directed subcontractors in the application of hydroseed and various erosion control measures as winter conditions approached. Jeff assisted the client team with negotiations with CT DEEP regarding compliance measures needed to satisfy the Cease & Desist Order. Jeff met with abutting property owners and local Inland Wetland Commissioners to inspect, evaluate and discuss impacts to properties, and proximate wetland resources and vernal pools, and to develop corrective actions to restore these sensitive areas.

RIDOT, Reconstruction of Two Mile Corner, Middletown, RI

VHB was retained by RIDOT to design traffic and safety improvements for Two Mile Corner, the intersection of West Main Road and East Main Road in Middletown. Located in a highly urbanized part of Aquidneck Island, Two Mile Corner is in the watershed of Bailey Brook, the principal tributary to Easton Pond, a public water supply reservoir for the City of Newport. According to a Natural Resources Conservation Service funded study, "The highly urbanized Bailey Brook Watershed has been ranked as having the highest water quality risk of the eight sub-watersheds that comprise the Aquidneck Island Reservoir watersheds complex." Jeff worked with project engineers to identified large urban areas draining untreated runoff into the RIDOT stormwater

system that outlets to Bailey Brook. VHB presented the situation to the RIDOT Project Manager and RIDOT Natural Resources Section staff and recommended the search for a solution beyond the project limits. RIDOT enlisted VHB to develop the conceptual plan to divert approximately 18.4 acres of the highly urbanized West Main Road watershed that conveyed untreated through the RIDOT storm sewer system off-line to be treated by a gravel wet vegetated treatment system (WVTS) on Town of Middletown conservation land. Jeff presented the conceptual plans to representatives of the Town of Middletown, the Aquidneck Island Trust, and City of Newport, as the latter two parties are conservation lien holders. After all parties approved of the project, Jeff prepared a successful application for a competitive non-point source grant, the first ever awarded to RIDOT by RIDEM for the construction of the gravel WVTS. Jeff also authored the successful Freshwater Wetlands application for the entire project. In 2017 this project was awarded a prestigious Environmental Excellence Award from the Federal Highways Administration; one of only 18 projects receiving a national award.
https://www.fhwa.dot.gov/environment/environmental_excellence_awards/eea_2017/page18.cfm

Chelsea Glinka, ENV SP

Environmental Scientist

Education

MS, Natural Resource Science with a concentration in Aquatic Toxicology, University of Connecticut, 2013

BS, Environmental Science and Management, University of Rhode Island, 2010

Registrations/Certifications

Envision™ Sustainability Professional, 2017

Chelsea Glinka is an Environmental Scientist in VHB's Providence, Rhode Island office. Her experience includes assessing permitting needs and developing environmental permit applications for small and large-scale projects within the private and public sectors. She also has experience conducting rare, threatened, and endangered species surveys, facilitating Section 7 consultations under the Endangered Species Act, and habitat assessment and wetland delineation.

11 years of professional experience

Ørsted, Revolution Wind Farm Project, offshore of Rhode Island and Massachusetts

The Rhode Island Public Utilities Commission approved a 20-year power-purchase agreement for the joint venture team of Ørsted U.S. Offshore Wind and Eversource to develop a 400-megawatt offshore windfarm within a designated Renewable Energy Lease Area awarded by the Bureau of Ocean Energy and Management (BOEM). VHB is leading a team of subconsultants to develop the Construction and Operations Management Plan (COP) for review and approval by BOEM as well as leading the effort to secure State environmental permits. The purpose of the COP is to demonstrate the Project is being conducted in a manner that conforms to responsible offshore development per 30 CFR 585.621. Chelsea is part of the team that is responsible for documenting the onshore biological resources for the proposed onshore export cable route. This work includes wetland delineation, rare species surveys, flora and fauna documentation, and invasive species documentation.

RIDOT, Henderson Bridge Replacement, Providence and East Providence, RI

VHB is leading the $85 million replacement of the Henderson Bridge to design a smaller, more efficient bridge that will be more economical to maintain and better suited for traffic demands. Chelsea is leading the permitting team for the Henderson Bridge Replacement. This Project has the potential to impact several regulated resources, including freshwater and coastal wetlands, essential fish habitat, federally-listed species under the Endangered Species Act, and a federal navigation project. Federal funding stipulations of this Project have created an accelerated advertising schedule which has necessitated that permitting applications progress concurrently with engineering designs. Chelsea has led consultation meetings with the several permitting agencies involved in the Project to make ensure that regulators have the information that is needed to keep the permit progress on schedule. Tasks that Chelsea has performed include resource area delineation, National Environmental Policy Act (NEPA) documentation, Consultations with U.S. Fish and Wildlife Service and National Marine Fisheries Service regarding federally-threatened and endangered species and Essential Fish Habitat, Section 408 review, and permit applications for the U.S. Coast Guard, Coastal Resources Management Council (CRMC), Rhode Island Department of Environmental Management (RIDEM) and U.S. Army Corps of Engineers (USACE). *Completion: Ongoing*

Tobacco Valley Solar Natural Resource Documentation, Simsbury, CT
Chelsea was part of VHB's team that was responsible for the preparation for a Petition for a Declaratory Ruling from the Connecticut Siting Council for a proposed 26.4 MW for a solar photovoltaic development in the town of Simsbury, CT. Chelsea was responsible for conducting natural resource assessments within the 300-acre project area, including included breeding bird surveys that targeted State-listed grassland and shrubland species, vernal pool surveys, rare flora and fauna surveys, and thorough documentation of the different vegetative communities and Key Habitat types present within the project area. Bird survey techniques employed passive acoustic and visual observations in line-transect surveys which followed pre-determined survey routes to maximize the opportunities to observe State-listed species. Call-back surveys were conducted following the passive acoustic surveys to further target the State-listed species. Chelsea also helped to develop conservation measures to protect sensitive resources within the project area that were approved by the Connecticut Natural Diversity Database Program. These conservation measures have been incorporated in the Development and Management Plan for the client and subcontractors to ensure compliance with conservation and resource protection measures that have been required by permit conditions

Groton-New London Airport, Wetland Mitigation Assessment, New London, CT
Under an on-call environmental services contract with the Connecticut Airport Authority, Chelsea was part of a team that conducted field surveys for two state-listed rare plants present on the airfield and reported on the populations trends by reviewing previous reports. She also completed an annual wetland mitigation monitoring report required by the U.S. Army Corps of Engineers (USACE) and the Connecticut Department of Energy (CTDEEP) for a tidal wetland creation and enhancement project along the Poquonnock River on airport property. Additionally, Chelsea completed an invasive species field investigation and management report for the CAA.

Narragansett Indian Tribe Natural Resource Resiliency Assessment and Action Plan, Charlestown, RI
Chelsea was part of a team that performed a natural resource resiliency assessment of the Narragansett Indian Tribe's (NIT) coastal forest to determine the effects of wind damage from previous storms such as Superstorm Sandy. She collected field data to illustrate the baseline conditions of the forest and conducted an extensive literature review of similar studies to understand the forest's long-term vulnerability to significant storm events. The forest provides fish and wildlife habitat and is also an important cultural resource to the NIT. Chelsea helped to identify options for the protection and recovery of the NIT's natural resources and helped to make recommendations to improve the resiliency of the forest against future storms and climate change

National Grid, Aquidneck Island Reliability Project, Middletown and Newport, RI
Chelsea was part of a team responsible for the complex permitting needs of the Aquidneck Island Reliability Project (AIRP). This project has required the careful documentation of the environmental resources within the project area, which included an inventory of the environmental, social, and economic assets of the project area. Chelsea also described the anticipated effects from the project on habitat structure, water resources, and wildlife, and the measures that will be taken to minimize impact to the surrounding environment while ensuring successful completion of the project.

PATRICK FELLION

WETLAND ECOLOGIST

YEARS OF EXPERIENCE
27

EDUCATION
- B.A., Environmental Science, State University at Plattsburgh

CERTIFICATION
- OSHA 10-hr Construction
- OSHA 40-hr HAZWOPER
- CPR/First Aid/AED

AREAS OF EXPERTISE
- Wetland/stream determinations, delineations, and assessments
- Wildlife surveys, assessments, and monitoring, including radio-telemetry tracking
- Avian nest surveys pursuant to Migratory Bird Treaty Act
- Field crew management and coordination
- Field survey and study techniques
- Clean Water Act Section 401 and 404 permitting
- Natural gas pipeline/electric transmission line right-of-way analysis and studies
- Environmental inspection and oversight
- Biological monitoring

EXPERIENCE SUMMARY

Mr. Fellion is a Wetland Ecologist with extensive experience performing wetland delineation surveys and assessments throughout the North Atlantic. He has prepared Massachusetts Wetland Protection Act Notices of Intent (NOI) and Requests for Determination of Applicability (RDA), served as a MassDEP-approved biological monitor/wetlands scientist/environmental inspector, and has conducted field surveys and assisted with permitting linear transmission projects. He has experience supporting major construction projects, natural gas and overhead transmission line projects, transportation projects, and ecological restoration projects. In addition to his specialization in wetland delineation and regulatory and compliance project support, Mr. Fellion is also a proven field lead and task manager.

National Grid, Revolution Wind/Davisville No. 84 Substation Interconnection Facility, Rhode Island

Lead Wetland Scientist and Environmental Monitor responsible for peer review of previously-delineated wetland resources; surveying for and documenting a population sickle-leaved golden aster (*Pityopsis falcata*), a Rhode Island listed species of concern; conducting an upland habitat assessment and impact evaluation; and, performing full-time construction oversight during vegetation clearing and subsurface geotechnical investigations. Mr. Fellion provided Environmental Field Issue (EFI) training to contractors prior to commencement of field activities. The project includes development of a new six breaker ring bus interconnection facility located on an undeveloped portion of an existing substation property subject to an Environmental Land Use Restriction (ELUR) and Soil Management Plan (SMP).

National Grid, G185S Shield Wire Replacement/L190 Asset Condition Refurbishment Project, Rhode Island

Lead Wetland Scientist responsible for coordinating multi-crew wetland, stream, and potential vernal pool assessment surveys; data collection and QA/QC; constructability review; and, initial permitting tasks. The project includes OPGW replacement and asset refurbishment for approximately 25 miles of co-located 115 kV overhead transmission lines and minor substation upgrades.

Eversource, Line 125 Structure and OPGW Replacement, Massachusetts

Environmental Monitor responsible for conducting environmental compliance inspections and periodic SWPPP inspections pursuant to federal, state, and local permits. Mr. Fellion monitored construction activities in Massachusetts protected species habitat for commons' rosette grass (*Dichanthelium commonsianum*) and eastern box turtle (*Terrapene carolina carolina*). Eastern box turtle observations were reported to the Massachusetts

Natural Heritage & Endangered Species Program (NHESP) through the Vernal Pool and Rare Species Reporting System (VPRS). The project includes replacement of 86 115 kV transmission structures and 13.1 miles of OPGW.

Eversource, Transmission Line Maintenance/Replacement Projects, Connecticut

Lead Wetland Scientist responsible for coordinating and conducting field surveys for numerous structure replacement and transmission line maintenance projects of various lengths (<1 mile to over 8 miles) throughout Connecticut. Responsibilities included field coordination, wetland and watercourse delineation, GPS data collection, preliminary resource area mapping, and permitting support.

- Eversource Line 329 Maintenance Project.
- Eversource Line 348 Maintenance Project.
- Eversource Line 362 Structure Replacement Project.
- Eversource Line 1208/1610 Maintenance Project.
- Eversource Line 1620/1975 Maintenance Project.
- Eversource Lines 1800/1810/1835/1921 OPGW Replacement Project.
- Eversource Line 1835 Structure Replacement Project.

Eversource, Natick ROW 8-1 Vegetation Management, Massachusetts

Lead Wetland Scientist responsible for bordering vegetated wetland (BVW) and watercourse delineation, GPS data collection, and wetland functions & values assessment. The project consisted of vegetation maintenance activities along 1.2 miles of existing overhead transmission line.

New York Transco, Dover Station NUF/Phase Angle Regulator, New York

Lead Wetland Scientist responsible for coordinating a multi-crew wetland/stream delineation survey and Phase 1 bog turtle (*Glyptemys muhlenbergii*) habitat assessment field effort, preparing wetland delineation report, and assisting with initial federal, state, and local permitting tasks. The project includes construction of a new phase angle regulator (PAR) on a 13.1 acre greenfield site and approximately 1,500 feet of associated transmission infrastructure.

U.S. Army Corps of Engineers, New Bedford Harbor Technical Support, Massachusetts

Laboratory Lead and Technical Specialist providing support to long-term cleanup efforts at the New Bedford Harbor Superfund Site. As Laboratory Lead, Mr. Fellion's responsibilities included supervision of up to six (6) laboratory assistants; characterization of thousands of shallow subtidal and intertidal sediment profile cores per the Unified Soil Classification System (USCS); prepared over 12,000 subtidal sediment samples and 2,000 intertidal sediment samples for polychlorinated biphenyl (PCB) congener and immunoassay (IA) analysis; and conducted daily QA/QC procedures, including preparation of chain of custody forms. As a Technical Specialist, Mr. Fellion collected hundreds of intertidal sediment cores in salt marsh and

adjacent upland communities along the Acushnet River's Upper Harbor; performed subcontractor oversight of subtidal sediment core collection; conducted boat-based water quality monitoring during active dredge operations; and, evaluated viability of intertidal salt marsh (i.e., *Spartina* spp.) restoration sites throughout the project footprint. The New Bedford Harbor Superfund Site is an 18,000 acre urban tidal estuary that was contaminated with PCBs in the 1940s-1970s and is currently undergoing intertidal remedial dredging operations and restoration activities.

Kinder Morgan, Line 261B Mitigation Project, Massachusetts

Massachusetts Department of Environmental Protection (MassDEP)-approved Wetlands Scientist responsible for subcontractor oversight during initial planting of 4,600 trees and shrubs at an 11.7 acre upland and wetland mitigation site. Mr. Fellion developed a rapid plant assessment protocol, monitored the subcontractor for adherence to planting specifications, geolocated each plant, and documented initial planting conditions using the rapid assessment protocol. Mitigation site planting was a pre-construction condition to mitigate bordering vegetated wetland (BVW) and riverfront area (RFA)-associated impacts prior to initiation of a 2.1-mile-long natural gas pipeline project in Agawam, Massachusetts.

Kinder Morgan, Line 261B Upgrade Projects, Massachusetts

MassDEP-approved Wetlands Scientist, Biological Monitor, and Environmental Inspector responsible for contractor oversight during construction of a natural gas infrastructure upgrade project. Wetland Scientist responsibilities included monitoring contractors during initial disturbance and work within wetlands, watercourses, and buffer zones. Biological Monitor responsibilities included presenting rare species training to project personnel, conducting daily turtle sweeps within Priority Habitat, radio-telemetry tracking of eastern box turtles, collecting biometric data and installing transmitters on newly found turtles, and daily reporting. Environmental Inspector responsibilities included monitoring contractors for proper implementation of erosion control devices and preparing daily inspection reports. The project increased transportation capacity of natural gas on the existing Tennessee Gas Pipeline system by adding and upgrading compression facilities at the existing 261B compressor station and replacement of 2.1 miles of abandoned 6" pipeline with a new 12" pipeline.

Massachusetts Department of Transportation, I-90 Toll Demolition and Improvements, Massachusetts

Wetland Scientist responsible for resource area delineations and preparation of MassDEP permit applications pursuant to the Massachusetts Wetlands Protection Act. Mr. Fellion prepared and submitted 13 NOIs and one RDA to local Conservation Commissions and MassDEP. Mr. Fellion collaborated with planners, landscape architects, and engineers to design two wetland replication areas required for unavoidable wetland impacts which were determined acceptable by the Conservation Commissions and subsequently approved for construction. The project consisted of demolition and reconfiguration of 19 legacy toll plazas along 125 miles of the Massachusetts Turnpike (I-90) from the New York state border to I-95 in Weston, MA.

LEC WETLANDS WILDLIFE WATERWAYS

Andrew R. Johnson

Education and Certifications

Plymouth State University, Plymouth, New Hampshire
Bachelor of Science Degree, Environmental Planning, May 2009

University of Massachusetts, Amherst, Massachusetts
Graduate Course Work, Soil Sciences

Professional Affiliations and Certifications

Qualified Compliance Inspector of Stormwater (QCIS) – Massachusetts
Qualified Preparer of Stormwater Pollution Prevention Plans (QPSWPPP) – Massachusetts
OSHA 510 Occupational Safety and Health Standards (2012)
OSHA 10 Hour Construction Safety (Transmission and Distribution) (2013)
OSHA 10 Hour General Construction (2014)
Association of Massachusetts Wetland Scientists
Massachusetts Association of Conservation Commissions

Professional Experience

LEC Environmental Consultants, Inc.

East Providence, Rhode Island (2017-Present)
Environmental Scientist

Provides professional consulting services on a variety of projects including utilities, commercial, residential subdivisions and developments, MassDOT/DCR highway and multi-use trail projects, and smaller projects proposed by private homeowners and landowners. Associated tasks may include construction monitoring, wetland boundary delineation, rare species studies, wildlife habitat evaluations, regulatory compliance analysis, and permitting under federal, state and local environmental regulations. Extensive field experience providing Construction Monitoring services for various project types with a high level of expertise in linear construction projects. Direct field experience conducting surveys for eastern box turtle (*Terrapene carolina*) following Natural Heritage-approved protocols.

AECOM

Pocasset, Massachusetts (2014-2017)
Environmental Scientist II

Responsible for environmental compliance and construction monitoring services associated with large-scale, long-term transmission line construction project in New England. Services included comprehensive project planning, wetland delineations, conducting site inspections, oversight of construction, fulfilling reporting requirements, and implementing contractor training and customer initiatives.

New Energy Alliance/MJ Electric

Safety Environmental Representative
Marlborough, Massachusetts (2011-2013)

Responsible for maintaining environmental and safety compliance under federal, state and local permits on utility construction projects located throughout New England.

Claire A. Hoogeboom

Education

University of Rhode Island (URI), Kingston, RI
Bachelor of Science, Environmental Management, May 2010

Coastal Fellows Program, University of Rhode Island, Kingston, RI
Created morphological classification for the hybrid *phragmites* for field identification. (2009)

Research Assistant, Laboratory of Soil Ecology and Microbiology, URI Coastal Institute, Kingston, RI
Collected atmospheric methane samples, soil temperatures, and earthworms and conducted earthworm ID and laboratory radiation soil analysis and metal ID (2010)

University of Massachusetts, Amherst, Massachusetts
Graduate Course Work, Soil Sciences

Professional Affiliations and Certifications

Association of Massachusetts Wetland Scientists (AMWS) (Affiliate Membership)
Massachusetts Association of Conservation Commissions (Corporate Member)
Society of Wetland Scientists
Certified Basic Soil Scientist (CBSS), SSSNE, Southern New England
OSHA HAZWOPER Certification (Recent Refresher Training: September 28, 2018)

Professional Experience

LEC Environmental Consultants, Inc. East Providence, Rhode Island (July 2013 – Present)
Wetland Scientist

Provide technical assistance for identification, characterization, and demarcation of wetland resource areas, wildlife habitat evaluations, erosion control inspection and monitoring, and endangered species surveys and monitoring. Direct field experience conducting surveys for eastern box turtle (*Terrapene carolina*) following Natural Heritage-approved protocols. Prepares and submits environmental permit applications following federal, state, and local statutes, and participates in project team meetings regarding project design and regulatory implications. Utilizes the MassGIS database, ArcView, and AutoCAD LT to support field work and permitting.

Audubon Society of Rhode Island, Bristol, RI (September 2011 – July 2013)
Environmental Educator

Provided education through public outreach programs, field trips to Audubon refuges, summer camp sessions, and afterschool programming with the Providence After School Alliance (PASA). Trained to care for, transport, and handle raptors to off-site programs for presentations. Created lesson plans and a personalized plant identification book for Audubon's Environmental Education Center in Bristol, RI. Represented Ocean State Environmental Education Collaborative (OSEEC) on a monthly basis to the AmeriCorps InterCorps Council. Responsibilities included collaborating service efforts with Rhode Island based AmeriCorps groups, creating a recruiting video for the OSEEC website, and coordinating ServeRI AmeriCorps week.

Appendix E: Site Photos

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Photo 1: A view of Wetland 5 looking northeast towards the existing Davisville Substation. This Special Aquatic Site (SAS) functions as a vernal pool as indicated by the presence of wood frog larvae and fairy shrimp. Photo date: May 6, 2021

Photo 2: A view of the "ASSF" looking southeast towards Wetland 5. This ASSF is an excavated ditch that may provide a surface hydrological connection between Wetland 5 and Wetland 4 during extreme rainfall events or sudden snow melt. However, no evidence of directional flow was observed. The ditch bottom is covered with last fall's leaves. Photo date: May 6, 2021

Photo 3: View of Wetland 5 looking northeast. Lower water levels in this photo expose waste that was submerged in Photo 1 including the tire pieces visible in the foreground. The proposed Wetland Mitigation Plan includes the removal of large waste items to restore the health of the wetland. Photo date: May 20, 2021.

Photo 4: A view of the upland on the west side of Wetland 5. This area will be cleared for the development of the ICF and the expansion of the TNEC ROW. Garlic mustard, Asiatic bittersweet, poison ivy, and Japanese honeysuckle provide most of the groundcover.

Photo 5: View of the existing TNEC transmission ROW at the TNEC Davisville Transmission Tap Lines. The TNEC ROW will be widened to accommodate new overhead lines from the ICF to the TNEC Davisville Substation and from the ICF to the TNEC Davisville Transmission Tap. Photo date: May 20, 2021

Photo 6: A view of sickle-leaved golden aster (*Pityopsis falcata*), a state species of special concern, within the adjacent AP 179-001. Potential habitat for this species has also been identified along the southwestern border of the Davisville Substation parcel. The ICF Project design avoids impacts to this species which requires open sites with full sun and a dry exposed sand substrate. Photo date: July 30, 2019

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Appendix F1: Site Evaluation Report

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LEC WETLANDS WILDLIFE WATERWAYS

December 18, 2019

Email [laura.ernst@nationalgrid.com]

Ms. Laura Ernst
Lead Environmental Scientist
National Grid
40 Sylvan Road
Waltham, MA 02451

Re: Site Evaluation Report [LEC File #: NG\19-414.01]
109 Circuit Drive (Davisville Substation)
(Assessor's Plat 179, Lot 5)
National Grid Work Order #90000198459
North Kingstown, Rhode Island

Dear Ms. Ernst:

As requested, LEC Environmental Consultants, Inc., (LEC) conducted a site evaluation and Wetland Resource Area Analysis at the above-referenced site in North Kingstown, Rhode Island. The purpose of the evaluation was to determine Freshwater Wetland boundaries located on the property. The evaluation was conducted in accordance with the federal *Clean Water Act* ("*CWA*"; 33 U.S.C. 1344, s.404) and its *Regulations* ("*CWA Regulations*"; 33 CFR and 40 CFR), the Rhode Island *Fresh Water Wetlands Act* ("*Act*"; Sections 2-1-18 through 2-1-15 of the R.I.G.L.) and its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* ("*Act Regulations*"; revised July 16, 2014), and the *Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast* ("*CRMC Regulations*"; CRMC 2008). The following report provides a general site description, wetland delineation methodology, a description of the Freshwater Wetlands, and potential regulatory implications.

General Site Description

The 6.10-acre site, herein referred to as the Davisville Substation, is located south of Roger Williams Way and north of Camp Avenue, in proximity to Quonset Point Naval Air Base in eastern North Kingstown, RI (Attachment A, Figures 1 & 2). The site is bordered by commercial buildings to the east, residential lots to the south and forested uplands and wetlands to the north and west.

The substation and associated mechanical equipment are encompassed by a 10-foot chain-linked fence, and located on a topographic high-point within the northeastern portion of the site. The substation is

situated atop a flat gravel/stone base, and topography slopes steeply downgradient towards the forested uplands and wetlands in an east and west direction. The site is accessible via an asphalt driveway extending within an easement located on adjacent parcels to the east of the site originating from Camp Avenue and Circuit Drive. A transmission line right-of-way extends in a northerly direction from the substation towards Roger Williams Way.

As further described below, three on-site Freshwater Wetlands were delineated by LEC. The Freshwater Wetland Resource Areas are present immediately east and west of the substation. The remaining portion of the site is generally characterized as previously-disturbed forested areas. Evidence of recreational all-terrain vehicle use was observed within the southern portion of the site.

According to available land records and as indicated by on-site signage, the site is the subject of an Environmental Land Use Restrictions (ELUR) which is recorded at the North Kingstown Land Evidence Records in Book 2024, Page 1. According to the ELUR, the property was previously utilized by the Quonset Point Naval Air Station (NAS) for mining operations, and was subsequently filled with waste material and topped with sand. Additionally, waste materials, including construction debris, roofing tar, ship parts, and other industrial wastes were reportedly disposed of on and adjacent to the site. Contaminants of concern have been confirmed on-site within the top four feet of the soil profile and within the groundwater.

Vegetation observed within the upland portions of the site includes a moderately dense canopy layer of northern red oak (*Quercus rubra*), white oak (*Quercus alba*), Norway maple (*Acer platanoides*), red maple (*Acer rubrum*), eastern cottonwood (*Populus deltoides*), eastern red cedar (*Juniperus virginiana*), eastern white pine (*Pinus strobus*), black cherry (*Prunus serotina*), and sassafras (*Sassafras albidum*). The moderately dense understory is comprised of saplings from the canopy layer, and a shrub layer of sweet pepperbush (*Clethra alnifolia*) and the invasive species listed below. The sparse groundcover layer includes garlic mustard (*Alliaria petiolata*), raspberry (*Rubus* sp.), poison ivy (*Toxicodendron radicans*), and seedlings from the overstory. Entanglements are common throughout. Dense patches of poison ivy, common greenbrier (*Smilax rotundifolia*), and invasive species listed below are common throughout portions of the forested upland.

Generally speaking, invasive plant species were observed throughout the forested portion of the site in varying densities. However, the forested areas immediately abutting the access road and substation appeared to have the highest density of invasive plant establishment. LEC determined that is was not practical to delineate and GPS locate invasive plant species establishment on-site due to the extent of invasive growth. In addition to the native upland vegetation listed above the following invasive vegetation was observed in various quantities interspersed with native vegetation throughout the site:

- Glossy buckthorn (*Rhamnus frangula*)
- Autumn olive (*Elaeagnus umbellata*)
- Bush honeysuckle (*Lonicera* spp.)
- Japanese honeysuckle (*Lonicera japonica*)

- Staghorn sumac (*Rhus typhina*)
- Japanese barberry (*Berberis thunbergii*)
- Multiflora rose (*Rosa multiflora*)
- Asiatic bittersweet (*Celastrus orbiculatus*)

According to the Natural Resource Conservation Service (NRCS) Soil Survey (Web Soil Survey and State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties, Version 18, December 6, 2018), the site consists of Merrimac-Urban land complex, 0 to 8 percent slopes. NRCS describes Merrimac-Urban land complex soils as somewhat excessively drained fine sandy loam soils. LEC inspected soil conditions within the upland portions of the site using a Dutch-style soil auger and generally observed a 12-inch or greater layer of fill/human transported material (HTM) with a soil matrix color of 10YR 3/1. Due to soil conditions observed within the topsoil and the potential for contaminants in the soil, the soil underlying the HTM was not evaluated. No redoximorphic features or evidence of hydrology (i.e. groundwater, oxidizes rhizospheres, etc.) were observed within the top 12 inches of the mineral soil profile. This soil profile is not considered 'hydric' in accordance with the *Field Indicators Guide.*

Natural Heritage Program Designation

According to the *Natural Heritage Area* layer provided on the Rhode Island Department of Environmental Management (RIDEM) Environmental Resource Map, the site is not located in a *Natural Heritage Area* (Attachment A, Figure 3).

Flood Plain Designation

According to the October 16, 2013 FEMA Flood Insurance Rate Map (FEMA FIRM) for the Town of North Kingstown, Rhode Island (*Community Panel 44009 C 0108J*), the site is located within a Zone X (shaded) – *Areas subject to the 0.2% annual chance flood* and a portion of the paved driveway entrance is mapped within Zone X (unshaded) – *Areas outside the 1% annual chance flood.* A Zone AE (el. 13) – *Areas subject to inundation by the 1% annual chance flood* extends into the northwestern and eastern portions of the site (Attachment A, Figure 4).

Wetland Boundary Determination Methodology

On December 10, 2019, LEC conducted a site evaluation to identify and characterize existing protectable Freshwater Wetlands located on or adjacent to the site. The Freshwater Wetland boundaries were delineated through observations of the existing plant communities, using the "fifty percent criteria" to determine dominance of wetland/upland vegetation, the interpretation of soil characteristics, and other indicators of wetland hydrology in accordance with the Appendix 2 of the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* (July 16, 2014), the *Field Indicators for Identifying Hydric Soils in New England* (2018), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (January, 2012).

LEC utilized a Trimble Handheld GEO XH-7000 Global Positioning System (GPS) unit to locate the established Freshwater Wetland flags, as shown on Attachment A and provided the raw and shapefile data to National Grid on December 18, 2019.

The boundaries of the Freshwater Wetlands were demarcated in the field with orange surveyors tape embossed with the text "LEC Wetland Resource Area" in bold, black print. The wetland flags are numbered A1 – A8, B1 – B9, and C1 – C11 (Attachment B). LEC completed U.S. Army Corps of Engineers (U.S. ACOE) Wetland Determination Field Data Forms at one representative transect for each Freshwater Wetland to support the wetland boundary delineation (Attachment C). Representative photographs of the site and each Freshwater Wetlands were also taken on December 10, 2019 (Attachment D).

Freshwater Wetland and Other Jurisdictional Areas

Freshwater Wetland Areas and additional jurisdictional areas associated with the site include Freshwater Wetland, Perimeter Wetland, Area Subject to Storm Flowage (ASSF), and Flood Plain. A brief description of the Freshwater Wetland Areas is provided below.

Freshwater Wetland

Wetland is defined at 33 CFR Part 328.3(b) as *those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*

Freshwater Wetland is defined at Rule 4.00 of the *Act Regulations* and Section 2.4(A)(35) of the *CRMC Regulations* as *those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*

Furthermore, Appendix 2 (A) provides specific criteria for identifying Vegetated Wetland edges as *the landward edge of vegetated wetlands (i.e., bogs; marshes; swamps; emergent, shrub or forested wetlands; or similar types, including wetland complexes of these types), shall, under normal conditions, be identified as the place where the plant community associated with the vegetated wetland is no longer dominated by hydrophytes/hydrophytic vegetation (i.e., the plant community is composed of less than or equal to fifty percent (50%) hydrophytes/hydrophytic vegetation).*

Three Freshwater Wetlands (FW) are located on the subject parcel. Two FWs are contiguous with an expansive wetland system located off-site to the northwest (wetland flags A1 – A8 and B1 – B9) and the remaining FW is an isolated wetland (wetland flags C1 – C11). The FW characteristics are further detailed below.

Forested Freshwater Wetlands (A-series and B-series)

The A and B series FWs are a part of an expansive wetland system associated with the perennial stream, Mill Creek, located off-site to the northwest approximately 840 linear feet from the northwestern parcel

boundary (Attachment A, Figure 1). Additionally, the FWs appear to be hydrologically influenced by a high groundwater table and surface runoff from the upgradient substation. Topography slopes steeply downgradient from the upland portions of the site towards the FW boundaries, which are well defined along the abrupt toe of slope. Topography within the B-series FW slopes gently downgradient towards the north and topography within the A-series FW slopes gently towards the northeast. The two FWs exhibit gentle pit and mound microtopograhy and contained at least six inches of standing water within 20-30 feet of the FW boundary at the time of LEC's site evaluation.

The A and B-series FWs can be characterized as forested wetlands, dominated by both deciduous and coniferous trees greater than 20 feet tall with scattered patches of saplings and shrubs. Wetland vegetation within the two FWs is similar, consisting of a moderately dense canopy layer dominated by red maple (*Acer rubrum*) with scattered patches and individuals of tupelo (*Nyssa sylvatica*), swamp white oak (*Quercus bicolor*), red oak (*Quercus rubra*), and eastern white pine (*Pinus strobus*). The understory contains scattered individuals of saplings from the canopy layer, and scattered patches of sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), and alder (*Alnus* sp.). The groundcover layer is generally sparse, as the site evaluation took place outside the growing season, however; vegetation observed in the groundcover layer includes cinnamon fern (*Osmunda cinnamomea*), poison ivy (*Toxicodendron radicans*), tree clubmoss (*Lycopodium obscurum*), and seedlings from the overstory. Small patches of common greenbrier (*Smilax rotundifolia*) and poison ivy entanglements are common throughout.

Scrub-Shrub/Special Aquatic Site Freshwater Wetland (C-series)

The C-series FW is situated within a small topographic depression measuring approximately 25 feet by 60 feet wide and appears to be hydrologically influenced by a high groundwater table and surficial stormwater runoff from the substation. At the time of LEC's site evaluation, approximately one to two feet of standing water was observed within the FW and the edge of the surface water was approximately one to three linear feet downgradient of the FW boundary. A slightly meandering, manmade ditch measuring approximately five feet wide by five feet deep extends from wetland flag C1 in a northwest direction and connects with the B-series FW at flags B6. This area is further described below in the Area Subject to Storm Flowage (ASSF) Section.

The C-series FW can be characterized as a scrub-shrub/special aquatic site, as the FW edges contain woody plants less than 20 feet tall and the FW contains less than 1/4 acre open standing water. Trace amount of aquatic vegetation was observed within the inundated portion of the FW and the inner edges of the FW consist of individual red maple saplings, sweet pepperbush, and cinnamon fern. The eastern and southern edges of the FW are dominated by dense concentrations of common greenbrier, Asiatic bittersweet, and multiflora rose.

As noted above, the C-series FW exhibits the characteristics of a special aquatic site (i.e., Vernal Pool); however, due to the time of year, LEC was unable to perform a formal survey to confirm the presence/absence of obligate and/or facultative amphibian breeding activity. Based on the historic aerial

imagery and LECs field observations, it appears that the FW is likely capable of supporting and providing habitat for aquatic lifeforms; however, the groundwater contamination associated with the site may affect the success of any breeding activity within the FW. Further survey during the active breeding season would be necessary to determine the presence/absence of obligate and/or facultative amphibian breeding activity.

Freshwater Wetland Invasive Species

LEC observed invasive vegetation within portions of the A, B and C series FWs. The eastern portion of the B-series FW contains dense patches of honeysuckle and the eastern and southern portions of the C-series FW contain dense patches of honeysuckle, Asiatic bittersweet, and multiflora rose. The western portion of the A series FW also contains honeysuckle, Asiatic bittersweet, and multiflora rose along its eastern boundary.

Perimeter Wetland (Area of Land Within Fifty Feet)

Perimeter Wetland (Area of Land within Fifty Feet) is defined at Rule 4.00 of the *Act Regulations* and Section 2.4(A)(5) of the *CRMC Regulations* as *a freshwater wetland consisting of the area of land within fifty feet (50') of the edge of any freshwater wetland consisting in part, or in whole, of a bog, marsh, swamp or pond, as defined by these Rules. For purposes of identification, this area shall be measured horizontally, without regard for topography, from the edge of such a wetland.*

The 50-foot Perimeter Wetland extends horizontally from the edge of the aforementioned Freshwater Wetland boundaries. The Perimeter Wetland includes paved portions of the National Grid substation and forested uplands.

Area Subject to Stormwater Flowage (ASSF)

Rule 4.00 of the *Act Regulations* and Section 2.4(A)(7) of the *CRMC Regulations* defines ASSF as *drainage swales and channels that lead into, out of, pass through or connect other freshwater wetlands or coastal wetlands, and that carry flows resulting from storm events, but may remain relatively dry at other times.*

ASSF is associated with the aforementioned man-made ditch which extends between wetland flags C1 – C11 and B5 – B6 (Attachment A). The ditch measures approximately five feet wide by five feet high and did not contain any standing or flowing water at the time of LEC's site evaluation. The ditch is generally unvegetated, with the exception of a few dense patches of invasive honeysuckle.

Flood Plain

Flood Plain is defined at Rule 4.00 of the *Act Regulations* and Section 2.4(A)(31) of the *CRMC Regulations* as *that land area adjacent to a river or stream or other flowing body of water that is, on average, likely to be covered with flood waters resulting from a one hundred (100) year frequency storm. A storm of this nature is one that is to be expected to be equaled or exceeded once in one hundred (100)*

years, and hence may be said to have a one percent (1%) probability of being equaled or exceeded in any given year.

As previously noted, a Zone AE (el. 13) extends into the northwestern and eastern portions of the site and is contained within the A and B-series FWs.

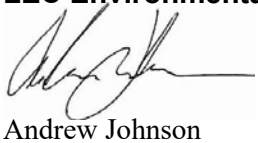
Summary

LEC identified and delineated the boundaries of three Freshwater Wetlands located at 109 Circuit Drive in North Kingstown, Rhode Island. Additional jurisdictional areas identified on the site include Perimeter Wetlands, Areas Subject to Storm Flowage, and Flood Plain. The aforementioned Freshwater Wetlands are protected under the federal *Clean Water Act* (33 U.S.C. 1344, s.404) and its *Regulations* (33 CFR and 40 CFR), the Rhode Island *Fresh Water Wetlands Act* (Sections 2-1-18 through 2-1-15 of the R.I.G.L.) and its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* (revised July 16, 2014), and the *Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast* (CRMC 2008). Any proposed alteration within the Freshwater Wetlands may require filing the necessary permit applications with the Department of the Army Corps of Engineers, Rhode Island Department of Environmental Management, and/or the Coastal Resource Management Council.

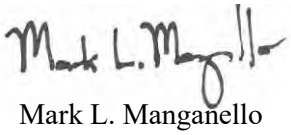
We appreciate the opportunity to work with you on this project. If you should have any questions or require additional information, please do not hesitate to contact us at (508) 746-9491 or ajohnson@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.



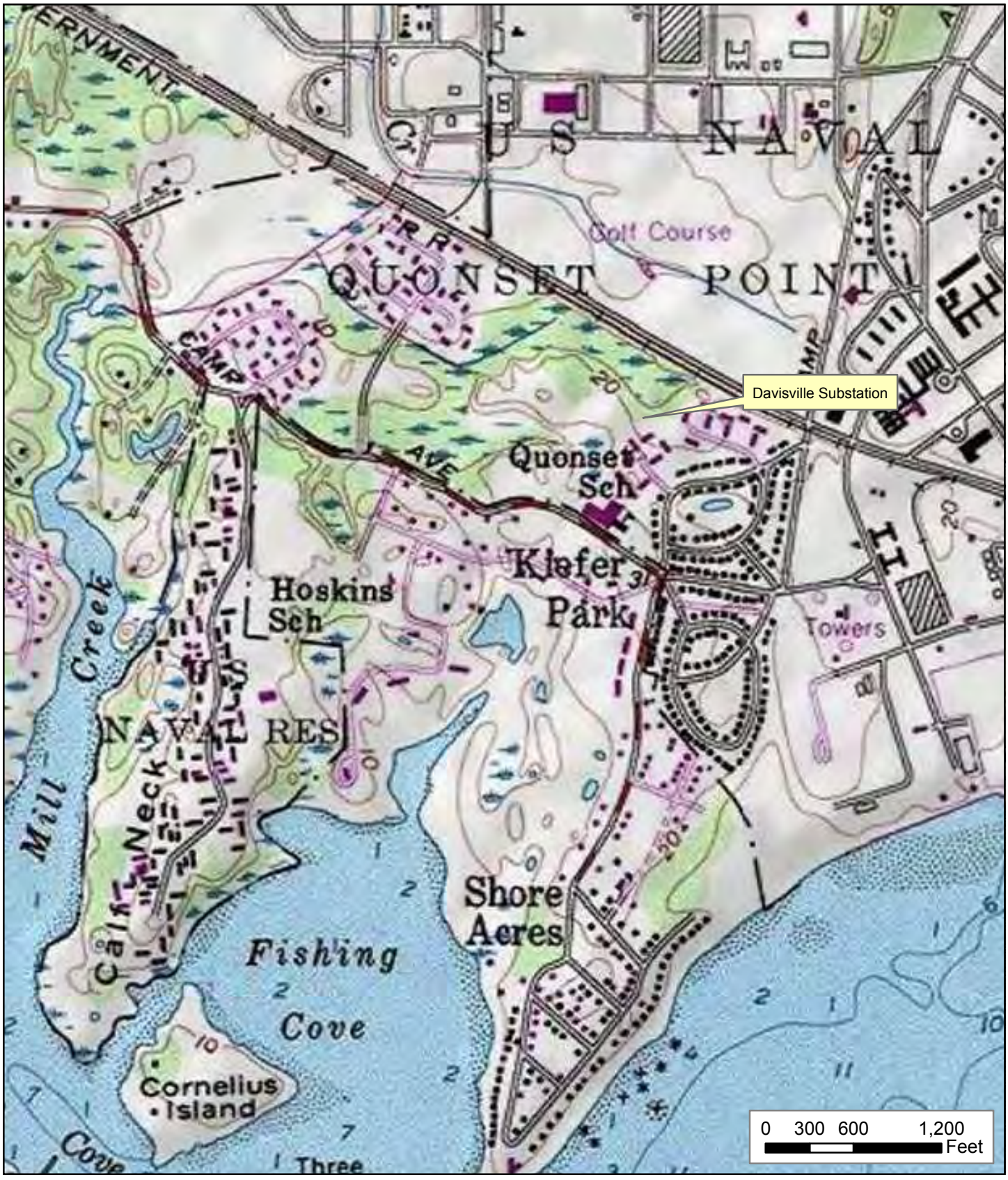
Andrew Johnson
Environmental Scientist



Mark L. Manganello
Assistant Director of Ecological Services

Attachment A

Figure 1: USGS Topographic Map
Figure 2: Aerial Orthophoto
Figure 3: Natural Heritage Map
Figure 4: FEMA FIRM



LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 1: USGS Topographic Map

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 2: Aerial Orthophoto

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

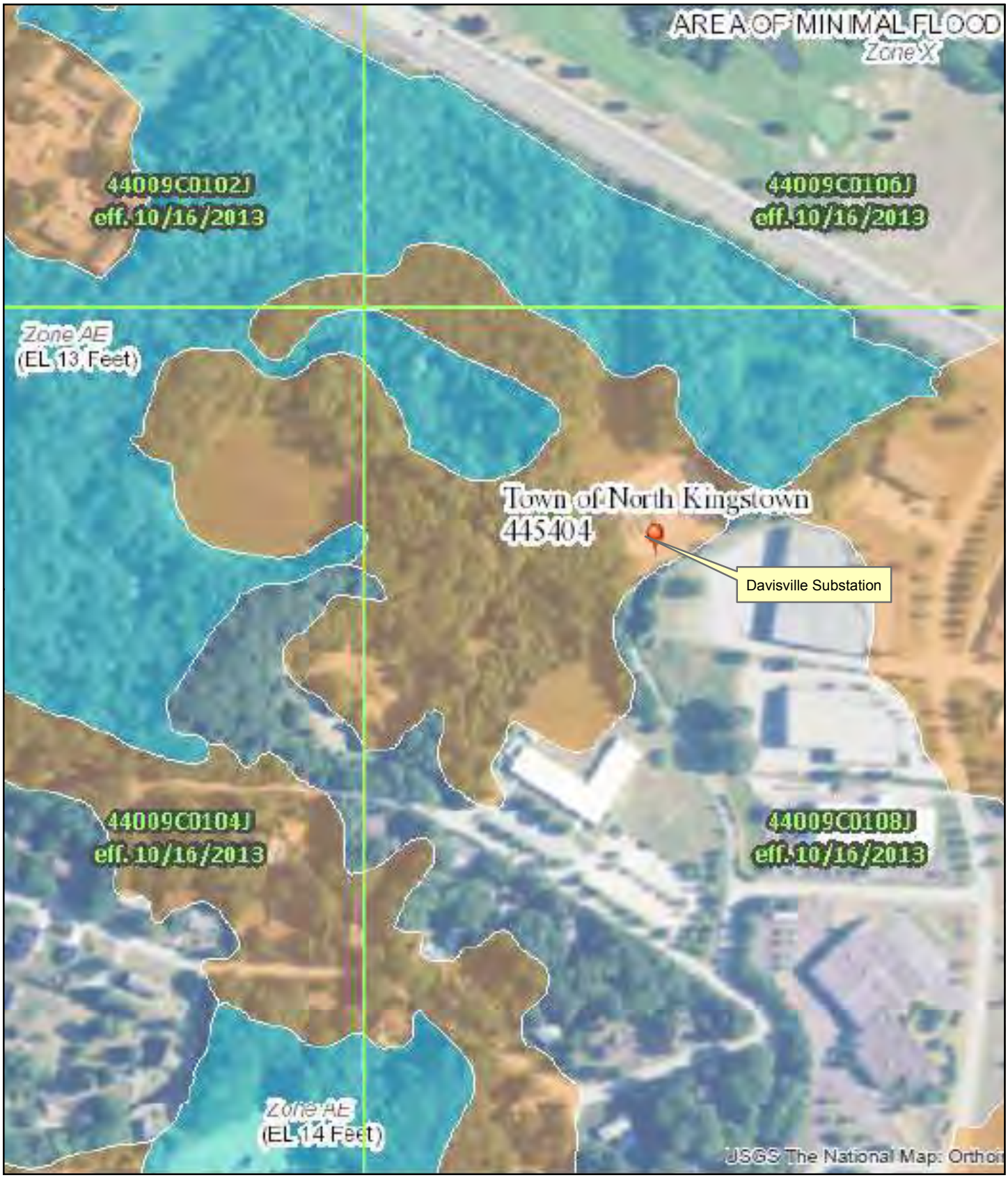
LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 3: Natural Heritage Map

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019



LEC Environmental Consultants, Inc.

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508.746.9491
www.lecenvironmental.com

Figure 4: FEMA FIRM

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

Attachment B

Aerial Orthophoto: GPS Survey

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
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Aerial Orthophoto: GPS Survey

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

Attachment C

U.S. ACOE Wetland Determination Field Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Davisville Substation City/County: Washington Co. Sampling Date: 12/10/19

Applicant/Owner: National Grid State: RI Sampling Point: A①

Investigator(s): AJohnson + CHoogeboom (LEC) Section, Township, Range: North Kingstown

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

Subregion (LRR or MLRA): LRR-R Lat: 41°35'33"N Long: 71°26'04"W Datum: WGS84

Soil Map Unit Name: Wa-Walpole Sandy Loam, 0-3% Slopes NWI classification: N/A

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
- Test pit located East of wetland flag numbers A3-A4
- the property is a state-listed facility (SR 23-0874) and subject to an environmental Land Use Restriction (ELUR)
- Contaminated soils are identified at grade up to 1 feet below grade
- Contaminants are identified in the groundwater table

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1-6" w/in 20'
Water Table Present?	Yes X	No ____	Depth (inches): 1-6" w/in 20'
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: AD

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	30	Yes	FACU
2. Quercus alba	30	Yes	FACU
3. Quercus bicolor	10	No	
4. Nyssa sylvatica	5	No	
5. Quercus rubra	5	No	
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Clethra alnifolia	30	Yes	FAC
2. Nyssa sylvatica	5	No	
3. Vaccinium corymbosum	2	No	
4. Sassafras albidum	1	No	
5.			
6.			
7.			
	38	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Lycopodium obscurum	2	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	= Total Cover	

Woody Vine Stratum (Plot size: 10')			
1. Smilax rotundifolia	5	Yes	FAC
2.			
3.			
4.			
	5	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .4 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 2	x 3 = 6
FACU species 3	x 4 = 12
UPL species	x 5 =
Column Totals: 5 (A)	18 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

-Vegetation observed with buttressed roots (indicators of hydric soils and wetland hydrology are present)

SOIL

Sampling Point: A(1)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1"	leaf litter							
0-16"	10YR2/1	100	—	—	—	—	MUCK	
16-24"	10YR4/2	100	—	—	—	—	FSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed): N/A

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

- Soil profile Saturated to surface
- free water observed in test pit 16" below surface

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Davisville Substation City/County: Washington Co. Sampling Date: 12/10/19
Applicant/Owner: National Grid State: RI Sampling Point: B01
Investigator(s): A. Johnson + C. Hoagboom (IEC) Section, Township, Range: North Kingstown
Landform (hillslope, terrace, etc.): outwash Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR or MLRA): LRR-R Lat: 41°35'33" N Long: 71°26'10" W Datum: WGS 84
Soil Map Unit Name: MU- Merrimac-Urban Land complex, 0-8% Slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil X, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil X, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
- Test pit located 15' North of wetland flag B3.
- The property is a State-Listed facility (RK 73-0874) and subject to an Environmental Land-Use Restriction (ELUR)
- Contaminated soils identified at grade upto 4 feet below grade
- Contaminants identified in the groundwater table

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 1-6" Wlin 20'
Water Table Present? Yes X No ____ Depth (inches): 1-6" Wlin 20'
Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface.

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: B1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	60	Yes	FAC
2. Nyssa sylvatica	10	No	
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Acer rubrum	15	Yes	FAC
2. Lonicera tatarica	10	Yes	FACU
3. Vaccinium corymbosum	7	No	
4.			
5.			
6.			
7.			
	32	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 10')			
1. Lonicera japonica	10	Yes	FACU
2. Smilax rotundifolia	3	Yes	FAC
3.			
4.			
	13	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	4	x 3 =	12
FACU species	2	x 4 =	8
UPL species		x 5 =	
Column Totals:	6 (A)		20 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

- Woody vegetation exhibits buttressed roots

SOIL

Sampling Point: B(1)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1"	leaf litter							
0-5"	10YR 2/2	100	—	—	—	—	SL	
5-13"	10YR 4/1	80-90	10YR 5/6	10-20	C	m	VGSL	
13-24"	10YR 4/1	80-90	10YR 5/6	10-20	C	m	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed): N/A

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

- Saturated to the mineral soil surface
- Free standing water in test pit 14" below mineral soil surface.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Davisville Substation City/County: Washington Co. Sampling Date: 12/10/19

Applicant/Owner: National Grid State: RI Sampling Point: B(2)

Investigator(s): AJohnson+CHoogeboom (TEC) Section, Township, Range: North Kingstown

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Convex Slope (%): 0-3

Subregion (LRR or MLRA): LRR-R Lat: 41°35'33"N Long: 71°26'09"W Datum: WGS 84

Soil Map Unit Name: MU-Merrimac Urban Land Complex, 0-3% Slopes NWI classification: N/A

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

- Test pit located in disturbed upland area between wetland flags C1 and B6
- The property is a State-listed facility (SR 23-0674) and subject to an Environmental Land Use Restriction (ELUR)
- Contaminated soils identified at grade up to 4 feet below grade
- Contaminants identified in the groundwater table

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: B(2)

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra	30	Yes	FACU
2. Quercus alba	30	Yes	FACU
3. Acer rubrum	30	Yes	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. Prunus serotina	5	Yes	FACU
2. Vaccinium corymbosum	3	Yes	FACW
3. Frangula alnus	2	Yes	FAC
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size:)			
1. Frangula alnus	10	Yes	FAC
2. Rubus sp.	2	No	
3. Lycopodium obscurum	2	No	
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	14	= Total Cover	

Woody Vine Stratum (Plot size: 10')			
1. Lonicera japonica	15	Yes	FACU
2. Celastrus orbiculatus	10	Yes	UPL
3. Smilax rotundifolia	5	No	
4. Rosa multiflora	3	No	
	33	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	1	x 2 =	2
FAC species	3	x 3 =	9
FACU species	4	x 4 =	16
UPL species	1	x 5 =	5
Column Totals:	9 (A)		32 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL

Sampling Point: B(2)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1"	leaf litter							
0-4"	10YR 3/2	100	-	-	-	-	SL	
4-18"	10YR 5/4	100	-	-	-	-	CSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed): N/A

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Davisville Substation City/County: Washington Co. Sampling Date: 12/10/19

Applicant/Owner: National Grid State: RI Sampling Point: C1

Investigator(s): AJohnson + CHoogeboom (LEC) Section, Township, Range: North Kingstown

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR or MLRA): LRR-R Lat: 41°35' 32" N Long: 71°26'08" W Datum: WGS 84

Soil Map Unit Name: MU-Merrimac Urbanland Complex, 0-3% slopes NWI classification: N/A

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

- TP3 pit located South of wetland flags C1-C2
- The property is a State-listed facility (SR 23-0874) and subject to an Environmental Land Use Restriction (ELUR).
- Contaminated soil identified at grade up to 4 feet below grade
- Contaminants are identified in the groundwater, as well

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1.5' +/-
Water Table Present?	Yes X	No ____	Depth (inches): Surface
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

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

Remarks:

- Surface water within wetland depression located within 1-3 feet of wetland boundary.

VEGETATION – Use scientific names of plants.

Sampling Point: C(1)

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Clethra alnifolia	30	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3. Berberis thunbergii	3	No	
4.			
5.			
6.			
7.			
	43	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1. Smilax rotundifolia	10	Yes	FAC
2. Lonicera japonica	5	Yes	FACU
3.			
4.			
	15	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species	1	x 4 =	4
UPL species		x 5 =	
Column Totals:	6	(A)	19 (B)

Prevalence Index = B/A = 3.16

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: C(1)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1"	leaf litter							
0-5"	10YR 3/1	100	–	–	–	–	CSL	
5-18"	10YR 5/3	95	10YR 6/6	5	C	M	VCSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Saturated gravel

Depth (inches): 18"

Hydric Soil Present? Yes ____ No X

Remarks:

- Saturated to mineral soil surface
- Free water observed in test pit 5" below mineral soil surface.
- Depression appears to have been excavated, likely manipulating the soil profile.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Davisville Substation City/County: Washington Co. Sampling Date: 12/10/19

Applicant/Owner: National Grid State: RI Sampling Point: EA(1)

Investigator(s): A Johnson + C Hoogeboom (LEC) Section, Township, Range: North Kingstown

Landform (hillslope, terrace, etc.): Outwash Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR-R Lat: 41° 35' 31" N Long: 71° 26' 09" W Datum: WGS84

Soil Map Unit Name: MU-Merrimac-Urban Land Complex NWI classification: N/A

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

- Test Pit located in disturbed upland area
- The property is a State-listed facility (SK 23-0874) and subject to an Environmental Land Use Restriction (ELUR)
- Contaminated soils identified at grade up to 4 feet below grade
- Contaminants are identified in the groundwater table

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: EA(1)

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	50	Yes	FACU
2. Acer rubrum	15	Yes	FAC
3. Quercus rubra	10	No	
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera tatarica	20	Yes	FACU
2. Elaeagnus angustifolia	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Viola sp.	25	Yes	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 10')			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .2 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	1	x 3 =	3
FACU species	3	x 4 =	12
UPL species		x 5 =	
Column Totals:	4 (A)		15 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No X

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

- Viola sp. difficult to identify species in winter conditions

SOIL

Sampling Point: EA(1)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/1	100	—	—	—	—	CSL	HTM

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ROCKY

Depth (inches): 12"

Hydric Soil Present? Yes ____ No X

Remarks:

- Test Pit located in historically altered area
- No saturation within test pit
- Small pieces of asphalt observed within top 12" of soil profile

Attachment D

Photographic Log

LEC

PHOTOGRAPHIC LOG

Client Name: National Grid | **Site Location:** Davisville Substation

Photo No.	Date:
1	12/10/19

Direction Photo Taken:
N

Description:

View of the site entrance and the Davisville Substation.

Photo No.	Date:
2	12/10/19

Direction Photo Taken:
E

Description:
View of the Davisville Substation.

Photo No. **3**	**Date:** 12/10/19
Direction Photo Taken: E	
Description: View of wetland series A.	

Photo No. **4**	**Date:** 12/10/19
Direction Photo Taken: E	
Description: View of wetland series A with standing water present within the offsite portion of the wetland.	

Photo No. 5	Date: 12/10/19
Direction Photo Taken: N	
Description: View of the western portion of wetland series B. A significant amount of concrete and other construction debris was present within the eastern portion of the wetland.	

Photo No. 6	Date: 12/10/19
Direction Photo Taken: N	
Description: View of the eastern portion of wetland series B depicting dense vegetation consisting of asiatic bittersweet *(Celastrus orbiculatus)* and honeysuckle *(Lonicera sp.).*	

Photo No. 7	Date: 12/10/19	
Direction Photo Taken: N		
Description: View of the northern portion of wetland series C.		

Photo No. 8	Date: 12/10/19	
Direction Photo Taken: N		
Description: View of the southern portion of wetland series C.		

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Appendix F2: Site Evaluation Report Follow-up

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August 6, 2020

Email [laura.ernst@nationalgrid.com]

Ms. Laura Ernst
Lead Environmental Scientist
National Grid
40 Sylvan Road
Waltham, MA 02451

Re: Site Evaluation Report [LEC File #: NG\19-414.01]
109 Circuit Drive (Davisville Substation)
(Assessor's Plat 179, Lot 5)
National Grid Work Order #90000198459
North Kingstown, Rhode Island

Dear Ms. Ernst:

As requested, LEC Environmental Consultants, Inc., (LEC) conducted a follow-up site evaluation on July 13, 2020 at the above-referenced site in North Kingstown, Rhode Island. The purpose of the evaluation was to further assess a wetland on the property in the context of its potential designation as a Special Aquatic Site (i.e. Vernal Pool) and confirm that a feature previously delineated as an Area Subject to Stormwater Flowage (ASSF) is not an intermittent stream. LEC was also asked to confirm that there are no known state or federally listed rare species onsite.

The evaluation was conducted in accordance with the federal *Clean Water Act* ("*CWA*"; 33 U.S.C. 1344, s.404) and its *Regulations* ("*CWA Regulations*"; 33 CFR and 40 CFR), the Rhode Island *Fresh Water Wetlands Act* ("*Act*"; Sections 2-1-18 through 2-1-15 of the R.I.G.L.) and its implementing *Rules and Regulations Governing the Administration and Enforcement of the Fresh Water Wetlands Act* ("*Act Regulations*"; revised July 16, 2014), and the *Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast* ("*CRMC Regulations*"; CRMC 2008).

Overview

On December 10, 2019, LEC conducted an initial site evaluation to identify and characterize existing protectable Freshwater Wetlands located on or adjacent to the site. The Freshwater Wetland boundaries were delineated through observations of the existing plant communities, using the "fifty percent criteria" to determine dominance of wetland/upland vegetation, the interpretation of soil characteristics, and other indicators of wetland hydrology in accordance with Appendix 2 of the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* (July 16, 2014), the *Field Indicators for Identifying Hydric Soils in New England* (2018), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (January, 2012).

Upon completion of the site evaluation mentioned above, LEC produced and distributed a Site Evaluation Report, dated December 18, 2019, to the project team which detailed the general site conditions, an assessment of applicable available rare species data, and a description of jurisdictional Freshwater Wetlands which were delineated onsite.

Upon review of LEC's Site Evaluation Report, Burns & McDonnell requested a further assessment of the potential Special Aquatic Site (i.e. Vernal Pool), ASSF, and rare species data. In response, LEC conducted a follow-up site evaluation on July 13, 2020 and has prepared this report. The following report provides a summary of LEC's site observations relative to the potential Vernal Pool and ASSF, and an assessment of the available rare species data.

Scrub-Shrub/Special Aquatic Site Freshwater Wetland (C-series)

The C-series Freshwater Wetland (FW) is situated within a small topographic depression measuring approximately 25 feet by 60 feet wide and appears to be hydrologically influenced by high groundwater and surficial stormwater runoff from the substation. As noted in the previous Site Evaluation Report, the C-series FW exhibits the characteristics of a Special Aquatic Site (i.e., Vernal Pool); however, due to the time of year and absence of standing water within the feature, LEC was unable to perform a formal survey to confirm the presence/absence of obligate and/or facultative amphibian breeding activity. LEC did not encounter any transforming juvenile amphibians within the leaf-litter within and around the perimeter of the FW.

As depicted in the above photograph, no standing water was observed within the FW at the time of LEC's site evaluation; however, evidence of staining and previous observations suggest that the depression may hold up to 2 feet of standing water during the spring hydroperiod. The FW edges contain woody plants less than 20 feet tall, and the FW contains less than a 1/4 acre open standing water (dry). Trace amount of (exposed) aquatic vegetation was observed within the central portion of the FW. The inner edges of the FW consist of individual red maple (*Acer rubrum*) saplings, sweet pepperbush (*Clethra alnifolia*), and cinnamon fern (*Osmunda cinnamomea*). The eastern and southern edges of the FW are dominated by dense concentrations of buttonbush (*Cephalanthus occidentalis*), multiflora rose (*Rosa multiflora*), and entanglements of common greenbrier (*Smilax rotundifolia*), Asiatic bittersweet (*Celastrus orbiculatus*), and grape vine (*Vitis spp.*).

LEC did observe an adult wood frog (*Lithobates sylvaticus*) within the FW as well as several species of insects and invertebrates. It appears that the FW contains the physical characteristics necessary to provide habitat for species commonly found in Vernal Pools (i.e., it is an isolated depression with a sufficient seasonal water column and contains attachment sites for egg masses). However, it is important to note that the groundwater contamination associated with the site may affect the success of any breeding activity within the FW. Further survey during the active vernal pool breeding season would be necessary to definitively determine the presence/absence of obligate and/or facultative amphibian breeding activity. Based on our observations to date, LEC recommends that the project engineering and development plans consider this FW/feature to be a Special Aquatic Site, unless determined otherwise based on site evaluations during vernal pool breeding season.

Area Subject to Stormwater Flowage (ASSF)

Rule 4.00 of the *Act Regulations* and Section 2.4(A)(7) of the *CRMC Regulations* defines ASSF as *drainage swales and channels that lead into, out of, pass through or connect other freshwater wetlands or coastal wetlands, and that carry flows resulting from storm events, but may remain relatively dry at other times.*

Rule 4.00 of the *Act Regulations* and Section 2.4(A)(7) of the *CRMC Regulations* defines Stream/Intermittent Stream as *Any flowing body of water or watercourse other than a river that flows long enough each year to develop and maintain a defined channel. Such watercourses may carry groundwater discharge or surface runoff. Such watercourses may not have flowing water during extended dry periods but may contain isolated pools or standing water.*

ASSF is associated with the man-made ditch which extends between wetland flags C1 – C11 and B5 – B6. As depicted in the photo on the left, the ditch measures approximately five feet wide by five feet high and is one hundred and fifty feet long. The feature did not contain any standing or flowing water at the time of LEC's 2019 and 2020 site evaluations. The ditch is generally unvegetated, with the exception of a few dense patches of invasive honeysuckle bush.

During both of LEC's site evaluations, the feature was observed to be dry. Upon evaluation of soils within the underlying feature, no redoximorphic features or other hydric soil indicators (i.e. oxidized rhizospheres, soil saturation, free-standing water within the test pit, etc.) were identified which would indicate that the feature experiences infrequent surficial flow exclusively as a result of stormwater runoff

and is not influenced by shallow groundwater. While leaf staining was observed within the feature, no scouring, leaf dams, and/or other evidence of channelization or flow was observed, further indicating that the feature is man-made, flow is infrequent, and that minimal channelization has developed since the feature was constructed. Furthermore, the feature is not depicted on the United States Geologic Survey (USGS) Topographic Map (atttached) as an intermittent or perennial stream. Based upon our initial evaluation and the evaluation noted above, LEC maintains the assertion that the feature is accurately characterized as an ASSF under the *Act Regulations.*

Rare Species Assessment

A brief description and evaluation of the available rare species data is provided below.

Rhode Island Natural Heritage Program Designation

According to the *Natural Heritage Area* layer provided on the Rhode Island Department of Environmental Management (RIDEM) Environmental Resource Map, the site is not located in a *Natural Heritage Area* (attached). However, LEC recommends that a formal request for rare and endangered species information at the project site be requested from the Rhode Island Natural History Survey.

United Stated Fish and Wildlife Service

According to an unofficial Information for Planning and Consultation Report (IPAC) from the U.S. Fish and Wildlife Service (USFWS) (attached), the Northern Long Eared Bat (NLEB, *Myotis septentronalis*) is present throughout all of Rhode Island. Further consultation with the USFWS is recommended if the project involves tree-clearing activities, potentially including time of year restrictions on tree clearing and/or field surveys/habitat assessments to confirm activities are not located within 0.25 miles of a known hibernacula or 150 linear feet of a known maternity roost tree in compliance with the NLEB Final 4(d) rule under the ESA, effective 2/16/2016.

Additionally, the range of 12 species of migratory birds are known to exist in or in proximity to the site. Tree clearing activity shall be conducted in accordance with the *Migratory Bird Treaty Act, The Bald and Golden Eagle Protection Act* in compliance with guidance provided in National Grid Environmental Guidance Document 303 (EG 303).

Summary

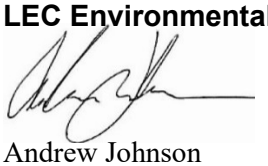
LEC conducted a follow-up site evaluation to conduct a Vernal Pool assessment and to confirm that a feature previously delineated onsite as an Area Subject to Stormwater Flowage (ASSF) is not an intermittent stream on the property located at 109 Circuit Drive in North Kingstown, Rhode Island. LEC also conducted a further assessment of applicable available rare species data. While the Freshwater Wetland contains the physical characteristics of a potential Vernal Pool, a formal Vernal Pool survey during the active breeding season in 2021 is necessary to definitively determine if it is a Special Aquatic Site/Vernal Pool. LEC recommends that the project engineering and development plans consider this FW/feature to be a Special Aquatic Site, unless determined otherwise. LEC confirmed that the previously identified ASSF is not an Intermittent Stream. LEC confirmed that there are no known state or federally

listed rare species onsite. However, consultation with the USFWS and RINHS is recommended during project development to ensure that a Northern Long Eared Bat survey is not required and/or time-of-year restrictions for tree clearing activities are applicable.

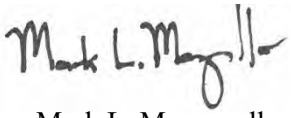
We appreciate the opportunity to work with you on this project. If you should have any questions or require additional information, please do not hesitate to contact us at (508) 746-9491 or ajohnson@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.



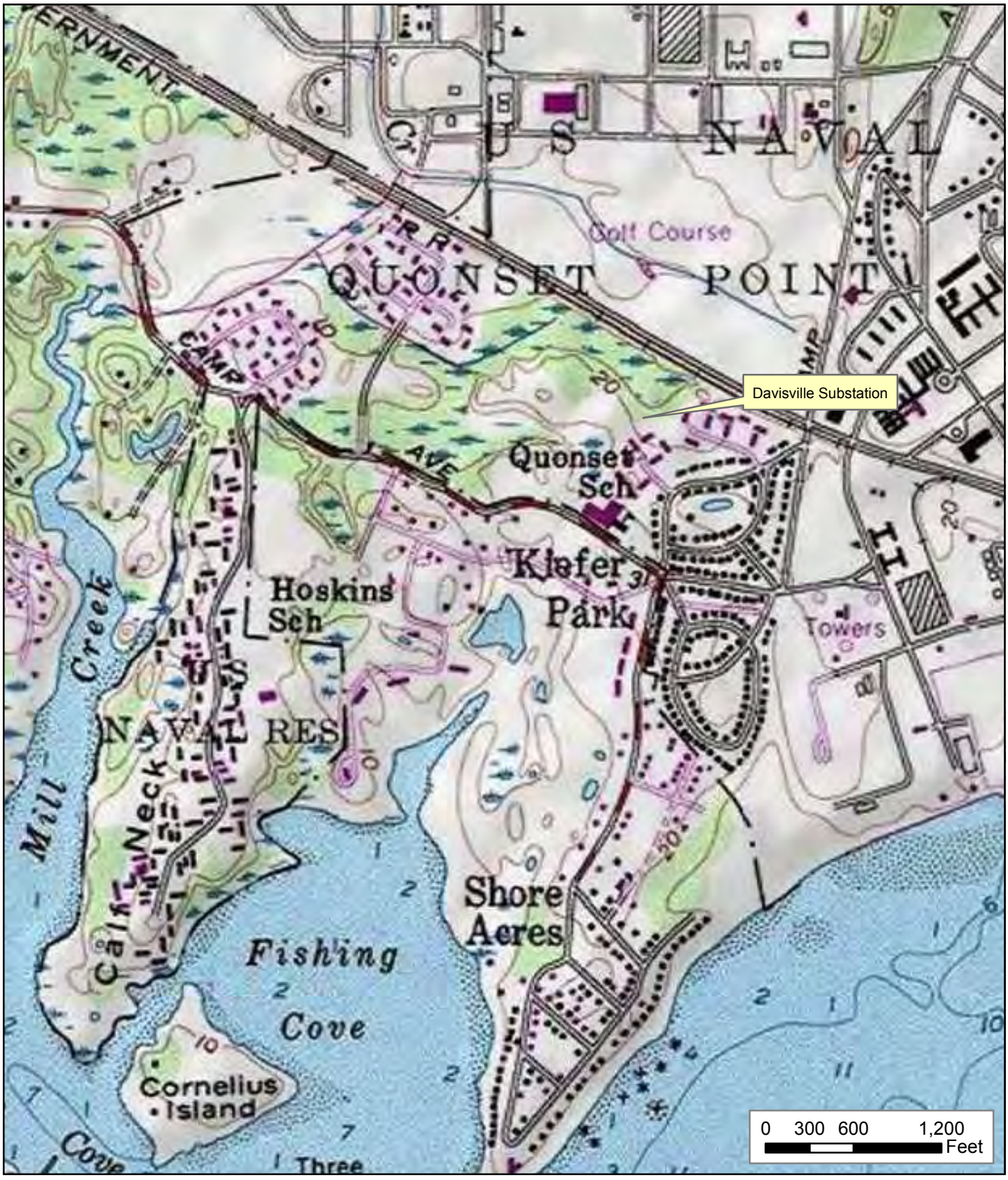
Andrew Johnson
Environmental Scientist



Mark L. Manganello
Assistant Director of Ecological Services

Attachments

USGS Topographic Map
Natural Heritage Map
IPAC Resource List, U.S. Fish and Wildlife Service



LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 1: USGS Topographic Map

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 3: Natural Heritage Map

109 Circuit Drive (Davisville Substation)
Assessor's Plat 179, Lot 5
North Kingstown, Rhode Island

N

December 17, 2019

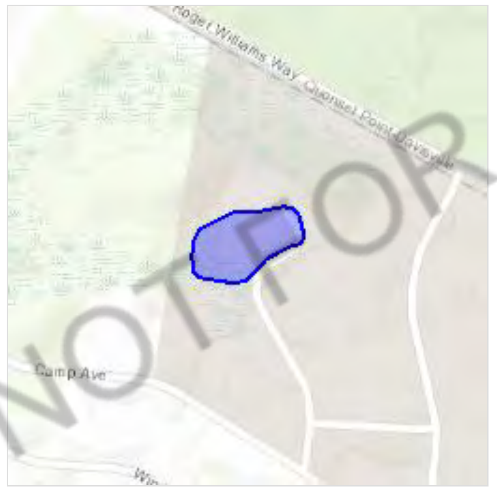
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Washington County, Rhode Island



Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Northern Long-eared Bat Myotis septentrionalis Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Oystercatcher Haematopus palliatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Buff-breasted Sandpiper Calidris subruficollis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9488	Breeds elsewhere
Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Least Tern Sterna antillarum This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Sep 10

Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-throated Loon Gavia stellata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence

across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

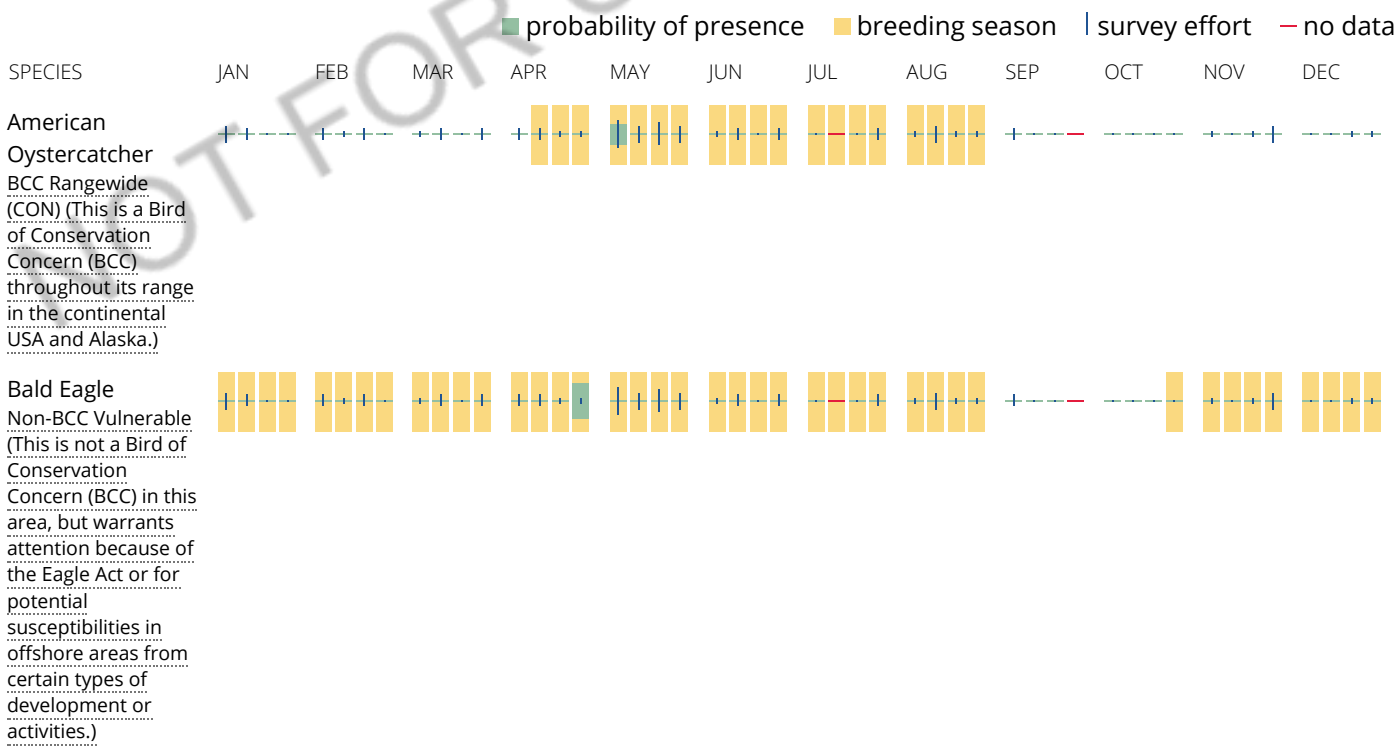
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

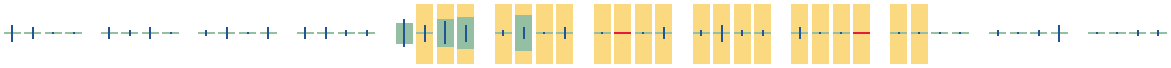
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

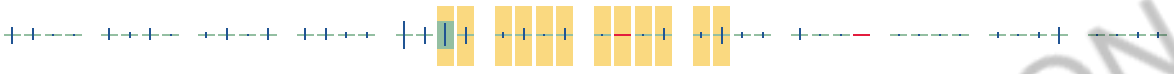


Black-billed Cuckoo
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

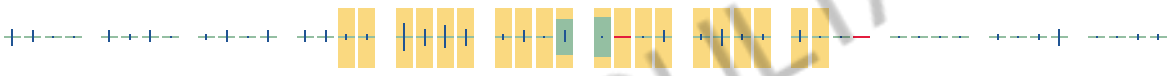


Buff-breasted Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

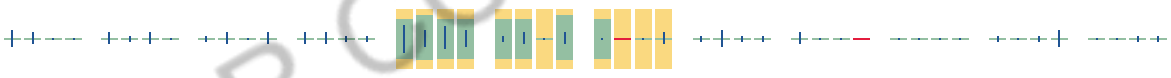
Canada Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Least Tern
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

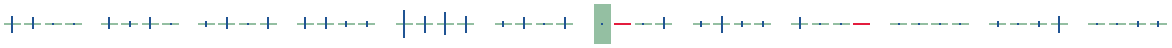


Red-throated Loon
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

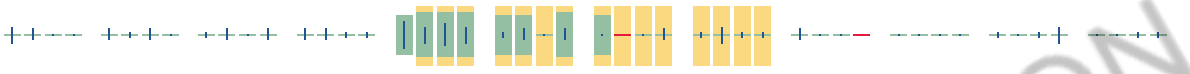
Rusty Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Semipalmated Sandpiper
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Appendix G: Vernal Pool Memos

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Memorandum

To: Mark Roll
Senior Project Lead
Revolution Wind, LLC

Date: September 21, 2020

Project #: 73030.00

From: Chelsea Glinka ENV SP

Re: Vernal Pool Survey Memorandum for Revolution Wind Onshore Facilities
Parcel ID 179-030 & 179-001
Camp Avenue, North Kingstown, Rhode Island

Proposed Project and Site Description

This Vernal Pool Survey Memorandum has been developed to supplement the Onshore Natural Resources & Biological Assessment Technical Report (**Appendix K** of the Construction and Operations Plan) for the Revolution Wind Project (Revolution Wind, LLC). The Onshore Facilities of the Revolution Wind Project include the Landfall Envelope Area (LEA), Onshore Export Cable, Alternative Cable Route Segment, the Onshore Substation (OnSS) and the transmission interconnection, collectively the Project Site. The OnSS is proposed to be located within two parcels identified by the North Kingstown Tax Assessor as 179-030 and 179-001. The transmission interconnection will be partially located within the adjacent parcel 179-005.

The Project Site occurs within Quonset Point in North Kingstown, Rhode Island which was developed by the United States Department of Defense as the Naval Air Station Quonset Point, commissioned in 1941 and decommissioned in 1974. Today, most of the land is owned and managed by the Quonset Development Corporation and has been developed as a business park. The two areas within the Project Site that are undeveloped include the western limits of the LEA and the parcels proposed for the OnSS.

Wetlands and Vernal Pool Resources

Freshwater wetlands were delineated within the Project Site between July 2019 and August 2019 by VHB wetland scientists, and by LEC Environmental Consultants, Inc. (LEC) on December 10, 2019. There are five wetlands within the Project Site. Four of the wetlands were investigated for vernal pool indicators by VHB biologists on March 27, 2020, and the fifth wetland within parcel 179-005 was surveyed by LEC on July 13, 2020 (refer to **Figures 1** and **2** in **Attachment A**).

Vernal Pool Identification Criteria

The Rhode Island Department of Environmental Management (RI DEM) does not provide a definition of vernal pools on its website (RI DEM, 2020). However, vernal pools are regulated in Rhode Island under the Freshwater Wetland Rules (650-RICR-20-00-2) as part of the larger Freshwater Wetland which envelops them or as Special Aquatic Sites if they are isolated from other wetlands. Special Aquatic Sites are defined as:

"…a body of open standing water, either natural or artificial, which does not meet the definition of pond, but which is capable of supporting and providing habitat for aquatic life forms, as documented by the:

a. Presence of standing water during most years, as documented on site or by aerial photographs; and

b. Presence of habitat features necessary to support aquatic life forms of [wetland] obligate wildlife species, or the presence of or evidence of, or use by aquatic life forms of [wetland] obligate wildlife species (excluding biting flies)."

1 Cedar Street
Suite 400
Providence, RI 02903-1023
P 401.272.8100

Vernal pools are seasonal water bodies that pond water continuously for a minimum period beginning in the winter or early spring and typically extending into the early summer. They may be situated within larger wetland systems or occur as hydrologically isolated features situated in uplands. In the northeastern United States, they are characterized by vernal-pool-dependent fauna, certain amphibian and invertebrate species (indicator species) that require the pools to complete at least a portion of their life cycles (Colburn, 2004).

The common and scientific names for Rhode Island species considered by Calhoun and Klemens (2002) to be obligate biological indicators of vernal pool habitat are listed within Table 1.

Table 1. Vernal Pool Obligate Species

Common Name	Scientific name
Jefferson Salamander	*Ambystoma jeffersonianum*
Blue-spotted Salamander complex	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Marbled Salamander	*Ambystoma opacum*
Wood Frog	*Lithobates sylvaticus*
Fairy Shrimp	*Eubranchipus sp.*

Vernal Pool Survey Methodology

Vernal pools were surveyed by VHB biologists on March 27, 2020 by traversing the wetlands to find potentially suitable pools. Once potential vernal pools were identified, VHB biologists logged any auditory cues (e.g., wood frog chorusing) and searched the pools for egg masses while wearing waders and polarized sunglasses. Biologists used dipnets to search for wood frog and spotted salamander adults, egg masses and larvae, and fairy shrimp. Discretion was used during dipnet sweeps, such that small, shallow areas containing obligate vernal pool indicators were disrupted as little as possible (i.e., mucking-up of cryptic pools was avoided). Field notes were recorded on the Connecticut Association of Westland Scientists (CAWS[1]) Vernal Pool Observation Forms (**Attachment B**) and supporting photographs were taken at vernal pools (**Attachment C**). Biologists hung flagging around the perimeter of vernal pool and located flags using a global positioning device.

On behalf of the property owner, parcel 179-005 was investigated by LEC on July 13, 2020 for potential vernal pools. LEC concluded that a vernal pool survey is required during the active breeding season in 2021 to determine if this resource meets the criteria of a vernal pool. A vernal pool survey for wetlands within this parcel will be conducted at a later date.

[1] RI DEM does has not published a comparable vernal pool documentation form.

Findings

VHB biologists identified one vernal pool within the Project Site that meets the vernal pool criteria described above. The vernal pool was contained entirely within Wetland 4 which is classified as a Marsh[2] under the RI DEM Freshwater Wetland Rules. Wetland 4 has a forested perimeter along the northern boundary of the OnSS parcels (see **Figure 2 – Attachment A** for the location of the vernal pool). Obligate species identified within the pool included adult wood frogs, wood frog egg masses, salamander egg masses, and fairy shrimp. A description of the vernal pool is provided below.

Vernal Pool 1

Vernal Pool 1 is a cryptic Vernal Pool within Wetland 4 along the northeastern boundary of parcel 179-030. Based on existing topography and aerial photos, Wetland 4 may have originated as a kettle hole, however, due to anthropogenic disturbance including filling and cutting, the natural form of this feature has been obscured.

No watercourse enters or leaves this wetland. Water depth within Vernal Pool 1 ranged from six inches to two feet in its deepest points at the time of the field survey. The bottom is semi-firm with a leaf litter and muck substrate. Filamentous algae were present near the surface of the pool at the time of the investigation and impaired the search for vernal pool fauna in some areas. Dense shrubs and tannin-stained waters also impaired the ability to observe egg masses in some portions of the pool. The wetland is forested and dominated by red maple (*Acer rubrum*) and cottonwood (*Populus deltoides*). Canopy closure was estimated to be 80 percent.

During the investigation, adult wood frogs were heard chorusing within the pool along with spring peepers (*Pseudacris c. crucifer*) across the wider wetland. The survey yielded estimated counts of 50-75 wood frog egg masses and 20 spotted salamander egg masses. Adult wood frogs were also observed in the pool. Fairy shrimp were captured with a dip net. Facultative vernal pool species include backswimmers (*Notonectidae*).

Conclusions

In March 2020, VHB biologists identified one vernal pool within the Project Site. Vernal Pool 1 is a cryptic vernal pool within Wetland 4. A summary of findings is presented in Table 3 below. The appended CAWS Vernal Pool Observation Forms provide further data on each of the pools (**Attachment B**). Photos of the pool are also appended (**Attachment C**).

Table 3. Summary of Findings

Pond ID	Area (SF)	Inlet/Outlet Flowing	Obligate Indicators	Fish Present	Vernal Pool Classification
Vernal Pool 1	1,300	No	WFC, WFEM, SSEM, FS	No	Cryptic

WFC: Wood frog chorusing; WFEM: Wood frog egg masses; WFL: Wood frog larvae; SSEM: Spotted salamander egg masses; FS fairy shrimp

[2] The Freshwater Wetland Rules define a Marsh as a wetland feature not less than 1 ac (0.40 ha) in size that has standing or running water during the growing season and is made up of herbaceous vegetation such as grasses and sedges and/or shrubs.

References

Calhoun, A. J. K. and M. W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Colburn E. A. 2004. Vernal pools: Natural history and conservation. Blacksburg, VA: McDonald and Woodward.

Rhode Island Department of Environmental Management vernal pool brochure: http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/vernbroc.pdf

Rhode Island Department of Environmental Management. Vernal Pools. http://www.dem.ri.gov/programs/water/wetlands/vernal-pools.php. Accessed September 9, 2020.

Attachments

Attachment A: Figure 1: USGS Overview Map and Figure 2: Vernal Pool Resources

Attachment B: CAWS Vernal Pool Observation Form

Attachment C: Representative Site Photographs

Revolution Wind

Figure 1
USGS Overview
NORTH KINGSTOWN, RI

Legend
- Parcel ID 179-030 & 179-001
- Parcel ID 179-005

Project Location

Service Layer Credits: National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
USGS Historical Topographic Maps: Source: Historical Topographic Map Collection courtesy of the U.S. Geological Survey, Esri

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 270 540 810 Meters

0 790 1,580 2,370 Feet

Date: 05/19/2020
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: STEPW

Revolution Wind | Powered by Ørsted & Eversource

Revolution Wind

Figure 2
Vernal Pool Resources
NORTH KINGSTOWN, RI

Legend

- Onshore Transmission Cable
- Alternative Cable Route Segment
- Substation Limit of Work
- Parcel ID 179-030 & 179-001
- Parcel ID 179-005
- Parcel Boundary
- One-Percent Annual Chance Flood Hazard Area
- Potential Vernal Pool
- Delineated Wetland Edge
- Approximate Wetland Edge
- LEC Delineated ASSF
- Approximate Stream
- Delineated Wetland Resources
- Interpolated Wetland
- Vernal Pool
- Wetland (NWI)

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):

Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 20 40 60 Meters

0 60 120 180 Feet

Date: 05/19/2020
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: STEPW

Revolution Wind

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VERNAL POOL DATA SHEET

Survey Date: 3/27/2020	Investigator(s): C. Glinka, E. Deluski	Town: North Kingstown	CAWS Pool #: VP1 - Wetland 4	CAWS Project #:
Town Staff Contacted? Yes ☐ No ☑	Project/property name: Revolution Wind On-Shore Substation		Pool Type: Development: ☐	Reference: ☐
Address/location (*or include annotated map*): north of Camp Ave			Investigator's Contact information: cglinka@vhb.com	

SEARCH CONDITIONS AND METHODS *(required)*

WEATHER:

Precipitation:

Current	Within last 24 hours
0"	0"

Cloud Cover:
- clear ☐
- partly cloudy ☑
- mostly cloudy ☐
- full cloud cover ☐

Start time: 1030
End time: 1215

Methods used:
- Visual ☑
- Dipnetting ☑

Type of Inspection:
- baseline ☑
- during construction ☐
- post construction ☐

Polarized sunglasses used? Yes ☑ No ☐

Comments:
GPS location was taken of one egg mass.

Temporary flagging used to mark egg masses? Yes ☐ No ☑

AMPHIBIAN EGG MASS COUNTS *(required)*

Wood frogs: ☑ 1-25 ☐ 26-49

condition	Abundance categories			
If condition mixed, note "some","many" or "most"	~~<50~~	☐	250-300	☐
	50-75	☑	300-400	☐
	75-100	☐	400-500	☐
	100-150	☐	500-750	☐
	150-200	☐	750-1000	☐
intact: All	200-250	☐	1000-1250	☐
breaking up:			>1250	☐
hatching:				

Describe estimation method used for a large raft:

Spotted Salamanders:

Condition:

	Total Number
intact: All	20
breaking up:	
hatching:	

ADDITIONAL NOTES: *(optional)*

VP 1 is a cryptic vernal pool within Wetland 4. The vernal pool is large and takes up nearly the entire footprint of Wetland 4, which further extends to the National Grid property line.

Wood frogs and spring peepers were heard chorusing within Wetland 4.

CONDITIONS/OBSERVATIONS WITHIN POOL

(required data)

			Flowing	Not flowing
Inlet observed?	No ☑	Yes ☐	☐	☐
Outlet observed?	No ☑	Yes ☐	☐	☐
finfish observed?	No ☑	Yes ☐		

Estimated water depth range? 6 inches to 2 feet

Optional Data (see also back of sheet)

Other Vernal Pool Species:
- fairy shrimp present? Yes ☑ No ☐
- marbled salamander larvae present? Yes ☐ No ☑

Vegetation (within or overhanging pool):
- Trees/Saplings: red maple, cottonwood
- Shrubs/Vines: speckled alder
- Herbs:
- Percent tree canopy closure? 80%
- Woody debris content? High ☑ Med. ☐ Low ☐

Pool Substrate: (top three)

Mud/muck ☑	Sand/Silt ☐	Peat	☐
Leaf Litter ☑	Silt/clay ☐	Bedrock	☐
		Gravel/cobbles	☐

Water Quality:
- ph ☐ conductivity(uS/cm) ☐ temperature (°C) ☐
- Nitrate-N (mg/l) ☐ Total P (ug/l) ☐ DO(mg/l) ☐
- turbidity(NTU's) ☐ Sulphidic odor? No ☐ Yes ☐
- Approximate % cover by algal mat or duckweed? 0%
- GPS coordinates:

CONDITIONS IN ENVELOPE WITHIN 100 FT OF POOL

(required data) *Give approximate percentage or show on sketch on back*

Landuses/conditions					
forest	100%	shrubland		meadow	
pasture		lawn		building	
exposed soil		grading		ag. field	

road X busy (>1 car/10 min.) yes ☐ no ☐

parking lot

Comments:
Road noise is audible from the vernal pool. The road is located >500 feet north of the pool.

Leaf Litter:	*If variable, note location (e.g. "N. shore")*
none/low:	
moderate:	
high:	X

Cover Objects:	*Logs*	*Rocks*
none:		X
low:		
moderate:		
high:	X	

Dominant vegetation *(optional)*
- Trees/saplings: red maple, cottonwood
- Shrubs/Vines: speckled alder
- Herbs:

VERNAL POOL DATA SHEET, *p. 2*

Survey Date: 3/27/2020	Investigator(s): C. Glinka, E. Deluski	Town: North Kingstown	***CAWS Pool #:***	VP1	CAWS Project #:
Project/property name: Revolution Wind On-Shore Substation				Pool Type:	Development: ☐ Reference ☐

*Draw a **rough, quick** sketch of the pool showing **approximate locations of egg mass rafts & clusters** in relation to pool features, like logs, algal mats, and islands. Show inlet/outlet if present. Include north arrow and approxImate scale.*

SKETCH OF POOL *(required)*

WILDLIFE OBSERVATIONS: *(optional)*

Checklist of Facultative Herptile Fauna (Pool & Fringe):

Green Frog	☐	Spring Peeper	☑
Pickerel Frog	☐	Gray Tree Frog	☐
Bull Frog	☐	Pickerel Frog	☐
Eastern Toad	☐	Painted Turtle	☐
Spotted Turtle	☐	Snapping Turtle	☐
N. Water Snake	☐	Blue-spot. salam.	☐

Other Observed Fauna (Pool & Fringe):

fairy shrimp, backswimmer, wood frog

*Draw a **rough, quick** sketch of the pool's **terrestrial envelope,** extending at least 200' from pool in all directions. Provide **detail on conditions & landuses within 100 feet of edge of pool.** Include north arrow and approxImate scale.*

SKETCH OF TERRESTRIAL ENVELOPE AROUND POOL *(required)*

Circle any of the following factors that impaired your ability to observe egg masses, and indicate severity of impairment.

Factor	Severity (Low/Mod./High)
1. Surface algae ☑	Low, higher in some areas
2. Surface pollen ☐	
3. Dark, tannin-colored water ☑	Low to moderate
4. Deep water ☐	
5. Turbidity ☐	
6. Dense shrubs ☑	
7. Other (specify) ☐	

ADDITIONAL NOTES: *(optional)*

Revolution Wind On-Shore Substation
Vernal Pool Survey Photo Log

Vernal Pool 1 Photos

Vernal Pool 1 - Photo 1	**Description:**
	View of Vernal Pool 1, a cryptic vernal pool within the larger Wetland 4. No watercourse enters or leaves this wetland. Water depth within Vernal Pool 1 ranged from six inches to two feet and the bottom is semi-firm with a leaf litter and muck substrate.
Vernal Pool 1 - Photo 2	**Description:**
	Dense shrubs in Vernal Pool 1 made some areas of the pool difficult to investigate.

Vernal Pool 1 - Photo 3	**Description:**
	A cluster of spotted salamander egg masses on a submerged branch. On March 27, 2020 VHB biologists inventoried an estimated 20 spotted salamander egg masses within Vernal Pool 1.
Vernal Pool 1 - Photo 4	**Description:**
	A raft of wood frog egg masses, some attached to submerged branches. VHB biologists counted approximately 50-75 egg masses on March 27, 2020.

Memorandum

To: Mark Roll
Senior Project Lead
Revolution Wind, LLC

Date: April 26, 2021

Project #: 73030.00

From: Chelsea Glinka ENV SP
Jeff Peterson, PWS

Re: Vernal Pool Survey Memorandum for Revolution Wind Interconnection Facility
Parcel ID 179-005
Camp Avenue, North Kingstown, Rhode Island

Proposed Project and Site Description

This Vernal Pool Survey Memorandum has been developed by VHB for Revolution Wind LLC (Revolution Wind) to describe vernal pool resources present within the existing Davisville Substation parcel, identified by the North Kingstown Tax Assessor as Parcel 179-005. The existing Davisville Substation parcel is owned and operated by The Narragansett Electric Company d/b/a National Grid (TNEC) which previously contracted LEC Environmental Consultants, Inc. (LEC) to conduct Site Evaluations of its property to document regulated environmental resources. Environmental documentation in this parcel will support the permit filings for the proposed Interconnection Facility (ICF) which will connect the power generated from the offshore Revolution Wind Project to the regional electric transmission grid via the Davisville Substation. The Davisville Substation parcel is within Quonset Business Park off Camp Avenue in North Kingstown, Rhode Island.

Wetlands Description

Wetlands within the Davisville Substation parcel were delineated by LEC on December 10, 2019. The wetland that is the subject of this report was identified as the "C-series" wetland, herein after referred to as Freshwater Wetland 5 (refer to attached **Figure 1**). Wetland flags were present and legible during the field visits conducted for this vernal pool survey. Freshwater Wetland 5 is a small topographic depression immediately southwest of Davisville Substation which measures approximately 3,800 square feet (0.09 acres). This isolated forested wetland is seasonally flooded with maximum water depths of four feet. Freshwater Wetland 5 has an ephemeral connection to the larger Freshwater Wetland 4, a Marsh within the northwest corner of the Davisville Substation parcel that was previously identified as a vernal pool by VHB[1], via an Area Subject to Storm Flowage (ASSF). LEC classified Freshwater Wetland 5 as a Special Aquatic Site under Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast (650-RICR-20-00-2; FWW Rules). This classification is often assigned to classic vernal pools. LEC was unable to verify that Freshwater Wetland 5 functioned as a vernal pool because their site visits were made outside of the season when vernal pool species are present. To follow up on this matter, VHB conducted two site visits during early Spring 2021 to investigate the presence of vernal pool indicators.

[1] Refer to separate Vernal Pool report dated September 20, 2020 which was submitted as an appendix to the Onshore Natural Resources and Biological Assessment Technical Report in support of the Construction and Operations Plan (COP) filed with revisions April 2021 with the Bureau of Ocean Energy Management (BOEM).

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P 401.272.8100

Vernal Pool Identification Criteria

Neither the Coastal Resources Management Council (CRMC) or Rhode Island Department of Environmental Management (RIDEM) provide a definition of vernal pools. However, vernal pools are regulated in Rhode Island under the FWW Rules as Special Aquatic Sites, which are defined as:

"…a body of open standing water, either natural or artificial, which does not meet the definition of pond, but which is capable of supporting and providing habitat for aquatic life forms, as documented by the:

a. Presence of standing water during most years, as documented on site or by aerial photographs; and

b. Presence of habitat features necessary to support aquatic life forms of obligate wildlife species, or the presence of or evidence of, or use by aquatic life forms of obligate wildlife species (excluding biting flies)."

Special Aquatic Sites are seasonal water bodies that pond water continuously for a minimum period beginning in the winter and extending at least into the early summer. They may be situated within larger wetland systems or occur as hydrologically isolated features situated in uplands. In the northeastern United States, they are characterized by vernal-pool-specific fauna, certain amphibian and invertebrate species (indicator species) that require the pools to complete a portion of their life cycles (Colburn, 2004).

The common and scientific names for Rhode Island species considered by Calhoun and Klemens (2002) to be obligate biological indicators of vernal pool habitat are listed within Table 1.

Table 1. Vernal Pool Obligate Species

Common Name	Scientific name
Jefferson Salamander	*Ambystoma jeffersonianum*
Blue-spotted Salamander complex	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Marbled Salamander	*Ambystoma opacum*
Wood Frog	*Lithobates sylvaticus*
Fairy Shrimp	*Eubranchipus sp.*

Methodology to Identify Vernal Pools

A VHB biologist surveyed Freshwater Wetland 5 for vernal pool indicators on April 5 and April 19, 2021 using auditory cues (e.g. wood frog chorusing), waders, polarized sunglasses, and a dipnet to search for wood frog and spotted salamander adults, egg masses and larvae, and fairy shrimp. Discretion was used during dipnet sweeps, such that small, shallow areas containing obligate vernal pool indicators were disrupted as little as possible (i.e., mucking-up of pool bottoms was avoided). Field notes were recorded on the Connecticut Association of Wetland Scientists (CAWS)

Vernal Pool Observation Form[2] and the U.S. Army Crops of Engineers New England District Draft Vernal Pool Characterization Form, and photographs were taken (see attached).

Findings

Freshwater Wetland 5 functions as a vernal pool. This wetland occurs within an area that has been previously disturbed by the U.S. military which used this area as a general landfill prior to 1970. Artifacts within the wetland, including several monitoring wells and an abandoned storage tank, indicate that the area has experienced anthropogenic disturbance. Vegetation within and around the wetland also include areas dominated by invasive vegetation providing further evidence of anthropogenic disturbance.

Based on field investigations and documentation from LEC, the pool floods seasonally and dries up during late summer and fall. Freshwater Wetland 5 contributes flow to Freshwater Wetland 4 during storm events via an ASSF that connects the two wetlands. Water depths at the deepest points of the vernal pool are between three to four feet and the pool bottom is firm consisting of leaf litter resting on a mineral soil substrate. Vegetation within the shrub layer consists of sweet pepper bush (*Clethra alnifolia*), red maple (*Acer rubrum*), autumn olive (*Elaeagnus umbellata*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), and poison ivy (*Toxicodendron radicans*). The forested perimeter of the pool includes red maple, red and white oak (*Quercus rubra* and *alba*), and eastern red cedar (*Juniperus virginiana*).

During the vernal pool investigations using dip net sweeps, the VHB biologist identified wood frog larvae and fairy shrimp which are both considered obligate vernal pool species. A summary of the findings is included in Table 2. Facultative vernal pool species observed include predacious diving beetles and backswimmers. Photos of the vernal pool and the data forms are appended to this memorandum.

Although Freshwater Wetland 5 exhibits indicators of anthropogenic disturbance it provides vernal pool habitat. The depth of the pool indicates that its hydroperiod during an average rainfall year is likely sufficient to allow obligate species such as wood frog to complete their metamorphosis.

Table 2. Summary of Findings

Pond ID	Area (SF)	Inlet/Outlet Flowing	Obligate Indicators	Fish Present	Vernal Pool Classification
Freshwater Wetland 5	3,800	Yes	WFL, FS	No	Classic

WFC: Wood frog chorusing; WFEM: Wood frog egg masses; WFL: Wood frog larvae; SSEM: Spotted salamander egg masses; FS fairy shrimp

[2] The CAWS form was used because Rhode Island does not have a state-specific vernal pool evaluation form.

References

Calhoun, A. J. K. and M. W. Klemens. 2002. Best development practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

Colburn E. A. 2004. Vernal pools: Natural history and conservation. Blacksburg, VA: McDonald and Woodward.

Rhode Island Department of Environmental Management vernal pool brochure: http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/vernbroc.pdf

Rhode Island Department of Environmental Management. Vernal Pools. http://www.dem.ri.gov/programs/water/wetlands/vernal-pools.php. Accessed April 22, 2021.

Attachments

Attachment A: Figure 1

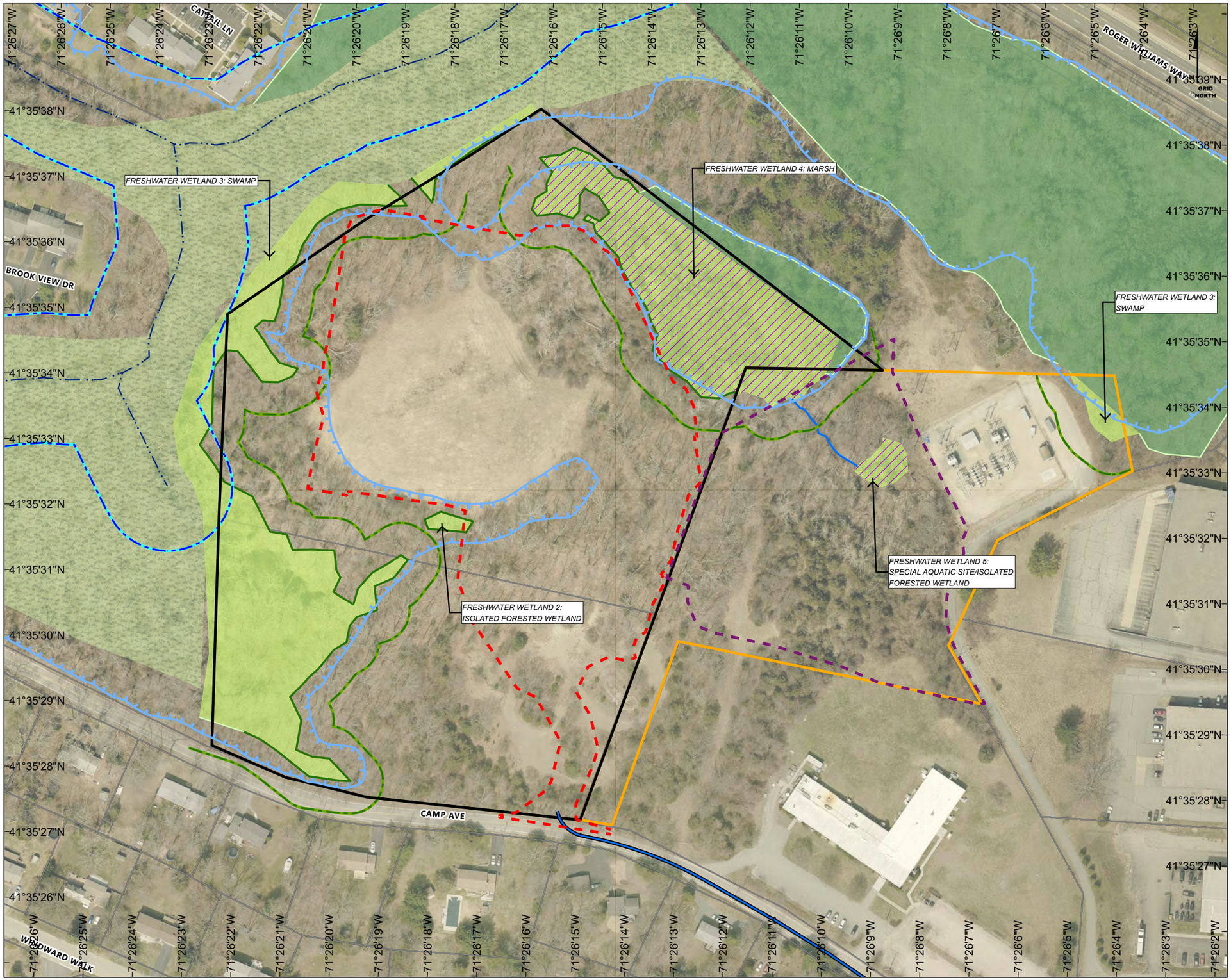
Attachment B: Site Photographs

Attachment C: CAWS Vernal Pool Observation Form

Attachment D: USACE New England District Draft Vernal Pool Characterization Form

Revolution Wind

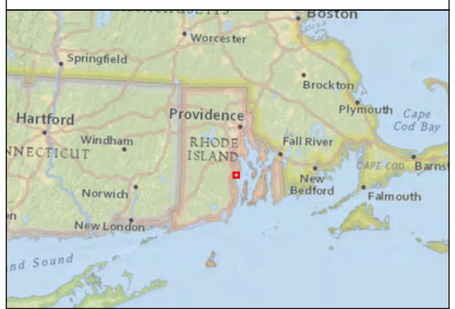
Figure 1
Wetland Resources: Large Scale view near OnSS and Davisville Substation Parcels
NORTH KINGSTOWN, RI



Legend

- Onshore Transmission Cable
- Substation Limit of Work
- ICF Limit of Work
- Parcel ID 179-030 & 179-001
- Parcel ID 179-005
- Parcel Boundary
- One-Percent Annual Chance Flood Hazard Area
- Delineated Wetland Edge
- Approximate Wetland Edge
- LEC Delineated ASSF
- Approximate Stream
- Delineated Wetland Resources
- Interpolated Wetland
- Vernal Pool Area
- Wetland (NWI)

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):



Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 20 40 60 Meters

0 60 120 180 Feet

Date: 05/19/2020
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: STEPW

Revolution Wind

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Revolution Wind: Existing Davisville Substation/Proposed ICF Parcel
Vernal Pool Survey Photo Log
April 26, 2021

Photo 1

Description:
View of Freshwater Wetland 5 looking northeast towards the Davisville Substation. Freshwater Wetland 5 is a classic vernal pool; a topographic depression within an upland that pools seasonally and dries during the summer and fall.

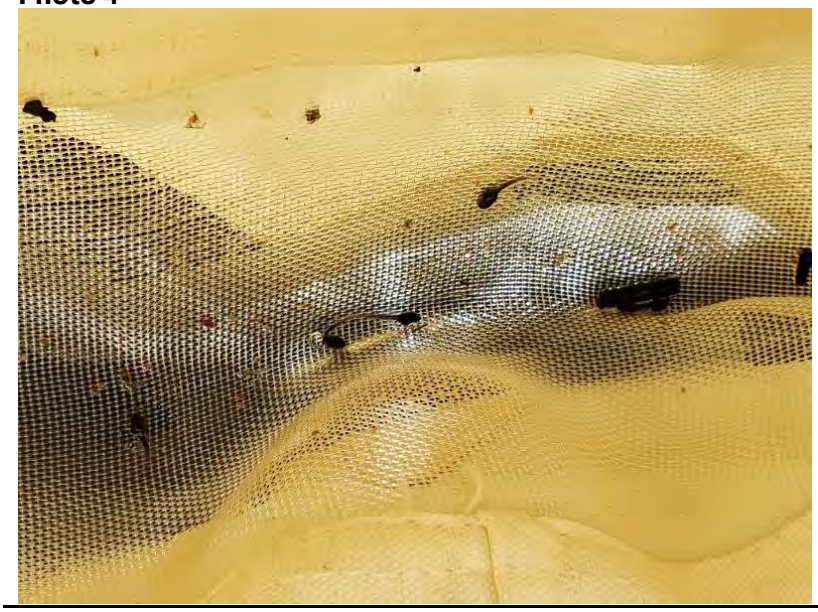
Photo 2

Description:
Freshwater Wetland 5 includes several artifacts indicative of past anthropogenic disturbance, including the abandoned storage tank visible in the foreground and several monitoring wells in the background of the photo.

Photo 3

Description:
This photo shows a single fairy shrimp and one wood frog larvae. These obligate species were captured during dip net surveys on April 19, 2021.

Photo 4



Description:
Several wood frog larvae were captured during dip net surveys on April 19, 2021.

VERNAL POOL DATA SHEET

Survey Date: 4/5/21 & 4/19/21	Investigator(s): C. Glinka	Town: North Kingstown	CAWS Pool #: VWetland 5	CAWS Project #:	
Town Staff Contacted? Yes ☐ No ☑	Project/property name: Revolution Wind ICF		Pool Type: classic	Development: ☐	Reference: ☐
Address/location (*or include annotated map*): north of Camp Ave			Investigator's Contact information: cglinka@vhb.com		

SEARCH CONDITIONS AND METHODS *(required)*

WEATHER:

Precipitation:

Current	Within last 24 hours
None	None

Cloud Cover:
- clear ☑
- partly cloudy ☐
- mostly cloudy ☐
- full cloud cover ☐

Start time: 1030
End time: 1145

Methods used:
- Visual ☑
- Dipnetting ☑

Type of Inspection:
- baseline ☑
- during construction ☐
- post construction ☐

Polarized sunglasses used? Yes ☑ No ☐

Comments: Temperature during both surveys was ~50 F

Temporary flagging used to mark egg masses? Yes ☐ No ☑

AMPHIBIAN EGG MASS COUNTS *(required)*

Wood frogs: ☐ 1-25 ☐ 26-49 ~~50~~

condition
If condition mixed, note "some","many" or "most"
intact: All
breaking up:
hatching:

Abundance categories			
50-75	☐	250-300	☐
75-100	☐	300-400	☐
100-150	☐	400-500	☐
150-200	☐	500-750	☐
200-250	☐	750-1000	☐
		1000-1250	☐
		>1250	☐

Describe estimation method used for a large raft:
Egg masses were not observed

Spotted Salamanders:

Condition:	Total Number
intact:	0
breaking up:	
hatching:	

ADDITIONAL NOTES: *(optional)*

Approximately 30 minutes of dip net sweeps on April 5, 2021 resulted in the capture of only one fair shrimp. No egg masses were observed during that field visit.
On a follow-up visit on April 19, 2021 another 30 minutes of dip net sweeps was performed and that resulted in the capture of several fairy shrimp and many wood frog larvae. No egg masses were observed during this follow-up visit.

CONDITIONS/OBSERVATIONS WITHIN POOL

(required data)

			Flowing	Not flowing
Inlet observed?	No ☑	Yes ☐	☐	☐
Outlet observed?	No ☐	Yes ☑	☐	☑
finfish observed?	No ☑	Yes ☐		

Estimated water depth range? 4 ft at deepest point

Optional Data (see also back of sheet)

Other Vernal Pool Species:
- fairy shrimp present? Yes ☑ No ☐
- marbled salamander larvae present? Yes ☐ No ☑

Vegetation (within or overhanging pool):
- Trees/Saplings: red maple, oak, eastern red cedar
- Shrubs/Vines: sweet pepperbush, red maple, autumn olive
- Herbs: sensitive fern

Percent tree canopy closure? 60
Woody debris content? High ☐ Med. ☑ Low ☐

Pool Substrate: (top three)
- Mud/muck ☐
- Sand/Silt ☐
- Peat ☐
- Bedrock ☐
- Leaf Litter ☑
- Silt/clay ☐
- Gravel/cobbles ☐

Water Quality:
ph ☐ conductivity(uS/cm) ☐ temperature (°C) ☐
Nitrate-N (mg/l) ☐ Total P (ug/l) ☐ DO(mg/l) ☐
turbidity(NTU's) ☐ Sulphidic odor? No ☐ Yes ☑
Approximate % cover by algal mat or duckweed? 0
GPS coordinates: 41.592417, -71.435668

CONDITIONS IN ENVELOPE WITHIN 100 FT OF POOL

(required data) *Give approximate percentage or show on sketch on back*

Landuses/conditions					
forest	75	shrubland		meadow	
pasture		lawn		building	25
exposed soil		grading		ag. field	

road ☐ busy (>1 car/10 min.) yes ☐ no ☐
parking lot ☐

Comments: VP is immediately southwest of Davisville Substation

Leaf Litter:	*If variable, note location (e.g. "N. shore")*
none/low:	
moderate:	
high:	✓

Cover Objects:	*Logs*	*Rocks*
none:		✓
low:		
moderate:	✓	
high:		

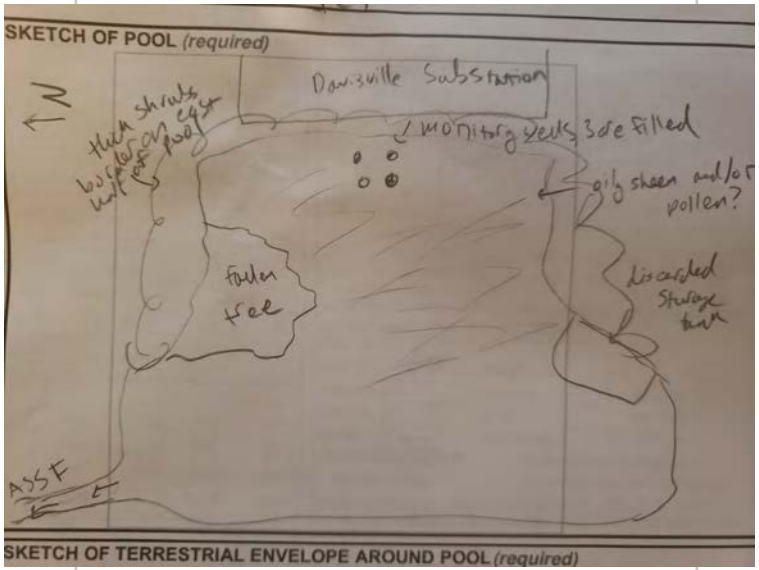
Dominant vegetation *(optional)*
- Trees/saplings: red maple
- Shrubs/Vines: Sweet pepperbush, autumn olive
- Herbs: sensitive fern

VERNAL POOL DATA SHEET, *p. 2*

Survey Date: 4/5/21 & 4/19/21	Investigator(s): C. Glinka,	Town: North Kingstown	***CAWS Pool #:***	Wetland 5	CAWS Project #:
Project/property name: Revolution Wind ICF				Pool Type:	Development: ☐ Reference ☐

*Draw a **rough, quick** sketch of the pool showing **approximate locations of egg mass rafts & clusters** in relation to pool features, like logs, algal mats, and islands. Show inlet/outlet if present. Include north arrow and approxImate scale.*

SKETCH OF POOL *(required)*



WILDLIFE OBSERVATIONS: *(optional)*

Checklist of Facultative Herptile Fauna (Pool & Fringe):

Green Frog	☐	Spring Peeper	☐
Pickerel Frog	☐	Gray Tree Frog	☐
Bull Frog	☐	Pickerel Frog	☐
Eastern Toad	☐	Painted Turtle	☐
Spotted Turtle	☐	Snapping Turtle	☐
N. Water Snake	☐	Blue-spot. salam.	☐

Other Observed Fauna (Pool & Fringe):

predacious diving beetles, backswimmers

*Draw a **rough, quick** sketch of the pool's **terrestrial envelope,** extending at least 200' from pool in all directions. Provide **detail on conditions & landuses within 100 feet of edge of pool.** Include north arrow and approxImate scale.*

SKETCH OF TERRESTRIAL ENVELOPE AROUND POOL *(required)*

Circle any of the following factors that impaired your ability to observe egg masses, and indicate severity of impairment.

Factor	Severity (Low/Mod./High)
1. Surface algae	☐
2. Surface pollen	☑
3. Dark, tannin-colored water	☑
4. Deep water	☐
5. Turbidity	☐
6. Dense shrubs	☑
7. Other (specify)	☐

ADDITIONAL NOTES: *(optional)*

US Army Corps of Engineers - New England District
DRAFT Vernal Pool Characterization Form

Project File # 73030.00 Project Name Revolution Wind ICF Pool ID Wetland 5
Observer Chelsea Glinka Phone or E-mail cglinka@vhb.com
Landowner/Applicant National Grid d/b/a TNEC & Revolution Wind, LLC Phone or E-mail mroll@orsted.com
Address 56 Exchange Terrace, Suite 300 City Providence State RI Zip 02903
Location of vernal pool: City/State North Kingstown, RI
Survey date(s) 4/5/21 and 4/19/21
Longitude/Latitude (in decimal degrees) 41.592417, -71.435668

A. VERNAL POOL CHARACTERISTICS (fill in all information known):

1. Landscape setting (check all that apply):

☑ Upland depression (4 pts; if this is also in a floodplain, use 2 pts)
☐ Pool part of wildlife corridor (4 pts)
☑ Pool part of a pool complex (within 1000 feet of one or more other vernal pools) (NA)
☐ Pool within larger wetland system (4 pts; if this is also in a floodplain, use 2 pts)
☐ Other: _____ (variable pts)

2. Vernal pool condition:

Describe any recent modifications to the pool and associated landscape: Pool is directly southwest of Davisville Substation. It has evidence of anthropogenic disturbance, including monitoring wells, abandoned storage tank, and oily sheen on the water's surface. Invasives form a dense barrier around the pool.

3. Parent material:

☑ Glacial fluvial ("outwash")
☐ Loose till
☐ Peat
☐ Dense till
☐ Alluvium
☐ Coastal marine sediments

4. Aquatic resource type that best applies to this pool (choose dominant):

☑ Forested wetland (4 pts)
☐ Herbaceous wetland (4 pts)
☐ Floodplain (overflow/oxbow) (3 pts)
☐ Shrub wetland (4 pts)
☐ Open water (2 pts)
☐ Other: _____ (variable points)
☐ Peatland (acidic fen or bog) (4 pts)
☐ Intermittent stream reach (2 pts)

5. Pool canopy cover (%): 60

6. Predominant substrate:

☒ Mineral soil
☐ Organic matter (peat/muck) Depth 4 ft Sampling location (e.g., deepest zone, edge, etc.) Deepest section is approximately 4 ft

7. Pool size:

a. Approximate dimensions of pool (at maximum capacity; include units): Length 100 ft Width 75 ft
Area: 0.09 acre

b. Maximum depth at deepest point at time of survey (include units): 4 ft

8. Hydrology:

a. Estimated hydroperiod (unless actual, observed hydroperiod value(s) is(are) known, use the presence of these example indicator species to best predict the expected hydroperiod of the pool):

☐ Dries between early March and early July (e.g., *Thelypteris palustris, Carex stricta, Impatiens capensis, Ilex verticillata*) (6 pts)
☒ Dries between early July and early September (e.g., *Sagittaria latifolia, Scirpus cyperinus, Dulichium arund., Cephalanthus occ.*) (8 pts)
☐ Dries between early September and early November (e.g., *Eleocharis palustris, Glyceria cana., Utricularia* spp., *Decodon vert.*) (8 pts)
☐ Dries between early November and late December, or intermittently exposed (e.g., *Nuphar* spp., *Potamogeton* spp.) (2 pts)

b. Inlet/outlet (pick one):

☐ No inlet/outlet (8 pts)
☐ Permanent inlet or outlet (channel with well-defined banks and permanent flow) (2 pts)
☑ Temporary inlet/outlet (6 pts)

9. Water quality:

☐ Clear
☐ High turbidity
☐ High algae content
☑ Tannic

22 **TOTAL for Pool Characteristics (out of 28 max.)**

B. VERNAL POOL ENVELOPE (100 ft) AND CRITICAL HABITAT AREA (100-750 ft) CHARACTERISTICS (fill in all information known):

1. Landuse type and approximate percentage within the 100-ft vernal pool envelope:

☑ Forested 75 % (16 pts) ☐ Open (e.g., meadow, agriculture, golf course) _____ % (4 pts)

☐ Shrub _____ % (10 pts) ☑ Developed 25 % (0 pts)

2. **Landuse type and approximate percentage within the 100 - 750-ft vernal pool critical terrestrial habitat:**

☑ Forested 50 % (16 pts) ☐ Open (e.g., agriculture, golf course) _____ % (4 pts)

☐ Shrub _____ % (10 pts) ☑ Developed 50 % (0 pts)

☑ Are there one or more barriers to vernal pool fauna movement within the envelope and/or critical terrestrial habitat? If so, check here and see directions for explanation of how to incorporate this information.

Based on: ☑ Field estimate ☐ GIS ☑ Aerial photo estimate

20 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area (out of 32 max.)**

C. SPECIES PRESENT IN VERNAL POOL

INDICATOR SPECIES	**DATE**	**EGG MASSES (#)**	**TADPOLES/LARVAE**
Wood Frog (*Lithobates sylvaticus*)	4/19/21		Many larvae observed
Spotted Salamander (*Ambystoma maculatum*)			
Blue-spotted Salamander (*Ambystoma laterale*)			
Jefferson's Salamander (*Ambystoma jeffersonianum*)			
Marbled Salamander (*Ambystoma opacum*)			
Fairy Shrimp (*Eubranchipus* spp.)	4/5/21 & 4/19/21	**PRESENT/ABSENT**	**ABUNDANCE:** many
OTHER SPECIES	**DATE**	**PRESENCE/ABSENCE**	**FEW/COMMON/MANY**
Facultative Species (e.g., Spring Peeper (*Pseudacris crucifer*), Gray Tree Frog (*Hyla versicolor*), Caddisflies (Limnephilidae, Phryganeidae), American Toad (*Anaxyrus americanus*), Eastern Spadefoot Toad (*Scaphiopus holbrookii*), Fowler's Toad (*Anaxyrus fowleri*), Fingernail Clams (Sphaeriidae, Pisidiidae))(list):			
Rare Species (list): None			
Predator Species (e.g., Bullfrog/Green frog tadpoles, Fish) (list): None			
Other species (e.g., Ducks, Turtles, etc.)(list): None			

Presence of Indicator Species ☑ Yes ☐ No

SUMMARY:

22 **TOTAL for Pool Characteristics** 20 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area**

Other comments (append photographs, additional notes, sketch of pool and surrounding landscape):

Vegetation within the shrub layer consists of sweet pepper bush (Clethra alnifolia), red maple (Acer rubrum), autumn olive (Elaeagnus umbellata), Japanese barberry (Berberis thunbergii), multiflora rose (Rosa multiflora), and poison ivy (Toxicodendron radicans). The forested perimeter of the pool includes red maple, red and white oak (Quercus rubra and alba), and eastern red cedar (Juniperus virginiana).

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Appendix H: Site Plans (Bound Separately)

Site Plans are provided under confidential cover to this Application to Alter because they contain confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

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Appendix I: RIPDES Soil Erosion and Sediment Control Plan (Bound Separately)

The RIPDES SESC Plan is provided under confidential cover to this Application to Alter because it contains confidential commercial information not subject to disclosure under APRA (RIGL § 38-2-1) or FOIA (5 U.S.C. § 552).

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Appendix J: Stormwater Management Report (Bound Separately)

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Appendix K: Long-term Stormwater BMP Operations and Maintenance Plan, Pollution Prevention and Source Control (Bound Separately)

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Appendix L: Abutter Figure

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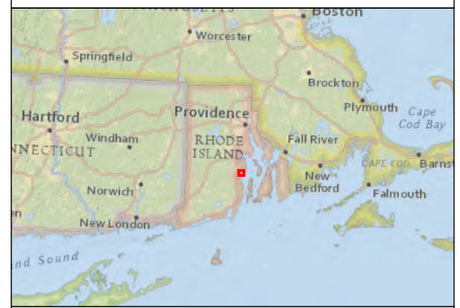
Revolution Wind

Abutter Figure
NORTH KINGSTOWN, RI

Legend
- ICF Limit of Work
- ICF Project Parcel Boundary
- Parcel Boundary

Service Layer Credits: RIDEM/Tax_Parcels: RI State, 37 Towns
National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
Rhode Island Aerial Photographs (Spring 2018; State Plane):



Reference system: NAD83 (2011)
Projection: UTM Zone 19N

0 30 60 90 Meters

0 100 200 300 Feet

Date: 05/19/2020
Document no:

Created by: S. PELLETIER
Checked by: S. MOBERG
Approved by: STEPW

Revolution Wind | Powered by Ørsted & Eversource

Property Abutters to the ICF Project

Property Owner Name	Street Address	Plat Number	Lot Number	Mailing Address
RI Commerce Corporation	594 Camp Avenue	179	030	95 Cripe St North Kingstown, RI 02852
RI Commerce Corporation	574 Camp Avenue	179	001	
RI Commerce Corporation	614 Camp Avenue	179	020	
N Kingstown Camp Ave Real Estate Inc	646 Camp Avenue	179	003	2425 New Holland Pike Lancaster, PA 17605
Kiefer Park Associates LLC	75 Circuit Drive	179	017	50 Whitecap Dr, Suite 302 North Kingstown, RI 02852
QPS Associates	51 Circuit Drive	179	016	50 Whitecap DR, Suite 302 North Kingstown, RI 02852
Grey Ledge Holdings LLC	21 Circuit Drive	179	009	C/O Kennedy Inc 21 Circuit DR North Kingstown, RI 02852
MillCreek LLC C/O The Grossman Companies Inc	Mill Creek Drive	178	002	One Adams Place 859 Willard ST, STE 501 Quincy, MA 02169
MillCreek LLC C/O The Grossman Companies Inc	Mill Creek Drive	178	003	

Appendix M: Observed and Potential Wildlife in Project Area

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Table M-1 Observed and Potential Bird Species – June 25, 2021

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Bald Eagle (BCC)					
Great egret(S-C)					
Snowy egret(S-C)					
American oystercatcher(S-C) (BCC)					
Glossy ibis(S-C)					
Great blue heronB		P			
Black-crowned night heron(S-C)					
Yellow-crowned night heron(S-C)					
Green heronB		P			
Tricolored heron					
Herring gull (BCC)					
Ring-billed gull (BCC)					
Great Black-Backed Gull (BCC)					
Northern Gannet (BCC)					
Double-crested cormorantB (BCC)					
Great cormorantM					
Common tern (BCC)					

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.
RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Roseate Tern (F-E)					
Least tern(S-T) (BCC)					
Ruddy turnstone					
Sanderling					
Dunlin					
Buff-Breasted Sandpiper (BCC)					
White-rumped sandpiper					
Purple sandpiper					
Least sandpiper					
Semipalmated sandpiper (BCC)					
Semipalmated plover					
Piping plover(F-E; S-E)M					
Short-billed dowitcher (BCC)					
Black-bellied plover					
Greater yellowlegs					
Nelson's sparrowM					
Saltmarsh sparrow					
Seaside sparrow(S-C)					

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
Source: DeGraaf, Richard M. and Mariko Yamasaki. 2001. New England Wildlife: Habitat, Natural History and Distribution, University Press of New England, Hanover, New Hampshire, 2001.
RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
American black duck					
Clapper rail[S-C]					
Willet[S-C]					
Osprey[S-C]					
Turkey vulture[B]	P	P	P	P	P
Canada Goose[B]	**P**				
Mallard[B]					
Lesser scaup					
Greater scaup					
Canvasback					
Atlantic brant					
Bufflehead					
Common goldeneye					
Common Loon					
Red-throated Loon [BCC]					
Black scoter					
White-winged scoter [BCC]					
Surf scoter [BCC]					

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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Red-breasted merganser (BCC)					
Horned grebe					
Common eider (BCC)					
Sharp-shinned Hawk[M (S-E)]	P	P	P	P	P
Cooper's Hawk[B]	P	P	P	P	P
Northern Goshawk[M (S-C)]	**P**	**P**	**P**	**P**	**P**
Red-shouldered Hawk[B]	P	P	P	O	P
Broad-winged Hawk[B]	P	P	P	P	P
Red-tailed Hawk[B]	P	O	O	P	P
Rough-legged Hawk[M]	P	P	P	P	P
American Kestrel[B]	**P**	**P**	**P**	**P**	**P**
Ring-necked Pheasant[B]	P	P	P	P	P
Wild Turkey[B]	P	P	P	P	P
Northern Bobwhite[B]	P	P	P	P	P
Killdeer[B]					
Spotted Sandpiper[B]					
American Woodcock[B]	**P**	**P**	**P**	**P**	**P**
Rock Pigeon[B]	P				

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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Mourning Dove[B]	O	O	O	O	O
Black-billed Cuckoo[B (BCC)]	**P**	**P**	**P**	**P**	**P**
Yellow-billed Cuckoo[B]	**P**	**P**	**P**	**P**	**P**
Eastern Screech-Owl[B]	P	P	P	P	P
Great Horned Owl[B]	P	P	P	P	P
Barred Owl[B]	P	**O**	P	P	P
Northern Saw-whet Owl[B]	P	P			
Common Nighthawk[B]	P	P	P	P	P
Eastern whip-poor-will[B]	**P**	**P**	**P**	**P**	**P**
Chimney Swift[B]	**O**	**O**	**P**	**P**	**P**
Ruby-throated Hummingbird[B]	P	O	O	O	P
Belted Kingfisher[B]					
Red-bellied Woodpecker[B]		O	O	O	P
Pileated Woodpecker[B (S-C)]		**P**	**P**	**P**	**P**
Yellow-bellied Sapsucker[B]		P	P	P	P
Downy Woodpecker[B]		O	O	O	P
Hairy Woodpecker[B]		**O**	**O**	**O**	**P**
Northern Flicker[B]	**P**	**O**	**O**	**O**	**P**

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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Eastern Wood-Pewee[B]		O	O	P	P
Acadian Flycatcher[B(S-C)]		**P**	**P**	**P**	**P**
Willow Flycatcher[B]	**P**	**P**	**P**	**P**	**P**
Least Flycatcher[B]		**P**	**P**	**P**	**P**
Eastern Phoebe[B]	P	O	O	P	P
Great Crested Flycatcher[B]		**O**	**O**	**O**	**O**
Eastern Kingbird[B]	**P**	**P**	**P**	**P**	**P**
Northern Shrike[M]	P	P	P	P	P
White-eyed Vireo[B]		P	P	P	P
Yellow-throated Vireo[B]		**P**	**P**	**P**	**P**
Warbling Vireo[B]		O	O	O	P
Red-eyed Vireo[B]	P	O	O	O	
Blue-headed vireo		**P**	**P**	**P**	**P**
Blue Jay[B]	O	O	O	O	O
American Crow[B]	O	O	O	O	P
Fish Crow[B]					
Purple Martin[B]	P		P	P	P
Tree Swallow[B]	**P**	**P**	**P**	**P**	**P**

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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Northern Rough-winged Swallow[B]	P	P	P	P	P
Barn Swallow[B]	P				
Black-capped Chickadee[B]	P	O	O	P	P
Tufted Titmouse[B]		O	O	O	O
Red-breasted Nuthatch[B]		P	P	P	P
White-breasted Nuthatch[B]		O	O	O	O
Brown Creeper[B]		P	P	P	P
Carolina Wren[B]	O	O	O	O	O
House Wren[B]	P	O	O	O	P
Winter Wren[B]	P	P	P	P	P
Golden-crowned Kinglet[B]		P	P	P	P
Ruby-crowned Kinglet[M]		P	P	P	P
Blue-gray Gnatcatcher[B]		P	P	P	P
Eastern Bluebird[B]	**P**	**P**	**P**	**P**	**P**
Veery[B]		**P**	**P**	**P**	**P**
Hermit Thrush[B]		P	P	P	P
Wood Thrush[B (BCC)]		**P**	**P**	**P**	**P**
American Robin[B]	O	O	O	O	P

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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Gray Catbird[B]	**O**	**O**	**O**	**O**	**P**
Northern Mockingbird[B]	P		O	O	P
Brown Thrasher[B]	**P**	**P**	**P**	**P**	**P**
European Starling[B]	P	P	P	P	P
Cedar Waxwing[B]		P	P	P	P
Blue-winged Warbler[B]	**P**				
Northern parula[M(S-T)]		**P**	**P**	**P**	**P**
Black-and-white warbler[B]		**P**	**P**	**P**	**P**
Golden-winged Warbler[B]		P	P	P	P
Nashville Warbler[B]	**P**	**P**	**P**	**P**	**P**
Yellow Warbler[B]	O	P	O	O	P
Yellow-rumped warbler[M]		**O**	**P**	**P**	**P**
Chestnut-sided Warbler[B]	**P**	**P**	**P**	**P**	**P**
Black-throated Green Warbler[B]		P	P	P	P
Black-throated blue warbler[B(S-T)]		**P**	**P**	**P**	**P**
Blackburnian warbler[M(S-T)]		**P**	**P**	**P**	**P**
Pine Warbler[B]		P	P	P	O
Prairie Warbler[B (BCC)]	**P**				**P**

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
American Redstart[B]	**P**	**O**	**O**	**O**	**P**
Worm-eating Warbler[B]	P	O	P	P	P
Ovenbird[B]	P	P	P	P	P
Northern Waterthrush[B]		**O**			
Louisiana Waterthrush[B]		P			
Common Yellowthroat[B]	P	O	O	P	P
Hooded Warbler[B]		**P**	**P**	**P**	**P**
Canada Warbler[B (BCC)]		**P**	**P**	**P**	**P**
Cerulean warbler[B(S-E)]		**P**	**P**	**P**	**P**
Scarlet Tanager[B]		**P**	**P**	**P**	**P**
Eastern Towhee[B]	**P**	**P**	**P**	**P**	**P**
American Tree Sparrow[M]	P	P	P	P	P
Chipping Sparrow[B]	P	P	P	P	P
Field Sparrow[B]	**P**				
Savannah Sparrow[B]	**P**				
Fox Sparrow[M]	P	P	P	P	P
Song Sparrow[B]	O	O	O	O	P
Swamp Sparrow[B]	P	P			

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
White-throated Sparrow[M]	P	P	P	P	P
Dark-eyed Junco[M]	P	P	P	P	P
Lapland Longspur[M]	P				
Snow Bunting[M]					
Northern Cardinal[B]	P	O	O	O	P
Rose-breasted Grosbeak[B]		**P**	**P**	**P**	**P**
Indigo Bunting[B]	**P**				
Bobolink[B] (S-SC)	**P**				
Red-winged Blackbird[B]	P	O			
Rusty Blackbird (BCC)	**P**	**P**	**P**	**P**	
Eastern Meadowlark[B]	**P**				
Common Grackle[B]	P	O	O	O	P
Brown-headed Cowbird[B]	O	O	P	P	P
Orchard Oriole		P	O	O	P
Baltimore Oriole[B]		O	O	O	P
Pine Grosbeak[M]		P	P	P	
Purple Finch[M]		**P**	**P**	**P**	**P**
House Finch[B]	P	O	P	O	P

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Common Redpoll[M]	P	P	P	P	P
Pine Siskin[M]	P	P	P	P	P
American Goldfinch[B]	P	O	O	O	P
Evening Grosbeak[M]	P	P	P	P	P
House Sparrow[B]	O	O	P	O	P

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

Table M-2 Observed and Potential Amphibian and Reptile Species – June 25, 2021

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Marbled Salamander[B]		**P**	**P**	**P**	**P**
Spotted Salamander[B]		**O**	**P**	**P**	**P**
Red Spotted Newt[B]		**P**	**P**	**P**	**P**
Northern Dusky Salamander[B]		P	P	P	P
Northern Redback Salamander[B]		P	P	P	P
Four-toed Salamander[B]		**P**	**P**	**P**	**P**
Northern Two-Lined Salamander[B]		P	P	P	P
American Toad[B]	P	P	P	P	P
Fowler's Toad[B]	P	P	P	P	P
Northern Spring Peeper[B]	P	O	P	P	P
Gray Treefrog[B]		P	P	P	P
American Bullfrog[B]					
Green Frog[B]		O			
Wood Frog[B]	**P**	**O**	**O**	**O**	
Pickerel Frog[B]	P	P	P	P	
Common Snapping Turtle[B]	P	P	P	P	
Painted Turtle[B]	P	P			

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Spotted Turtle[B]	**P**	**P**	**P**	**P**	
Wood Turtle[B (S-C)]	**P**	**P**	**P**	**P**	**P**
Eastern Box Turtle[B]	P	P	P	P	P
Common Musk Turtle[B]	P	P	P	P	P
Diamondback Terrapin[B(S-E)]					
Northern Water Snake[B]	P	P	P	P	P
Northern Red-bellied Snake[B]	P	P	P	P	P
Common Garter Snake[B]	P	P	P	P	P
Eastern Ribbon Snake[B (S-SC)]	P	P	P	P	P
Eastern Hognose Snake[B]	P	P	P	P	P
Northern Ringneck Snake[B]	P	P	P	P	P
Eastern Worm Snake[B]	P	P	P	P	P
Northern Black Racer[B]	**P**	**P**	**P**	**P**	**P**
Eastern Smooth Green Snake[B]	P	P	P	P	P
Northern Brownsnake[B]	P	P	P	P	P
Black Rat Snake[B]	P	P	P	P	P
Eastern Milk Snake[B]	P	P	P	P	P

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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

Table M-3 Observed and Potential Mammal Species – June 25, 2021

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Virginia Opossum[B]	P	P	P	P	P
Masked Shrew[B]	P	P	P	P	P
Water Shrew[B(S-C)]	P	**P**	**P**	**P**	**P**
Northern Short-tailed Shrew[B]		P	P	P	P
Smoky Shrew[B(S-C)]	**P**	**P**	**P**	**P**	**P**
Star-nosed Mole[B]	P	P	P	P	P
Little Brown Bat[B]	**P**	**P**	**P**	**P**	**P**
Silver-haired Bat[B]	**O**	**O**	**O**	**O**	**O**
Tricolored bat[B]	P	P	P	P	P
Big Brown Bat[B]	**O**	**O**	**P**	**P**	**P**
Eastern Red Bat[B]	**P**	**P**	**P**	**P**	**P**
Hoary Bat[M (S-SC)]	**P**	**P**	**P**	**P**	**P**
Northern Long-eared Bat[B (F-T)]	**P**	**P**	**P**	**P**	**P**
Eastern Cottontail[B]	P	P	P	P	P
New England Cottontail[B(S-C)]	**P**	**P**	**P**	**P**	**P**

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Snowshoe Hare[B]	P	P	P	P	P
Eastern Chipmunk[B]	O	O	O	O	O
Woodchuck[B]	P	P	P	P	P
Gray Squirrel[B]	O	O	O	O	O
Red Squirrel[B]	P	P	P	P	P
Southern Flying Squirrel[B]		P	P	P	P
White-footed Mouse[B]	P	P	P	P	P
Southern Red-backed Vole[B]	P	P	P	P	P
Meadow Vole[B]	**P**	**P**	**P**	**P**	**P**
Woodland Vole[B]	P	P	P	p	P
Muskrat[B]		P	P	P	P
Southern Bog Lemming[B]	P	P	P	P	P
Norway Rat[B]	P	P	P	P	P
House Mouse	P	P	P	P	P
Meadow Jumping Mouse[B]	P	P	P	P	P
Coyote[B]	P	P	P	P	P
Red Fox[B]	P	P	P	P	P

P = Potential to occur O = observed by VHB between Summer 2019 – Spring 2021 **P/O** = GCN Species in the 2015 RIWAP. B = breeding in Rhode Island M = migrant/visitor
S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

	Inland Key Habitats				
	Ruderal Grassland/ Shrubland	**Ruderal Forested Swamp**	**Mixed Oak/White Pine Forest**	**Oak Forest**	**Pitch Pine Woodland/ Barren**
Gray Fox[B]	P	P	P	P	P
Raccoon[B]	P	P	P	P	P
Ermine (Short-tailed weasel)[B]	P	P	P	P	P
Fisher[B]	P	P	O		
Long-tailed Weasel[B]	P	P	P	P	P
Mink[B]	P	P	P	P	P
Striped Skunk[B]	P	P	P	P	P
White-tailed Deer[B]	P	O	O	P	P
Black Bear[B]	**P**	**P**	**P**	**P**	**P**
Bobcat[B(S-T)]	**P**	**P**	**P**	**P**	**P**

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S-E = State-endangered S-T= State-threatened S-C = State Concern F-E = Federally endangered F-T = Federally Threatened BCC = Bird of Conservation Concern
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RIDEM, The Rhode Island Nature Conservancy, University of Rhode Island. 2015. Rhode Island Wildlife Action Plan. http://www.dem.ri.gov/programs/fish-wildlife/wildlifehuntered/swap15.php

Appendix N: USFWS Official Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: December 28, 2020
Consultation Code: 05E1NE00-2021-SLI-0836
Event Code: 05E1NE00-2021-E-02498
Project Name: Revolution Wind LLC, Onshore Facilities

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-0836

Event Code: 05E1NE00-2021-E-02498

Project Name: Revolution Wind LLC, Onshore Facilities

Project Type: DEVELOPMENT

Project Description: The Onshore Facilities will include an up to 500 foot (ft) (150 meter (m)) segment of the RWEC, the Landfall Work Area, the Onshore Transmission Cable and an Onshore Substation (OnSS) adjacent to the existing Davisville Substation with up to two interconnection circuits (overhead or underground) connecting the OnSS with the existing substation, referred to as the Interconnection Cable Route.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.58583829058749N71.42881666964098W

Counties: Washington, RI

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.