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# Eversource Resistance Substation Retirement Project

## Town of Greenland and City of Portsmouth

**New Hampshire Department of Environmental Services**
Wetlands Permit Application

**PREPARED BY:**

**GZA GeoEnvironmental, Inc.**
5 Commerce Park North, Suite 201 | Bedford, NH 03110-6984
603-623-3600 www.gza.com

February 2024

File No. 04.0191410.47

NHDES File:_____

USACE File:_____

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# STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION

## Water Division / Land Resources Management

Check the Status of your Application

**RSA/Rule**: RSA 482-A/Env-Wt 100-900

**APPLICANT'S NAME:** Eversource Energy **TOWN NAME:** Greenland and Portsmouth

| | | | |
|---|---|---|---|
| Administrative Use Only | Administrative Use Only | Administrative Use Only | File No.: |
| | | | Check No.: |
| | | | Amount: |
| | | | Initials: |

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the Waiver Request Form.

**SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))**

Please use the Wetland Permit Planning Tool (WPPT), the Natural Heritage Bureau (NHB) DataCheck Tool, the Aquatic Restoration Mapper, or other sources to assist in identifying key features such as: Priority Resource Areas (PRAs), protected species or habitats, coastal areas, designated rivers, or designated prime wetlands.

| | |
|---|---|
| Has the required planning been completed? | (●) Yes ( ) No |
| Does the property contain a PRA? If yes, provide the following information: | (●) Yes ( ) No |
| • Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHFG) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. | ( ) Yes (●) No |
| • Protected species or habitat?<br>○ If yes, species or habitat name(s): State Endangered and State Threatened<br>○ NHB Project ID #: NHB23-3331, NHB23-3332 | (●) Yes ( ) No |
| • Bog? | (●) Yes ( ) No |
| • Floodplain wetland contiguous to a tier 3 or higher watercourse? | (●) Yes ( ) No |
| • Designated prime wetland or duly-established 100-foot buffer? | (●) Yes ( ) No |
| • Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? | ( ) Yes (●) No |
| Is the property within a Designated River corridor? If yes, provide the following information:<br>• Name of Local River Management Advisory Committee (LAC):<br>• A copy of the application was sent to the LAC on Month: Day: Year: | ( ) Yes (●) No |

| | |
|---|---|
| For dredging projects, is the subject property contaminated?<br>• If yes, list contaminant: | ○ Yes ◉ No |
| Is there potential to impact impaired waters, class A waters, or outstanding resource waters? | ◉ Yes ○ No |
| For stream crossing projects, provide watershed size (see WPPT or Stream Stats): N/A | |

**SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))**

Provide a description of the project and the purpose of the project, the need for the proposed impacts to jurisdictional areas, an outline of the scope of work to be performed, and whether impacts are temporary or permanent.

Eversource is proposing to remove the existing T-13 Transmission Line, install the new 339 Distribution Line, replace structures along the 3171 and 3111 Distribution Lines, and retire the Resistance Substation. The Site runs through portions of Greenland and Portsmouth, New Hampshire. The maintenance work requires temporary timber matting within wetlands for work pad placement and associated access to each structure. The existing 3171 and 3111 Distribution Line structures are wooden monopole structures and will be replaced with steel equivalent monopole structures. The two existing distribution lines are currently on separate structures and the proposed project will consolidate the two lines by attaching them to the same steel monopole structure centered in the 3171/3111 ROW. The existing T13 Transmission Line structures are wooden H-frame structures and will be removed and the new 339 Distribution Line circuit will be installed with steel monopoles. The proposed structure work will require temporary impact to place temporary timber matting within wetlands for replacement work areas and associated access. Access and work pad locations in wetlands will be restored as part of required impact minimization. However, for mitigation purposes, Eversource proposes to submit a mitigation fee for proposed pole replacements in wetlands.

**SECTION 3 - PROJECT LOCATION**

Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.

ADDRESS: 3171/3111 and T13 Right-of-Ways

TOWN/CITY: Greenland and Portsmouth

TAX MAP/BLOCK/LOT/UNIT: Multiple, see Appendix B

US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: Pickering Brook
☐ N/A

(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 70.804417, 43.054297

**SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))**

If the applicant is a trust or a company, then complete with the trust or company information.

| | | |
|---|---|---|
| NAME: Eversource Energy, C/O Kurt Nelson | | |
| MAILING ADDRESS: 13 Legends Drive | | |
| TOWN/CITY: Hooksett | STATE: NH | ZIP CODE: 03106 |
| EMAIL ADDRESS: kurt.nelson@eversource.com | | |
| FAX: N/A | PHONE: 603-634-3256 | |

ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically. KN

**SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))**

☐ N/A

| | | |
|---|---|---|
| LAST NAME, FIRST NAME, M.I.: Madison, Conor, E. | | |
| COMPANY NAME: GZA GeoEnvironmental, Inc | | |
| MAILING ADDRESS: 5 Commerce Park North, Suite 201 | | |
| TOWN/CITY: Bedford | STATE: NH | ZIP CODE: 03110 |
| EMAIL ADDRESS: conor.madison@gza.com | | |
| FAX: N/A | PHONE: 603-232-8753 | |

ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically. CM

**SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))**

If the owner is a trust or a company, then complete with the trust or company information.

■ Same as applicant

| | | |
|---|---|---|
| NAME: | | |
| MAILING ADDRESS: | | |
| TOWN/CITY: | STATE: | ZIP CODE: |
| EMAIL ADDRESS: | | |
| FAX: | PHONE: | |

ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically.

**SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))**

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Eversource has worked to avoid and minimize impacts to wetlands to the greatest extent by shifting access roads out of jurisdictional wetlands where possible, crossing wetlands at the narrowest wetland crossing, and moving new structure locations out of wetlands where possible. Stream crossings are temporary and no permanent bridges are proposed, there are no proposed coastal impacts or impacts to prime wetlands. Utility Project criteria per Env-Wt 521.06 have been addressed in the application narrative, and wetlands have been delineated and classified in accordance with Env-Wt 400. The attached permit narrative details the wetland delineation, project impacts, and mitigation as required.

**SECTION 8 - AVOIDANCE AND MINIMIZATION**

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization and the Wetlands Permitting: Avoidance, Minimization and Mitigation fact sheet. For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the Avoidance and Minimization Checklist, the Avoidance and Minimization Narrative, or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

**SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)**

If unavoidable jurisdictional impacts require mitigation, a mitigation pre-application meeting must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: Day: Year: December 5, 2023

(☐ N/A - Mitigation is not required)

**SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)**

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☒ I confirm submittal.

(☐ N/A – Compensatory mitigation is not required)

**SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))**

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/rivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent (PERM.) impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary (TEMP.) impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

| JURISDICTIONAL AREA | | PERM. SF | PERM. LF | PERM. ATF | TEMP. SF | TEMP. LF | TEMP. ATF |
|---|---|---|---|---|---|---|---|
| Wetlands | Forested Wetland | | | ☐ | | | ☐ |
| | Scrub-shrub Wetland | 825 | | ☐ | 285,677 | | ☐ |
| | Emergent Wetland | | | ☐ | | | ☐ |
| | Wet Meadow | | | ☐ | | | ☐ |
| | Vernal Pool | | | ☐ | | | ☐ |
| | Designated Prime Wetland | | | ☐ | | | ☐ |
| | Duly-established 100-foot Prime Wetland Buffer | | | ☐ | | | ☐ |
| Surface | Intermittent / Ephemeral Stream | | | ☐ | | | ☐ |
| | Perennial Stream or River | | | ☐ | | | ☐ |
| | Lake / Pond | | | ☐ | | | ☐ |
| | Docking - Lake / Pond | | | ☐ | | | ☐ |
| | Docking - River | | | ☐ | | | ☐ |
| Banks | Bank - Intermittent Stream | | | ☐ | | | ☐ |
| | Bank - Perennial Stream / River | | | ☐ | | | ☐ |
| | Bank / Shoreline - Lake / Pond | | | ☐ | | | ☐ |
| Tidal | Tidal Waters | | | ☐ | | | ☐ |
| | Tidal Marsh | | | ☐ | | | ☐ |
| | Sand Dune | | | ☐ | | | ☐ |
| | Undeveloped Tidal Buffer Zone (TBZ) | | | ☐ | | | ☐ |
| | Previously-developed TBZ | | | ☐ | | | ☐ |
| | Docking - Tidal Water | | | ☐ | | | ☐ |
| **TOTAL** | | 825 | | | 285,667 | | |

**SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)**

☐ **MINIMUM IMPACT FEE**: Flat fee of $400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of $400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

| | | | | |
|---|---|---|---|---|
| Permanent and temporary (non-docking): | 286,502 | SF | × $0.40 = | $ 114,600.80 |
| Seasonal docking structure: | | SF | × $2.00 = | $ |
| Permanent docking structure: | | SF | × $4.00 = | $ |
| Projects proposing shoreline structures (including docks) add $400 = | | | | $ |
| Total = | | | | $ |
| *The application fee for minor or major impact is the above calculated total or $400, whichever is greater =* | | | | $ 114,600.80 |

| **SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)**<br>Indicate the project classification. | | |
|---|---|---|
| ☐ Minimum Impact Project | ☐ Minor Project | ■ Major Project |

| **SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)** | |
|---|---|
| **Initial each box below to certify:** | |
| Initials: KN | To the best of the signer's knowledge and belief, all required notifications have been provided. |
| Initials: KN | The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief. |
| Initials: KN | The signer understands that:<br>• The submission of false, incomplete, or misleading information constitutes grounds for NHDES to:<br>1. Deny the application.<br>2. Revoke any approval that is granted based on the information.<br>3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. |
| Initials: KN | If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing. |

| **SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)** | | |
|---|---|---|
| SIGNATURE (OWNER):  | PRINT NAME LEGIBLY: Kurt Nelson | DATE: 2/12/2024 |
| SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): | PRINT NAME LEGIBLY: | DATE: |
| SIGNATURE (AGENT, IF APPLICABLE):  | PRINT NAME LEGIBLY: Conor Madison | DATE: 2/12/2024 |

| **SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))** | |
|---|---|
| As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below. | |
| TOWN/CITY CLERK SIGNATURE: | PRINT NAME LEGIBLY: |
| TOWN/CITY: | DATE: |

Keep this checklist for your reference; do not submit with your application.

**APPLICATION CHECKLIST**

Unless specified, all items below are required. Failure to provide the required items will delay a decision on your project and may result in denial of your application. Please reference statute RSA 482-A, Fill and Dredge in Wetlands, and the Wetland Rules Env-Wt 100-900.

- ☐ The completed, dated, signed, and certified application (Env-Wt 311.03(b)(1)).
- ☐ Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)). Make check or money order payable to "Treasurer – State of NH".
- ☐ The Required Planning actions required by Env-Wt 311.01(a)-(c) and Env-Wt 311.03(b)(3).
- ☐ US Army Corps of Engineers (ACE) "Appendix B, New Hampshire General Permits (GPs), Required Information and Corps Secondary Impacts Checklist" and its required attachments (Env-Wt 307.02). This includes the US Fish and Wildlife Service IPAC review and Section 106 Historic/Archaeological Resource review.
- ☐ Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- ☐ Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- ☐ Explanation of the methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- ☐ If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 - Permittee Responsible Mitigation Project Worksheet, unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- ☐ Any additional information specific to the **type of resource** as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- ☐ Project specific information required by Env-Wt 500, Env-Wt 600, and Env-Wt 900 (Env-Wt 311.03(b)(11)).
- ☐ A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- ☐ Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).
- ☐ Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- ☐ Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- ☐ Dated and labeled color photographs that:
  - (1) Clearly depict:
    - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur.
    - b. All existing shoreline structures.
  - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- ☐ A copy of the appropriate US Geological Survey map or updated data based on LiDAR at a scale of one inch equals 2,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- ☐ A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).

lrm@des.nh.gov or (603) 271-2147
29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
des.nh.gov

- ☐ For all projects in the protected tidal zone, a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).
- ☐ If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
  - (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest; and
  - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
- ☐ The NHB memo containing the NHB identification number and results and recommendations from NHB as well as documentation of any consultation requests made to NHFG, communications and information related to the consultation, with the consultation results and recommendations from NHFG. (Env-Wt 311.06(g)). See Wetlands Permitting: Protected Species and Habitat Fact Sheet.
- ☐ A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
- ☐ For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
- ☐ If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
- ☐ Avoidance and Minimization Written Narrative or the Avoidance and Minimization Checklist, or your own avoidance and minimization narrative (Env-Wt 311.07).
- ☐ For after-the-fact applications: information required by Env-Wt 311.12.
- ☐ Coastal Resource Worksheet for coastal projects as required under Env-Wt 600.
- ☐ Prime Wetlands information required under Env-Wt 700. See WPPT for prime wetland mapping.
- ☐ For non-tidal shoreline structure projects, the length of shoreline frontage per Env-Wt 311.09(b)(1)

**Required Attachments for Minor and Major Projects**

- ☐ Attachment A: Minor and Major Projects (Env-Wt 313.03).
- ☐ Functional Assessment Worksheet or others means of documenting the results of actions required by Env-Wt 311.10 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3); Env-Wt 311.03(b)(10)). See Functional Assessments for Wetlands and Other Aquatic Resources Fact Sheet. For shoreline structures, see shoreline structures exemption in Env-Wt 311.03(b)(10)).

**Optional Materials**

- ☐ Stream Crossing Worksheet which summarizes the requirements for stream crossings under Env-Wt 900.
- ☐ Request for concurrent processing of related shoreland / wetlands permit applications (Env-Wt 313.05).

## APPLICANT AND OWNER INFORMATION

APPLICANT NAME

Public Service Company of New Hampshire (dba Eversource Energy)

APPLICANT CONTACT INFORMATION

Eversource Energy
Attn: Kurt Nelson, Specialist – Licensing & Permitting
13 Legends Drive
Hooksett, New Hampshire 03106

Phone: (603) 634-3256
E-mail: kurt.nelson@Eversource.com

EASEMENT INFORMATION

The proposed project crosses 17 parcels through the Town of Greenland and City of Portsmouth. Eversource owns two parcels and holds easements across the remaining 15 parcels within the proposed work area along the existing and maintained 3171 and 3111 Distribution Lines and T13 Transmission Line right-of-ways (ROW) corridor and Resistance Substation. The easements provide Eversource the right to access, construct, and maintain the structures and the ROW. A table has been provided in **Appendix A** containing easement information, including the book (volume) and page number, for the proposed work area along the 3171 and 3111 Distribution Lines and T13 Transmission Line. The easement documentation generally dates back to when the line was first constructed, and therefore property owner names have changed, and parcels may have been divided or combined (see **Appendix A – Eversource Easement Information**).

## SITE INFORMATION

SITE LOCATION

The proposed project involves the removal of the existing T13 Transmission Line, installation of a new 339 Distribution Line, replacement of structures along the 3171 and 3111 Distribution Lines, and retirement of the Resistance Substation in portions of Greenland and Portsmouth, New Hampshire. The project spans approximately 5.6 miles in length, beginning on the north side of Ocean Road in Greenland and continues northeasterly direction to the Resistance Substation in Portsmouth, New Hampshire. Existing ROW where the proposed project is located varies in width (100-ft to 350-ft). **See Figure 1 - Site Locus Map** and **Figure 2 – Aerial Overview Plan**.

TAX MAP AND LOT(S)

Eversource either holds easements or owns parcels in fee along the 3171 and 3111 Distribution Lines and T13 Transmission Line where work is planned. Specifically, there are 17 parcels that cross through the work area. **See Figure 3 – Tax Maps** that highlights the Site.

ABUTTERS INFORMATION AND NOTIFICATION

According to Env-Wt 306.06(c), abutter notification shall not be required for "*Utility maintenance or repair projects within a utility right-of-way."* Accordingly, no abutter notifications were issued for this submittal. However, **Appendix B** provides tax map and lot information for the parcels that intersect the 3171/3111 ROW and T13 Transmission Line ROW.

SITE DESCRIPTION

The Site is located primarily through suburban and industrial privately owned areas in the Town of Greenland and the City of Portsmouth within a cleared and maintained ROW. Natural cover within the ROW includes upland shrublands and wetland emergent and scrub-shrub habitats. The 3171/3111 ROW borders Interstate 95N and extends along the Exit 3 off ramp constrained by an active railroad track. The corridor then extends across Route 33 along an existing parking lot. The T13 ROW extends from Schiller Substation and borders Granite Shore Power Schiller Station to the south and east and terminates at Resistance Substation along a railroad track. There are approximately 16 wetlands within the ROWs along the project route, these include one unnamed stream and one named stream, Pickering Brook.

IDENTIFICATION OF NATURAL AND CULTURAL RESOURCES

GZA GeoEnvironmental, Inc. (GZA) has been retained by Public Service Company of New Hampshire doing business as Eversource Energy (Eversource) to provide professional services for this project that relate to natural and cultural resource identification and assessment as well as permit applications for natural resource impacts required to complete the project. GZA has conducted field evaluations and corresponded with the appropriate agencies to identify natural and cultural resources present in the vicinity of the proposed project. Eversource and GZA completed a pre-application meeting with the NHDES, USACE, and EPA on December 5, 2023.

IDENTIFICATION OF JURISDICTIONAL WETLANDS

GZA delineated and classified wetlands, photographed resources, and recorded data relevant to functions and values in November 2022 and February 2023 (see **Figure 5 – Flood Insurance Rate Map**). The wetland delineation was conducted in accordance with the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual using the Routine Determinations Method and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual as required by the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau and the USACE. As directed by DES, the approximate boundaries of soils mapped as histisols and/or histic epipedon soils have been included on project plans and are referred to below as very poorly drained soils (VPD). The wetland delineation was conducted by GZA's New Hampshire Certified Wetland Scientist (CWS) Mr. James H. Long (CWS No. 007).

GZA identified 16 wetland systems on Site and has assigned this wetland system with alphabetized identification. The identified wetland and assigned classifications are presented in the table below:

**Table 1**
**Wetland Identification Table**

| Wetland Identification | Classification | Notes |
|---|---|---|
| GW-1 | PEM1/PSS1/PFO1E,Fg/R2UB | This large wetland system is located in both Greenland and Portsmouth along the project route. Contains Pickering Brook and an unnamed stream, mapped wetland adjacent to tier 3 watercourse, prime wetland and VPD soil. |
| PW-1 | PEM1/PSS1E,Fg | |
| PW-2 | PEM1/PSS1E | |
| PW-3 | PEM1/PSS1E | |
| PW-4 | PEM1/PSS1E | |
| PW-5 | PEM1/PSS1E | |
| PW-6 | PEM1/PSS1E | |
| PW-7 | PEM1/PSS1E,H | Contains potential vernal pool. |
| PW-8 | PEM1/PSS1E | |
| PW-9 | PEM1/PSS1Ex | |
| PW-10 | PSS1Ex | |
| PW-11 | PSS1/PEM1Ex | |
| PW-12 | PEM1/PSS1E | |
| PW-13 | PEM1/PSS1E | |
| PW-14 | PSS1/PEM1E | |

**(1) Key to classifications:**

System
P = palustrine wetland system
SS = scrub-shrub, 1 = broad-leaved deciduous
EM = emergent, 1= persistent
FO = forested, 1 = broad-leaved deciduous, 4 = needle-leaved evergreen
UB = unconsolidated bottom, x = excavated
R = Riverine
2 = Lower Perennial
3 = Upper Perennial
4 = Intermittent

Modifiers
E = nontidal, seasonally flooded/saturated, x=excavated
F = nontidal, semi permanently flooded, g = organic soil
H = permanently flooded
UB = Unconsolidated bottom, 1=cobble-gravel, 2=sand, b=beaver
SB = Streambed, 3=cobble-gravel, 4= sand, 5=Mud

View of ROW facing north toward Line 3171 Structure 82.

View of ROW facing south toward line T13 Structure 3.

The project area includes upland and wetland areas located in primarily suburban wetland and industrial areas. In uplands, the shrub layer contains Goldenrod (*Solidago* spp.), oriental bittersweet (*Celastrus orbiculatus*), red raspberry (*Rubus idaeus*), staghorn sumac (*Rhus hirta*), pin cherry (*Prunus pensylvanica*), and red oak (*Quercus rubra*). Vegetation in the wetlands were dominated by Common reed (*Phragmites australis*), tussock sedge (*Carex stricta*), broad leaved cattail (*Typha latifolia*), lurid sedge (*Carex lurida*), purple loosestrife (*Lythrum salicaria*), glossy buckthorn (*Frangula alnus*), gray birch (*Betula populifolia*), and red maple (*Acer rubrum*).

View of ROW facing east toward T13 Structure 6.

GZA recorded data relevant to functions and values provided by these natural resources within the ROW in November 2022 and February 2023. GZA classified wetlands in accordance with the "Classification of Wetlands and Deepwater Habitats of United States" (Federal Geographic Committee, 2013). GZA completed a wetland function-value assessment in accordance with the Highway Methodology (see **Table 2)**. Below is a summary table of functions and values provided by each wetland system (see **Appendix C – Functional Value Assessment Form**).

A majority of the wetlands in the ROW provide groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, nutrient removal, production export and wildlife habitat as capable wetland functions. The project has been designed to minimize work and remove an existing distribution line circuit in the highest ranked wetland GW-1, which is a PRA wetland and provides several principal wetland functions including groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal, production export, sediment/shoreline stabilization, wildlife habitat, recreational use, uniqueness/heritage, visual quality/aesthetics and endangered/threatened species habitat.

**Table 2**
**Wetland Function and Value Summary Table**

| Wetland Identification | Classification (1) | Functions/Values (2) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GW | FA | FH | STR | NR | PE | SS | WH | RE | ES | UH | VQ | ESH |
| GW-1 | PEM1/PSS1/PFO1E,Fg/R2UB | P | P | X | P | P | P | P | P | X | X | P | P | X |
| PW-1 | PEM1/PSS1E,Fg | P | P | | P | P | P | | P | | X | X | | X |
| PW-2 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-3 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-4 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-5 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-6 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-7 | PEM1/PSS1E,H | X | X | | P | X | X | | P | | | | | |
| PW-8 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-9 | PEM1/PSS1Ex | X | X | | P | X | X | | X | | | | | |
| PW-10 | PSS1Ex | X | X | | P | X | X | | X | | | | | |
| PW-11 | PSS1/PEM1Ex | X | X | | P | X | X | | X | | | | | |
| PW-12 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-13 | PEM1/PSS1E | X | X | | P | X | X | | X | | | | | |
| PW-14 | PSS1/PEM1E | X | X | | P | X | X | | X | | | | | |

**(1) Key to functions and values:**

GW = groundwater recharge/discharge
RE = recreation
STR = sediment/toxicant retention
VQ = visual quality/aesthetics
ESH = endangered/threatened species habitat
WH = wildlife habitat
FH = fish and shellfish habitat
UH = uniqueness/heritage
PE = production export (nutrient)
SS = sediment/shoreline stabilization
FA = floodflow alteration
ES = educational/scientific value
NR = nutrient removal

**Key to function/value occurrence symbols:**
Blank space = function/value is not occurring in this system
X = system is capable of performing this function/value though it is not considered principal
P = function/value is occurring in this system and is considered a principal function/value

## IDENTIFICATION OF VERNAL POOLS

GZA conducted a preliminary vernal pool evaluation while delineating wetland boundaries in 2022 and identified one potential vernal pool in Portsmouth. Vernal pool areas exist as confined basins and must exhibit vernal pool criteria outlined in the New Hampshire Code of Administrative Rules, Env-Wt 103.64, 104.15, and 104.44. It is typical that potential vernal pools are considered vernal pools for the purposes of impact avoidance and minimization for Eversource maintenance projects.

**Table 3**
**Vernal Pool Habitat Summary**

| Wetland Identification | Location | Confirmed or Potential |
|---|---|---|
| PW-7 | Southern portion of the wetland. | Potential |

View of ROW facing west toward the potential vernal pool in Wetland PW-7.

## IDENTIFICATION OF SURFACE WATERS

Jurisdictional limits of surface waters of the State of New Hampshire were delineated and confirmed by GZA in accordance with their definition in RSA 485-A:2 XIV, 482-A:4 II and rule Env-Wt 104.33. Surface waters include wherever freshwater flows or stands and tidal waters. This includes, but is not limited to, rivers, perennial and intermittent streams, lakes, ponds, marshes, intertidal zones, and tidal waters. In addition, jurisdiction extends to the portion of any bank or shore which borders such surface waters, and to any swamp or bog subject to periodic flooding by fresh water including the surrounding shore. In accordance with Env-Wt 102.15, the limit of jurisdiction for surface water areas is delineated at the limit of bank, where a natural bank occurs or its ordinary high-water mark, or HOTL, where a natural bank is not present. In the City of Portsmouth, surface waters include one named perennial riverine system, Pickering Brook and one unnamed perennial stream. There were no surface waters identified along the project route in the Town of Greenland.

**Table 4**
**Surface Water Summary**

| Wetland Identification | Surface Water Body | Classification |
|---|---|---|
| GW-1 | Pickering Brook | PEM1/PSS1/PFO1E,Fg/R2UB |
| GW-1 | Unnamed Lower Perennial Stream | PEM1/PSS1/PFO1E,Fg/R2UB |

## IDENTIFICATION OF RARE, THREATENED, AND ENDANGERED SPECIES

The Natural Heritage Bureau (NHB) data check tool has identified four protected plant species, American reed (*Phragmites americanus*), great bur-reed (*Sparganium eurycarpum*), hairy-fruited sedge (*Carex* trichocarpa) and tufted yellow-loosestrife (*Lysimachia thyrsiflora*) in the vicinity of the Resistance Substation Retirement project work areas (see **Appendix D** for the NHB Report). Additionally, the NHB data check tool has identified one protected vertebrate

species, a Blanding's turtle (*Emydoidea blandingii*) in the vicinity of the Resistance Substation Retirement project work areas (see **Appendix D** for the NHB Report). A coordination memo was sent to both NHFG and NHB on January 2, 2024 and the team will continue coordination with each agency for recommendations to minimize impact.

Historically, GZA conducted a rare plant survey between proposed 3171/3111 Structures 1 and 14 on August 1, 2023 for hairy-fruited sedge and tufted yellow-loosestrife. There were no observations of either rare species within the proposed work areas within the survey areas and a plant survey report was submitted to NHB on November 3, 2023.

In the IPaC report for the project, the United States Fish and Wildlife Service identified the potential presence of the northern long-eared bat (*Myotis septentrionalis*), Roseate Tern (*Sterna dougallii dougallii),* and monarch butterfly (*Danaus plexippus)* within the vicinity of the Site. The proposed project does not involve cutting trees with greater than 3-inch diameter at breast height (dbh). No records of known roost trees were noted by the NHB near the Site.

IDENTIFICATION OF PRIORITY RESOURCE AREAS

The proposed project was screened for the presence of Priority Resource Areas (PRAs) in accordance with Env-Wt 306.05(2) (see **Figure 5 – Wetland Permit Planning Tool Screening**). Based on review of the Wetland Permit Planning Tool (WPPT), the Site contains a floodplain wetland adjacent to a tier 3 watercourse and prime wetland (GW-1). Access and work areas are required in GW-1 to complete the proposed work.

NHB and NHFG correspondence is referenced in **Appendix D** above and impacts to rare species and communities are not anticipated as a result of this project.

Overview of ROW facing south toward Wetland GW-1 during August 2023.

IDENTIFICATION OF CULTURAL AND HISTORICAL RESOURCES

Phase IA Archeological Sensitivity Assessments along portions of the T-13 Transmission Line were conducted by Independent Archaeological Consulting, LLC (IAC) during 2021. IAC was retained in the summer of 2023 to conduct a Phase IB Intensive Archaeological Investigation for the 3171 and 3111 Distribution Lines and the T-13 Transmission Line for the entirety of six sensitivity areas associated with the proposed pole replacement / removal locations and access for the proposed project. The entirety of the sensitivity areas were cleared through Phase IB survey and no further archeological survey is recommended. GZA submitted a Request for Project Review (RPR) to the New Hampshire Division of Historical Resources (NHDHR) for the proposed project in December 2023 and the NHDHR concurred with

the results and recommendations to use protective measures such as matting and avoid the known sites (See **Appendix E** for the RPR form).

## PROJECT DESCRIPTION

Eversource is proposing to remove the existing T-13 Transmission Line, install the new 339 Distribution Line, replace structures along the 3171 and 3111 Distribution Lines, and retire the Resistance Substation. The Site runs through portions of Greenland and Portsmouth, New Hampshire. The maintenance work requires temporary timber matting within wetlands for work pad placement and associated access to each structure (see **Figure 2 – Aerial Permitting Plans)**.

The existing 3171 and 3111 Distribution Line structures are wooden monopole structures and will be replaced with steel equivalent monopole structures. The two existing distribution lines are currently on separate structures and the proposed project will consolidate the two lines by attaching them to the same steel monopole structure centered in the 3171/3111 ROW. The replacement structures are constructed with weathered steel material, so that over time the steel material will weather from an orange color to a dark brown color to blend in with the environment. New structure heights will remain similar to the existing and are typically higher where there are crossings over public roads and distribution lines, as well as ground clearance where there's a shift in topography since new structures are offset from existing locations approximately 5-10-feet. The average height of the 3171 and 3111 Distribution Line structures will remain at 45-feet across the project.

The existing T13 Transmission Line structures are wooden H-frame structures and will be removed and the new 339 Distribution Line circuit will be installed with steel monopoles. The 339 Distribution Line structures are constructed similarly to the 3171/3111 distribution structures with weathered steel material, so that over time the steel material will weather from an orange color to a dark brown color to blend in with the environment. New structure heights will be reduced due to a removal of T13 Transmission Line and installation of the 339 Distribution Line. The average height of the 339 Distribution Line structures will be 40-feet across the project.

Existing wooden Structure 81 on 3171 Distribution Line.

Existing wooden Structure 6 on 393 Distribution Line replaced in 2022.


Weathered steel color progression over time. Photo provided by Eversource.

Due to recent and ongoing correspondence with NHDES and the need for temporary wetland matting in very poorly drained soils during the active growing season, it is not anticipated the proposed project meets the minimum impact criteria Per Env-Wt 521.06 (a). Therefore, the project is anticipated to be classified as a major impact project.

PROJECT NEED

Eversource supplies electrical transmission and distribution services from within their existing, maintained ROWs. Maintenance of Eversource's electrical infrastructure is necessary to ensure the continued safety and reliability of the system. Replacement of the poles prior to significant deterioration to crossarms or the pole itself is of the utmost importance in regard to maintaining service and ensuring safety of the public. Therefore, Resistance Substation retirement along with the other components of this project, including, the removal of the existing T-13 Transmission line, the installation of the new 339 Distribution Line, and the replacement of structures along the 3171 and 3111 Distribution Lines, is beneficial to public health and safety. During an inspection of the 3171 and 3111 Distribution Lines, it was observed that the structures are old and worn and have been subjected to pole splitting, woodpecker damage and rot, and must be replaced due to the state of deterioration.

The proposed project will require temporary impact to place temporary timber matting within wetlands for replacement work areas and associated access. The existing wood structures will be replaced with a new steel counterpart and will require heavy machinery to install. Access and work pad locations in wetlands will be restored as part of required impact minimization.

PROPOSED IMPACTS

Eversource requests a permit from the NHDES Wetlands Bureau for proposed temporary wetland impacts for timber matting within the mapped wetland systems and permanent impacts for installation of the proposed replacement structures along the project area (see **Appendix G – Photo Log**). The project has been designed to minimize impacts to wetlands and surface waters to the extent practicable. Per Env-Wt 307.11 (f), swamp mats are considered temporary impact for new authorizations if they are in place no longer than one growing season and are removed immediately upon completion of work.

WETLAND IMPACTS

The proposed project includes a total of approximately 286,502 square feet (sq. ft.) of wetland impacts associated with construction of a temporary work pads, associated access, and pole replacements. Of the total square footage of wetland impact, approximately 131,567 sq. ft. is temporary wetland impact located within wetland soils classified as very poorly drained wetland soils. It is planned that work will be completed so that matting is in place during one growing season. Lastly, the proposed project requires approximately 825 sq. ft. of permanent wetland impact associated with the replacement utility poles for caisson and pole installation within wetlands, and 375 square feet is within a PRA.

| Town | Temporary Wetland Matting Non VPD Soils (sq. ft.) | Temporary Wetland Matting VPD Soils (sq. ft.) | Permanent Pole Replacement Impact (sq. ft.) | Total Impacts (sq. ft.) |
|---|---|---|---|---|
| Greenland | 0 | 29,533 | 100 | 29,633 |
| Portsmouth | 154,110 | 102,034 | 725 | 256,869 |
| ***Total*** | ***154,110*** | ***131,567*** | ***825*** | ***286,502*** |

The proposed work pads are necessary in order to safely stage equipment during pole replacement activities. Wetland impacts for access and work pad placement are temporary and will be restored upon completion of work by regarding, mulching, and seeding with native seed mix, as necessary.

Where Eversource owns the underlying parcel or where Eversource has obtained written agreements with underlying property owners, Eversource will utilize off-ROW access routes to access the ROW. Off ROW access routes typically provide safer access to utility poles than in-ROW access through steep terrain or may avoid and minimize wetland impacts in ROW.

INVASIVE SPECIES CONTROL

Timber matting will be cleaned of plant debris and soil and evaluated for cleanliness prior to being brought on Site and placed within wetlands in order to prevent the spread of invasive species. In general, matting is typically cleaned through the use of pressurized air and/or sweeping. During monitoring timber mats will be reviewed by the environmental monitor at laydown areas. Matting that is not observed to be clean at the laydown areas will be reported to the site civil contractor who will be directed to clean mats prior to transportation of mats into the ROW and placed within wetlands. Once timber mats are pulled from wetlands, when necessary (e.g. where work occurs in invasive plant locations), matting will be cleaned prior to transportation from the Site to further prevent the spread of invasive plant species. Seed mixes utilized for restoration will consist of native/naturalized plant species (see project schedule and sequence below).

Based on data collection during wetland delineation and confirmation efforts, invasive plant species including reed canary grass and glossy buckthorn were observed and documented in multiple wetland systems. The summary table below indicates which wetlands have documented records of common reed, reed canary grass, glossy buckthorn, purple loosestrife, autumn olive and/or oriental bittersweet.

| Wetland Identification | Common Reed | Reed Canary Grass | Glossy Buckthorn | Purple Loosestrife | Autumn Olive | Oriental Bittersweet |
|---|---|---|---|---|---|---|
| GW-1 | X | | X | X | | |
| PW-1 | X | X | X | X | | |
| PW-2 | X | | X | X | X | |
| PW-3 | | | X | | X | |
| PW-4 | | | X | | | X |
| PW-5 | | | | X | | |
| PW-6 | | X | X | X | | X |
| PW-7 | X | X | X | X | X | X |
| PW-8 | | | X | X | | |
| PW-9 | X | X | | | | |
| PW-10 | | X | | X | X | X |
| PW-11 | | X | | X | X | X |
| PW-12 | X | X | | X | | |
| PW-13 | | | | | | |
| PW-14 | X | X | | | | |

DREDGING AND FILLING ACTIVITY CONDITIONS

Dredging activities will occur in the footprint of proposed pole locations within wetlands where drilling is necessary to set a metal caisson at each pole butt. In accordance with Env-Wt 307.10I Erosion and sediment controls are installed concurrent with matting installation. Wetland matting is installed around proposed pole locations in wetlands. Following installation of timber matting in wetlands and construction of a level work pad, a drill rig is utilized to drill out an approximate footprint of a 4-ft diameter hole to install a metal caisson. During caisson installation, dredged material from the wetland will be temporarily held in an excavator bucket, spin-off box, or protected in a hay bale basin lined with fabric. Once a hole is set, typically over the course of a day, the material is then transported to an upland area outside of jurisdiction (e.g. nearby work pad or other construction areas), graded and then stabilized with seed and weed-free hay.

Temporary timber matting will not be in place longer than one growing season and no dredging is proposed within streams, tidal wetlands, ponds or lakes.

PROJECT SCHEDULE AND SEQUENCE

The project construction is proposed to begin May 2024, pending receipt of require regulatory approvals. The following is a description of the anticipated construction sequence for this type of routine work:

1. Conduct a pre-construction meeting with team members to review project permits and conditions.
2. Complete wetland flag refreshing in advance of construction in individual areas.
3. Complete pole spotting and equipment mobilization as work progresses.
4. Install sediment and erosion controls in proposed locations, as shown in **Figure 5**. Perimeter controls are installed in tandem with matting installation for proper installation up to stabilized access roads.
5. Build access routes and work pads utilizing timber matting in wetlands as designated by **Figure 5**.
6. Install check dams along access routes where necessary.
7. Conduct drilling activities, including drilling of approximately 4-ft diameter holes for caisson placement, approximately 7-15 ft below ground surface. Dewatering practices (e.g. dirt bags and temporary sediment basins in uplands) and proper stockpiling will be utilized during drilling. Drill spoils will be properly stabilized in non-jurisdictional areas or within portable basins located on work pads with secondary controls.
8. Conduct structure replacement activities, including installation of new structures, and removal of old structures.
9. Remove temporary timber matting, stabilize exposed soils within the ROW and restore temporarily disturbed wetland areas with appropriate wetland seed mix, as necessary.
10. Remove erosion and sedimentation controls following stabilization.
11. Complete restoration monitoring and reporting as required by project permits.

It is anticipated that final matting removal will occur in December 2024.

## AVOIDANCE, MINIMIZATION, AND MITIGATION

### AVOIDANCE AND MINIMIZATION OF IMPACTS

Minimization of impacts to jurisdictional wetlands and surface waters were avoided by careful design of the project (see **Appendix H – Avoidance and Minimization Checklist**). Eversource completes routine weekly and bi-weekly meetings during design to minimize and avoid impacts to wetlands, PRAs, archeological features, and protected species areas as directed by NHFG and NHB. In addition, Eversource completes multiple constructability walk downs in the field with consultants, and completes site visits with abutters as requested. This information is compiled and reviewed by Eversource Project Managers, Environmental Specialists, Engineers, Project Services (outreach staff to landowners), and wetland and archeology consultants. In addition, Eversource coordinates reviews with underlying municipalities, and incorporates feedback from Planning and Zoning staff, as well as road agents and DOT district engineers. Data collection and planning for the Resistance Substation Project has been ongoing since 2022. The attached proposal represents the combined feedback of these stakeholders, with a focus on minimizing and avoiding impact.

Although access and work pad placement within wetlands is necessary due to the required engineered span widths between structures, impacts were minimized by avoiding wetlands to the greatest extent possible while continuing to provide safe and adequate work areas for construction and meeting engineering constraints.

Where possible, wetlands were crossed at the narrowest portion of the wetland, access and work pads were avoided in VPD soils, and access was shifted to the side of the ROW with the least amount of wetland crossing impact. Where access and work pads could not be placed in the least impactful location to wetlands, this was the result of engineering requirements for span width between structures, and lack of height clearance for equipment to cross under the lowest height phase wires. The following avoidance and minimization measures were noted:

- Impacts to Wetlands PW-10, PW-11, PW-14, and PW-15 were avoided by shifting access and work pads out of wetlands.

Rather than propose permanent access and permanent fill in wetlands, Eversource proposes temporary impacts to wetlands within the existing ROW in order to access the utility structures and stage equipment on a work pad around the structures to complete the replacement work and will be restored upon completion of work. Individual structures cannot be accessed without temporary access in wetlands. In addition, two-way access is required in ROW stretches that lack frequent road crossings to ensure worker access to emergency services during construction. To minimize proposed temporary impacts, Eversource has identified potential off-ROW access points and coordinated review by underlying landowners. The only permanent impacts are the new utility poles which are similar in size and scope to the existing poles which will be removed, resulting in a similar existing condition.

Exposed wetland soils following completion of work will be seeded with New England Wetmix Seed Mix from New England Wetland Plants, Inc., or equivalent as necessary and mulched with weed free mulch and/or erosion control blankets. Best Management Practices (BMPs) will be implemented on Site to reduce/limit potential effects. Due to similar footprint of the existing structures, it is not anticipated that the project will have adverse impacts on the functions and values of the freshwater wetlands. Wetlands located on Site will continue to provide principal functions and values including groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, production export, sediment/shoreline stabilization, wildlife habitat, recreation, and uniqueness/heritage.

A table has been included below to summarize wetland impact minimization for each wetland system along the 3171 and 3111 Distribution Lines and T13 Transmission Line.

| Wetland Identification | Classification | Wetland Avoidance/Minimization |
|---|---|---|
| GW-1 | PEM1/PSS1/PFO1E,Fg/R2UB | 22 existing 3171 and 3111 structures are located within wetland. Temporary matting cannot be avoided. |
| PW-1 | PEM1/PSS1E,Fg | 22 existing 3171 and 3111 structures are located within wetland. Temporary matting cannot be avoided. |
| PW-2 | PEM1/PSS1E | No impact |
| PW-3 | PEM1/PSS1E | No impact |
| PW-4 | PEM1/PSS1E | No impact |
| PW-5 | PEM1/PSS1E | No impact |
| PW-6 | PEM1/PSS1E | Access is proposed through the narrowest portion of wetland. Pole replacements for 339 Structures 3 and 4 were engineered out of wetland areas. The 339 Structure 2 proposed location was engineered due to a steep slope. The large work pad areas are required due to pole replacements. |
| PW-7 | PEM1/PSS1E,H | Access is proposed to buffer the potential vernal pool by 25 feet. Pole replacement at 339 Structure 8 was engineered out of the wetland along the parcel boundary and the large work pad area is required due to pole replacement work. |
| PW-8 | PEM1/PSS1E | No impact |

| | | |
|---|---|---|
| PW-9 | PEM1/PSS1Ex | No impact |
| PW-10 | PSS1Ex | No impact |
| PW-11 | PSS1/PEM1Ex | No impact |
| PW-12 | PEM1/PSS1E | Existing T13 Structure 9 is located within the wetland. Access is proposed through the narrowest portion of wetland. |
| PW-13 | PEM1/PSS1E | Work pad area required for pole replacement and wire pulling activities. |
| PW-14 | PSS1/PEM1E | No impact |

Where Eversource has obtained written agreements with underlying property owners, Eversource will utilize off-ROW access routes to access the ROW to further avoid and minimize impacts to wetlands within the ROW. Eversource has identified several off ROW access routes and are actively pursuing agreements with underlying property owners. Utilization of these off ROW access routes is entirely dependent on securing an agreement with the property owner, and will not be utilized if an agreement is not secured. Therefore, the proposed project and this application includes in-ROW access and accounts for wetland impacts should off ROW agreements not be secured.

PROPOSED MITIGATION

As previously mentioned, the project team met with NHDES for a pre-application meeting on December 5, 2023. As discussed with DES and the USACE, the project proposes an in-lieu fee payment for wetland mitigation to compensate for permanent impacts for proposed pole replacements within a Priority Resource Area wetland. The proposed Aquatic Resource Mitigation (ARM) fund mitigation fee was based on the current, December 2023 ARM Calculator is summarized in the table below.

| Town | Impact Type | Permanent Impact (sq. ft.) | Town Land Value | ARM Fee |
|---|---|---|---|---|
| Greenland | Pole Replacement | 100 | $67,802 | $728.09 |
| Portsmouth | Pole Replacement | 275 | $67,802 | $2,002.26 |
| | | | ***Total Fee*** | ***$ 2,730.35*** |

Timber matting will not be in place longer than one growing season. Wetland disturbances will be noted and described on a weekly basis, concurrent with the mat tracking. Observations will be recorded on impacts that may remain after matting is removed, such as lack of vegetation regrowth or conditions that prevent adequate regrowth. Temporarily impacted wetlands will continued to be monitored under the five year Standard Dredge & Fill permit timeframe until such time as adequate revegetation has been established and all other performance standards have been met in accordance with the wetlands rules. The project has been designed to avoid impacts to most wetland functions and values. Matting will be installed to maintain hydrologic connectivity across wetland systems and therefore the principal functions of groundwater recharge and flood storage are not anticipated to be impacted. The nutrient and sediment trapping capabilities of a wetland may be slightly reduced while matting and construction activities are occurring in individual wetlands, but it is not expected that these functions would be reduced following completion of construction. Matting to create roads and safe work areas may temporarily decrease the area of a wetland available to wetland dependent wildlife, but since the majority of the ROW will be maintained as early successional habitat, and vernal pool and in-stream impacts are avoided and minimized, there is not expected to be a significant loss of habitat once the project is complete. Vegetation disturbances from matting may temporarily reduce fruiting and flowering plants available to wildlife and insects during construction, but it is expected to be a relatively small area within the

surrounding landscape, which is mostly undeveloped and contains abundant vegetation that will remain undisturbed. Once construction is complete, the ROW will continue to be maintained as scrub-shrub early successional habitat, with no permanent loss of wetland functions and values proposed or anticipated outside of the limited footprint of pole locations. Environmental monitors will take representative photographs of temporary matting and other disturbances throughout all phases of construction. If disturbances are observed, monitors will attempt to quantify those impacts with a GPS receiver or by visually estimating the disturbance as a percentage of the overall wetland within the ROW.

This monitoring process will be performed by, or under the supervision of, a New Hampshire Certified Wetland Scientist (CWS). Subsequent NHDES reporting, the final report, and proposal of any additional compensatory mitigation will also be prepared/reviewed by a CWS.

ALTERNATIVES REVIEW

The existing distribution lines are located within established utility corridors that have been used for decades. A large portion of the 3171/3111 ROW is located in close proximity and parallel to Interstate- 95 and an existing active railroad. Due to the existing location of the 3171/3111 ROW and characteristics of the surrounding area such as large expansive wetlands (i.e. GW-1) there are no alternative right of way solutions which would result in less impact to maintain the existing infrastructure. Conversely the T13 ROW is located within and surrounded by an industrial area, however the ROW is constrained by multiple electric power generation plants such that no alternative site would result in less impact. The proposed project was designed to minimize direct impacts to wetlands and surface water resources to the greatest extent possible, while maximizing safety during construction. Rather than propose permanent access and permanent fill in wetlands, Eversource proposes temporary impacts to wetlands within the existing ROW in order to access the utility structures and stage equipment on a work pad around the structures to complete the replacement work and will be restored upon completion of work. Individual structures cannot be accessed without temporary access in wetlands. In addition, two-way access is required in ROW stretches that lack frequent road crossings to ensure worker access to emergency services during construction. To minimize proposed temporary impacts, Eversource has identified potential off-ROW access points and coordinated review by underlying landowners. The only permanent impacts are the new utility poles which are similar in size and scope to the existing poles which will be removed, resulting in a similar existing condition.

**FEDERAL REGULATORY REQUIREMENTS**

US ARMY CORPS OF ENGINEERS

The USACE issued a State Programmatic General Permit (SPGP) that allows NHDES to review wetland permit applications and grant wetland impact permits under the Clean Water Act. However, the USACE maintains a supervisory role over State wetland permits. In the case of Major and Minor impact projects, the NHDES wetlands permit is not valid until an USACE permit has also been issued to allow for the USACE to review the project and address any concerns. The applicant may receive a request from the USACE for additional information, modifications to the project as proposed, compensatory mitigation, or an Individual Permit for the project during the course of their review. If an Individual Permit is requested, the USACE has declared that the project is ineligible for a permit under the SPGP. In order to facilitate the USACE review process, GZA has included the USACE checklist and the required 11”x17” plan sheets per the USACE requirement. See **Appendix J – USACE Checklist and 11”x17” Plans**.

The USACE Checklist has been designed to provide a brief overview of items that could be of potential concern to the USACE for any size project. The completion of the USACE Checklist for this project highlighted that the project results in primarily temporary wetland impacts. The proposed project is not anticipated to negatively impact the nearby Pickering Brook. Flood storage is not expected to be significantly impacted by the proposed replacement of the existing

utility structures (see **Figure 6 – FEMA Floodplain Maps**). 15 structures are proposed to be installed in Wetland GW-1 directly adjacent to Pickering Brook. However, to minimize impacts the proposed structures are single pole structures rather than two pole structures requiring only 25 sq. ft. of permanent impact. Additionally, 22 structures are proposed to be removed in Wetland GW-1 resulting in a net removal of 7 structures in Wetland GW-1. The proposed project requires approximately 131,567 sq. ft. of temporary wetland impact in floodplain Wetland GW-1 along Pickering Brook for placement of temporary timber matting for access and work pad placement which will be removed upon completion of construction. Therefore, it is not anticipated flood storage will be significantly impacted by the proposed project.

US FISH AND WILDLIFE SERVICE

According to the IPaC report, there are three endangered species known within the location of the project. These species consist of, Roseate Tern (*Sterna dougalli dougalli),* Northern Long-eared Bat (*Mytosis septentrionalis),* and Monarch Butterfly (*Danaus plexippus).* In addition to this, there are Bald Eagles (*Haliaeetus leucocephalus)* known to be within the project area and are protected under the Bald and Golden Eagle Protection Act as well as the Migratory Bird Treaty Act. There are multiple birds of particular concern within the project area consisting of, American Oystercatcher (*Haematopus palliates),* Black Skimmer (*Rynchops niger),* Black-billed Cuckoo (*Coccyzus erythropthalmus)*, Blue-winged Warbler (*Vermivora pinus),* Bobolink (*Dolichonyx oryzivorus)*, Canada Warbler (*Cardellina canadensis)*, Chimney Swift (*Chaetura pelagica),* Gill-billed Tern (*Gelochelidon nilotica),* Hudsonian Godwit (*Limosa haemastica),* Lesser yellowlegs (*Tringa flavipes),* Pectoral Sandpiper (*Calidris melanotos),* Prairie Warbler (*Dendroica discolor),* Prothonotary Warbler (*Protonotaria citrea),* Purple Sandpiper (*Calidris maritima),* Red-headed Woodpecker (*Melanerpes erythrocephalus),* Ruddy Turnstone (*Arenaria interpres morinella),* Rusty Blackbird (*Euphagus carolinus),* Saltmarsh sparrow (*Ammodramus caudacutus),* Short-billed Dowitcher (*Limnodrom griseus),* Willet (*Tringa semipalmata),* and Wood Thrush (*Hylocichla mustelina).* There are no critical habitats, refuge lands, or fish hatcheries located within the location of the proposed project.

| Bird Species | Scientific Name | Habitat | Note |
|---|---|---|---|
| American Oystercatcher | *Haematopus palliates* | Saltmarshes and coastal barrier beaches | N/A – habitat not present within the ROW |
| Bald Eagle | *Haliaeetus leucocephalus* | Forested areas adjacent to large bodies of water | Not known based on NHB#23-331 and NHB23-332 |
| Black skimmer | *Rynchops niger* | Saltmarshes and coastal sandy beaches | N/A – habitat not present within the ROW |
| Black-billed Cuckoo | *Coccyzus erthropthalmus* | Dense wooded habitats, and often found in mesic environments that have strong association with water | Breeding season between May- mid October |
| Blue-winged warbler | *Vermivore pinus* | Along forest-shrub edges and dense thickets | Breeding season between May - mid June |
| Bobolink | *Dolichonyx oryzivorus* | Hayfields, meadows | N/A – habitat not present within the ROW |
| Canada Warbler | *Cardellina canadensis* | Forest undergrowth, shady thickets | Breeding season between mid May-mid August |
| Chimney Swift | *Chaetura pelagica* | Open sky, especially over cities and towns | Breeding season through March-August |
| Gull-billed tern | *Gelochelidon nilotica* | Saltmarshes and coastal beaches | N/A – habitat not present within the ROW |
| Hudsonian Godwit | *Limosa haemastica*) | Large open wetlands such as flooded fields, lakes, estuaries, and salt marshes considered important features during migration | N/A – habitat not present within the ROW |
| Lesser yellowlegs | *Tringa flavipes*) | Flooded fields, marshes, edges of lakes, and brackish mudflats | N/A – habitat not present within the ROW |

| Bird Species | Scientific Name | Habitat | Note |
|---|---|---|---|
| Pectoral sandpiper | *Calidris melanotos* | Flooded fields, fresh and saltwater marsh | N/A – habitat not present within the ROW |
| Prairie warbler | *Dendroica discolor* | Shrubland habitat such as early-mid successional forests, scrub-oak stands, and forest edges | Breeding season between April - August |
| Prothonotary warbler | *Protonotaria citrea* | Forested wetlands and woodlands adjacent to lakes, ponds, and streams | Breeding season between March - July |
| Purple sandpiper | *Calidris maritima* | Rocky coastline and islands considered important features during migration. | N/A – habitat not present within the ROW |
| Red-headed woodpecker | *Melanerpes erythrocephalus* | Deciduous woodland habitats, roadsides, forest edges, and grasslands | Breeding season between April - July |
| Roseate tern | *Sterna dougalli dougalli* | Salt marshes, remote sandy and rocky islands | N/A – habitat not present within the ROW |
| Ruddy turnstone | *Arenaria interpres morinella* | Rocky coastline and islands considered important features during migration. | N/A – habitat not present within the ROW |
| Rusty blackbird | *Euphagus carolinus* | Northern coniferous forests adjacent to waterbodies such as bogs. During migration, the Rusty blackbird travels through forested wetlands and rivers with shallow water | Breeding season between April - May |
| Saltmarsh sparrow | *Ammodramus caudacutus* | Coastal salt marshes with vegetative cover like sedges and grasses | N/A – habitat not present within the ROW |
| Short-billed dowitcher | *Limnodrom griseus* | Flooded fields, shorelines, and muddy bays and rivers considered important features during migration. | N/A – habitat not present within the ROW |
| Willet | *Tringa semipalmata* | Rocky coastlines, bay shorelines, and sandy beaches | N/A – habitat not present within the ROW |
| Wood Thrush | *Hylocichla mustelina* | Mainly deciduous woodlands | N/A – habitat not present within the ROW |

## STATE REGULATORY REQUIREMENTS

The proposed project requires approval to temporarily impact wetlands using timber matting for the proposed work pads and associated access and permanently impact wetlands for utility pole installation (see **Appendix K – Utility Projects Worksheet**). Per Env-Wt 521.06 (a), the proposed project does not qualify for a minimum impact Statutory Permit by Notification due to impacts to a floodplain wetland adjacent to a tier 3 watercourse and prime wetland. This report describes the proposed project and addresses the regulatory requirements of the State to complete the proposed project. The project proposes to maintain safety and integrity of the distribution line and its infrastructure by minimizing impacts to the extent practicable, and is therefore consistent with the purposes of RSA 482-A. As such, Eversource requests that a permit be issued for the proposed project in order to maintain the safety and reliability of the associated distribution lines and there is not a less-impacting alternative.

ATTACHMENT A WORKSHEET – MINOR AND MAJOR PROJECTS

1. **Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.** The proposed project is located within an existing and maintained utility ROW, and will not expand the footprint of the existing ROW. This project is necessary to allow Eversource to continue to safely and efficiently provide electricity to the public and for maintenance of existing utility lines. The proposed project impacts are minimized by utilizing existing access routes and trails to the extent practicable and proposed use of temporary timber matting for access and work pads within wetlands. In addition and as previously mentioned, the internal project team reviewed each wetland crossing and work pad location to review where impacts to wetlands could be further avoided and minimized. Where possible, Eversource has sought off-ROW agreements to minimize impacts, and is crossing in narrow portions of wetlands where feasible based on grades and line clearances. Due to the location of the existing right-of-way and location of the proposed structures, there is no alternative that would have less adverse impact on the area and environment. The project avoids impacts in new locations by remaining in the footprint of the ROW or pre-existing line alignments to the greatest extent possible, and by avoiding permanent wetland crossings with permanent fill and culverts.

2. **Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.** The proposed project does not require any temporary wetland impact to tidal wetland systems for work pad placement or associated access. The majority of the impacts are temporary, with approximately 825 square feet of permanent freshwater impact to erect replacement structures. Based on significant previous experience working in this freshwater system, it is not anticipated that temporary wetland impacts due to timber matting will have long term impacts to the wetlands or the wetland systems ability to provide sources of nutrients to wildlife of significant value.

3. **Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.** The majority of impacts to wetlands are temporary using timber matting for work pads and associated access. Streams in Wetlands GW-1 will be bridged utilizing temporary timber matting to provide for hydrologic connectivity during construction. When necessary, matting crossings are enlarged concurrent with large storm events. Hydrologic connectivity is monitored during construction by both environmental monitors and Eversource construction representatives as part of erosion control monitoring and safety oversight.

4. **Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.** The proposed project avoids impacts to vernal pools and protected species habitat. One potential vernal pool was identified as part of data collection and avoided as part of constructability reviews.

   The Natural Heritage Bureau (NHB) data check tool has identified four protected plant species, American reed (*Phragmites americanus*), great bur-reed (*Sparganium eurycarpum*), hairy-fruited sedge (*Carex* trichocarpa) and tufted yellow-loosestrife (*Lysimachia thyrsiflora*) in the vicinity of the Resistance Substation Retirement project work areas (see **Appendix D** for the NHB Report). Additionally, the NHB data check tool has identified one protected vertebrate species, a Blanding's turtle (*Emydoidea blandingii*) in the vicinity of the Resistance Substation Retirement project work areas (see **Appendix D** for the NHB Report). A coordination memo was sent to both NHFG and NHB on January 2, 2024 and the team will continue coordination with each agency for recommendations to minimize impact.

5. **Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.** The proposed project is located within an existing and maintained utility line corridor

and not within public roadways except for entering and exiting the ROW. Therefore, it is not anticipated the proposed project will have significant impact to public commerce, navigation or recreation.

6. **Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.** The majority of impact within floodplain wetlands is temporary due to placement of temporary timber matting within wetlands during construction. Along Pickering Brook, given the distance between existing structures and the brook, impacts have been minimized to the greatest extent possible to allow for a safe work environment during construction, and temporary timber matting will be removed upon completion of construction. Therefore it is not anticipated the project will have long term impacts to flood storage.

7. **Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.** As previously mentioned, majority of wetland impacts for the proposed structure replacement are temporary for work pad placement and associated access. Majority of temporary wetland impacts are associated with scrub-shrub that are routinely mowed and an emergent wetland system where the existing distribution lines are located. Within GW-1 Eversource will work within the existing alignment of the 3171/3111 ROW. The least impacting alternative is to utilize the existing ROW and to utilize existing off right-of-way access as authorized by underlying property owners. Where possible, Eversource has scoped access through wetlands at the narrowest crossing or have avoided wetlands by scoping access around them to the greatest extent. For example, Eversource shifted the poles for new 339 Distribution Line Structure 9 northerly out of Wetlands PW-10 and PW-11, 339 Structure 8 easterly out of Wetland PW-7 and 339 Structures 3 and 4 northerly out of Wetland PW-6.

8. **Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.** The majority of impacts resulting from the proposed project are temporary for access and work pad placement. The footprint of the proposed pole replacement is minimal and is not anticipated to be detriment to adjacent drinking water supply and groundwater aquifer levels. In addition, the Site is not located within mapped GA1 or GAA groundwater resources or within a source water protection area or wellhead protection area. The project does not propose disturbance to a river and therefore there is no proposed detrimental impact to drinking water supply or groundwater aquifer levels.

9. **Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.** As previously mentioned, timber matting will be used in wetlands crossings to minimize direct wetland impacts. It is not anticipated that stream flows will be restricted as timber mats will be utilized to span streams and therefore ability of stream channels to handle runoff from waters should not be impacted.

10. **Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.** Impacts have been minimized to the greatest extent through careful design and use of construction equipment with the least ground disturbance. Timber matting is utilized to minimize and prevent rutting and compaction in wetlands. Prior to the start of work, erosion and sediment controls will be installed to limit and prevent erosion and sedimentation from construction into the wetlands. In addition, exposed soils at the project Site will be stabilized using a seed mix as part of restoration.

11. **Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.** The proposed project does not involve impacts to shoreline frontage that would impact docking.

12. **Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.** The proposed project is within an existing and maintained transmission line ROW. Eversource holds easements across private properties to maintain the electrical infrastructure. Existing utility poles will be replaced in the same alignment and the ROW corridor will continue to be maintained as an existing, portions of which are routinely mowed ROW. Eversource is not proposing to expand the width of the ROW and no new lines

are proposed to be installed. It is not anticipated that the project will impact abutting property owners' ability to use and enjoy their properties.

13. **Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.** The project does not propose direct impact to surface waters which would impact navigation, passage, commerce, and recreation. Therefore, the project does not propose impacts to the public's right to navigation, passage, commerce, and recreation.

14. **Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.** The proposed project has been designed to minimize direct impacts to wetlands and surface waters to the greatest extent. Temporary wetland impacts have been minimized to the extent necessary to safely replace existing structures. Existing access within the ROW has been utilized to the greatest extent, and timber matting will be utilized within wetlands to minimize and prevent rutting and compaction to wetlands and wetland vegetation.

    The proposed project will utilize NHDES Best Management Practices (BMPs) manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (March 2019) and the New Hampshire Stormwater Manual as required as part of the NHDES Alteration of Terrain permit for the project. In addition, the project will prepare a Stormwater Pollution Prevention Plan as part of the EPA Construction General Permit. Eversource will retain an environmental monitor to complete erosion control inspections and advise the team on practices to maintain compliance with water quality.

    Due to outage planning requirements, Eversource cannot avoid construction in the summer months, outside of the typical songbird breeding season. While Eversource recognizes that the Utility BMP manual request seasonal avoidance when possible, seasonal avoidance is not possible for this project due to the number of structures that must be replaced and the requirement by both DES and the USACE to avoid matting installation for more than one growing season. As an alternative, environmental monitors will complete sweeps for wildlife in access routes during erosion control inspections and advise the team on wildlife observations. Where possible, wildlife are avoided or safely re-located just outside of access routes (e.g. amphibians and reptiles) to limit and prevent mortality. Areas adjacent to access routes and work pads are anticipated to continue to provide habitats to a variety of species mammals and birds. During construction, the majority of the ROW continues to provide early successional foraging and nesting habitat to shrubland birds and provide browse to ungulates. Long-term management in the ROW is required to maintain early successional habitats and this is accomplished by Eversource as part of separate vegetation maintenance. In addition, after construction, wetland impacts are restored and upland work pads are reduced to approximate 30 x 60 foot pads as part of upland restoration. Therefore, the project is not anticipated to have long-term impacts on species associated with wetlands given the ROW is managed as a utility corridor.

    In addition, there are no proposed pole replacements within streams and therefore no proposed long-term impacts to finfish habitat.

15. **Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.** The proposed structure to be replaced is located within an existing and maintained utility ROW and does not propose removal of trees within shoreland jurisdiction. Timber matting will be utilized within wetlands to provide a stable and safe surface for construction equipment to replace the existing utility pole while buffering wetland vegetation from direct impact. The project does not propose impacts to existing banks or shorelines. Timber matting will be utilized to bridge mat over temporary stream crossings, spanning over the banks.

## LOCAL REGULATORY REQUIREMENTS

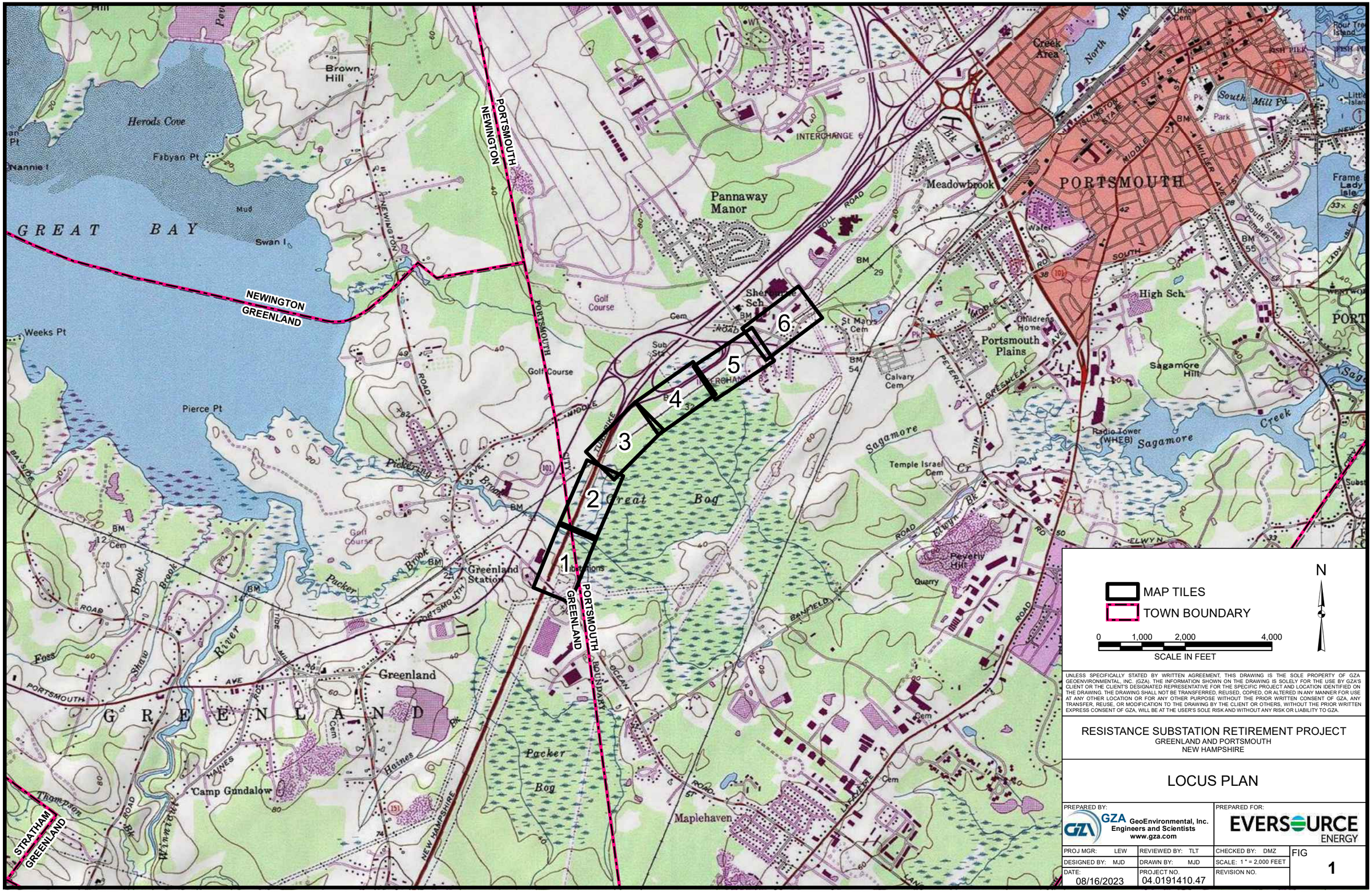
TOWN OF GREENLAND

Eversource and GZA will meet with the Town of Greenland Conservation Commission on January 10, 2024. A conditional use permit application was submitted to the Town with a Planning Board meeting scheduled on February 15, 2024.

CITY OF PORTSMOUTH

Eversource and GZA will meet with the City of Portsmouth Conservation Commission on February 14, 2024. A conditional use permit application was submitted to the City with a Planning Board meeting scheduled on March 21, 2024.

**FIGURE 1 – SITE LOCUS MAP**




MAP TILES

TOWN BOUNDARY

N

0 1,000 2,000 4,000

SCALE IN FEET

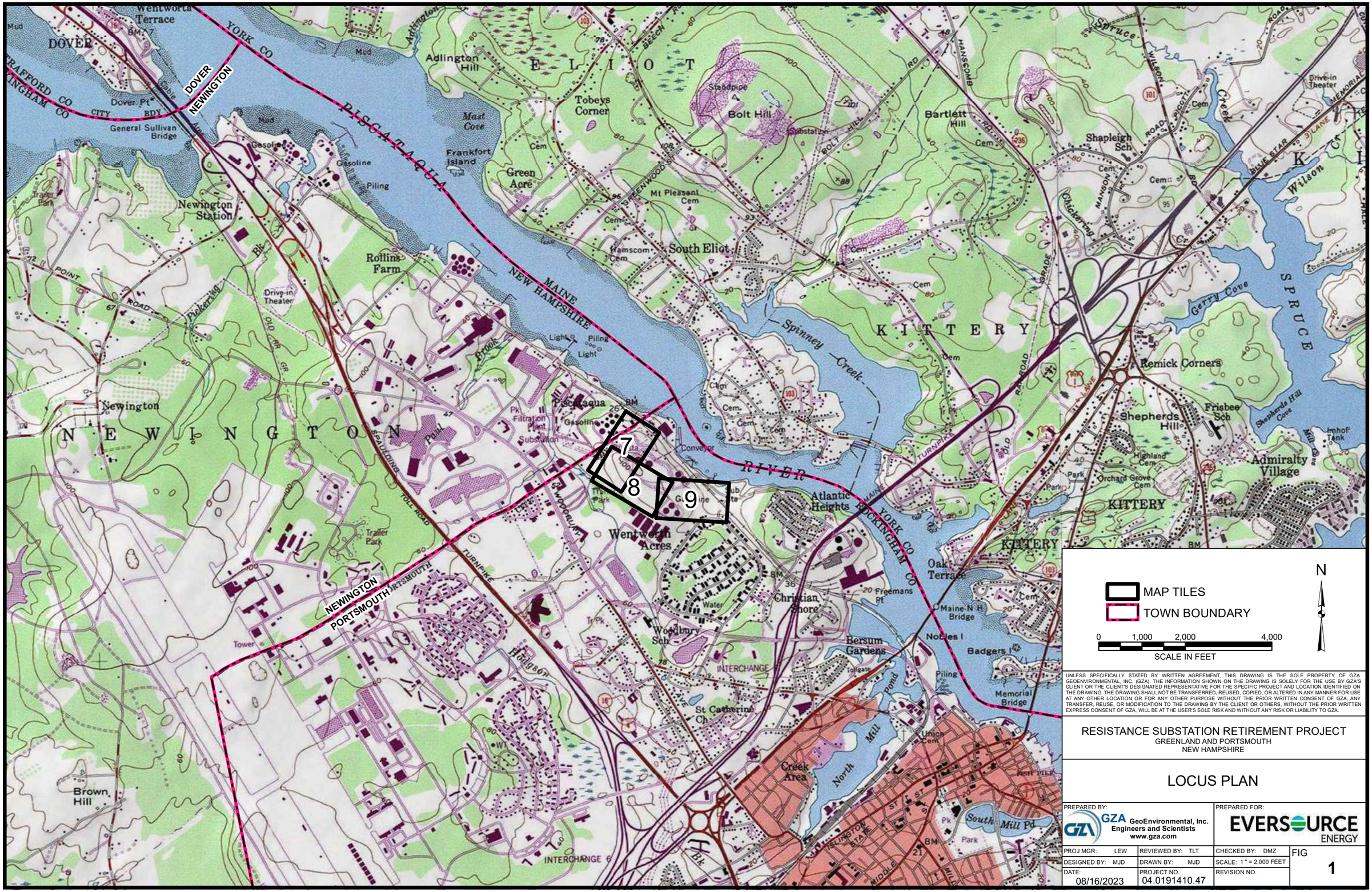


# RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

## LOCUS PLAN

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: EVERSOURCE ENERGY | |
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | FIG 1 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: 1 " = 2,000 FEET | |
| DATE: 08/16/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |




MAP TILES

TOWN BOUNDARY

N

0 1,000 2,000 4,000

SCALE IN FEET



# RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

## LOCUS PLAN

| PREPARED BY: | | PREPARED FOR: | |
|---|---|---|---|
| GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | EVERSOURCE ENERGY | |
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| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: 1 " = 2,000 FEET | |
| DATE: 08/16/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

**FIGURE 2 – AERIAL OVERVIEW PLAN**


MAP TILES
TOWN BOUNDARY

N

0 1,000 2,000 4,000
SCALE IN FEET



# RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

## AERIAL PLAN

| PREPARED BY: | | PREPARED FOR: | |
|---|---|---|---|
| GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | EVERSOURCE ENERGY | |
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | FIG 1 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: 1 " = 2,000 FEET | |
| DATE: 11/13/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

DOVER
NEWINGTON
NEWINGTON
PORTSMOUTH
7
8
9

MAP TILES
TOWN BOUNDARY

N

0 1,000 2,000 4,000
SCALE IN FEET



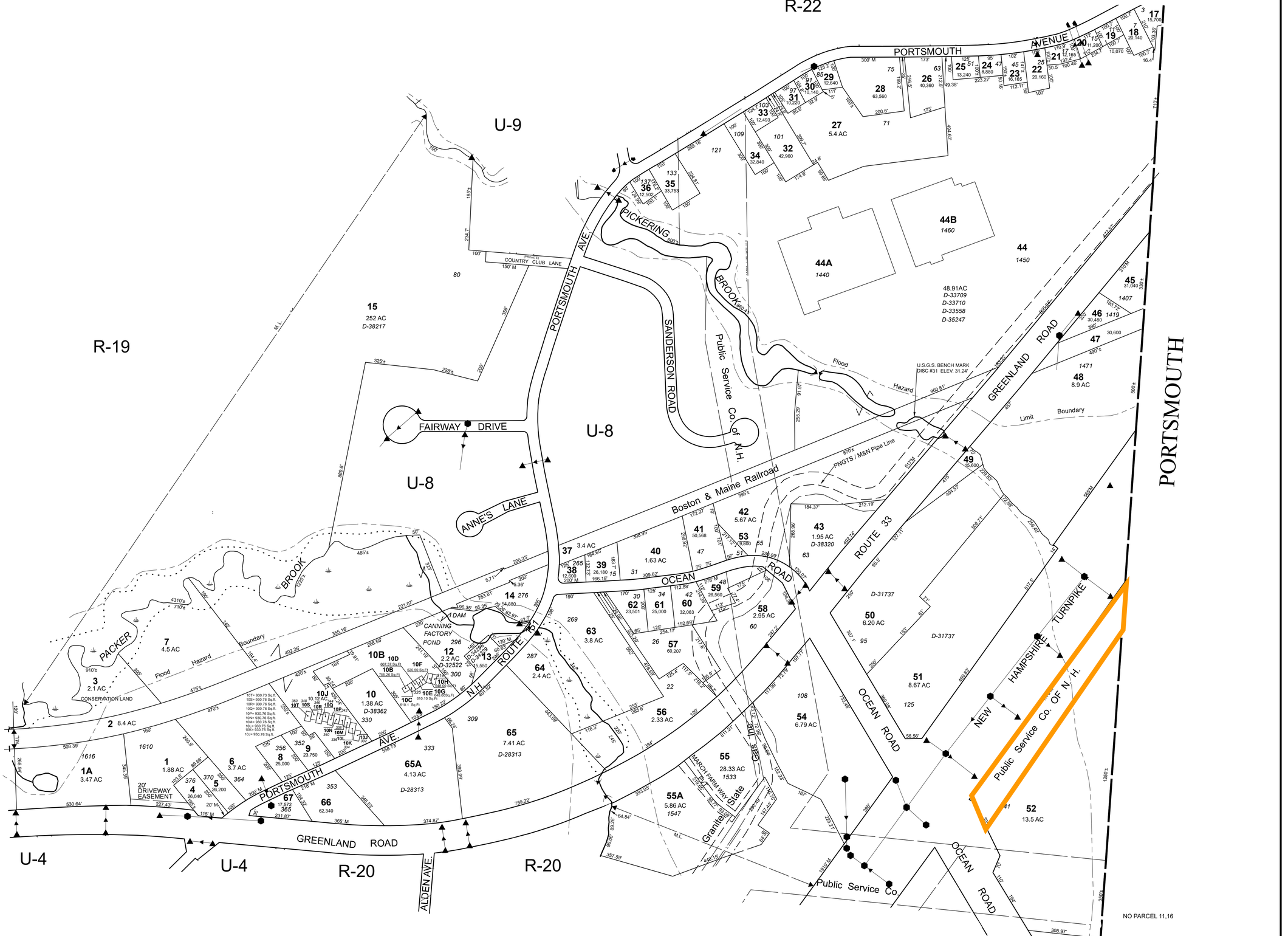
# RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

## AERIAL PLAN

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: EVERSOURCE ENERGY | |
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | FIG 1 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: 1 " = 2,000 FEET | |
| DATE: 11/13/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

**FIGURE 3 – TAX MAPS**




THIS MAP IS FOR ASSESSMENT PURPOSES. IT IS NOT VALID FOR LEGAL DESCRIPTION OR CONVEYANCE.

THE HORIZONTAL DATUM IS THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM, NAD 83.

PREPARED IN 1976 BY PHOTOGRAMMETRIC METHODS BY JOHN E. O'DONNELL & ASSOCIATES, AUBURN, MAINE

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**LEGEND**

ADJACENT SHEET NO- 12
COMMON OWNERSHIP OR
DEVELOPMENT LOT NO. (2)
SCALED DIMENSION ±

CATCH BASIN
DRAIN PIPE
STREET NO. 1

SCALE: 1" = 200'
FEET 200 100 0 200 400 600
METERS 50 25 0 50 100 150

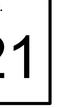
REVISED TO: APRIL 1, 2018

PROPERTY MAPS

# GREENLAND

NEW HAMPSHIRE

INDEX DIAGRAM



MAP NO.

# R-21

I-95 NORTH

SIMS AVE

1
1.500 ac

2
CURRENT USE: 13.850 ac
NOT IN CURRENT USE: 0.890 ac
TOTAL: 14.740 ac

282-6-22

282-6-19

282-6-18

282-6-17

282-6-16

282-6-14

282-5

280'
620'
673.07'
965.07'
422.14'
178.01'
236'
301.11'
165'
174'
396'
297'
681.51'
681.51'
316.27'
102.65'
265.75'
172.89'
68.26'
98.99'
315.46'
461.73'
884.75'
440.74'
76.54'
220.77'

## Partial Legend

*See the cover sheet for the complete legend.*

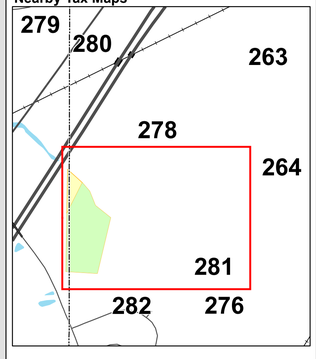
| | |
|---|---|
| 7-5A | Lot or lot-unit number |
| 2.56 ac | Parcel area in acres (ac) or square feet (sf) |
| 25 | Address number |
| 233-137 | Parcel number from a neighboring map |
| 68' | Parcel line dimension |
| SIMS AVE | Street name |
| | Parcel/Parcel boundary |
| | Parcel/ROW boundary |
| | Water boundary |
| | Structure (1994 data) |
| | Parcel covered by this map |
| | Parcel from a neighboring map (see other map for current status) |

0 50 100 200 300 Feet

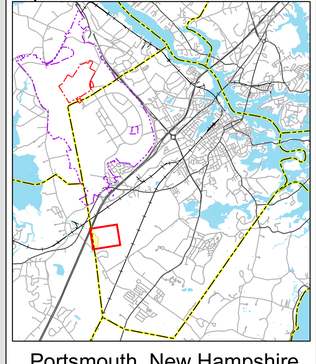
0 20 40 80 Meters

*This map is for assessment purposes only. It is not intended for legal description or conveyance.*
*Parcels are mapped as of April 1.*
*Building footprints are 2006 data and may not represent current structures.*
*Streets appearing on this map may be paper (unbuilt) streets.*
*Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.*

**Nearby Tax Maps**




**Map Location**



Portsmouth, New Hampshire
2022

# Tax Map 281

## Partial Legend

*See the cover sheet for the complete legend.*

| | |
|---|---|
| **7-5A** | Lot or lot-unit number |
| *2.56 ac* | Parcel area in acres (ac) or square feet (sf) |
| 25 | Address number |
| 233-137 | Parcel number from a neighboring map |
| 68' | Parcel line dimension |
| SIMS AVE | Street name |
| | Parcel/Parcel boundary |
| | Parcel/ROW boundary |
| | Water boundary |
| | Structure (1994 data) |
| | Parcel covered by this map |
| | Parcel from a neighboring map (see other map for current status) |

0 50 100 200 300 Feet

0 20 40 80 Meters

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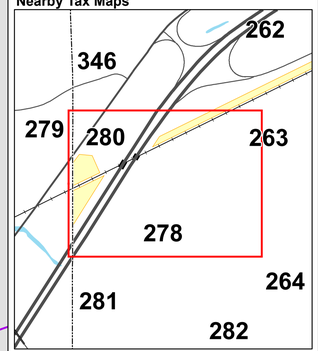
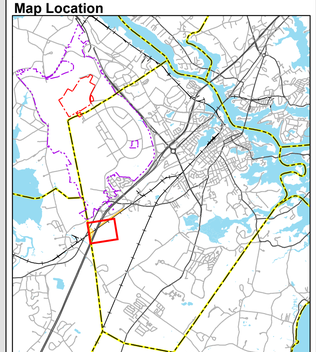
**Nearby Tax Maps**




**Map Location**



Portsmouth, New Hampshire
2022

# Tax Map 280

## Partial Legend

*See the cover sheet for the complete legend.*

| | |
|---|---|
| **7-5A** | Lot or lot-unit number |
| *2.56 ac* | Parcel area in acres (ac) or square feet (sf) |
| 25 | Address number |
| 233-137 | Parcel number from a neighboring map |
| 68' | Parcel line dimension |
| SIMS AVE | Street name |
| | Parcel/Parcel boundary |
| | Parcel/ROW boundary |
| | Water boundary |
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0 50 100 200 300 Feet

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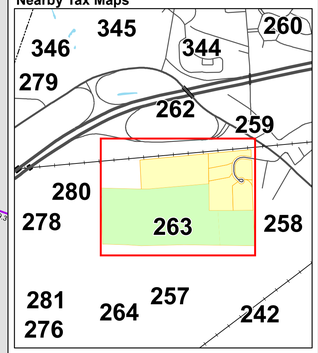
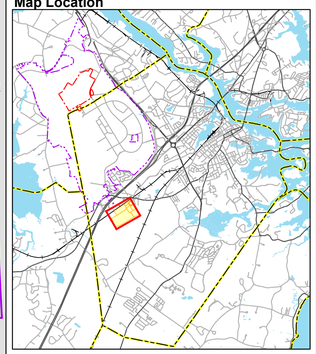
*Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.*

### Nearby Tax Maps




### Map Location



Portsmouth, New Hampshire
2022

# Tax Map 263

## Partial Legend

*See the cover sheet for the complete legend.*

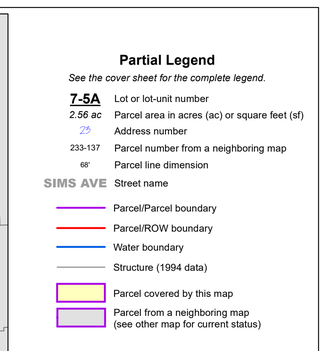
| | |
|---|---|
| 7-5A | Lot or lot-unit number |
| 2.56 ac | Parcel area in acres (ac) or square feet (sf) |
| 25 | Address number |
| 233-137 | Parcel number from a neighboring map |
| 68' | Parcel line dimension |
| SIMS AVE | Street name |
| | Parcel/Parcel boundary |
| | Parcel/ROW boundary |
| | Water boundary |
| | Structure (1994 data) |
| | Parcel covered by this map |
| | Parcel from a neighboring map (see other map for current status) |

0 50 100 200 300 Feet

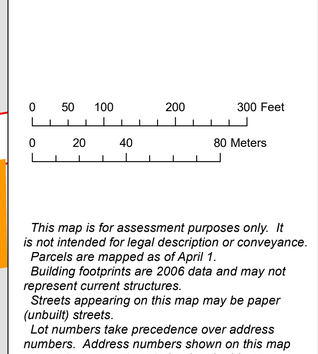
0 20 40 80 Meters

*This map is for assessment purposes only. It is not intended for legal description or conveyance.*
*Parcels are mapped as of April 1.*
*Building footprints are 2006 data and may not represent current structures.*
*Streets appearing on this map may be paper (unbuilt) streets.*
*Lot numbers take precedence over address numbers. Address numbers shown on this map may not represent posted or legal addresses.*

**Nearby Tax Maps**




**Map Location**



Portsmouth, New Hampshire
2022

# Tax Map 259

## Partial Legend

*See the cover sheet for the complete legend.*

- **7-5A** Lot or lot-unit number
- *2.56 ac* Parcel area in acres (ac) or square feet (sf)
- *25* Address number
- 233-137 Parcel number from a neighboring map
- 68' Parcel line dimension
- SIMS AVE Street name
- Parcel/Parcel boundary
- Parcel/ROW boundary
- Water boundary
- Structure (1994 data)
- Parcel covered by this map
- Parcel from a neighboring map (see other map for current status)

0 50 100 200 300 Feet

0 20 40 80 Meters

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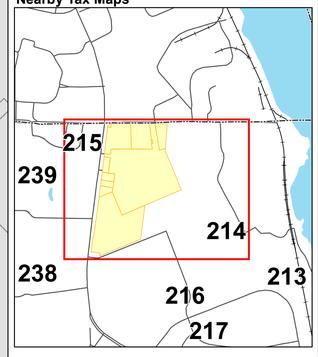
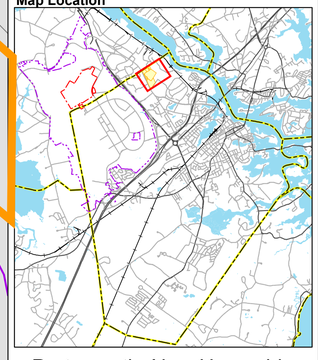
**Nearby Tax Maps**




**Map Location**



Portsmouth, New Hampshire
2022

# Tax Map 215

## Partial Legend

*See the cover sheet for the complete legend.*

| | |
|---|---|
| 7-5A | Lot or lot-unit number |
| 2.56 ac | Parcel area in acres (ac) or square feet (sf) |
| 25 | Address number |
| 233-137 | Parcel number from a neighboring map |
| 68' | Parcel line dimension |
| SIMS AVE | Street name |
| | Parcel/Parcel boundary |
| | Parcel/ROW boundary |
| | Water boundary |
| | Structure (1994 data) |
| | Parcel covered by this map |
| | Parcel from a neighboring map (see other map for current status) |

0 50 100 200 300 Feet

0 20 40 80 Meters

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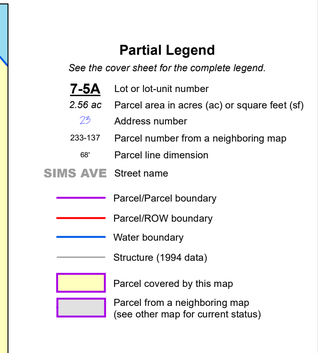
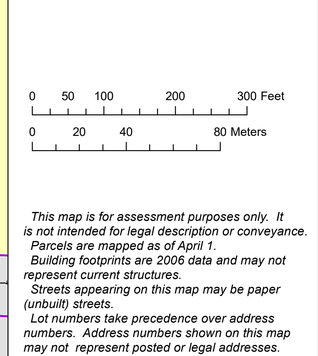
**Nearby Tax Maps**




**Map Location**

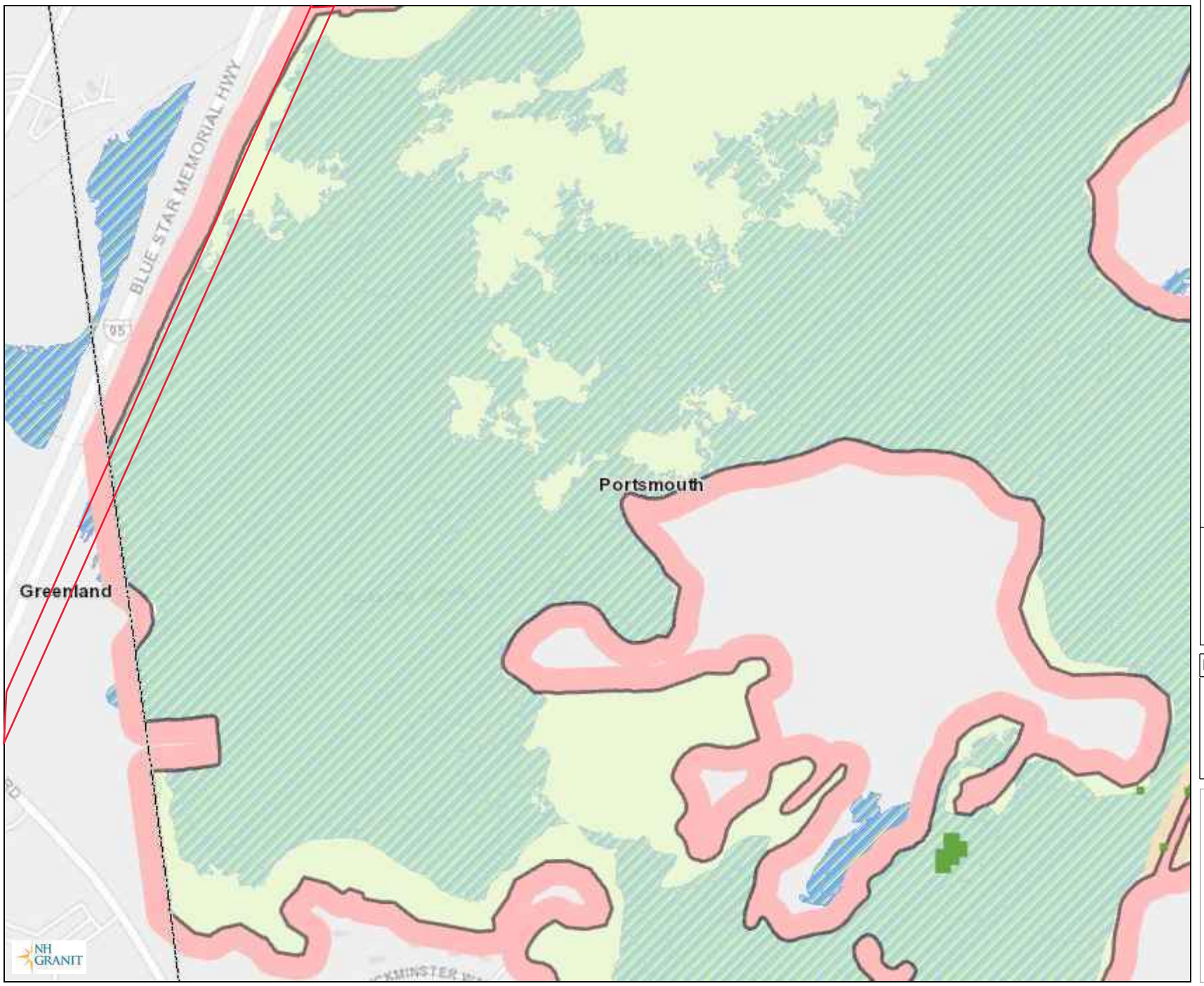


Portsmouth, New Hampshire
2022

# Tax Map 214

**FIGURE 4 – WETLAND PERMIT PLANNING TOOL SCREENING**

# P1




## Legend

- Dock Registrations
- Active Permits
  - AGRICULT
  - EMERGENCY
  - EXPEDITED
  - PBN
  - ROADWAYREG
  - SHORE-PBN
  - SHORELAND
  - SPN
  - STD APP
  - TRAILS
  - UTILITY
  - WET-PBN
- Additional Lines
- City/Town
- Designated Rivers with a
  - Ammonoosuc
  - Ashuelot
  - Cocheco
  - Cold

Map Scale

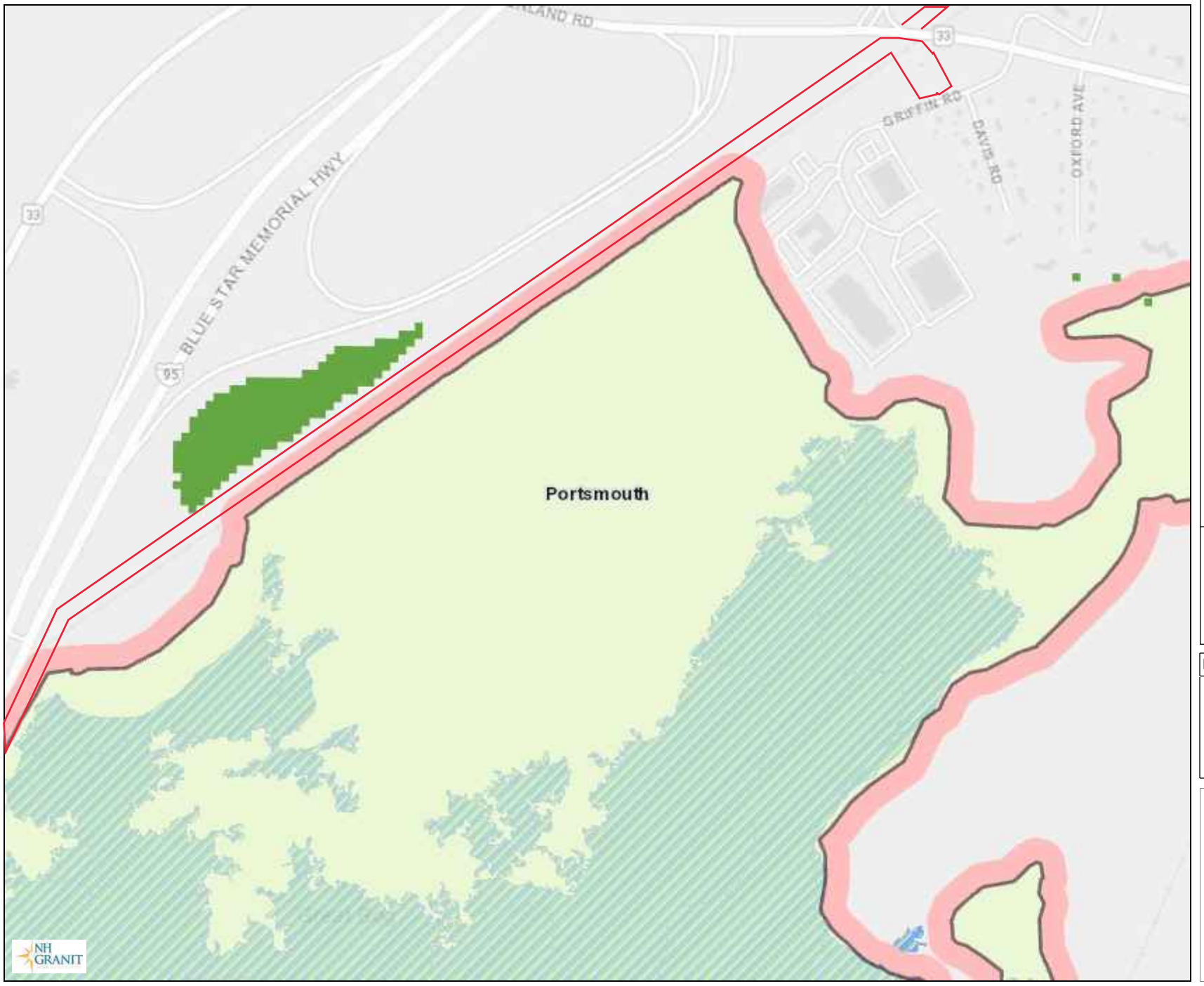
1: 6,494



Map Generated: 11/29/2023

Notes

# P2




## Legend

- Dock Registrations
- Active Permits
  - AGRICULT
  - EMERGENCY
  - EXPEDITED
  - PBN
  - ROADWAYREG
  - SHORE-PBN
  - SHORELAND
  - SPN
  - STD APP
  - TRAILS
  - UTILITY
  - WET-PBN
- Additional Lines
- City/Town
- Designated Rivers with a
  - Ammonoosuc
  - Ashuelot
  - Cocheco
  - Cold

Map Scale

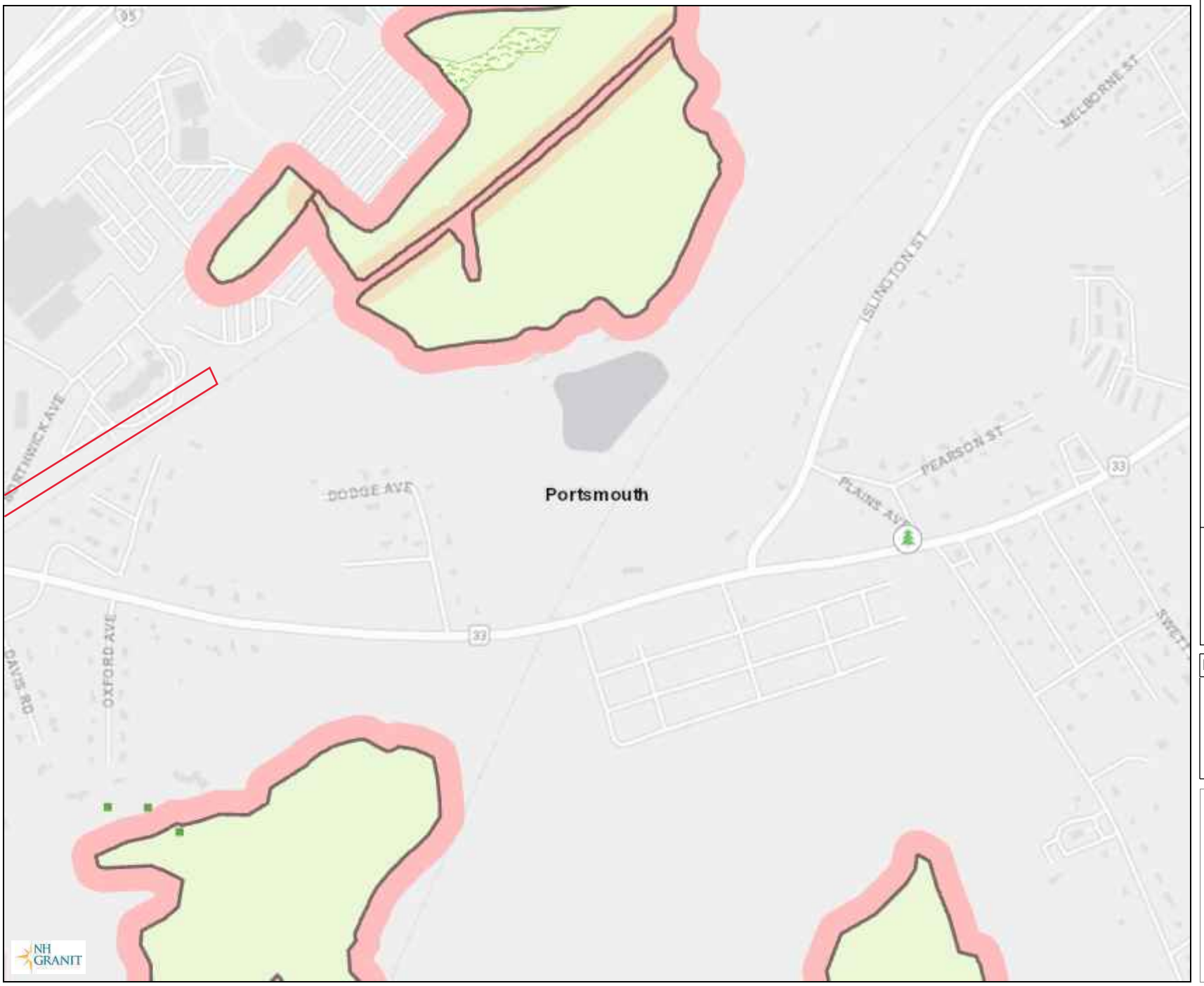
1: 6,494



Map Generated: 11/29/2023

Notes

# P3




## Legend

- Dock Registrations
- Active Permits
  - AGRICULT
  - EMERGENCY
  - EXPEDITED
  - PBN
  - ROADWAYREG
  - SHORE-PBN
  - SHORELAND
  - SPN
  - STD APP
  - TRAILS
  - UTILITY
  - WET-PBN
- Additional Lines
- City/Town
- Designated Rivers with a
  - Ammonoosuc
  - Ashuelot
  - Cocheco
  - Cold

Map Scale

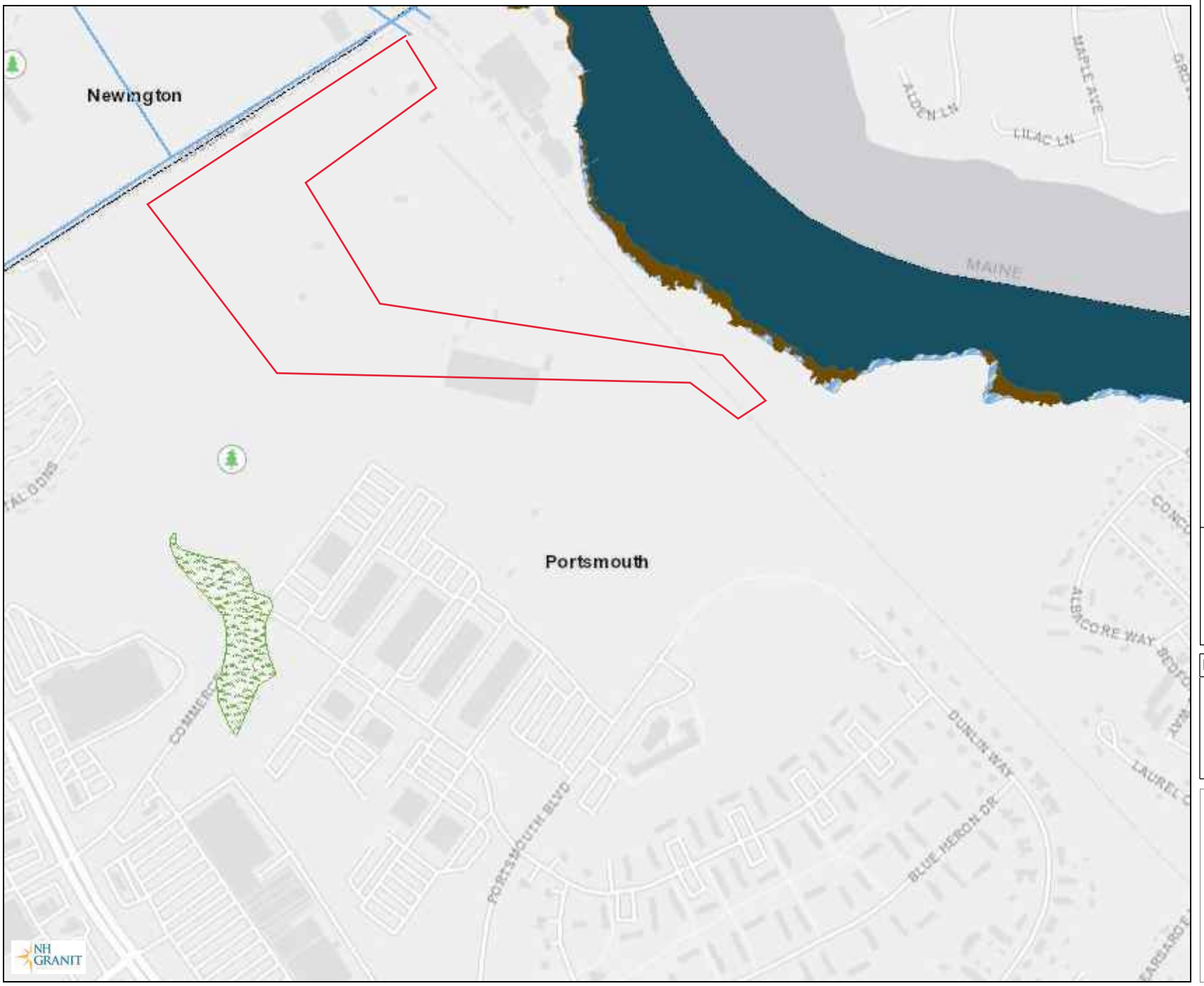
1: 6,494



Map Generated: 11/29/2023

Notes

# P4




## Legend

- Dock Registrations
- Active Permits
  - AGRICULT
  - EMERGENCY
  - EXPEDITED
  - PBN
  - ROADWAYREG
  - SHORE-PBN
  - SHORELAND
  - SPN
  - STD APP
  - TRAILS
  - UTILITY
  - WET-PBN
- Additional Lines
- City/Town
- Designated Rivers with a
  - Ammonoosuc
  - Ashuelot
  - Cocheco
  - Cold

Map Scale

1: 6,494



Map Generated: 11/29/2023

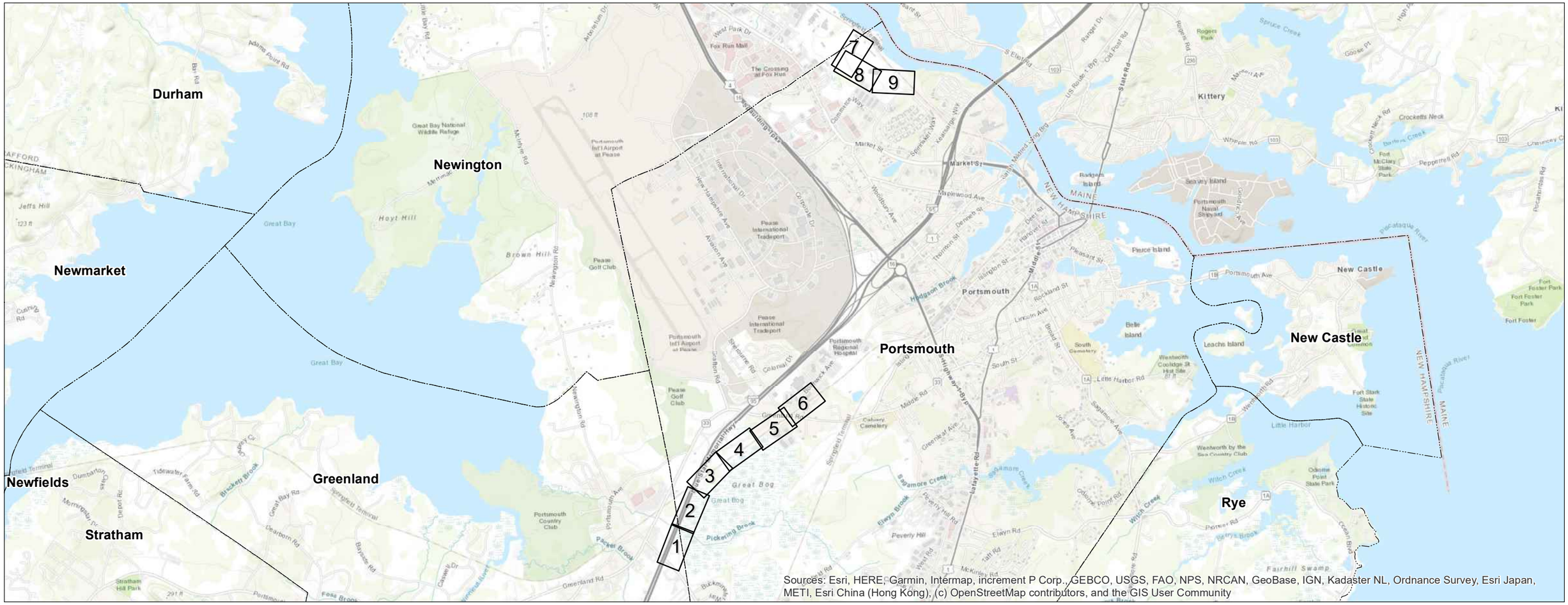
Notes

**FIGURE 5 – ACCESS AND PERMITTING PLANS**

# Resistance Substation Retirement Project

GREENLAND AND PORTSMOUTH, NEW HAMPSHIRE
Environmental Resources Map

Date: November 14, 2023




PREPARED FOR:

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

N

0 0.25 0.5 1 Miles

INDEX OF FIGURES

Title Sheet / Index Map
Map Sheets 1-9

| NO. | DATE | REVISIONS |
|---|---|---|
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PREPARED BY:

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com


**INDEX MAP**


- PROPOSED STRUCTURE
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- EXISTING STRUCTURE TO BE REMOVED
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- RAILROAD
- 2FT CONTOURS

*This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.*

1 inch = 100 feet

0 50 100 Feet

| NO. | DATE | REVISIONS |
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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

GREENLAND/PORTSMOUTH, NH | MAP SHEET

Date: November, 2023 | **1 OF 9**

04.0191410.47

Document Path: \\GZABedford\Jobs\04Jobs\0191400s\04.0191410.00 - EE Siting Permitting 2019-2021\04.0191410.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXD\ResistanceSSPlans.mxd

GREENLAND
PORTSMOUTH

INTERSTATE 95 SOUTH — Interstate 95 South

INTERSTATE 95 NORTH — Interstate 95 North

GW-1
PEM1/PSS1/PFO1E,Fg/R2UB

APPROXIMATE VERY
POORLY DRAINED SOILS
IMPACT: 102,309 SF

5 78 6 93 7 77 92 3171 Line 8 3111 Line 76 3174 Line 91 9 3111 Line 75 10 90 74 11 89 12 73 88

Unnamed Stream

## INDEX MAP


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N

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH | MAP SHEET

Date: November, 2023 | **2 OF 9**

04.0191410.47

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Interstate 95 South — INTERSTATE 95 SOUTH

I-95 SB Exit 3 On-ramp (NH-33)

SPAULDING TPKE NB EXIT 3 ON-RAMP (WOODBURY AVE)

Spaulding Tpke NB Exit 3 On-ramp (Woodbury Ave)

Crossover

INTERSTATE 95 NORTH — Interstate 95 North

APPROXIMATE VERY POORLY DRAINED SOILS IMPACT: 102,309 SF

APPROXIMATE TEMPORARY NON-VPD WETLAND IMPACT: 139,792 SF

3111 Line

3171 Line

GW-1
PEM1/PSS1/PFO1E,Fg/R2UB

PW-1
PEM1/PSS1E,Fg

Unnamed Stream

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

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Document Path: \\GZABedford\Jobs\04Jobs\0191410a\04.0191410.00 - EE Siting Permitting 2019-2022\04.0191410.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXDs\ResistanceSSPlans.mxd


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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

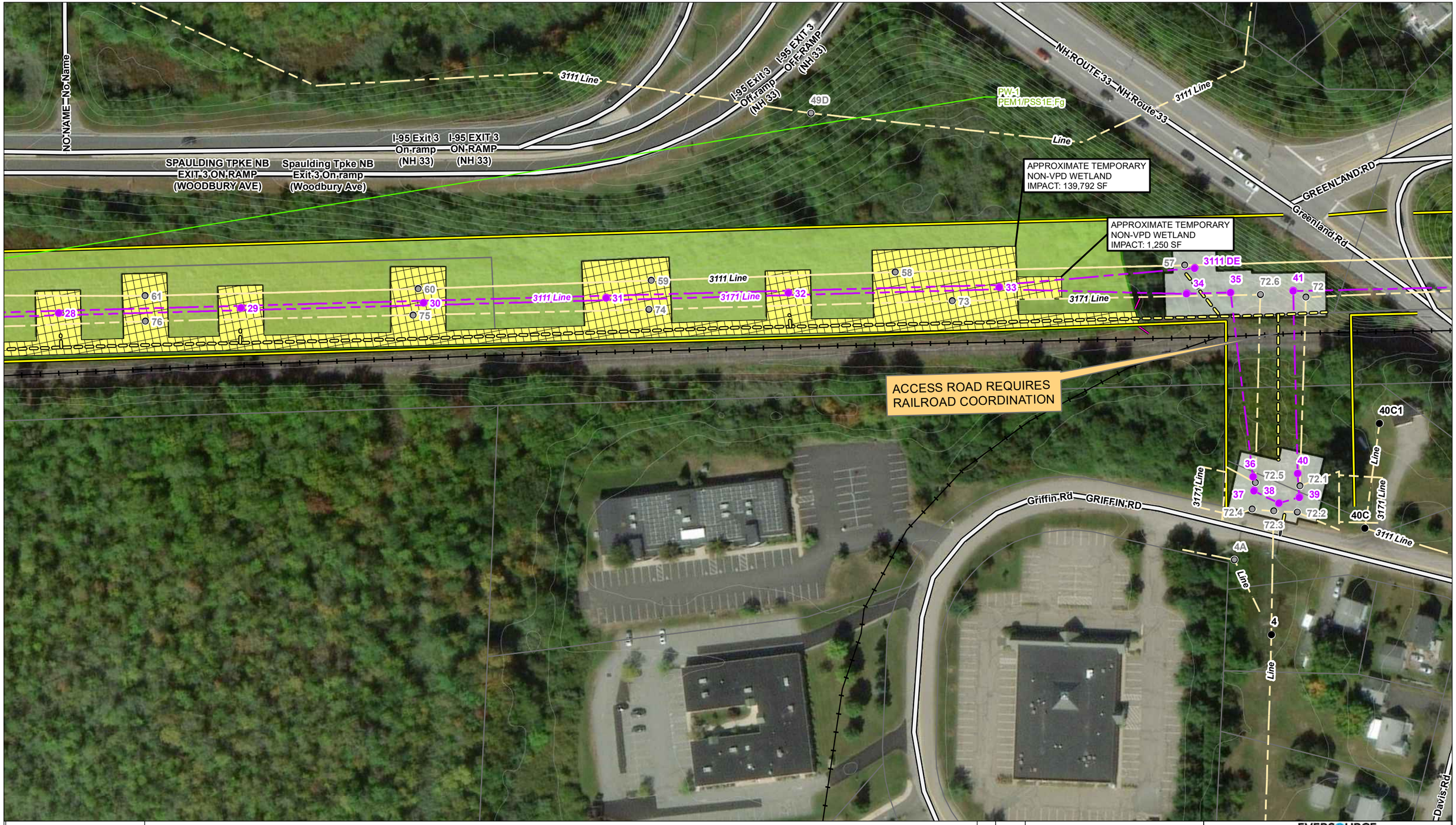
PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

**4 OF 9**

04.0191410.47

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

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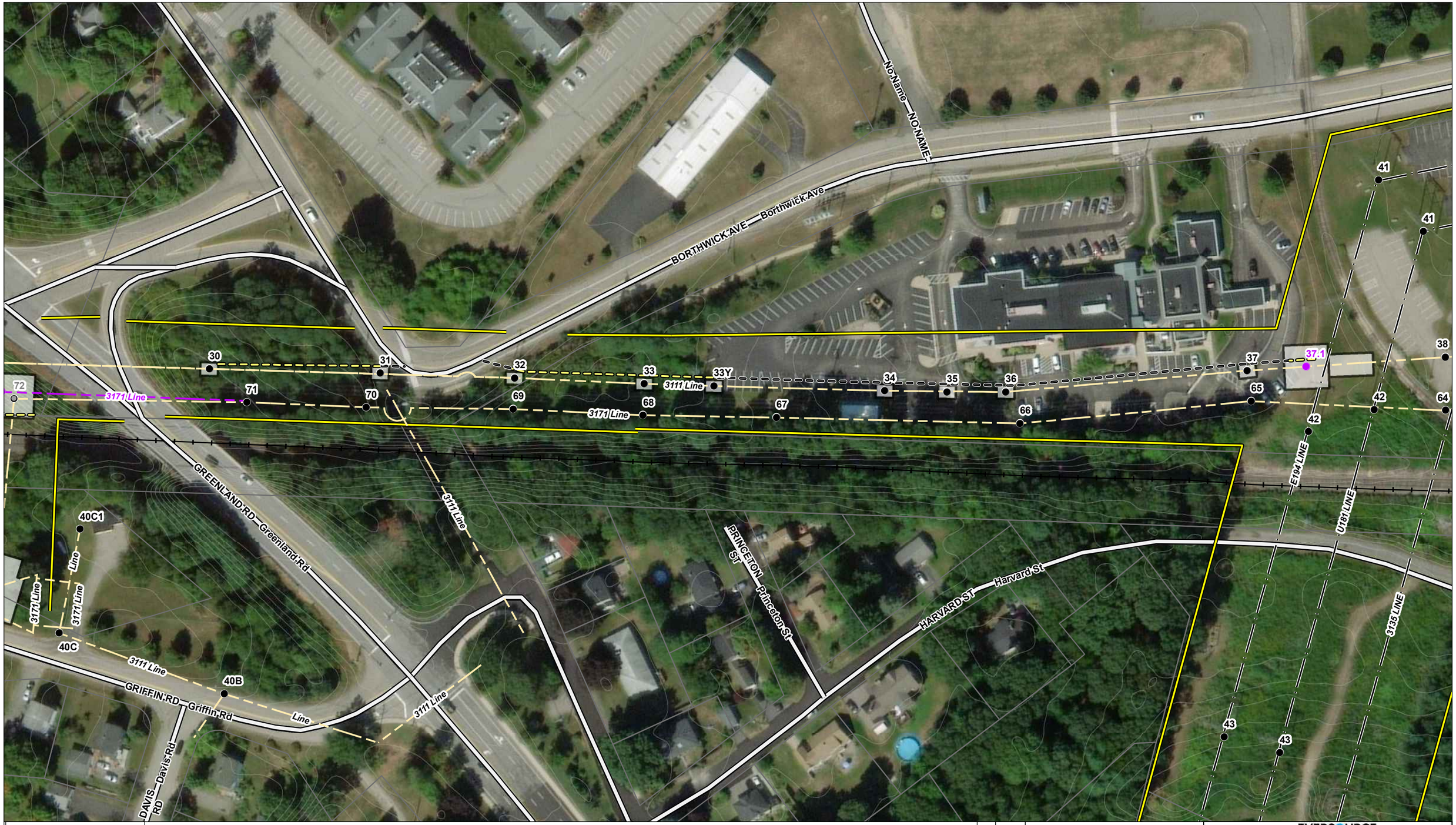


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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

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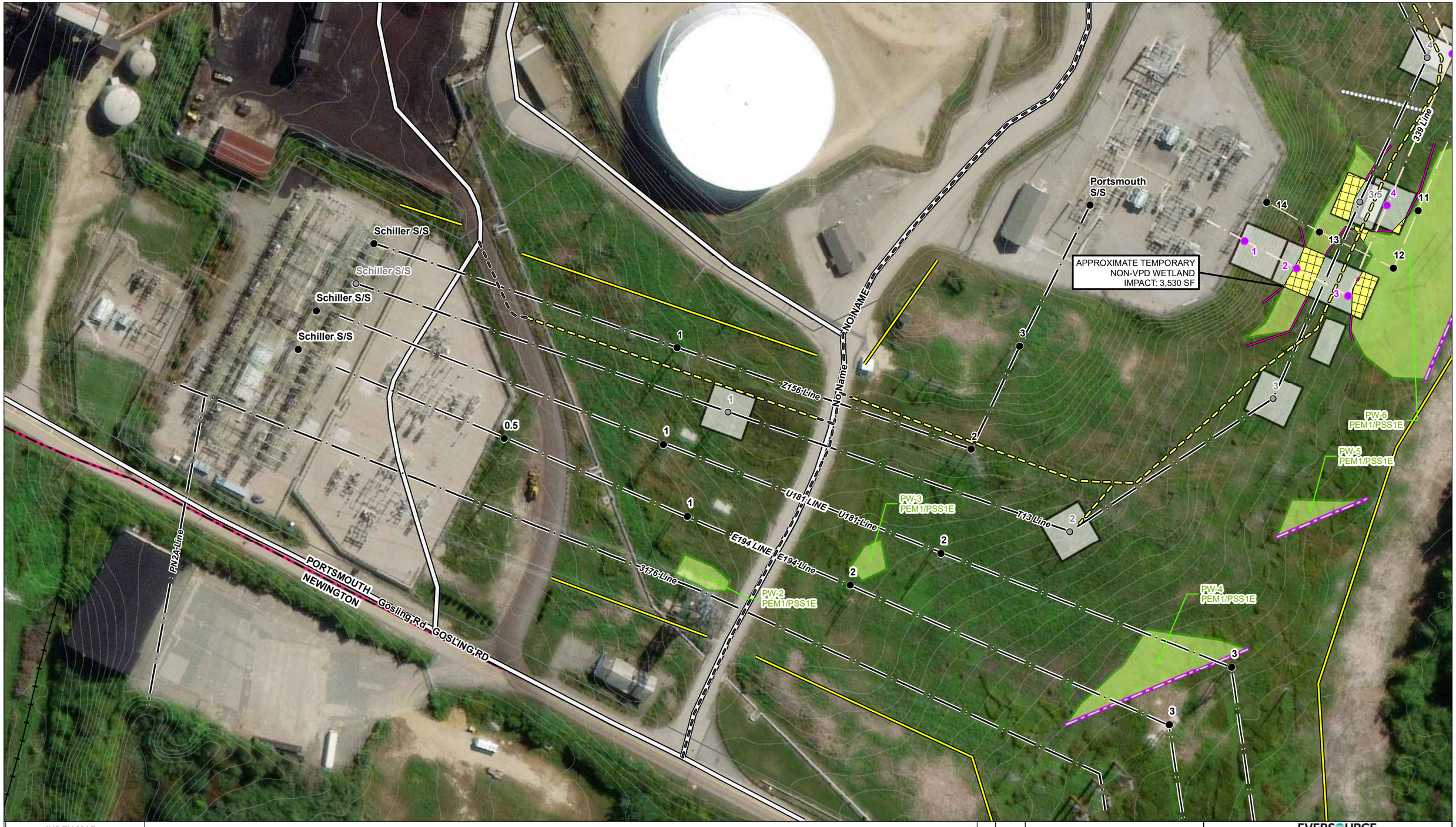
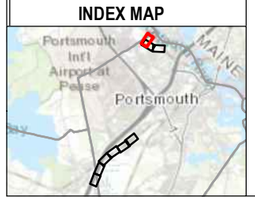



**INDEX MAP**

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1 inch = 100 feet

0 50 100 Feet

| NO. | DATE | REVISIONS |
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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

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Document Path: \\GZABedford\Jobs\04Jobs\0191400s\04.0191410.00 - EE Siting Permitting 2019-2024\04.0191410.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXD\ResistanceSSPlans.mxd

PW-3
PEM1/PSS1E

PW-4
PEM1/PSS1E

PW-5
PEM1/PSS1E

PW-6
PEM1/PSS1E

PW-7
PEM1/PSS1E;H

PW-8
PEM1/PSS1E

PW-9
PEM1/PSS1Ex

3176 Line

E194 LINE - E194 Line

U181 LINE

2156 Line

U181 Line

T13 Line

339 Line

No Name - NO NAME

Portsmouth
S/S

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 3,530 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 1,848 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 241 SF

APPROXIMATE UPLAND
MATTING: 345 SF

APPROXIMATE UPLAND
MATTING: 603 SF

BRIDGE OVER
STONEWALL

APPROXIMATE
UPLAND MATTING:
2,244 SF

APPROXIMATE
UPLAND
MATTING: 9 SF

## INDEX MAP


- PROPOSED STRUCTURE
- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- EXISTING DISTRIBUTION LINE
- PROPOSED DISTRIBUTION LINE
- NHDOT ROADS
- FLOWLINES
- TRANSMISSION LINE
- APPROXIMATE ROW
- EROSION CONTROLS
- PROPOSED ACCESS
- OFF ROW ACCESS
- EXISTING ACCESS
- VERY POORLY DRAINED SOILS IMPACT
- HISTOSOL AND HISTIC EPIPEDON SOILS
- UPLAND MATTING
- TEMPORARY NON-VPD WETLAND IMPACT
- WETLAND DELINEATION BOUNDARY
- PRIME WETLAND
- PARCEL BOUNDARY
- POTENTIAL VERNAL POOL
- PEATLAND HABITAT
- WETLAND
- WETLAND ADJACENT TO TIER 3+
- STONEWALL
- WORK AREA
- DOT ROAD
- TOWN BOUNDARY
- RAILROAD
- 2FT CONTOURS

*This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.*

1 inch = 100 feet

0 50 100 Feet

| NO. | DATE | REVISIONS |
|---|---|---|
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| | | |

EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

04.0191410.47

**8 OF 9**

Document Path: \\GZABedford\Jobs\04Jobs\01914\00s\04.01914100 - EE Siting Permitting 2019-2022\04.01914100.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXD\ResistanceSSPlans.mxd

PW-7
PEM1/PSS1E,H

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 1,848 SF

NO NAME

No-Name

PW-11
PSS1/PEM1Ex

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 3,416 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 4,483 SF

PW-14
PSS1/PEM1E

T13 Line

339 Line

PW-7
PEM1/PSS1E,H

PW-9
PEM1/PSS1Ex

PW-15
PEM1E

PW-10
PSS1Ex

PW-12
PEM1/PSS1E

Resistance
S/S

PW-8
PEM1/PSS1E

APPROXIMATE
TEMPORARY NON-VPD
WETLAND IMPACT: 241 SF

PW-13
PEM1/PSS1E

REMOVAL FROM
INSIDE FENCE

REMOVAL FROM
INSIDE FENCE

Portsmouth Blvd

PORTSMOUTH BLVD

## INDEX MAP


- PROPOSED STRUCTURE
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- TOWN BOUNDARY
- RAILROAD
- 2FT CONTOURS

*This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.*

N

1 inch = 100 feet

0 50 100 Feet

| NO. | DATE | REVISIONS |
|---|---|---|
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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

04.0191410.47

**9 OF 9**

Document Path: \\GZABedford\Jobs\04Jobs\01\04.0191410.00 - EE Siting Permitting 2019-2021\04.0191410.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXD\ResistanceSSPlans.mxd

CONSTRUCTION SEQUENCE:

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.

2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY, AND CONSISTENT WITH THE NHDES MARCH 2019 BMP MANUAL FOR UTILITY MAINTENANCE.

3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN THE RIGHT OF WAY.

4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.

5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.

6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH.

7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE SWAMP MATS WHERE REQUIRED.

8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATIONS IS NEEDED FOR ACCESS.

9. TIMBER MATS AND PERIMETER CONTROLS WILL BE USED ALONG ACCESS ROUTES AND WORK PADS WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.

10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC, 3"-4" STONE, AND GRAVEL TO PROVIDE A SUITABLE ROAD BED. A TEMPORARY CULVERT MAY BE REQUIRED IN AREAS OF HIGH FLOW TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.

11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.

12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE OR FOUNDATION PLACEMENT OR STABILIZATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE.

13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.

15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.

16. REMOVAL OF THE OLD POLE WILL OCCUR ONCE THE CABLE HAS BEEN INSTALLED ON THE NEW STRUCTURE. THE OLD STRUCTURES WILL BE REMOVED FROM THE SITE. POLES WILL BE CUT AT THE GROUND SURFACE. FOOTINGS WILL BE ABANDONED IN PLACE TO MINIMIZE IMPACTS.

17. ALL TIMBER MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.

18. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.

19. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, AVAILABLE THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, 413-548-8000, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.

20. MULCH USED FOR STABLIZATION SHALL CONSIST OF SEEDLESS STRAW.

21. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.

22. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.

23. NATURALLY VEGETATED LOCAL WETLAND BUFFER AREAS OUTSIDE OF EXISTING TRAILS MUST BE RESTORED UPON COMPLETION OF WORK.

WINTER CONSTRUCTION NOTES

1. PROP0SED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

GENERAL NOTES:

OWNER: EVERSOURCE ENERGY
13 LEGENDS DRIVE
HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. EVERSOURCE ENERGY PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.

2. JURISDICTIONAL WETLANDS WERE DELINEATED BY GZA GEOEVIRONMENTAL IN 2022, IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," NOVEMBER 2022 AND FEBRUARY 2023.

3. GZA GEOENVIRONMENTAL EVALUATED WETLANDS AS POTENTIAL VERNAL POOLS IN 2022 IN ACCORDANCE WITH "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE," 1997, NEW HAMPSHIRE FISH AND GAME DEPARTMENT, NONGAME AND ENDANGERED WILDLIFE PROGRAM.

4. GZA GEOENVIRONMENTAL COMPLETED WETLANDS FUNCTION AND VALUES ASSESSMENT IN 2022 AND 2023 IN ACCORDANCE WITH THE ACOE'S "HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT," SEPTEMBER 1999.

5. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.

6. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

7. IN ACCORANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
- OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

EROSION CONTROL NOTES:

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.

2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.

3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.

4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED WITH BMPS.

5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.

6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

7. EROSION CONTROL MATTING, IF REQUIRED, WILL CONSIST OF JUTE MATTING. MATTING WITH WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD WILL BE AVOIDED TO LIMIT UNINTENTIONAL MORTALITY TO SNAKES.



RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND & PORTSMOUTH
NEW HAMPSHIRE

NOTES

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET S1 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

## Best Management Practices (BMP's) for Straw wattles

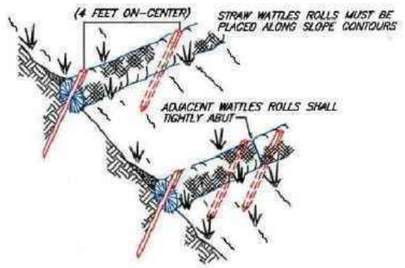
**Definition and purpose:**
Straw wattles are burlap rolls filled with straw that trap sediment and interrupt water flow by reducing slope lengths.

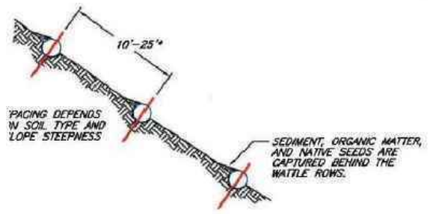
**Applications:**
* Along erodible or unstablizied slopes
* Spread overland waterflow
* Trap sediment
* Around storm drain inlets to slow water and settle out sediment
* Overlap ends approximately 6 inches

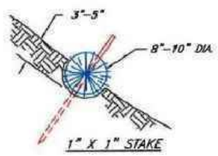
**Installation:**
Straw wattles are installed parallel to slope contours and perpendicular to sheet flow.

Spacing* - Dependent on slope length, soil steepness and soil type (general range 10 - 25').

Trenching - 2"-5" inch trench
Stacking - at each end and four foot on center (i.e. 25 foot wattle uses 6 stacks)

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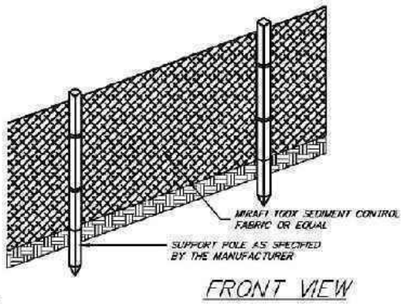
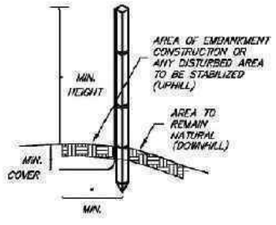
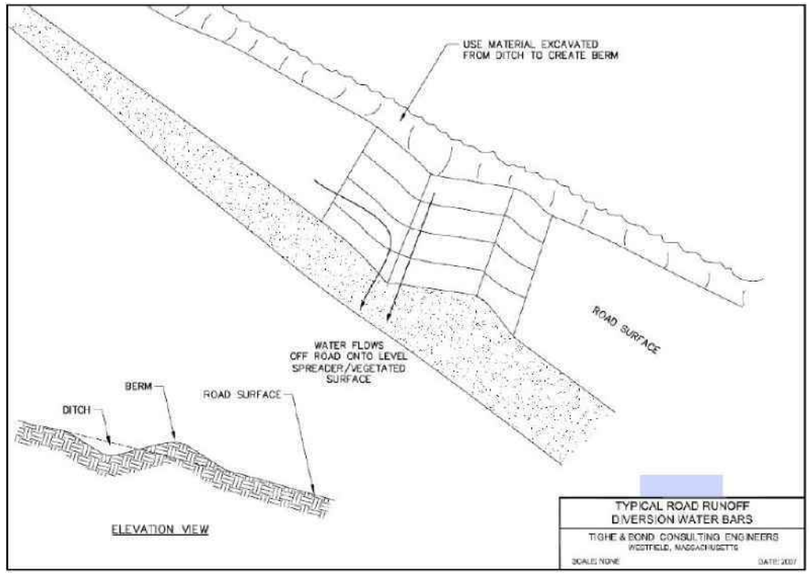


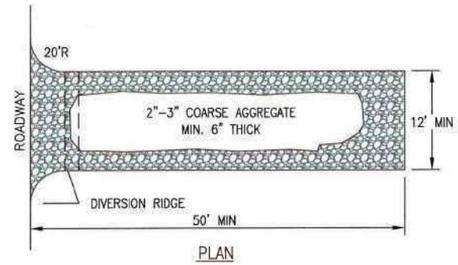

FRONT VIEW




SIDE VIEW

*NOTES (SILT FENCE)*
*1. THE HEIGHT OF THE BARRIER SHALL NOT EXEED 36 INCHES.*
*2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6—INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.*
*3 POSTS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.*
*4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS*
*5. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.*
*6. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.*
*7. FABRIC BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.*
*8. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DAILY DURING PROLONGED RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.*
*9. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.*
*10. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE—HALF THE HEIGHT OF THE BARRIER.*
*11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.*



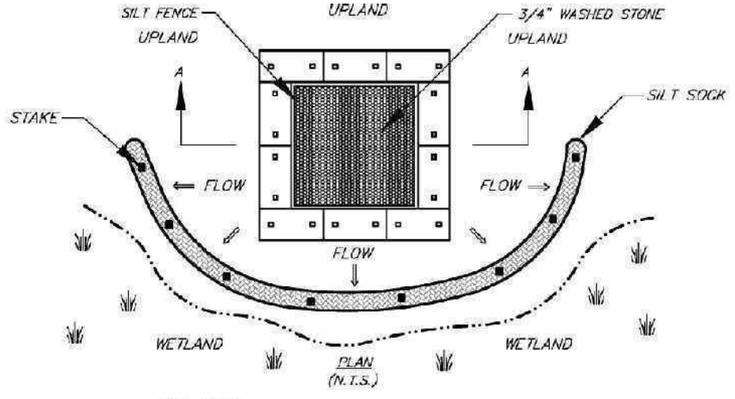

PLAN

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

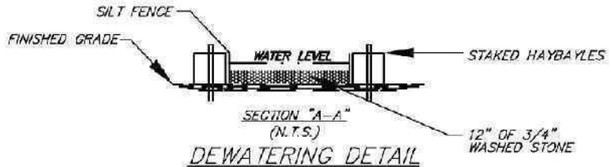
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

## CONSTRUCTION ENTRANCE

NOT TO SCALE




PLAN
(N.T.S.)




SECTION "A-A"
(N.T.S.)

## DEWATERING DETAIL
N.T.S.



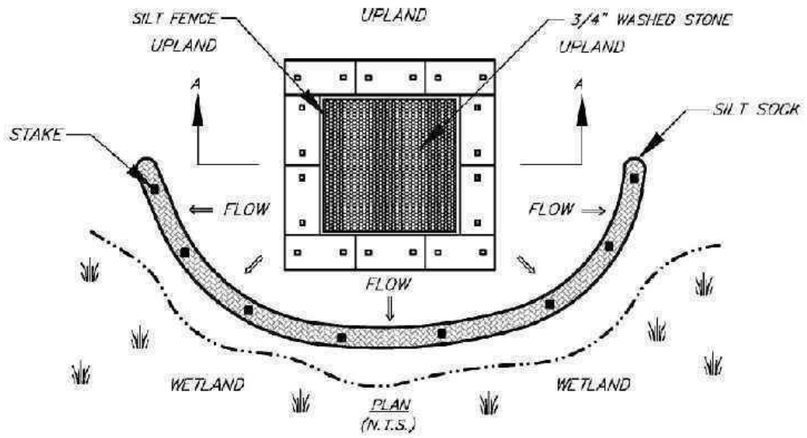
RESISTANCE SUBSTATION RETIREMENT PROJECT
GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

BMP DETAILS

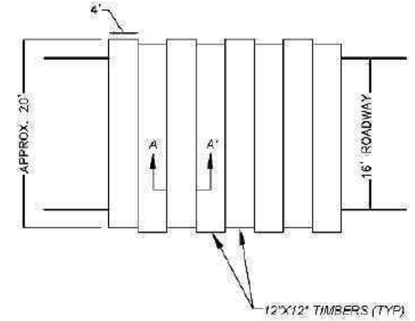
PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

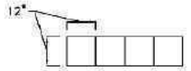
| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET S2 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |



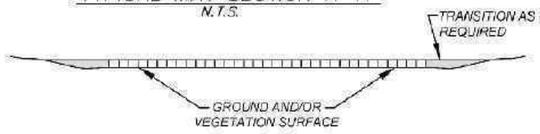

DEWATERING DETAIL
N.T.S.



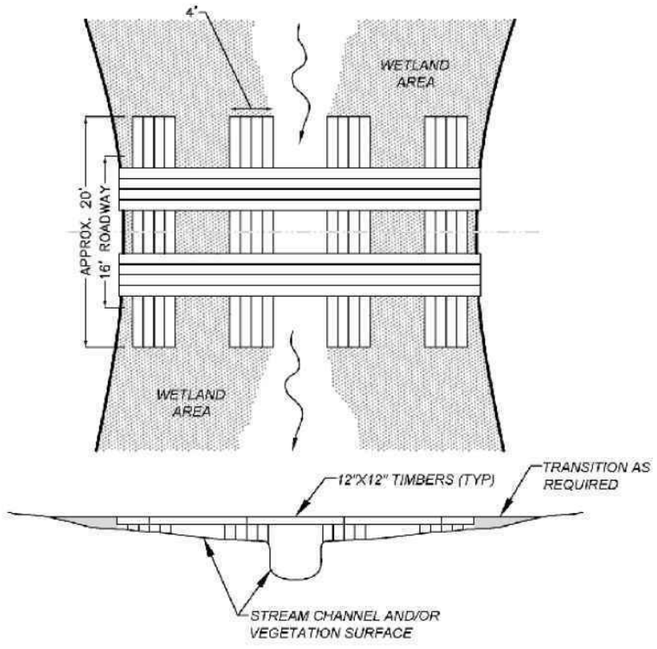

TYPICAL SWAMP MAT PLAN VIEW
N.T.S.



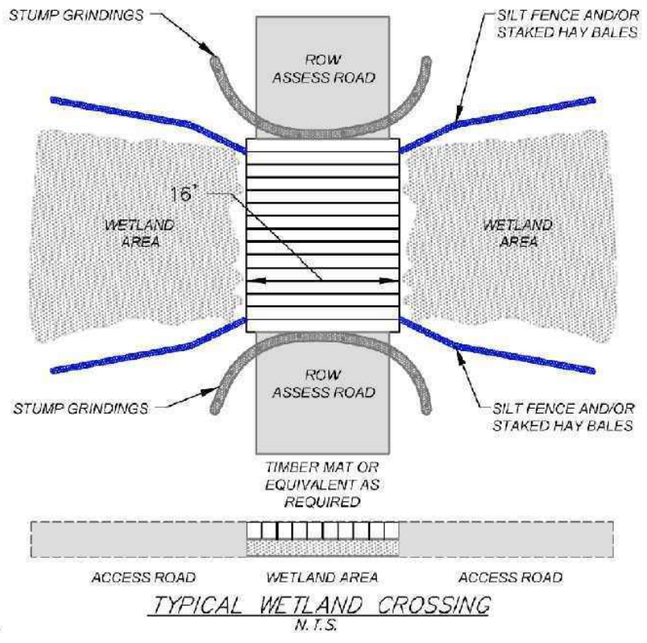

TYPICAL MAT SECTION A-A
N.T.S.




TYPICAL SWAMP MAT SECTION DETAIL
N.T.S.




TYPICAL STREAM CROSSING
N.T.S.




TYPICAL WETLAND CROSSING
N.T.S.



RESISTANCE SUBSTATION RETIREMENT PROJECT
GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

# BMP DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | S3 |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

**FIGURE 6 – FEMA FLOODPLAIN MAPS**

70°52'30.86"W 43°3'58.21"N


70°48'44.15"W 42°59'46.85"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/27/2023 3:41 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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## SCALE

**Map Projection:**
**GCS, Geodetic Reference System 1980;**
**Vertical Datum: NAVD88**

**For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov**

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

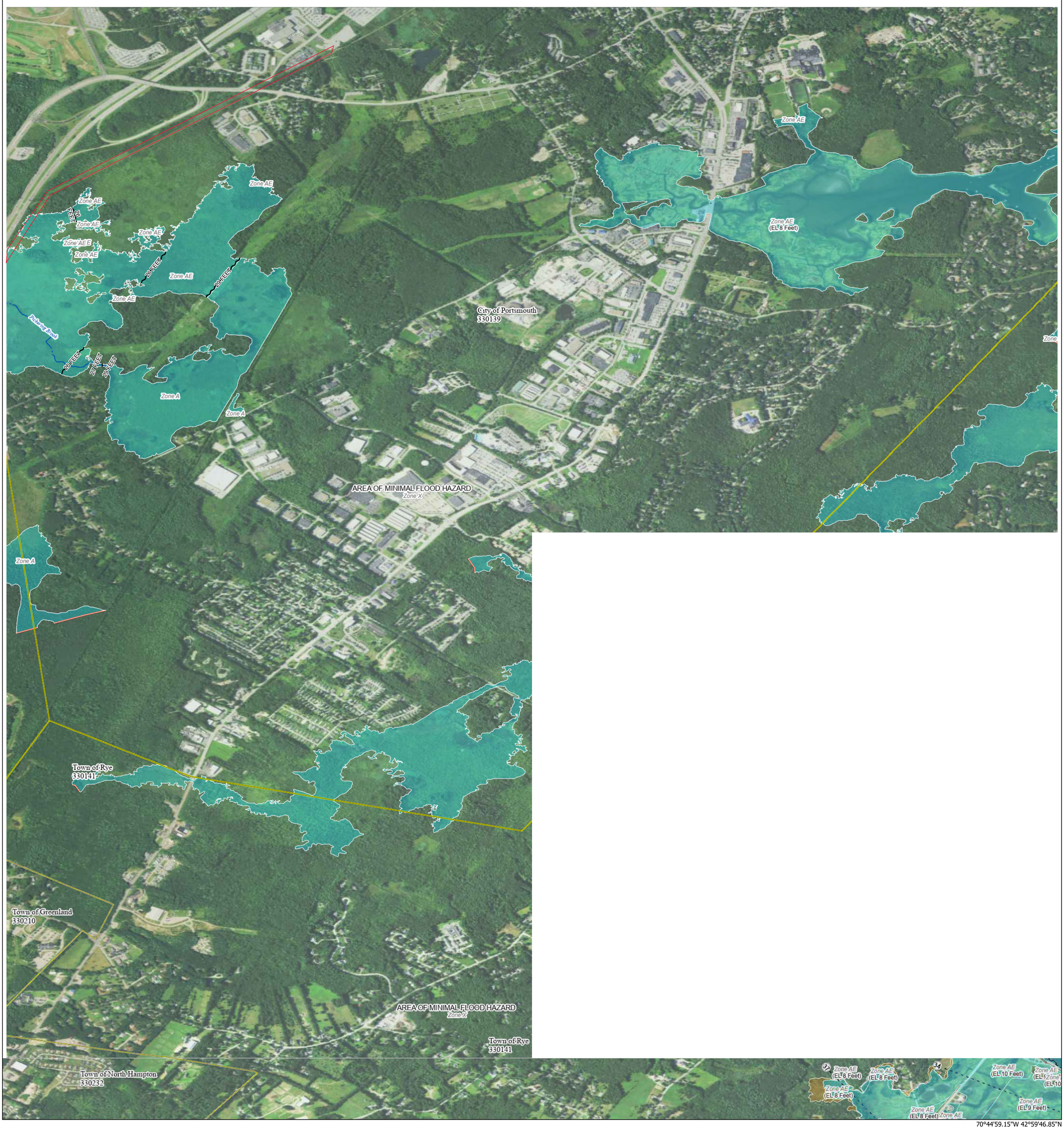
PANEL **265** OF **681**

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| TOWN OF NORTH HAMPTON | 330232 | 0265 |
| TOWN OF STRATHAM | 330197 | 0265 |
| TOWN OF RYE | 330141 | 0265 |
| TOWN OF GREENLAND | 330210 | 0265 |
| CITY OF PORTSMOUTH | 330139 | 0265 |
| TOWN OF NEWINGTON | 330229 | 0265 |

MAP NUMBER
**33015C0265F**
EFFECTIVE DATE
**January 29, 2021**

70°48'45.86"W 43°3'58.21"N




70°44'59.15"W 42°59'46.85"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/27/2023 3:37 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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## SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 270 OF 681

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| TOWN OF NORTH HAMPTON | 330232 | 0270 |
| TOWN OF RYE | 330141 | 0270 |
| TOWN OF GREENLAND | 330210 | 0270 |
| CITY OF PORTSMOUTH | 330139 | 0270 |

MAP NUMBER
33015C0270F
EFFECTIVE DATE
January 29, 2021

70°49'18.53"W 43°7'32.22"N


70°45'31.82"W 43°3'20.86"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

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This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/27/2023 3:48 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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## SCALE

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GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **260** OF **681**

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| CITY OF PORTSMOUTH | 330139 | 0260 |
| TOWN OF NEWINGTON | 330229 | 0260 |

MAP NUMBER
**33015C0260F**
EFFECTIVE DATE
**January 29, 2021**

70°46'52.93"W 43°5'44.12"N


70°44'59.57"W 43°3'38.44"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

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To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/27/2023 3:53 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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## SCALE

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GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

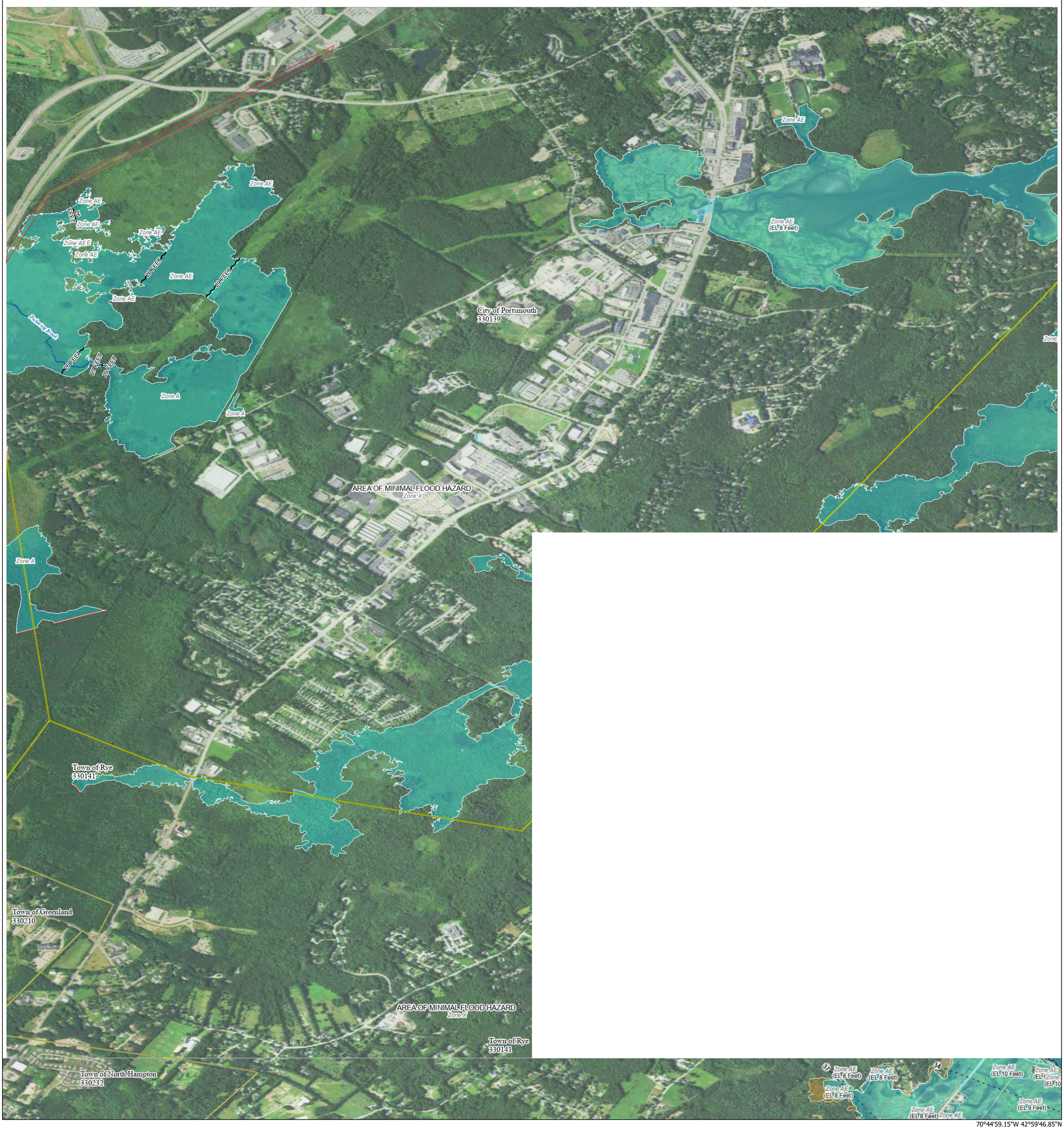
PANEL **259** OF **681**

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| CITY OF PORTSMOUTH | 330139 | 0259 |

MAP NUMBER
**33015C0259F**
EFFECTIVE DATE
**January 29, 2021**

70°48'45.86"W 43°3'58.21"N




70°44'59.15"W 42°59'46.85"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

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## SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 270 OF 681

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| TOWN OF NORTH HAMPTON | 330232 | 0270 |
| TOWN OF RYE | 330141 | 0270 |
| TOWN OF GREENLAND | 330210 | 0270 |
| CITY OF PORTSMOUTH | 330139 | 0270 |

MAP NUMBER
33015C0270F
EFFECTIVE DATE
January 29, 2021

70°49'18.53"W 43°7'32.22"N


70°45'31.82"W 43°3'20.86"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

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## SCALE

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GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

0 105 210 420 630 840 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **260** OF **681**

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| CITY OF PORTSMOUTH | 330139 | 0260 |
| TOWN OF NEWINGTON | 330229 | 0260 |

MAP NUMBER
**33015C0260F**
EFFECTIVE DATE
**January 29, 2021**

70°46'52.93"W 43°5'44.12"N


70°44'59.57"W 43°3'38.44"N

## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- 8 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **11/27/2023 3:53 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

## SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters




## NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL **259** OF **681**

Panel Contains:

| COMMUNITY | NUMBER | PANEL |
|---|---|---|
| CITY OF PORTSMOUTH | 330139 | 0259 |

MAP NUMBER
**33015C0259F**
EFFECTIVE DATE
**January 29, 2021**

# APPENDIX A – EVERSOURCE EASEMENT INFORMATION

**Resistance Substation Easement Information**

| GENERAL INFORMATION | | | | |
|---|---|---|---|---|
| | | | | |
| DOCUMENT NO. | LINE | GRANTEE | VOLUME | PAGE |
| EAN-262 | 3111/3171 | PSNH | 1196 | 252 |
| DDA-645 | 3111/3171 | PSNH | 1790 | 44 |
| EAA-3200 | 3111/3171 | PSNH | 1350 | 185 |
| EAN-154 | 3111/3171 | PSNH | 1255 | 259 |
| EAN-412 | 3111/3171 | PSNH | 1147 | 98 |
| EAN-414 | 3111/3171 | PSNH | 1147 | 94 |
| EAN-415 | 3111/3171 | PSNH | 1147 | 102 |
| EAN-417 | 3111/3171 | PSNH | 1147 | 106 |
| EAN-431 | 3111/3171 | PSNH | 1148 | 369 |
| GFN -16 | 3111/3171 | PSNH | 1147 | 306 |
| DDA-1186 (1), (2), (3) | T13 | PSNH | 5887 | 823 |
| FDA-117 | T13 | PSNH | N/A | N/A |
| EAA-1402 | T13 | PSNH | 1150 | 218 |

# APPENDIX B

# ABUTTER LIST

**Appendix B - Parcels Intersecting Project Area**

| Greenland |
|---|
| **Tax Map - Lot** |
| R21-052-000 |

| Portsmouth |
|---|
| **Tax Map - Lot** |
| 0121-0001-0000 |
| 0165-0014-0000 |
| 0213-0011-0000 |
| 0214-0001-0000 |
| 0214-0002-0000 |
| 0214-0003-0000 |
| 0216-0001-0010 |
| 0216-0001-0011 |
| 0240-0002-0001 |
| 0259-0001-0000 |
| 0259-0015-0000 |
| 0278-0001-0000 |
| 0280-0003-0000 |
| 0281-0001-0000 |

# APPENDIX C – FUNCTION VALUE ASSESSMENT FORM

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| **File No:** 04.0191410.47 | **WETLAND FUNCTION – VALUE EVALUATION FORM** | **Date: 10/20/2023** | |
|---|---|---|---|
| **Wetland ID: GW-1**<br>**PEM1/PSS1/PFO1E,Fg/R2UB** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 1, 2, 4, 7 | Wetland hydrology is supported by runoff, a seasonally high-water table and Pickering Brook. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | Y |
| Floodflow Alteration | Y | | 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 18 | The wetland receives and retains overland sheet flow. Pickering Brook flows through the wetland. | Y |
| Fish and Shellfish Habitat | Y | | 3, 4, 5, 8, 10, 14, 16, 17 | The wetland contains Pickering Brook a perennial stream capable of suitable fish habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2, 3, 4, 5, 6, 8, 10, 12, 13, 14, 16 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention and accepts runoff from I95 North. | Y |
| Nutrient Removal | Y | | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14 | Dense vegetation and poorly drained organic soils are present with ponded water and Pickering Brook. | Y |
| Production Export | Y | | 1, 2, 4, 5, 7, 10, 12, 13 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | Y |
| Sediment/Shoreline Stabilization | Y | | 1, 3, 4, 5, 7, 9, 10, 13, 15 | Pickering Brook contains a well vegetated bank and is bordered by a large emergent wetland system connected to Great Bog. | Y |
| Wildlife Habitat | Y | | 5, 6, 7, 8, 11, 13, 18, 19, 20, 21, 23 | The wetland is located in “highest ranked habitat in New Hampshire” (see Wildlife Action Plan overlay) and is part of Great Bog. | Y |
| Recreation | Y | | 1, 5, 7 | The wetland is located within City of Portsmouth conservation land. However, there are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | Y | | 5, 6, 11 | The wetland is located on City of Portsmouth conservation land (Great Bog). However, parking suitable for school buses is not present and the wetland is located under an active distribution line adjacent to Interstate 95. | N |
| Uniqueness/Heritage | Y | | 4, 7, 11, 16, 17, 19, 22, 26, 27 | The wetland contains a Priority Resource Area (PRA) mapped as a Floodplain Wetland Adjacent to a Tier 3+ Watercourse. | Y |
| Visual Quality/Aesthetics | Y | | 1, 2, 8, 12 | The wetland contains emergent marsh vistas of Great Bog. | Y |
| ES Endangered Species Habitat | Y | | 1, 2 | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3651). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| **Wetland ID: PW-1**<br>**PEM1/PSS1E,Fg** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 1, 2, 6 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | Y |
| Floodflow Alteration | Y | | 3, 4, 5, 6, 7, 8, 9, 18 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | Y |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2, 4, 5, 8 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention and accepts runoff from I95 North. | Y |
| Nutrient Removal | Y | | 2, 3, 5, 6, 7, 8, 9, 10 | Dense vegetation and poorly drained organic soils are present with ponded water. | Y |
| Production Export | Y | | 1, 4, 5, 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | Y |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 5, 6, 7, 8, 11, 13, 18, 19, 23 | A portion of the wetland is located in “highest ranked habitat in New Hampshire” (see Wildlife Action Plan overlay). | Y |
| Recreation | | N | 1, 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | Y | | 5, 6 | The wetland is located on City of Portsmouth conservation land (Great Bog). However, parking suitable for school buses is not present and the wetland is located under an active distribution line adjacent to Interstate 95 and an existing rail bed. | N |
| Uniqueness/Heritage | Y | | 13, 17, 19 | The wetland contains a Priority Resource Area (PRA) mapped Peatland Habitat in the northeast portion of the wetland. | N |
| Visual Quality/Aesthetics | | N | 2, 8, 12 | The wetland does not contain open water or emergent marsh vistas and is surrounded by Interstate 95 and an existing rail bed. | N |
| ES Endangered Species Habitat | Y | | 1, 2 | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes: Plants within the herbaceous layer include reed canary grass, broadleaf cattail, jewel weed, cinnamon fern, sensitive fern, reed canary grass, phragmites, and sphagnum moss. Plants within the shrub/sapling layer include meadowsweet, silky dogwood, glossy buckthorn, red maple, and gray birch.

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| **File No:** 04.0191410.47 | **WETLAND FUNCTION – VALUE EVALUATION FORM** | **Date: 10/19/2023** | |
|---|---|---|---|
| **Wetland ID: PW-2**<br>**PEM1/PSS1E** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention and accepts runoff from Gosling Road. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. Over size limits its capability. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| **ES** Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-3<br>PEM1/PSS1E | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. Over size limits its capability. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-4<br>PEM1/PSS1E | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMNT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| **Wetland ID: PW-5**<br>**PEM1/PSS1E** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| **ES** Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-6<br>PEM1/PSS1E | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. Some ponded water is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-7<br>PEM1/PSS1E,H | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. Some ponded water is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8, 18 | The wetland contains a potential vernal pool and scrub-shrub cover in a commercial area. | Y |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-8<br>PEM1/PSS1E | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Dense vegetation is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation and export is occurring through wildlife use in the wetland. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-9<br>PEM1/PSS1Ex | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Emergent and scrub shrub cover is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| **Wetland ID: PW-10**<br>**PSS1Ex** | | **GZA Personnel: Peter Petkauskos, Tracy Tarr** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Scrub shrub cover is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| **ES** Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| Wetland ID: PW-11<br>PSS1/PEM1Ex | | GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. Ponded water is present in an existing stormwater basin. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads and contains a stormwater basin. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Scrub shrub and emergent cover is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| | | | |
|---|---|---|---|
| **File No:** 04.0191410.47 | **WETLAND FUNCTION – VALUE EVALUATION FORM** | **Date: 10/19/2023** | |
| **Wetland ID: PW-12 and PW-13**<br>**PEM1/PSS1E** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Scrub shrub and emergent cover is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| **ES** Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

# 3171 & T13 STRUCTURE REPLACEMENT PROJECT
# GREENLAND & PORTSMOUTH, NEW HAMPSHIRE

| File No: 04.0191410.47 | WETLAND FUNCTION – VALUE EVALUATION FORM | Date: 10/19/2023 | |
|---|---|---|---|
| **Wetland ID: PW-14**<br>**PSS1/PEM1E** | | **GZA Personnel: Peter Petkauskos CWS, Tracy Tarr CWS** | |

| Function/Value | Capability Y | Capability N | Rationale (Reference #) | Summary | Principal Yes/No |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | Y | | 4 | Wetland hydrology is supported by runoff and a seasonally high-water table. The wetland is not directly underlain by an aquifer (see Aquifer Transmissivity Overlay). | N |
| Floodflow Alteration | Y | | 5, 6, 7, 9 | The wetland receives and retains overland sheet flow. Dense vegetation is present. | N |
| Fish and Shellfish Habitat | | N | Not Applicable | The wetland is not associated with a watercourse or permanently flooded habitat. | N |
| Sediment/Toxicant Retention | Y | | 1, 2 | The wetland contains dense vegetation suitable for sediment/toxicant detention and retention. The wetland accepts stormwater from surrounding roads. | Y |
| Nutrient Removal | Y | | 3, 8, 9 | Scrub shrub and emergent cover is present. | N |
| Production Export | Y | | 7, 12 | The wetland contains dense vegetation. | N |
| Sediment/Shoreline Stabilization | | N | Not Applicable | No streams or shoreline edges are associated with the wetland. | N |
| Wildlife Habitat | Y | | 7, 8 | The wetland contains scrub-shrub cover in a commercial area. | N |
| Recreation | | N | 5 | There are no water-based recreational opportunities present. | N |
| Educational/Scientific Value | | N | 5 | The wetland is located on private property and is located under an active transmission line. | N |
| Uniqueness/Heritage | | N | 17 | The wetland is not known to contain exemplary communities and is not designated as a prime wetland. | N |
| Visual Quality/Aesthetics | | N | 8 | The wetland does not contain open water or emergent marsh vistas. | N |
| ES Endangered Species Habitat | | N | Not Applicable | NHB does not have records of rare species in the vicinity of this wetland (see NHB memo dated NHB22-3650). | N |

Notes:

**APPENDIX D**

**NHB MEMO**

**NHB CORRESPONDENCE**

**NHB DataCheck Results Letter**
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Lindsey White, GZA GeoEnvironmental
5 Commerce Park North Suite 201
Bedford, NH 03110
lindsey.white@gza.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 11/22/2023 (valid until 11/22/2024)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Minor, USACE - General Permit

## NHB ID: NHB23-3331

Town: Portsmouth
Location: Eversource Maintained ROW

**Project Description:** Eversource is proposing to replace, remove and install select utility structures within the existing and maintained 3171 and 3111 ROW.

## Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

**NHB Comments:** Please send NHB representative photos during the growing season, proposed plans, and proposed project timing.

**NHFG Comments:** Please refer to NHFG consultation requirements below. Please indicate proposed project timing.

**NHB Consultation**

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

**NH Fish and Game Department Consultation**

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
**Contact NH Fish & Game at (603) 271-0467 with questions.**

**NHB Database Records:**
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

| Natural Community | State[1] | Federal | Notes |
|---|---|---|---|
| Herbaceous seepage marsh | -- | -- | As this wetland is strongly influenced by groundwater seepage, it could be affected by landscape alterations which modify groundwater movement or increase stormwater flow into it. |
| Red maple - sensitive fern swamp | -- | -- | These swamps are influenced by groundwater seepage and springs which moderate water fluctuations and maintain conditions favorable for the accumulation of organic matter. The primary threats are changes to the hydrology of the wetland complex, particularly raising or lowering the water levels, and increased nutrient and pollutant input carried in by stormwater runoff. |
| Swamp white oak basin swamp | -- | -- | Threats to this community include changes to the wetland's hydrology either through damming or increasing drainage. Significant increases in nutrients and pollutants from stormwater runoff could also have a deleterious effect on the wetland. |

| Plant species | State[1] | Federal | Notes |
|---|---|---|---|
| American reed (*Phragmites americanus*) | E | -- | Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff. |
| great bur-reed (*Sparganium eurycarpum*) | T | -- | Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level. |
| hairy-fruited sedge (*Carex trichocarpa*)* | E | -- | This species occurs in forested swamps, and would be threatened by changes to local hydrology as well as activities such as logging that opened up the canopy. |
| tufted yellow-loosestrife (*Lysimachia thyrsiflora*) | T | -- | As a resident of peatlands, this species is susceptible to any changes to the wetland's hydrology (especially that which causes pooling), increased |

| | | | |
|---|---|---|---|
| | | | nutrient input from stormwater runoff, and sedimentation from nearby disturbances. |

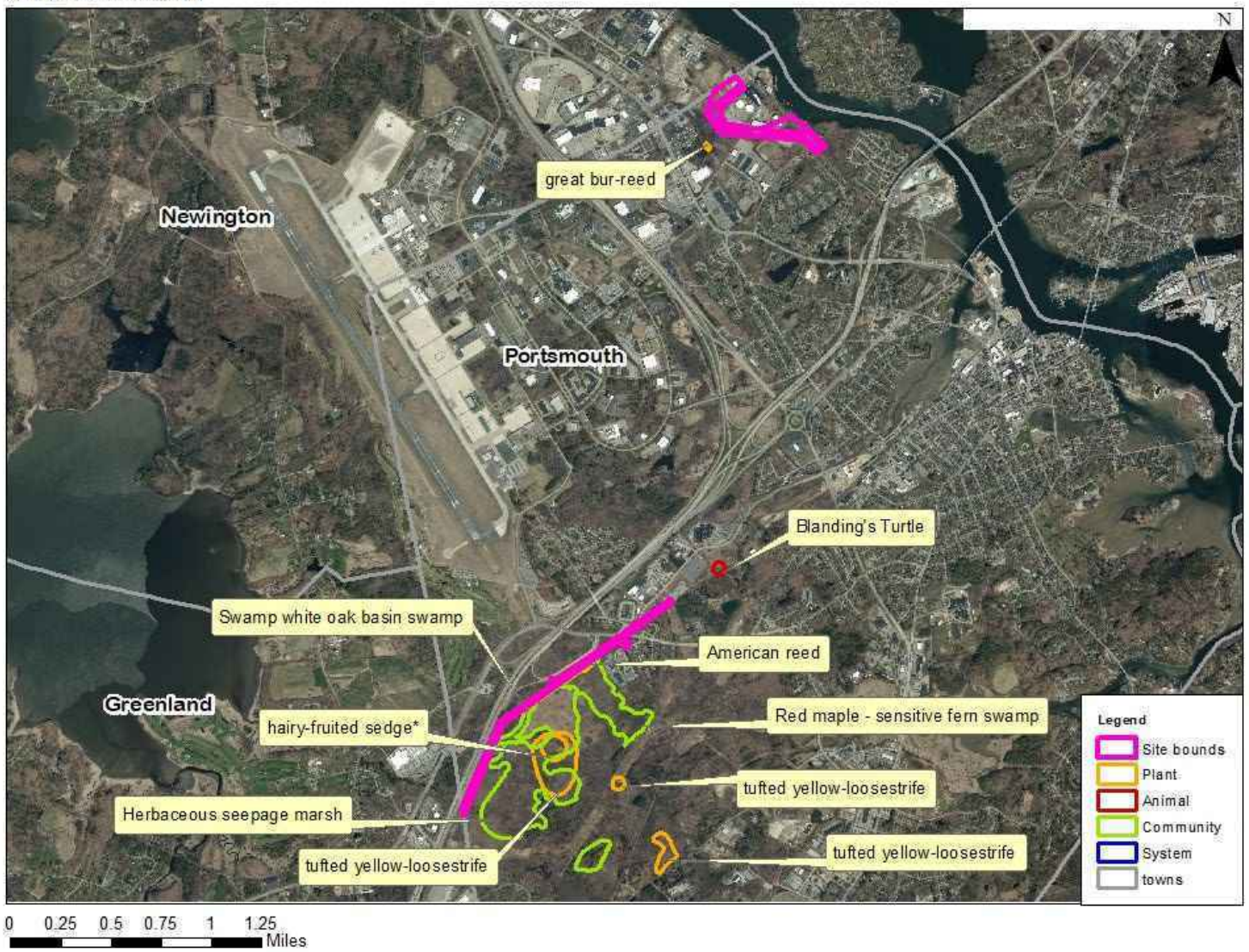
| **Vertebrate species** | **State[1]** | **Federal** | **Notes** |
|---|---|---|---|
| Blanding's Turtle (*Emydoidea blandingii*) | E | -- | Contact the NH Fish & Game Dept (see below). |

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

*For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.*

**Disclaimer**: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

## NHB23-3331


N
great bur-reed
Newington
Portsmouth
Blanding's Turtle
Swamp white oak basin swamp
American reed
Greenland
hairy-fruited sedge*
Red maple - sensitive fern swamp
tufted yellow-loosestrife
Herbaceous seepage marsh
tufted yellow-loosestrife
tufted yellow-loosestrife
Legend
Site bounds
Plant
Animal
Community
System
towns
0 0.25 0.5 0.75 1 1.25
Miles

NHB23-3331 EOCODE: CP00000103*001*NH

# New Hampshire Natural Heritage Bureau - Community Record

## Herbaceous seepage marsh

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Not ranked (need more information) |
| State: Not listed | State: Rare or uncommon |

**Description at this Location**

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).

Comments on Rank: 2020: A very large seepage marsh in a compromised landscape context.

Detailed Description: 2020: The community has variable composition, with patches of dense narrow-leaved cattail (*Typha angustifolia*) mixed with areas dominated by lake sedge (*Carex lacustris*). Red maple (*Acer rubrum*) saplings are frequent, along with shrub species like speckled alder (*Alnus incana* ssp. *rugosa*), highbush blueberry (*Vaccinium corymbosum*), smooth arrowwood (*Viburnum dentatum* var. *lucidum*), and meadowsweet (*Spiraea alba* var. *latifolia*). Other herb species observed include sensitive fern (*Onoclea sensibilis*), bluejoint (*Calamagrostis canadensis*), royal fern (*Osmunda regalis* var. *spectabilis*), and wrinkle-leaved goldenrod (*Solidago rugosa*). The invasive species purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*) are both present at moderate levels. 2002: The northern portion of the seepage marsh is characterized by dense swards of *Carex lacustris* (lake sedge) (50%) accompanied by *Typha latifolia* (common cat-tail, 10%), *Toxicodendron radicans* (climbing poison ivy, 5-10%), *Thelypteris palustris* var. *pubescens* (marsh fern, 5-10%), *Onoclea sensibilis* (sensitive fern, 5%), and scattered sapling *Acer rubrum* (red maple, 1-5%). Numerous other herbs are present in low abundance. This area grades further south into sparse woodland areas with more red maple (20-40 ft. tall, including many dead snags), but still more marshy than swampy. A soil sample was very well decomposed muck over silty muck. 1989: The hybrid cattail *Typha* x *Glauca* dominates open areas with extremely abundant *Lysimachia thyrsiflora* (tufted loosestrife). State record *Carex trichocarpa* (hairy-fruited sedge) occurs at the marsh-swamp ecotone.

General Area: 2020: The community is bordered by railroad tracks to the north and I-95 to the west. There is an exemplary ***swamp white oak basin swamp*** adjacent to the northwest, and a ***red maple - sensitive fern swamp*** to the east. 2002: The seepage marsh is the dominant community in the central and western portions of Great Bog, and bounded to the west by the large seepage swamp, to the north by railroad tracks, to the NW by swamp white oak swamp, to the west by the highway and disturbed emergent marsh, and to the south by powerlines and upland areas. While surrounded by development, Great Bog is so large that it is actually one of the largest and least developed tracts of land in Portsmouth. 1989: Borders the red maple swamp forests that the Great Bog largely consists of.

General Comments: 1989: Further field work and a field form is needed.

NHB23-3331 EOCODE: CP00000103*001*NH

Management Comments: --

**Location**

Survey Site Name: Great Bog
Managed By: Hospital Corporation of America

County: Rockingham
Town(s): Portsmouth
Size: 135.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The seepage marsh is found past the red maple swamp (open area with few trees ca. 0.45 miles from Route 33).

**Dates documented**

First reported: 1989-05-30 Last reported: 2020-09-09

NHB23-3331 EOCODE: CP00000094*015*NH

# New Hampshire Natural Heritage Bureau - Community Record

## Red maple - sensitive fern swamp

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Not ranked (need more information) |
| State: Not listed | State: Rare or uncommon |

**Description at this Location**

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).

Comments on Rank: 2020: EO Rank of C+ does not meet threshold for exemplary status for this community type. 2002: This is a fairly mature and very large example in a compromised landscape context. This part of Great Bog is less influenced by hydrologic alterations than portions nearer the outlet to the west.

Detailed Description: 2020: Red maple swamp with lake sedge (*Carex lacustris*) as the dominant species in the herb layer, which also includes sensitive fern (*Onoclea sensibilis*), bluejoint (*Calamagrostis canadensis*), cinnamon fern (*Osmundastrum cinnamomeum*), tussock sedge (*Carex stricta*), skunk-cabbage (*Symplocarpus foetidus*), and spotted touch-me-not (*Impatiens capensis*). Numerous invasive species present, including glossy false buckthorn (*Frangula alnus*), multiflora rose (*Rosa multiflora*), purple loosestrife (*Lythrum salicaria*), and Asian bittersweet (*Celastrus orbiculatus*). Due to invasive infestations and heavily developed landscape, no longer considered exemplary. 2002: Two seepage swamp associations were observed at the north end of the seepage swamp system. Area 1 occurs further east (ie along border of development to the east) and has a denser *Acer rubrum* (red maple) cover (60-70%) and a sparse shrub layer. It is dominated by *Carex stricta* (tussock sedge; 35%), *Calamagrostis canadensis* (blue-joint; 15-20%), and *Onoclea sensibilis* (sensitive fern), with lesser quantities of *Carex lacustris* (lake sedge) and *Toxicodendron radicans* (climbing poison ivy). Area 2 is a classic red maple/lake sedge seepage swamp, with all the species of Area 1 present in lower abundance, less dense red maple (40%), a dominant layer of *Carex lacustris* (lake sedge; 60%) and sensitive fern (5%), and a denser shrub layer consisting mostly of *Vaccinium corymbosum* (highbush blueberry; 30%) and *Ilex verticillata* (winterberry; 5%). *Ulmus americana* (American elm) is occasional in the subcanopy. 1989: *Acer rubrum* (red maple) dominates. Understory dominants include *Carex stricta* (tussock sedge), *Alnus serrulata* (smooth alder), *Onoclea sensibilis* (sensitive fern), *Symplocarpus foetidus* (skunk cabbage). *Lysimachia thyrsiflora* (tufted loosestrife) also occurs here.

General Area: 2020: Community is bordered by railroad tracks to the north and commercial development to the east. Adjacent to exemplary ***herbaceous seepage marsh*** to the west. 2002: The seepage swamp is the dominant community in eastern portion of Great Bog, and bounded to the west by the large seepage marsh, to the north by railroad tracks, to the south by powerlines and upland. While surrounded by development, Great Bog is so large that it is actually one of the largest and least developed tracts of land in Portsmouth.

NHB23-3331 EOCODE: CP00000094*015*NH

General Comments: 1989: Further field work needed.
Management Comments: --

**Location**

Survey Site Name: Great Bog
Managed By: Griffin

County: Rockingham
Town(s): Portsmouth
Size: 39.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The seepage marsh is found past the red maple swamp (open area with few trees ca. 0.45 miles from Route 33).

**Dates documented**

First reported: 1989-05-30 Last reported: 2020-09-09

NHB23-3331 EOCODE: CP00000160*001*NH

# New Hampshire Natural Heritage Bureau - Community Record

## Swamp white oak basin swamp

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Not ranked (need more information) |
| State: Not listed | State: Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).

Comments on Rank: 2002: 4-5 acres dominated by swamp white oak, an additional 8-10 acres where it is codominant, and another several acres predicted from air photos (not visited). Mature and fair to good sized example, compromised by proximity of highway, evidence of old ditching at south end of swamp, and a make-shift blue-tarp shelter/tepee.

Detailed Description: 2020: Canopy co-dominated by swamp white oak (*Quercus bicolor*) and red maple (*Acer rubrum*), with average diameter of 12ö dbh. American hornbeam (*Carpinus caroliniana* ssp. *virginiana*) frequent in the understory. Sensitive fern (*Onoclea sensibilis*) is dominant in the herbaceous layer, with other associates including lady fern (*Athyrium angustum*), American hog-peanut (*Amphicarpaea bracteata*), wood horsetail (*Equisetum sylvaticum*), and star sedge (*Carex echinata*). Homeless encampment observed during visit. 2002: This is a nice, mature example of a swamp white oak swamp. About 4-5 acres (eastern half of Area 1) are dominated by *Quercus bicolor* (swamp white oak, 50-60%), with *Acer rubrum* (red maple) codominant (ca. 15%), and *Carpinus caroliniana* var. *virginiana* (musclewood) contributing ca. 25% cover in the understory. The herb layer is sparse, excepting patches of *Onoclea sensibilis* (sensitive fern, ca. 25%), a few other herbs, and *Toxicodendron radicans* (climbing poison ivy). The exotic *Elaeagnus umbellata* (autumn olive) occurs in low abundance (<1%). The western half of Area 1, closer to the railroad tracks and highway, is somewhat drier and swamp white oak is only codominant (ca. 20%) cover along with similar amounts of *Pinus strobus* (white pine), *Betula lenta* (black birch), red maple, and *Tsuga canadensis* (hemlock). As in other swamp white oak swamps, the soil here is a silt loam. Several more acres of swamp white oak swamp (Area 2) are predicted from air photos to occur to the SE beyond a band of red maple swamp.

General Area: 2020: The community is bordered to the north by active railroad tracks and to the west by I-95. Most of the rest of community is bordered by an exemplary ***herbaceous seepage marsh***. 2002: The swamp white oak swamp is bound by railroad tracks to the north, Rte. 95 to the west, and Great Bog to the south and east. There is a band of red maple swamp between swamp white oak patches at Area 1 and Area 2, with the large seepage marsh beyond to the east and south that dominate much of Great Bog.

General Comments: 2002: While compromised by proximity to highway, the swamp may be forever protected from further development by being surrounded by highway, railroad track, and a huge wetland.

NHB23-3331 EOCODE: CP00000160*001*NH

Management Comments: --

**Location**

Survey Site Name: Great Bog
Managed By: City of Portsmouth Land

County: Rockingham
Town(s): Portsmouth
Size: 11.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The seepage swamp is located to the south just past the industrial complex (0.25 miles from Route 33); the seepage marsh is found further along past the seepage swamp (open area with few trees ca. 0.45 miles from Route 33); and the swamp white oak swamp is found where trees pick up again south of the RR tracks closer to the highway crossing (0.7 miles from Route 33).

**Dates documented**

First reported: 2002-09-27 Last reported: 2020-09-09

NHB23-3331 EOCODE: PMPOA4V011*003*NH

# New Hampshire Natural Heritage Bureau - Plant Record

## American reed (*Phragmites americanus*)

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Demonstrably widespread, abundant, and secure |
| State: Listed Endangered | State: Critically imperiled due to rarity or vulnerability |

### Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: 300-500 stems, approximately 5% in fruit. Plants are growing on south-facing embankment of railroad tracks at edge of swamp in a band roughly 50 meters long.

General Area: 2020: South-facing slope below railroad tracks at edge of ***red maple - sensitive fern swamp***. Associates include bluejoint (*Calamagrostis canadensis*), wrinkle-leaved goldenrod (*Solidago rugosa*), meadowsweet (*Spiraea alba* var. *latifolia*), glossy false buckthorn (*Frangula alnus*), northern blackberry (*Rubus flagellaris*), sensitive fern (*Onoclea sensibilis*), lake sedge (*Carex lacustris*), red maple (*Acer rubrum*), Asian bittersweet (*Celastrus orbiculatus*), and autumn-olive (*Elaeagnus umbellata* var. *parvifolia*). A population of common reed (*Phragmites australis*) begins around 20 meters east of this patch of American reed.

General Comments: --
Management Comments: --

### Location

Survey Site Name: Great Bog
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: 1.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2020: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The American reed is on the south-facing embankment of the railroad tracks at the edge of the swamp approximately 0.25 miles from Route 33.

NHB23-3331 EOCODE: PMPOA4V011*003*NH

**Dates documented**

First reported: 2020-09-09 Last reported: 2020-09-09

NHB23-3331 EOCODE: PMSPA01050*026*NH

# New Hampshire Natural Heritage Bureau - Plant Record

**great bur-reed (*Sparganium eurycarpum*)**

| **Legal Status** | **Conservation Status** |
|---|---|
| Federal: Not listed | Global: Demonstrably widespread, abundant, and secure |
| State: Listed Threatened | State: Imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2022: More than 1,000 plants occurring densely in a large area, many bearing mature fruit.

General Area: 2022: Plants occur in a marsh along a beaver-impounded drainage surrounded by development. The marsh they are in is in good health and the population is robust spread over a large area. In the shallow marsh, associated species include broad-leaved cattail (*Typha latifolia*), water willow (*Decodon verticillatus*), and the invasive plant purple loosestrife (*Lythrum salicaria*). In deeper parts of the marsh, the plants form a monoculture where no other plant species are present.

General Comments: --

Management Comments: 2022: The invasive plant purple loostrife is present

**Location**

Survey Site Name: Oriental Gardens
Managed By:

County: Rockingham
Town(s): Portsmouth
Size: .2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2022: Plants are located in a marsh along the beaver-impounded drainage behind oriental gardens. Access is from a path from the northwestern corner of Oriental Gardens. A culvert crosses the stream and the marsh is on the far side of the culvert.

**Dates documented**

First reported: 2022-07-19 Last reported: 2022-07-19

NHB23-3331 EOCODE: PMCYP03DY0*001*NH

# New Hampshire Natural Heritage Bureau - Plant Record

## hairy-fruited sedge (*Carex trichocarpa*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

### Description at this Location

| | |
|---|---|
| Conservation Rank: | Fair quality, condition and/or landscape context ('C' on a scale of A-D). |
| Comments on Rank: | Small population, needs field work. |
| Detailed Description: | 2004: Searched for but not found. 2003: Searched for but not found. 2002: Searched for but not found. 1989: 50-100 budding plants. Rawinski specimen #9001 temporarily in personal herbarium. |
| General Area: | 1989: Red maple swamp. With *Carex rostrata* (beaked sedge), *Acer rubrum* (red maple), *Cornus amomum* (silky dogwood), and *Typha latifolia* (common cat-tail). |
| General Comments: | 2003: The surveyor (Jeremy Bell) has learned to ID this plant without flower or seed, so would like to go back next year to look again. 2002: General reported area was searched, but is all swamp and extremely challenging to cover. Also, original topographic map shows polygons covering extensive area - much of this was searched, but no plants were found. Unknown date: More inventory needed. |
| Management Comments: | 2004: Lots of invasives. |

### Location

Survey Site Name: Great Bog
Managed By: City of Portsmouth Land

County: Rockingham
Town(s): Portsmouth
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Great Bog. South of railroad, west and north of powerline right-of-way.

### Dates documented

First reported: 1989-05-30 Last reported: 1989-05-30

NHB23-3331 EOCODE: PDPRI070S0*003*NH

# New Hampshire Natural Heritage Bureau - Plant Record

**tufted yellow-loosestrife (*Lysimachia thyrsiflora*)**

| **Legal Status** | **Conservation Status** |
|---|---|
| Federal: Not listed | Global: Demonstrably widespread, abundant, and secure |
| State: Listed Threatened | State: Imperiled due to rarity or vulnerability |

**Description at this Location**

| | |
|---|---|
| Conservation Rank: | Excellent quality, condition and landscape context ('A' on a scale of A-D). |
| Comments on Rank: | 1989: New Hampshire's best population. |
| Detailed Description: | 2023: Area 1: Searched for but not found in ROW. 2018: Area 4: Species observed having approximately 4% cover in 7 of 59 plots. Observed frequently across site outside of plots. 2013: Area 4: Species observed having approximately 1% cover in 2 of 59 plots. 2010: Searched for but not found. 2004: Searched for but not found. 2002: Searched for but not found. 1989: Thousands of budding plants. 1983: 2 small populations, 11-50 individuals. Specimen collected. |
| General Area: | 2018: Area 4: Drainage marsh formerly dominated by common reed (*Phragmites australis*). After invasive control activities, *Phragmites* was reduced to very low abundance. Marsh now dominated by broad-leaved cattail (*Typha latifolia*), along with some narrow-leaved cattail (*Typha angustifolia*) and hybrid cattail. Purple loosestrife (*Lythrum salicaria*) also frequent at lower abundance. Other frequent species include tussock sedge (*Carex stricta*), meadowsweet (*Spiraea alba* var. *latifolia*), royal fern (*Osmunda regalis* var. *spectabilis*), and woolly bulrush (*Scirpus cyperinus*). 1989: SNE seepage marsh. Also in red maple swamp. With *Carex rostrata* (beaked sedge), *Acer rubrum* (red maple), *Typha latifolia* (common cat-tail), and *Osmunda cinnamomea* (cinnamon fern). 1983: Where a powerline crosses a branch of a brook. |
| General Comments: | 1989: Occurs in 2 areas of seepage marsh. |
| Management Comments: | 2018: Area 4: This site was the subject of an intensive invasive species management project to reduce the presence of common reed (*Phragmites australis*), which completely dominated the marsh. Use of herbicides successfully reduces *Phragmites* to low abundance. *Galerucella* beetles were also released to try and control purple loosestrife (*Lythrum salicaria*), with some success. 2004: Lots of exotic species present. |

**Location**

Survey Site Name: Great Bog
Managed By: Griffin

County: Rockingham
Town(s): Portsmouth
Size: 53.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

NHB23-3331 EOCODE: PDPRI070S0*003*NH

Directions: Great Bog. South and east of crook in powerline right-of-way. 2019: Area 4: Banfield Road conservation properties behind Apostolic Church, 500 Banfield Road, Portsmouth. 1989: Areas 2 and 3: Park at railroad crossing of Banfield Road. Access via dirt road heading NW from Banfield Road about 0.2 miles north of the railroad (much of this road was flooded to 18 inches). 1983: Area 1: Great Bog. At crossing of branch of Pickering Brook and the electric line (brook crossing of utility line and service lane).

**Dates documented**

First reported: 1983-06-16 Last reported: 2018-10

NHB23-3331 EOCODE: ARAAD04010*632*NH

# New Hampshire Natural Heritage Bureau - Animal Record

## Blanding's Turtle (*Emydoidea blandingii*)

| **Legal Status** | | **Conservation Status** | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2011: Area 12906: 1 adult observed.
General Area: 2011: Area 12906: Marsh along railroad tracks.
General Comments: --
Management Comments: --

**Location**

Survey Site Name: Meadowbrook
Managed By: Hospital Corporation of America

County: Rockingham
Town(s): Portsmouth
Size: 1.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2011: Area 12906: Marsh adjacent to 333 Borthwick Avenue, behind Portsmouth Regional Hospital.

**Dates documented**

First reported: 2011-05-07 Last reported: 2011-05-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

**NHB DataCheck Results Letter**
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Lindsey White, GZA GeoEnvironmental
5 Commerce Park North Suite 201
Bedford, NH 03110
lindsey.white@gza.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc:

Date: 11/22/2023 (valid until 11/22/2024)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Minor, USACE - General Permit, USEPA - Stormwater Pollution Prevention

## NHB ID: NHB23-3332

Town: Greenland
Location: Eversource Maintained ROW

**Project Description:** Eversource is proposing to replace select utility structures within the existing and maintained 3111 ROW.

## Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

**NHB Comments:** Please send NHB representative photos during the growing season, proposed plans, and proposed project timing.

**NHFG Comments:** No comments at this time.

**NHB Consultation**

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

**NH Fish and Game Department Consultation**

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
**Contact NH Fish & Game at (603) 271-0467 with questions.**

**NHB Database Records:**
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

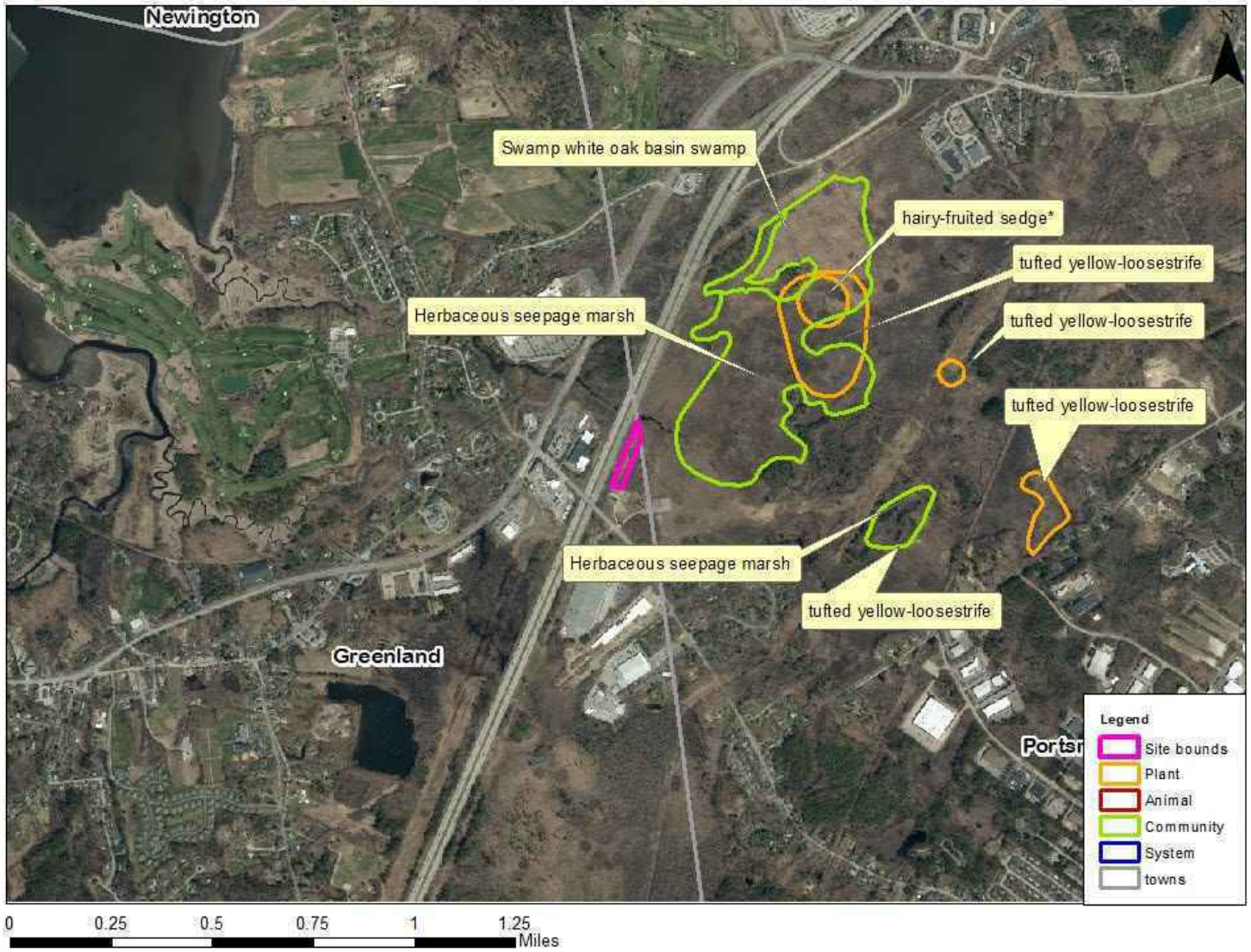
| **Natural Community** | **State[1]** | **Federal** | **Notes** |
|---|---|---|---|
| Herbaceous seepage marsh | -- | -- | As this wetland is strongly influenced by groundwater seepage, it could be affected by landscape alterations which modify groundwater movement or increase stormwater flow into it. |
| Swamp white oak basin swamp | -- | -- | Threats to this community include changes to the wetland's hydrology either through damming or increasing drainage. Significant increases in nutrients and pollutants from stormwater runoff could also have a deleterious effect on the wetland. |

| **Plant species** | **State[1]** | **Federal** | **Notes** |
|---|---|---|---|
| hairy-fruited sedge (*Carex trichocarpa*)* | E | -- | This species occurs in forested swamps, and would be threatened by changes to local hydrology as well as activities such as logging that opened up the canopy. |
| tufted yellow-loosestrife (*Lysimachia thyrsiflora*) | T | -- | As a resident of peatlands, this species is susceptible to any changes to the wetland's hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbances. |

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

**Disclaimer**: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

## NHB23-3332


Newington
Swamp white oak basin swamp
hairy-fruited sedge*
tufted yellow-loosestrife
Herbaceous seepage marsh
tufted yellow-loosestrife
tufted yellow-loosestrife
Herbaceous seepage marsh
tufted yellow-loosestrife
Greenland
Legend
Site bounds
Plant
Animal
Community
System
towns
0
0.25
0.5
0.75
1
1.25
Miles

NHB23-3332 EOCODE: CP00000103*001*NH

# New Hampshire Natural Heritage Bureau - Community Record

## Herbaceous seepage marsh

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Not ranked (need more information) |
| State: Not listed | State: Rare or uncommon |

**Description at this Location**

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).

Comments on Rank: 2020: A very large seepage marsh in a compromised landscape context.

Detailed Description: 2020: The community has variable composition, with patches of dense narrow-leaved cattail (*Typha angustifolia*) mixed with areas dominated by lake sedge (*Carex lacustris*). Red maple (*Acer rubrum*) saplings are frequent, along with shrub species like speckled alder (*Alnus incana* ssp. *rugosa*), highbush blueberry (*Vaccinium corymbosum*), smooth arrowwood (*Viburnum dentatum* var. *lucidum*), and meadowsweet (*Spiraea alba* var. *latifolia*). Other herb species observed include sensitive fern (*Onoclea sensibilis*), bluejoint (*Calamagrostis canadensis*), royal fern (*Osmunda regalis* var. *spectabilis*), and wrinkle-leaved goldenrod (*Solidago rugosa*). The invasive species purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*) are both present at moderate levels. 2002: The northern portion of the seepage marsh is characterized by dense swards of *Carex lacustris* (lake sedge) (50%) accompanied by *Typha latifolia* (common cat-tail, 10%), *Toxicodendron radicans* (climbing poison ivy, 5-10%), *Thelypteris palustris* var. *pubescens* (marsh fern, 5-10%), *Onoclea sensibilis* (sensitive fern, 5%), and scattered sapling *Acer rubrum* (red maple, 1-5%). Numerous other herbs are present in low abundance. This area grades further south into sparse woodland areas with more red maple (20-40 ft. tall, including many dead snags), but still more marshy than swampy. A soil sample was very well decomposed muck over silty muck. 1989: The hybrid cattail *Typha* x *Glauca* dominates open areas with extremely abundant *Lysimachia thyrsiflora* (tufted loosestrife). State record *Carex trichocarpa* (hairy-fruited sedge) occurs at the marsh-swamp ecotone.

General Area: 2020: The community is bordered by railroad tracks to the north and I-95 to the west. There is an exemplary ***swamp white oak basin swamp*** adjacent to the northwest, and a ***red maple - sensitive fern swamp*** to the east. 2002: The seepage marsh is the dominant community in the central and western portions of Great Bog, and bounded to the west by the large seepage swamp, to the north by railroad tracks, to the NW by swamp white oak swamp, to the west by the highway and disturbed emergent marsh, and to the south by powerlines and upland areas. While surrounded by development, Great Bog is so large that it is actually one of the largest and least developed tracts of land in Portsmouth. 1989: Borders the red maple swamp forests that the Great Bog largely consists of.

General Comments: 1989: Further field work and a field form is needed.

NHB23-3332 EOCODE: CP00000103*001*NH

Management Comments: --

**Location**

Survey Site Name: Great Bog
Managed By: Hospital Corporation of America

County: Rockingham
Town(s): Portsmouth
Size: 135.9 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The seepage marsh is found past the red maple swamp (open area with few trees ca. 0.45 miles from Route 33).

**Dates documented**

First reported: 1989-05-30 Last reported: 2020-09-09

NHB23-3332 EOCODE: CP00000160*001*NH

# New Hampshire Natural Heritage Bureau - Community Record

## Swamp white oak basin swamp

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Not ranked (need more information) |
| State: Not listed | State: Critically imperiled due to rarity or vulnerability |

**Description at this Location**

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).

Comments on Rank: 2002: 4-5 acres dominated by swamp white oak, an additional 8-10 acres where it is codominant, and another several acres predicted from air photos (not visited). Mature and fair to good sized example, compromised by proximity of highway, evidence of old ditching at south end of swamp, and a make-shift blue-tarp shelter/tepee.

Detailed Description: 2020: Canopy co-dominated by swamp white oak (*Quercus bicolor*) and red maple (*Acer rubrum*), with average diameter of 12ö dbh. American hornbeam (*Carpinus caroliniana* ssp. *virginiana*) frequent in the understory. Sensitive fern (*Onoclea sensibilis*) is dominant in the herbaceous layer, with other associates including lady fern (*Athyrium angustum*), American hog-peanut (*Amphicarpaea bracteata*), wood horsetail (*Equisetum sylvaticum*), and star sedge (*Carex echinata*). Homeless encampment observed during visit. 2002: This is a nice, mature example of a swamp white oak swamp. About 4-5 acres (eastern half of Area 1) are dominated by *Quercus bicolor* (swamp white oak, 50-60%), with *Acer rubrum* (red maple) codominant (ca. 15%), and *Carpinus caroliniana* var. *virginiana* (musclewood) contributing ca. 25% cover in the understory. The herb layer is sparse, excepting patches of *Onoclea sensibilis* (sensitive fern, ca. 25%), a few other herbs, and *Toxicodendron radicans* (climbing poison ivy). The exotic *Elaeagnus umbellata* (autumn olive) occurs in low abundance (<1%). The western half of Area 1, closer to the railroad tracks and highway, is somewhat drier and swamp white oak is only codominant (ca. 20%) cover along with similar amounts of *Pinus strobus* (white pine), *Betula lenta* (black birch), red maple, and *Tsuga canadensis* (hemlock). As in other swamp white oak swamps, the soil here is a silt loam. Several more acres of swamp white oak swamp (Area 2) are predicted from air photos to occur to the SE beyond a band of red maple swamp.

General Area: 2020: The community is bordered to the north by active railroad tracks and to the west by I-95. Most of the rest of community is bordered by an exemplary ***herbaceous seepage marsh***. 2002: The swamp white oak swamp is bound by railroad tracks to the north, Rte. 95 to the west, and Great Bog to the south and east. There is a band of red maple swamp between swamp white oak patches at Area 1 and Area 2, with the large seepage marsh beyond to the east and south that dominate much of Great Bog.

General Comments: 2002: While compromised by proximity to highway, the swamp may be forever protected from further development by being surrounded by highway, railroad track, and a huge wetland.

NHB23-3332 EOCODE: CP00000160*001*NH

Management Comments: --

**Location**

Survey Site Name: Great Bog
Managed By: City of Portsmouth Land

County: Rockingham
Town(s): Portsmouth
Size: 11.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2002: Best approach to portion of site (without pulling over on I-95) is from north via the railroad tracks just south of crossing of Route 33 and I-95. Park in vicinity of Route 33 crossing of railroad tracks, at industrial complex on Griffin Road to south of Route 33 (closest but dense shrub border along railroad track) or at railroad bridge by Greenland and Borthwick Streets just north of Route 33 (easiest). Proceed SW on railroad tracks. The seepage swamp is located to the south just past the industrial complex (0.25 miles from Route 33); the seepage marsh is found further along past the seepage swamp (open area with few trees ca. 0.45 miles from Route 33); and the swamp white oak swamp is found where trees pick up again south of the RR tracks closer to the highway crossing (0.7 miles from Route 33).

**Dates documented**

First reported: 2002-09-27 Last reported: 2020-09-09

NHB23-3332 EOCODE: PMCYP03DY0*001*NH

# New Hampshire Natural Heritage Bureau - Plant Record

## hairy-fruited sedge (*Carex trichocarpa*)

| Legal Status | | Conservation Status | |
|---|---|---|---|
| Federal: | Not listed | Global: | Apparently secure but with cause for concern |
| State: | Listed Endangered | State: | Critically imperiled due to rarity or vulnerability |

### Description at this Location

| | |
|---|---|
| Conservation Rank: | Fair quality, condition and/or landscape context ('C' on a scale of A-D). |
| Comments on Rank: | Small population, needs field work. |
| Detailed Description: | 2004: Searched for but not found. 2003: Searched for but not found. 2002: Searched for but not found. 1989: 50-100 budding plants. Rawinski specimen #9001 temporarily in personal herbarium. |
| General Area: | 1989: Red maple swamp. With *Carex rostrata* (beaked sedge), *Acer rubrum* (red maple), *Cornus amomum* (silky dogwood), and *Typha latifolia* (common cat-tail). |
| General Comments: | 2003: The surveyor (Jeremy Bell) has learned to ID this plant without flower or seed, so would like to go back next year to look again. 2002: General reported area was searched, but is all swamp and extremely challenging to cover. Also, original topographic map shows polygons covering extensive area - much of this was searched, but no plants were found. Unknown date: More inventory needed. |
| Management Comments: | 2004: Lots of invasives. |

### Location

Survey Site Name: Great Bog
Managed By: City of Portsmouth Land

County: Rockingham
Town(s): Portsmouth
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Great Bog. South of railroad, west and north of powerline right-of-way.

### Dates documented

| | | | |
|---|---|---|---|
| First reported: | 1989-05-30 | Last reported: | 1989-05-30 |

NHB23-3332 EOCODE: PDPRI070S0*003*NH

# New Hampshire Natural Heritage Bureau - Plant Record

## tufted yellow-loosestrife (*Lysimachia thyrsiflora*)

| Legal Status | Conservation Status |
|---|---|
| Federal: Not listed | Global: Demonstrably widespread, abundant, and secure |
| State: Listed Threatened | State: Imperiled due to rarity or vulnerability |

### Description at this Location

| | |
|---|---|
| Conservation Rank: | Excellent quality, condition and landscape context ('A' on a scale of A-D). |
| Comments on Rank: | 1989: New Hampshire's best population. |
| Detailed Description: | 2023: Area 1: Searched for but not found in ROW. 2018: Area 4: Species observed having approximately 4% cover in 7 of 59 plots. Observed frequently across site outside of plots. 2013: Area 4: Species observed having approximately 1% cover in 2 of 59 plots. 2010: Searched for but not found. 2004: Searched for but not found. 2002: Searched for but not found. 1989: Thousands of budding plants. 1983: 2 small populations, 11-50 individuals. Specimen collected. |
| General Area: | 2018: Area 4: Drainage marsh formerly dominated by common reed (*Phragmites australis*). After invasive control activities, *Phragmites* was reduced to very low abundance. Marsh now dominated by broad-leaved cattail (*Typha latifolia*), along with some narrow-leaved cattail (*Typha angustifolia*) and hybrid cattail. Purple loosestrife (*Lythrum salicaria*) also frequent at lower abundance. Other frequent species include tussock sedge (*Carex stricta*), meadowsweet (*Spiraea alba* var. *latifolia*), royal fern (*Osmunda regalis* var. *spectabilis*), and woolly bulrush (*Scirpus cyperinus*). 1989: SNE seepage marsh. Also in red maple swamp. With *Carex rostrata* (beaked sedge), *Acer rubrum* (red maple), *Typha latifolia* (common cat-tail), and *Osmunda cinnamomea* (cinnamon fern). 1983: Where a powerline crosses a branch of a brook. |
| General Comments: | 1989: Occurs in 2 areas of seepage marsh. |
| Management Comments: | 2018: Area 4: This site was the subject of an intensive invasive species management project to reduce the presence of common reed (*Phragmites australis*), which completely dominated the marsh. Use of herbicides successfully reduces *Phragmites* to low abundance. *Galerucella* beetles were also released to try and control purple loosestrife (*Lythrum salicaria*), with some success. 2004: Lots of exotic species present. |

### Location

Survey Site Name: Great Bog
Managed By: Griffin

County: Rockingham
Town(s): Portsmouth
Size: 53.0 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

NHB23-3332 EOCODE: PDPRI070S0*003*NH

Directions: Great Bog. South and east of crook in powerline right-of-way. 2019: Area 4: Banfield Road conservation properties behind Apostolic Church, 500 Banfield Road, Portsmouth. 1989: Areas 2 and 3: Park at railroad crossing of Banfield Road. Access via dirt road heading NW from Banfield Road about 0.2 miles north of the railroad (much of this road was flooded to 18 inches). 1983: Area 1: Great Bog. At crossing of branch of Pickering Brook and the electric line (brook crossing of utility line and service lane).

**Dates documented**

First reported: 1983-06-16 Last reported: 2018-10

**APPENDIX E – IPAC REPORT**

# 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

Rockingham County, New Hampshire

## Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

# 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. IPaC only shows species that are regulated by USFWS (see FAQ).

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<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/9045 | Endangered |

# Birds

| NAME | STATUS |
|---|---|
| Roseate Tern Sterna dougallii dougallii<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/2083 | Endangered |

# Insects

| NAME | STATUS |
|---|---|
| Monarch Butterfly Danaus plexippus<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/9743 | Candidate |



# 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.

You are still required to determine if your project(s) may have effects on all above listed species.

# Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**There are bald and/or golden eagles in your project area.**

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| Bald Eagle *Haliaeetus leucocephalus*<br>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. | Breeds Oct 15 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

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

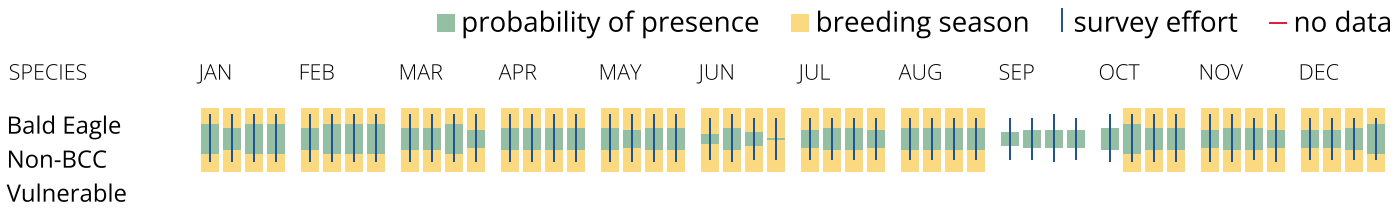
**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.




**What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?**

The potential for eagle presence 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). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs of bald and golden eagles 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 Rapid Avian Information Locator (RAIL) Tool.

**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. Please contact your local Fish and Wildlife Service Field Office if you have questions.

# 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[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

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:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**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, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|

American Oystercatcher Haematopus palliatus — Breeds Apr 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8935

Bald Eagle Haliaeetus leucocephalus — Breeds Oct 15 to Aug 31

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.

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black-billed Cuckoo Coccyzus erythropthalmus — Breeds May 15 to Oct 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9399

Blue-winged Warbler Vermivora pinus — Breeds May 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Hudsonian Godwit *Limosa haemastica* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs *Tringa flavipes* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Pectoral Sandpiper *Calidris melanotos* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prairie Warbler *Dendroica discolor* — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler *Protonotaria citrea* — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Purple Sandpiper *Calidris maritima* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-headed Woodpecker *Melanerpes erythrocephalus* — Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Ruddy Turnstone *Arenaria interpres morinella* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Rusty Blackbird *Euphagus carolinus* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Saltmarsh Sparrow *Ammodramus caudacutus* — Breeds May 15 to Sep 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9719

| | |
|---|---|
| Short-billed Dowitcher Limnodromus griseus<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9480 | Breeds elsewhere |
| Willet Tringa semipalmata<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Apr 20 to Aug 5 |
| Wood Thrush Hylocichla mustelina<br>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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

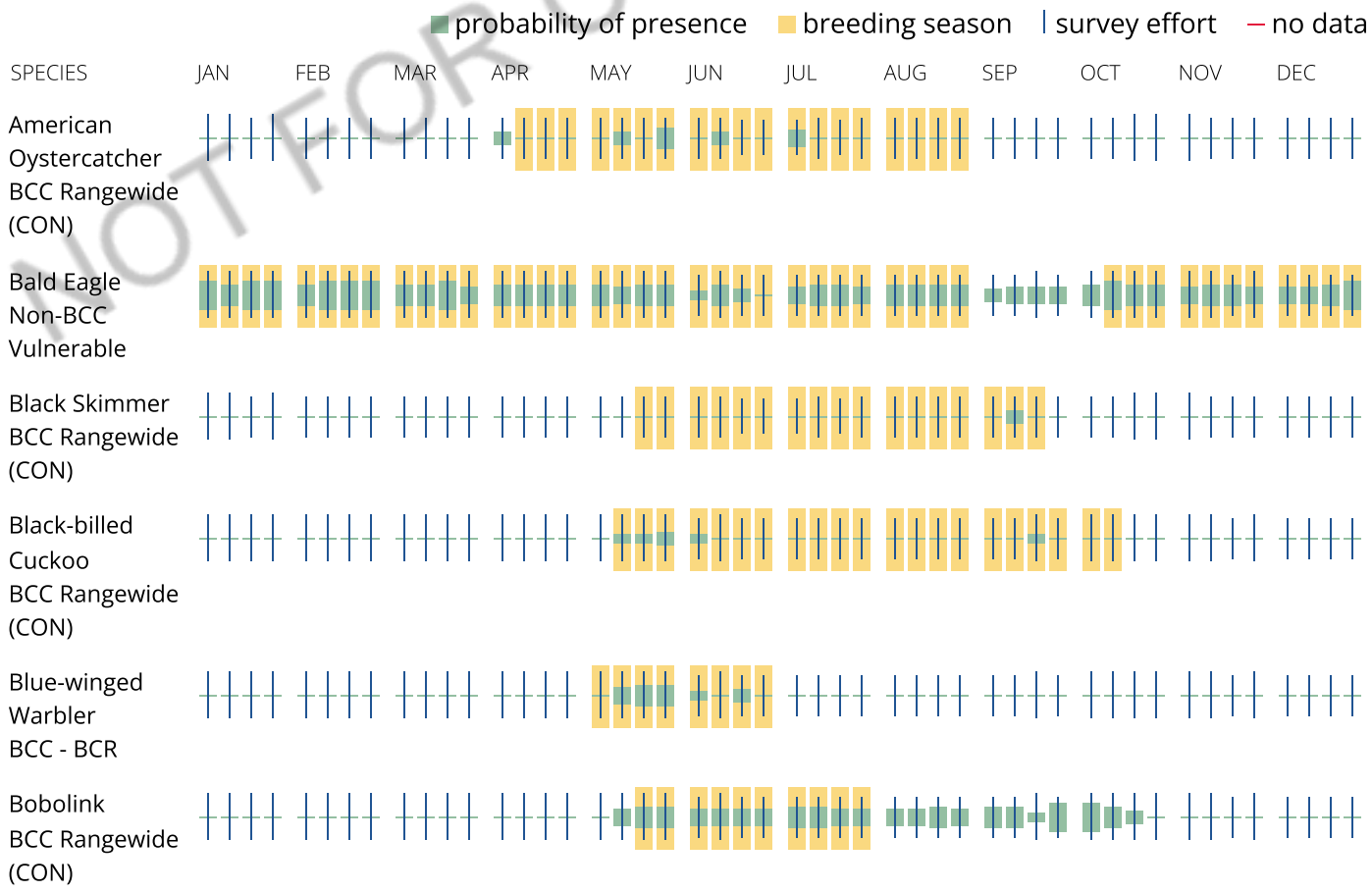
**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

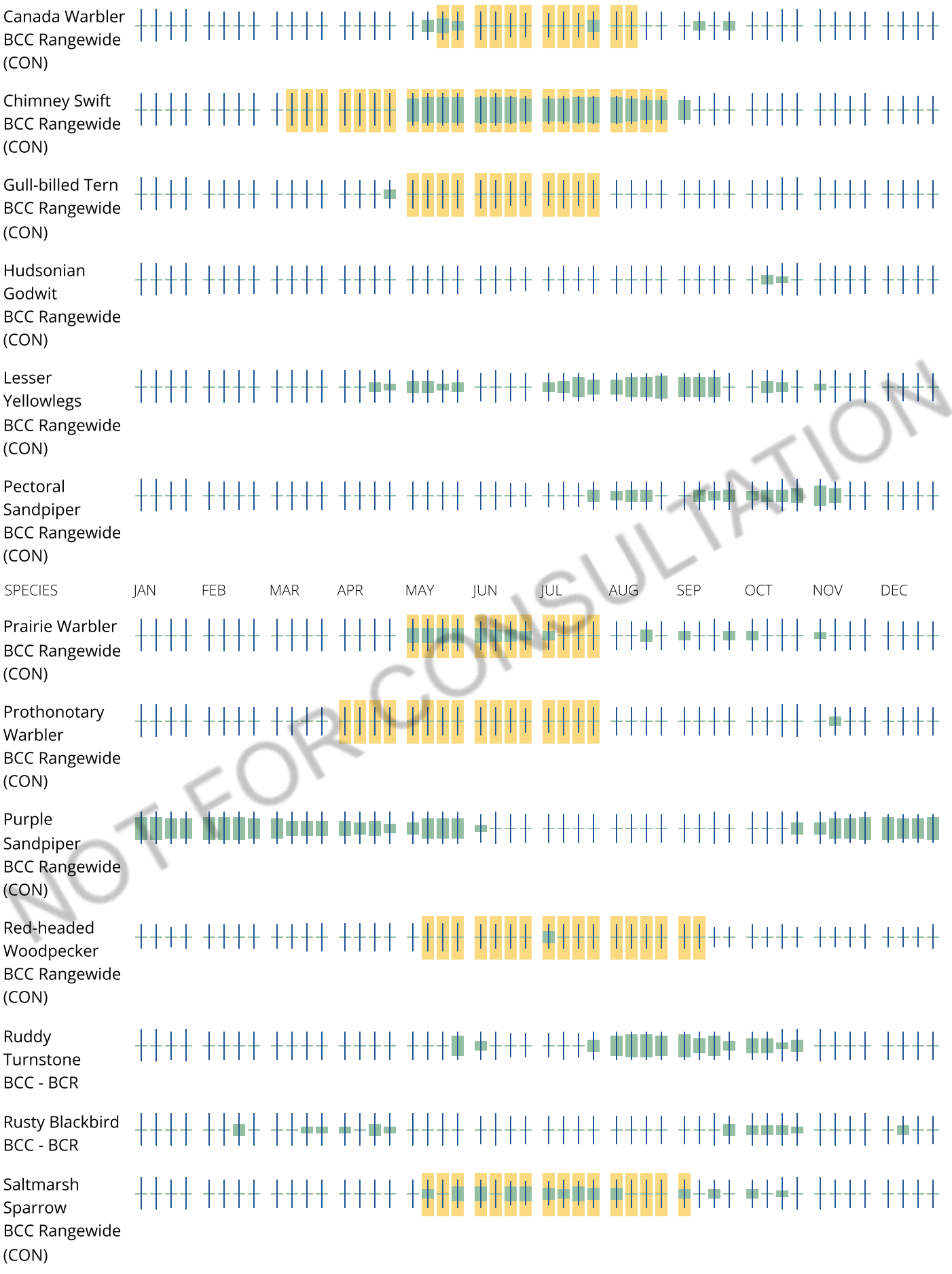
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

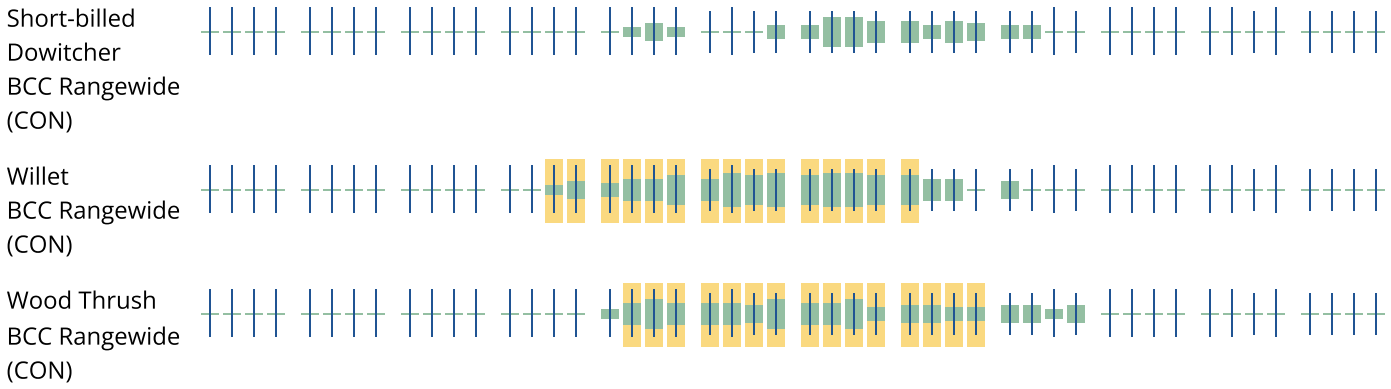
**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**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.










**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 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 list of migratory birds that potentially occur 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 Rapid Avian Information Locator (RAIL) 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 or migrating in my 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 query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. 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 (NWI)

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM5E
- PEM1/SS1E
- PEM1E

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1E
- PFO1/SS1E
- PFO1E

A full description for each wetland code can be found at the National Wetlands Inventory website

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.



**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.

# APPENDIX F – NHDHR REQUEST FOR PROJECT REVIEW

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
172 Pembroke Road, Concord, NH 03301

RECEIVED DEC 01 2023

| DHR Use Only | |
|---|---|
| R&C # | 15535 |
| Log In Date | 12/1/23 |
| Response Date | 12/18/23 |
| Sent Date | 12/19/23 |

# Request for Project Review by the New Hampshire Division of Historical Resources

☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

## GENERAL PROJECT INFORMATION

Project Title Resistance Substation Retirement Project, ESNH-2023-029

Project Location Eversource T-13 Transmission Line and 3171 Distribution Line Right-of-Way (ROW)

City/Town Greenland/Portsmouth Tax Map See attached Lot #

NH State Plane - Feet Geographic Coordinates: Easting 1213879 Northing 202663
*(See RPR Instructions and R&C FAQs for guidance.)*

Lead Federal Agency and Contact *(if applicable)* USACE
*(Agency providing funds, licenses, or permits)*
Permit Type and Permit or Job Reference # SV

State Agency and Contact *(if applicable)* NHDES

Permit Type and Permit or Job Reference # SPN

## APPLICANT INFORMATION

Applicant Name Eversource Energy, Attn: Kurt Nelson

Mailing Address 13 Legends Drive Phone Number 603-634-3256

City Hooksett State NH Zip 03106 Email kurt.nelson@eversource.com

## CONTACT PERSON TO RECEIVE RESPONSE

Name/Company GZA GeoEnvironmental, Inc., Attn: Conor E. Madison

Mailing Address 5 Commerce Park North, Suite 201 Phone Number 207-331-6629

City Bedford State NH Zip 03110 Email conor.madison@gza.com

*This form is updated periodically. Please download the current form at* www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review Instructions for direction on completing this form.* Submit one copy of this project review form for each project for which review is requested. Please include a self-addressed stamped envelope. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.s.labash@dncr.nh.gov.

**PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION**

*Project Boundaries and Description*

- ☒ Attach the Project Mapping ***using EMMIT or relevant portion of a 7.5' USGS Map.*** *(See RPR Instructions and R&C FAQs for guidance.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1**. *(Blank table forms are available on the DHR website.)* Please note, using EMMIT Guest View for an RPR records search does not provide the necessary information needed for DHR review.
  EMMIT or in-house records search conducted on 3/14/2023.

*Architecture*

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s):

- ☐ Photographs of ***each*** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

*Archaeology*

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

**Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.**

**DHR Comment/Finding Recommendation** *This Space for Division of Historical Resources Use Only*

☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.

☐ No Potential to cause Effects ☑ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments:

*If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.*

Authorized Signature: Nadine Miller, DSHPO Date: 12/18/23

# APPENDIX G – PHOTOGRAPHIC LOG

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 1: Looking north at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structures 97 to 95 on the 3171 Line ROW off Ocean Road, Greenland, NH.

Photograph No. 2: Looking north at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 94 on the 3171 Line ROW off Ocean Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 3: Looking south at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 94 on the 3171 Line ROW off Ocean Road, Greenland, NH.


Photograph No. 4: Looking northeast at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 93 on the 3171 Line ROW off Ocean Road, Greenland, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 5: Looking east at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 92 on the 3171 Line ROW off Ocean Road, Portsmouth, NH.

Photograph No. 6: Looking southwest at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 91 on the 3171 Line ROW off Ocean Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 7: Looking north at Wetland GW-1 (PEM1/PSS1/PFO1E.Fg/R2UB) near Structure 90 on the 3171 Line ROW off Ocean Road, Portsmouth, NH.

Photograph No. 8: Looking north towards Structure 86 on the 3171 Line ROW off Ocean Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 9: Looking east at Structures 85 and 84 on the 3171 Line ROW off NH33, Portsmouth, NH

Photograph No. 10: Looking east at Wetland PW-1 (PEM1/PSS1E.Fg) near Structure 83 on the 3171 Line ROW off NH33, Portsmouth, NH

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 11: Looking southwest at Wetland PW-1 (PEM1/PSS1E.Fg) near Structure 82 on the 3171 Line ROW off NH33, Portsmouth, NH

Photograph No. 12: Looking west at Wetland PW-1 (PEM1/PSS1E.Fg) near Structure 81 on the 3171 Line ROW off NH33, Portsmouth, NH

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 13: Looking southwest at Wetland PW-1 (PEM1/PSS1E.Fg) near Structure 80 on the 3171 Line ROW off NH33, Portsmouth, NH

Photograph No. 14: Looking northwest at Wetland PW-1 (PEM1/PSS1E.Fg) near Structure 79 on the 3171 Line ROW off NH33, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 15: Looking west at Wetland PW-1 (PEM1/PSS1E.Fg) near Structures 78 and 77 on the 3171 Line ROW off NH33, Portsmouth, NH.

Photograph No. 16: Looking northeast at Wetland PW-1 (PEM1/PSS1E.Fg) towards Structure 77 to 73 on the 3171 Line ROW off NH33, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 17: Looking northwest towards Structures 72 and 72.6 on the 3171 Line ROW off NH33, Portsmouth, NH.

Photograph No. 18: Looking southeast at Structures 72.1 to 72.5 on the 3171 Line ROW off Griffin Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 19: Looking northeast at Structure 1 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 20: Looking south near Wetland PW-2 (PEM1/PSS1E) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 21: Looking northwest near Wetland PW-3 (PEM1/PSS1E) between Structures 1 and 2 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 22: Looking southwest at Structure 2 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 23: Looking northwest at Wetland PW-4 (PEM1/PSS1E) near Structure 2 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 24: Looking south at Structure 3 and Wetlands PW-5 (PEM1/PSS1E) and PW-6 (PEM1/PSS1E) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 25: Looking west at Structure 3.5 and Wetland PW-6 (PEM1/PSS1E) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 26: Looking southeast at Structure 4 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 27: Looking south at Structure 5 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 28: Looking east at Structure 6 and Wetland PW-7 (PEM1/PSS1E,H) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 29: Looking east at Wetlands PW-9 (PEM1/PSS1Ex) and PW-8 (PEM1/PSS1E) near Structure 6 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 30: Looking east at Structure 7 and Wetlands PW-10 (PSS1Ex) and PW-11 (PSS1/PEM1Ex) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 31: Looking east at Wetland PW-11 (PSS1/PEM1Ex) between Structures 7 and 8 on the T13 Line ROW off Gosling Road, Portsmouth, NH

Photograph No. 32: Looking northeast at Structure 9 and Wetland PW-12 (PEM1/PSS1E) on the T13 Line ROW off Gosling Road, Portsmouth, NH.

**PHOTO LOG**
**T13/3171, and Resistance SS Project**
**Portsmouth, and Greenland, New Hampshire**
**Photos Taken: June and August 2023**

Photograph No. 33: Looking east at Wetland PW-13 (PEM1/PSS1E) and Structure 10 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

Photograph No. 34: Looking southeast at Wetlands PW-13 (PEM1/PSS1E), PW-14 (PSS1/PEM1E), and PW-15 (PEM1E), and at Structures 10 and 11 on the T13 Line ROW off Gosling Road, Portsmouth, NH.

# APPENDIX H – AVOIDANCE AND MINIMIZATION CHECKLIST

# AVOIDANCE AND MINIMIZATION CHECKLIST

## Water Division/Land Resources Management
## Wetlands Bureau

Check the Status of your Application

**RSA/Rule:** RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For the construction or modification of non-tidal shoreline structures over areas of surface waters without wetland vegetation, complete only Sections 1, 2, and 4 (or the applicable sections in Attachment A: Minor and Major Projects (NHDES-W-06-013).

The following definitions and abbreviations apply to this worksheet:

- "A/M BMPs" stands for Wetlands Best Management Practice Techniques for Avoidance and Minimization dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).
- "Practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

| **SECTION 1 - CONTACT/LOCATION INFORMATION** | |
|---|---|
| APPLICANT LAST NAME, FIRST NAME, M.I.: APPLICANT LAST NAME, FIRST NAME, M.I.: Eversource Energy, Attn: Kurt Nelson | |
| PROJECT STREET ADDRESS: 3171/3111 Right of Way and T13 Right of Way | PROJECT TOWN: Greenland and Portsmouth |
| TAX MAP/LOT NUMBER: Various - See Appendix B | |

| **SECTION 2 - PRIMARY PURPOSE OF THE PROJECT** | | |
|---|---|---|
| Env-Wt 311.07(b)(1) | Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof. | ☐ Yes ☒ No |

If you answered "no" to this question, describe the purpose of the "non-access" project type you have proposed:

The proposed project is to retire the Resistance Substation along with the other components, including, the removal of the existing T-13 Transmission line, the installation of the new 339 Distribution lLine, and the replacement of structures along the 3171 and 3111 Distribution Lines by replacing existing wooden poles with steel poles. The project requires temporary freshwater wetland impacts for timber matting access and work pad placement around utility poles, as well as permanent wetland impact for the installation of the proposed replacement structures. Upon completion of work, temporary timber matting will be removed and temporarily impacted wetland areas will be mulched and seeded with a native seed mix, as necessary.

**SECTION 3 - A/M PROJECT DESIGN TECHNIQUES**

Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.

| | | |
|---|---|---|
| Env-Wt 311.07(b)(2) | For any project that proposes new permanent impacts of more than one acre or that proposes new permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs. | ☒ Check<br>☐ N/A |
| Env-Wt 311.07(b)(3) | Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values. | ☒ Check<br>☐ N/A |
| Env-Wt 311.07(b)(4)<br>Env-Wt 311.10(c)(1)<br>Env-Wt 311.10(c)(2) | The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location and design for the proposed project that has the least impact to wetland functions. | ☒ Check<br>☐ N/A |
| Env-Wt 311.07(b)(4)<br>Env-Wt 311.10(c)(3) | Where impacts to wetland functions are unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions. | ☒ Check<br>☐ N/A |
| Env-Wt 313.01(c)(1)<br>Env-Wt 313.01(c)(2)<br>Env-Wt 313.03(b)(1) | No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands. | ☒ Check<br>☐ N/A |
| Env-Wt 313.01(c)(3) | The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs. | ☒ Check<br>☐ N/A |

| | | |
|---|---|---|
| Env-Wt 313.03(b)(3)<br>Env-Wt 904.07(c)(8) | The project maintains hydrologic connectivity between adjacent wetlands or stream systems. | ☒ Check<br>☐ N/A |
| Env-Wt 311.10<br>A/M BMPs | Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact. | ☐ Check<br>☒ N/A |
| Env-Wt 311.10<br>A/M BMPs | The project clusters structures to avoid wetland impacts. | ☐ Check<br>☒ N/A |
| Env-Wt 311.10<br>A/M BMPs | The placement of roads and utility corridors avoids wetlands and their associated streams. | ☒ Check<br>☐ N/A |
| A/M BMPs | The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed. | ☒ Check<br>☐ N/A |
| A/M BMPs | The project proposes bridges or spans instead of roads/driveways/trails with culverts. | ☒ Check<br>☐ N/A |
| A/M BMPs | The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point. | ☒ Check<br>☐ N/A |
| Env-Wt 500<br>Env-Wt 600<br>Env-Wt 900 | Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage. | ☐ Check<br>☒ N/A |
| Env-Wt 900 | Stream crossings are sized to address hydraulic capacity and geomorphic compatibility. | ☒ Check<br>☐ N/A |
| A/M BMPs | Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges. | ☒ Check<br>☐ N/A |
| **SECTION 4 - NON-TIDAL SHORELINE STRUCTURES** | | |
| Env-Wt 313.03(c)(1) | The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure. | ☒ Check<br>☐ N/A |
| Env-Wt 313.03(c)(2) | The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe navigation and docking on the frontage. | ☐ Check<br>☒ N/A |
| Env-Wt 313.03(c)(3) | The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties. | ☒ Check<br>☐ N/A |

| | | |
|---|---|---|
| Env-Wt 313.03(c)(4) | The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation. | ☒ Check<br>☐ N/A |
| Env-Wt 313.03(c)(5) | The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat. | ☐ Check<br>☒ N/A |
| Env-Wt 313.03(c)(6) | The non-tidal shoreline structure has been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability. | ☒ Check<br>☐ N/A |

**APPENDIX I – NHDES ARM FUND SPREADSHEET**

# NHDES AQUATIC RESOURCE MITIGATION FUND
# WETLAND PAYMENT CALCULATION
# ***INSERT AMOUNTS IN YELLOW CELLS***

| | | | |
|---|---|---|---|
| **1** | **Convert square feet of impact to acres:** | | |
| **INSERT SQ FT OF IMPACT** | Square feet of impact = | 100.00 | |
| | | 43560.00 | |
| | Acres of impact = | 0.0023 | |
| | Total Wetland Credits = | 0.0023 | |
| | | | |
| **2** | **Determine acreage of wetland construction:** | | |
| | Forested wetlands: | 0.0034 | |
| | Tidal wetlands: | 0.0069 | |
| | All other areas: | 0.0034 | |
| | | | |
| **3** | **Wetland construction cost:** | | |
| | Forested wetlands: | $373.27 | |
| | Tidal Wetlands: | $746.53 | |
| | All other areas: | $373.27 | |
| | | | |
| **4** | **Land acquisition cost (See land value table):** | | |
| **INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)** | Town land value: | 67802 | |
| | Forested wetlands: | $233.48 | |
| | Tidal wetlands: | $466.96 | |
| | All other areas: | $233.48 | |
| | | | |
| **5** | **Construction + land costs:** | | |
| | Forested wetland: | $606.75 | |
| | Tidal wetlands: | $1,213.49 | |
| | All other areas: | $606.75 | |
| | | | |
| **6** | **NHDES Administrative cost:** | | |
| | Forested wetlands: | $121.35 | |
| | Tidal wetlands: | $242.70 | |
| | All other areas: | $121.35 | |
| | | | |
| ********** | **TOTAL ARM PAYMENT**********| | |
| | Forested wetlands: | $728.09 | |
| | Tidal wetlands: | $1,456.19 | |
| | All other areas: | $728.09 | |

# NHDES AQUATIC RESOURCE MITIGATION FUND
# WETLAND PAYMENT CALCULATION
# ***INSERT AMOUNTS IN YELLOW CELLS***

| | | | |
|---|---|---|---|
| **1** | **Convert square feet of impact to acres:** | | |
| **INSERT SQ FT OF IMPACT** | Square feet of impact = | 725.00 | |
| | | 43560.00 | |
| | Acres of impact = | 0.0166 | |
| | Total Wetland Credits = | 0.0166 | |
| **2** | **Determine acreage of wetland construction:** | | |
| | Forested wetlands: | 0.0250 | |
| | Tidal wetlands: | 0.0499 | |
| | All other areas: | 0.0250 | |
| **3** | **Wetland construction cost:** | | |
| | Forested wetlands: | $2,706.19 | |
| | Tidal Wetlands: | $5,412.37 | |
| | All other areas: | $2,706.19 | |
| **4** | **Land acquisition cost (See land value table):** | | |
| **INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)** | Town land value: | 67802 | |
| | Forested wetlands: | $1,692.72 | |
| | Tidal wetlands: | $3,385.43 | |
| | All other areas: | $1,692.72 | |
| **5** | **Construction + land costs:** | | |
| | Forested wetland: | $4,398.90 | |
| | Tidal wetlands: | $8,797.81 | |
| | All other areas: | $4,398.90 | |
| **6** | **NHDES Administrative cost:** | | |
| | Forested wetlands: | $879.78 | |
| | Tidal wetlands: | $1,759.56 | |
| | All other areas: | $879.78 | |
| ********** | **TOTAL ARM PAYMENT**********| | |
| | Forested wetlands: | $5,278.68 | |
| | Tidal wetlands: | $10,557.37 | |
| | All other areas: | $5,278.68 | |

# APPENDIX J – USACE APPENDIX B CHECKLIST AND 11 X 17 PLANS

US Army Corps of Engineers ®
New England District

# Appendix B
# New Hampshire General Permits
# Required Information and USACE Section 404 Checklist

## Required Information

In order for USACE to properly evaluate your application, applicants must submit the following information for all projects along with the NHDES Wetlands Bureau application or permit notification forms. Some projects may require more information. Check with USACE at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the NHDES Wetlands Bureau application and Permit by Notification forms.

- NHDES Wetlands Permit Application.
- Request for Project Review Form by the NH DHR: https://www.nh.gov/nhdhr/review/rpr.htm.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible plans no larger than 11”x17” with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show MLW and MHW elevations. Show the HTL elevations when fill is involved. In other waters, show the OHW elevation.
- On each plan, show the following for the project:
  - Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. In coastal waters this may be mean higher high water (MHHW), MHW, MLW, mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983 - 2001.
  - Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
  - Project limits with existing and proposed conditions.
  - Limits of any FNP in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the FNP.
  - Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the OHW in inland waters and below the HTL in coastal waters.
  - Delineation of all waterways and wetlands on the project site.
- Use Federal delineation methods and include USACE wetland delineation data sheets (GC 2).
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact USACE for guidance.

US Army Corps of Engineers ®
New England District

## Appendix B
## New Hampshire General Permits
## Required Information and USACE Section 404Checklist

### USACE Section 404 Checklist

1. Attach any explanations to this checklist. Lack of information could delay a USACE permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 3 for information on single and complete projects.
4. Contact USACE at (978) 318-8832 with any questions.
5. The information requested below is generally required in the NHDES Wetland Application. See page 61 for NHDES references and Admin Rules as they relate to the information below.

| **1. Impaired Waters** | Yes | No |
|---|---|---|
| 1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See the following to determine if there is an impaired water in the vicinity of your work area. * https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx | x | |
| **2. Wetlands** | Yes | No |
| 2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work? | x | |
| 2.2 Are there proposed impacts to tidal SAS, prime wetlands, or priority resource areas? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www4.des.state.nh.us/NHB-DataCheck/. | x | |
| 2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage? | x | |
| 2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.) | x | |
| 2.5 The overall project site is more than 40 acres? | x | |
| 2.6 What is the area of the previously filled wetlands? | 1,125 Sq. Ft. - Existing Poles | |
| 2.7 What is the area of the proposed fill in wetlands? | 825 Sq. Ft. - Proposed Poles | |
| 2.8 What % of the overall project sire will be previously and proposed filled wetlands? | 0.01% | |
| **3. Wildlife** | Yes | No |
| 3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www4.des.state.nh.us/NHB-DataCheck/. USFWS IPAC website: https://ipac.ecosphere.fws.gov/ | x | |

| | | |
|---|---|---|
| 3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at:<br>• PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html.<br>• Data Mapper: www.granit.unh.edu.<br>• GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. | X | |
| 3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)? | | X |
| 3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development? | | X |
| 3.5 Are stream crossings designed in accordance with the GC 31? | X - Stream crossings temporary with timber matting | |
| **4. Flooding/Floodplain Values** | Yes | No |
| 4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream? | X | |
| 4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage? | N/A - existing and maintained ROW, flood storage loss not anticipated | |
| **5. Historic/Archaeological Resources** | | |
| For a minimum, minor or major impact project - a copy of the RPR Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 37 GC 14(d) of the GP document** | X | |
| **6. Minimal Impact Determination (for projects that exceed 1 acre of permanent impact)** | Yes | No |
| Projects with greater than 1 acre of permanent impact must include the following:<br>• Functional assessment for aquatic resources in the project area.<br>• On and off-site alternative analysis.<br>• Provide additional information and description for how the below criteria are met. | N/A - less than 1 acre of permanent impact for proposed project. | |
| 6.1 Will there be complete loss of aquatic resources on site? | | |
| 6.2 Have the impacts to the aquatic resources been avoided and minimized to the greatest extent practicable? | | |
| 6.3 Will all aquatic resource function be lost? | | |
| 6.4 Does the aquatic resource (s) have regional significance (watershed or ecoregion)? | | |
| 6.5 Is there an on-site alternative with less impact? | | |
| 6.6 Is there an off-site alternative with less impact? | | |
| 6.7 Will there be a loss to a resource dependent species? | | |
| 6.8 Are indirect impacts greater than 1 acre within and adjacent to the project area? | | |
| 6.9 Does the proposed mitigation replace aquatic resource function for direct, indirect, and cumulative impacts? | | |

*Although this checklist utilizes state information, its submittal to USACE is a federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

US Army Corps of Engineers ®
New England District

# Appendix B
# New Hampshire General Permits
# Required Information and USACE Section 404 Checklist

## NHDES Rule Citations

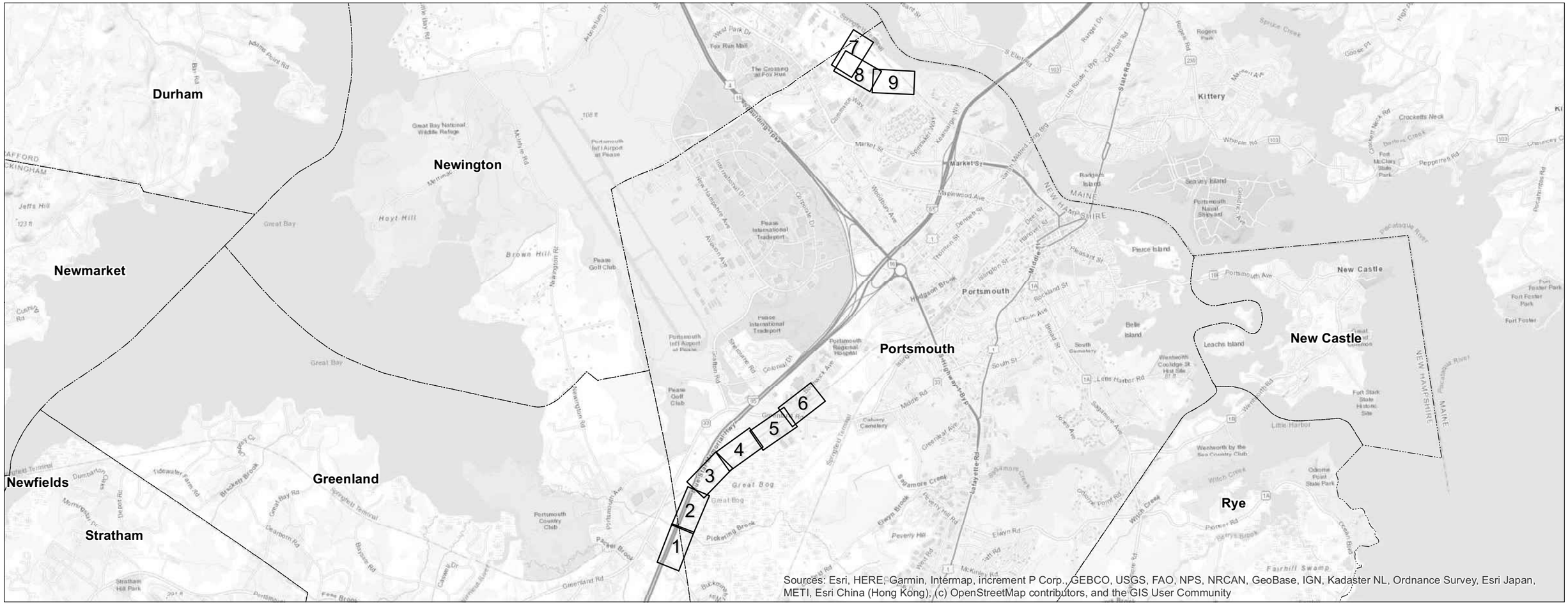
| Appendix B Requirements | NHDES Citation | NHDES Resource, Form & BMP |
|---|---|---|
| **1. Impaired Waters** | | |
| 1.1 | See Env-Wt 307.03 Protection of Water Quality Required & Env-Wt 306.05 a) 7 | https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx |
| **2. Wetlands** | | |
| 2.1 | N/A | N/A |
| 2.2 | Env 307.06; Env- Wt 311.01(a)(b) (c) | NH Online Forms System - Coastal Resource Worksheet. Version 2.0 Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov) https://www4.des.state.nh.us/NHB-DataCheck/. |
| 2.3 | Env-Wt 313.03(b)(3); Env-Wt 313.03(b)4)(7); Env-Wt 307.06 | See Chapter 7, Stream & Wetland Crossings: *Wetlands Best Management Practice Techniques for Avoidance and Minimiz* Wetlands-BMP-Manual-2019.pdf (neiwpcc.org) (& Env-Wt 900 for Stream Crossings) |
| 2.4 | Env-Wt 604.02 (Tidal buffer zone); Env-Wt 704 (prime buffers) | |
| 2.5 | N/A | N/A |
| 2.6 | N/A | N/A |
| 2.7 | Env-Wt 311.04(g) | Standard application Section 11- NH Online Forms System - Standard Dredge and Fill Wetlands Permit Application . Version 3.5 |
| 2.8 | N/A | N/A |
| **3. Wildlife** | | |
| 3.1 | Env-Wt 103.69 “Protected species or habitat”; Env-Wt 307.06, 311.01 | NHB DataCheck Tool: https://www4.des.state.nh.us/NHB-DataCheck/. Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov) |
| 3.2 | Env-Wt 311.02; 313.03(b)(2), (4), (7)(16); Env-Wt 313.03(b)(6) & See Env-Wt 808.19(g), Env-Wt 808.20 | Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov) |
| 3.3 | N/A | N/A |
| 3.4 | NA | N/A |
| 3.5 | (Env-Wt 900) Microsoft Word - Env-Wt 900 as of 10-2020.docx (nh.gov) | New Hampshire Stream Crossing Guidelines (nh.gov) (2009 UNH) _ NH Online Forms System - Wetland Permit Application Stream Crossing Worksheet. Version 1.8 Stream Crossing Design (nh.gov) : https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/documents/RR_V.9_FINAL_3-14-19.pdf Best Management Practices for Routine Roadway Maintenance Activities in New Hampshire. 2019. New Hampshire Department of Transportation. |
| **4. Flooding/Floodplain Values** | | |
| 4.1 | Env-Wt 311.05; Env-Wt 103.66 517.03(b); 517.06(a)(6); | Wetlands Permitting: Priority Resource Area (nh.gov) NH Online Forms System - Coastal Resource Worksheet. Version 2.0 New Hampshire Coastal Flood Risk Summary \| NH Department of |

| | | |
|---|---|---|
| | 527.02(e); 527.04(d); Env-Wt 600 Env-Wt 900 | Environmental Services (cited in Env-Wt 603.05)<br>NH Online Forms System - Wetland Permit Application Stream Crossing Worksheet. Version 1.8<br>hydraulic-vulnerability-handout.pdf (nh.gov) |
| 4.2 | Env-Wt 527.02 & 527.04 & 313.04 & Env-Wt 800; Wt 605.03 & 605.04 | Yes, for permanent impacts to a PRA, impacts from public highway projects, & those projects where flood storage functions are lost when the mitigation threshold is reached.<br>Wetlands Mitigation \| NH Department of Environmental Services |
| **5. Historical/Archeological Resources** | | |
| **5.0** | Env-Wt 311.02(f)(6) | |
| **6. Minimal Impact Determination** | | |
| 6.0 | F/V assessment: (Env-Wt 311.10); Env-Wt 603.04 (Coastal Functional Assessment)<br>Alternatives: (Env-Wt 311.07(b)(2)) | NH Online Forms System - Wetlands Functional Assessment Worksheet. Version 1.3<br>NH Online Forms System - Coastal Resource Worksheet. Version 2.0 |
| 6.1 | | Wetlands Permitting: Avoidance, Minimization, and Mitigation (nh.gov) |
| 6.2 | Env-Wt 102.12 (“Avoidance”), Env-Wt 102.13 (“Avoidance, minimization, mitigation”), Env-Wt 102.14 (“Avoid and minimize”), Env-Wt 311.01, Env-Wt 313.03 (“Avoidance & Minimization")<br>Env-Wt 311.07 | See *Wetlands Best Management Practice Techniques for Avoidance and Minimization* - Wetlands-BMP-Manual-2019.pdf (neiwpcc.org)referenced in Env-Wt 313.03(a); A/M written narrative (NH Online Forms System - Avoidance and Minimization Written Narrative. Version 2.0); Avoidance and Minimization Checklist: NH Online Forms System - Avoidance and Minimization Checklist. Version 3.1 |
| 6.3 | Env-Wt 311.10, 603.04 | See Functional Assessment worksheets above |
| 6.4 | Env-Wt 311.02, Env-Wt 312.04. Env-Wt 306.05, 307.06, 311.01 | See Protected Species or Habitat (including exemplary natural communities) |
| 6.5 | Env-Wt 311.01, Env-Wt 311.07, Env-Wt 311.10 & 313.01 c)1) | See Avoidance & Minimization cites above & BMPs |
| 6.6 | (Env-Wt 313.01c) (1) & Env-Wt 311.07(b)(2)) | |
| 6.7 | Env-Wt 311.10, Env-Wt 103.69, Env-307.06, see Avoidance & minimization cites | NH Online Forms System - Wetlands Functional Assessment Worksheet. Version 1.3; Wetlands Permitting: Priority Resource Area (nh.gov)<br>NH Online Forms System - Coastal Resource Worksheet. Version 2.0 |
| 6.8 | Env-Wt 102.05 (Water quality BMPs) | Practices to minimize or prevent direct or indirect discharge of sediment or other pollutants into surface waters and wetlands, listed in Env-Wt 307 |
| 6.9 | Env-Wt 800 | |

# Resistance Substation Retirement Project

GREENLAND AND PORTSMOUTH, NEW HAMPSHIRE
Environmental Resources Map

Date: November 14, 2023




PREPARED FOR:

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

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INDEX OF FIGURES

Title Sheet / Index Map
Map Sheets 1-9

| NO. | DATE | REVISIONS |
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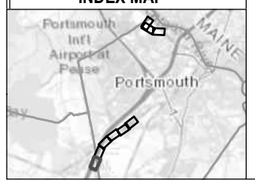
PREPARED BY:

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com


**INDEX MAP**




- PROPOSED STRUCTURE
- EXISTING STRUCTURE
- EXISTING STRUCTURE TO BE REMOVED
- EXISTING DISTRIBUTION LINE
- PROPOSED DISTRIBUTION LINE
- NHDOT ROADS
- FLOWLINES
- TRANSMISSION LINE
- APPROXIMATE ROW
- EROSION CONTROLS
- PROPOSED ACCESS
- OFF ROW ACCESS
- EXISTING ACCESS
- VERY POORLY DRAINED SOILS IMPACT
- HISTOSOL AND HISTIC EPIPEDON SOILS
- UPLAND MATTING
- TEMPORARY NON-VPD WETLAND IMPACT
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- PRIME WETLAND
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- POTENTIAL VERNAL POOL
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- WETLAND
- WETLAND ADJACENT TO TIER 3+
- STONEWALL
- WORK AREA
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- TOWN BOUNDARY
- RAILROAD
- 2FT CONTOURS

*This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.*

N

1 inch = 100 feet

0 50 100 Feet

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

GREENLAND/PORTSMOUTH, NH | MAP SHEET

Date: November, 2023

04.0191410.47

**1 OF 9**

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GREENLAND
PORTSMOUTH

INTERSTATE 95 SOUTH — Interstate 95 South

INTERSTATE 95 NORTH — Interstate 95 North

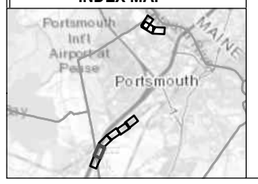
GW-1
PEM1/PSS1/PFO1E,Fg/R2UB

APPROXIMATE VERY
POORLY DRAINED SOILS
IMPACT: 102,309 SF

3111 Line
3171 Line

Unnamed Stream

## INDEX MAP

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0 50 100 Feet

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH | MAP SHEET

Date: November, 2023 | **2 OF 9**

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Interstate 95 South
INTERSTATE 95 SOUTH
I-95 SB Exit 3 On-ramp (NH-33)
Crossover
INTERSTATE 95 NORTH Interstate 95 North
SPAULDING TPKE NB EXIT 3 ON RAMP (WOODBURY AVE)
Spaulding Tpke NB Exit 3 On-ramp (Woodbury Ave)
Unnamed Stream
3111 Line
3171 Line
APPROXIMATE VERY POORLY DRAINED SOILS IMPACT: 102,309 SF
APPROXIMATE TEMPORARY NON-VPD WETLAND IMPACT: 139,792 SF
GW-1
PEM1/PSS1/PFO1E;Fg/R2UB
PW-1
PEM1/PSS1E;Fg

## INDEX MAP


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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

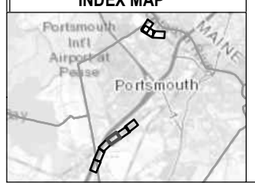
MAP SHEET

Date: November, 2023

04.0191410.47

**3 OF 9**


**INDEX MAP**

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

Date: November, 2023

04.0191410.47

**4 OF 9**

NO NAME — No Name

3111 Line

I-95 Exit 3 Off-ramp (NH 33)

I-95 EXIT 3 OFF-RAMP (NH 33)

49D

PW-1
PEM1/PSS1E;Fg

NH ROUTE 33 — NH Route 33

3111 Line

Line

SPAULDING TPKE NB EXIT 3 ON RAMP (WOODBURY AVE)

Spaulding Tpke NB Exit 3 On ramp (Woodbury Ave)

I-95 Exit 3 On ramp (NH 33)

I-95 EXIT 3 ON RAMP (NH 33)

APPROXIMATE TEMPORARY NON-VPD WETLAND IMPACT: 139,792 SF

APPROXIMATE TEMPORARY NON-VPD WETLAND IMPACT: 1,250 SF

GREENLAND RD

Greenland Rd

3111 DE

28 61 76 29 60 30 75 3111 Line 31 59 74 3111 Line 3171 Line 32 58 73 33 3171 Line 57 34 35 72.6 41 72

ACCESS ROAD REQUIRES RAILROAD COORDINATION

40C1

Line

36 72.5 40 72.1 37 38 39 72.4 72.2 72.3 40C

3171 Line

3171 Line

3111 Line

Griffin Rd — GRIFFIN RD

4A

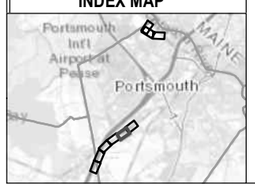
Line

4

Line

Davis Rd

## INDEX MAP

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- HISTOSOL AND HISTIC EPIPEDON SOILS
- UPLAND MATTING
- TEMPORARY NON-VPD WETLAND IMPACT
- WETLAND DELINEATION BOUNDARY
- PRIME WETLAND
- PARCEL BOUNDARY
- POTENTIAL VERNAL POOL
- PEATLAND HABITAT
- WETLAND
- WETLAND ADJACENT TO TIER 3+
- STONEWALL
- WORK AREA
- DOT ROAD
- TOWN BOUNDARY
- RAILROAD
- 2FT CONTOURS

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1 inch = 100 feet

0 50 100 Feet

| NO. | DATE | REVISIONS |
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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

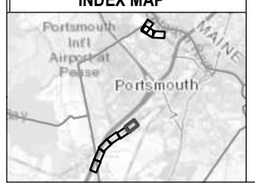
Date: November, 2023

**5 OF 9**

04.0191410.47

Document Path: \\GZABedford\Jobs\04Jobs\0191400s\04.0191410.00 - EE Siting Permitting 2019-2022\04.0191410.47 - T-13, 3171, and Resistance SS, Portsmouth and Greenland NH\Figures\MXD\ResistanceSSPlans.mxd


**INDEX MAP**

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH | MAP SHEET

Date: November, 2023 | **6 OF 9**

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Schiller S/S
Schiller S/S
Schiller S/S
Schiller S/S
Portsmouth S/S
APPROXIMATE TEMPORARY NON-VPD WETLAND IMPACT: 3,530 SF
NO NAME
NO NAME
Z156 Line
U181 LINE
U181 Line
T13 Line
E194 LINE
E194 Line
3176 Line
PW2A Line
339 Line
PORTSMOUTH
NEWINGTON
Gosling Rd
GOSLING RD
PW-2 PEM1/PSS1E
PW-3 PEM1/PSS1E
PW-4 PEM1/PSS1E
PW-5 PEM1/PSS1E
PW-6 PEM1/PSS1E
0.5
1
2
3
4
11
12
13
14

**INDEX MAP**


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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

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PW-3
PEM1/PSS1E

PW-4
PEM1/PSS1E

PW-5
PEM1/PSS1E

PW-6
PEM1/PSS1E

PW-7
PEM1/PSS1E;H

PW-8
PEM1/PSS1E

PW-9
PEM1/PSS1Ex

317 Line

E194 LINE - E194 Line

U181 LINE

U181 Line

Z156 Line

Portsmouth
S/S

No Name NO NAME

T13 Line

339 Line

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 3,530 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 1,848 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 241 SF

APPROXIMATE UPLAND
MATTING: 345 SF

APPROXIMATE UPLAND
MATTING: 603 SF

BRIDGE OVER
STONEWALL

APPROXIMATE
UPLAND MATTING:
2,244 SF

APPROXIMATE
UPLAND
MATTING: 9 SF

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PW-7
PEM1/PSS1E,H

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 1,848 SF

NO NAME

No-Name

PW-11
PSS1/PEM1Ex

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 3,416 SF

APPROXIMATE TEMPORARY
NON-VPD WETLAND
IMPACT: 4,483 SF

PW-14
PSS1/PEM1E

T13 Line

339 Line

PW-7
PEM1/PSS1E,H

PW-9
PEM1/PSS1Ex

PW-15
PEM1E

PW-10
PSS1Ex

PW-12
PEM1/PSS1E

Resistance
S/S

PW-8
PEM1/PSS1E

APPROXIMATE
TEMPORARY NON-VPD
WETLAND IMPACT: 241 SF

PW-13
PEM1/PSS1E

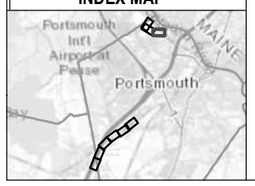
REMOVAL FROM
INSIDE FENCE

REMOVAL FROM
INSIDE FENCE

Portsmouth Blvd

PORTSMOUTH BLVD

## INDEX MAP

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0 50 100 Feet

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EVERSOURCE ENERGY

**RESISTANCE SUBSTATION RETIREMENT PROJECT**

PORTSMOUTH, NH

MAP SHEET

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CONSTRUCTION SEQUENCE:

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.

2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY, AND CONSISTENT WITH THE NHDES MARCH 2019 BMP MANUAL FOR UTILITY MAINTENANCE.

3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN THE RIGHT OF WAY.

4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.

5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.

6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH.

7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE SWAMP MATS WHERE REQUIRED.

8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATIONS IS NEEDED FOR ACCESS.

9. TIMBER MATS AND PERIMETER CONTROLS WILL BE USED ALONG ACCESS ROUTES AND WORK PADS WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.

10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC, 3"-4" STONE, AND GRAVEL TO PROVIDE A SUITABLE ROAD BED. A TEMPORARY CULVERT MAY BE REQUIRED IN AREAS OF HIGH FLOW TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.

11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.

12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE OR FOUNDATION PLACEMENT OR STABILIZATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE.

13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.

15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.

16. REMOVAL OF THE OLD POLE WILL OCCUR ONCE THE CABLE HAS BEEN INSTALLED ON THE NEW STRUCTURE. THE OLD STRUCTURES WILL BE REMOVED FROM THE SITE. POLES WILL BE CUT AT THE GROUND SURFACE. FOOTINGS WILL BE ABANDONED IN PLACE TO MINIMIZE IMPACTS.

17. ALL TIMBER MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.

18. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.

19. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, AVAILABLE THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, 413-548-8000, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.

20. MULCH USED FOR STABLIZATION SHALL CONSIST OF SEEDLESS STRAW.

21. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.

22. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.

23. NATURALLY VEGETATED LOCAL WETLAND BUFFER AREAS OUTSIDE OF EXISTING TRAILS MUST BE RESTORED UPON COMPLETION OF WORK.

WINTER CONSTRUCTION NOTES

1. PROP0SED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

GENERAL NOTES:

OWNER: EVERSOURCE ENERGY
13 LEGENDS DRIVE
HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. EVERSOURCE ENERGY PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.

2. JURISDICTIONAL WETLANDS WERE DELINEATED BY GZA GEOEVIRONMENTAL IN 2022, IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," NOVEMBER 2022 AND FEBRUARY 2023.

3. GZA GEOENVIRONMENTAL EVALUATED WETLANDS AS POTENTIAL VERNAL POOLS IN 2022 IN ACCORDANCE WITH "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE," 1997, NEW HAMPSHIRE FISH AND GAME DEPARTMENT, NONGAME AND ENDANGERED WILDLIFE PROGRAM.

4. GZA GEOENVIRONMENTAL COMPLETED WETLANDS FUNCTION AND VALUES ASSESSMENT IN 2022 AND 2023 IN ACCORDANCE WITH THE ACOE'S "HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT," SEPTEMBER 1999.

5. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.

6. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

7. IN ACCORANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
- OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

EROSION CONTROL NOTES:

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.

2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.

3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.

4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED WITH BMPS.

5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.

6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

7. EROSION CONTROL MATTING, IF REQUIRED, WILL CONSIST OF JUTE MATTING. MATTING WITH WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD WILL BE AVOIDED TO LIMIT UNINTENTIONAL MORTALITY TO SNAKES.



RESISTANCE SUBSTATION RETIREMENT PROJECT

GREENLAND & PORTSMOUTH
NEW HAMPSHIRE

NOTES

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET S1 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

## Best Management Practices (BMP's) for Straw wattles

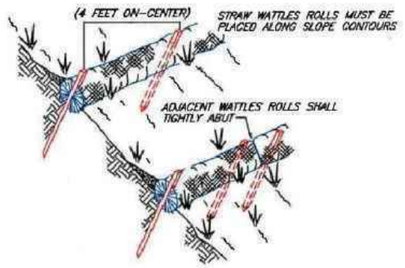
**Definition and purpose:**
Straw wattles are burlap rolls filled with straw that trap sediment and interrupt water flow by reducing slope lengths.

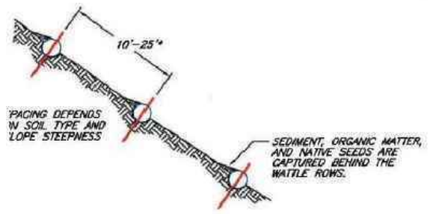
**Applications:**
* Along erodible or unstablizied slopes
* Spread overland waterflow
* Trap sediment
* Around storm drain inlets to slow water and settle out sediment
* Overlap ends approximately 6 inches

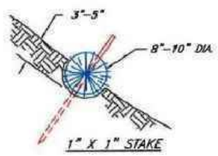
**Installation:**
Straw wattles are installed parallel to slope contours and perpendicular to sheet flow.

Spacing* - Dependent on slope length, soil steepness and soil type (general range 10 - 25').

Trenching - 2"-5" inch trench
Stacking - at each end and four foot on center (i.e. 25 foot wattle uses 6 stacks)

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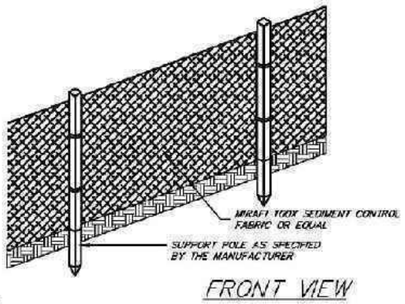
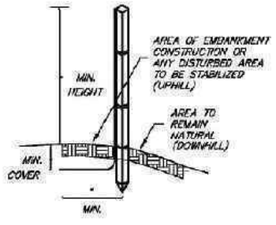
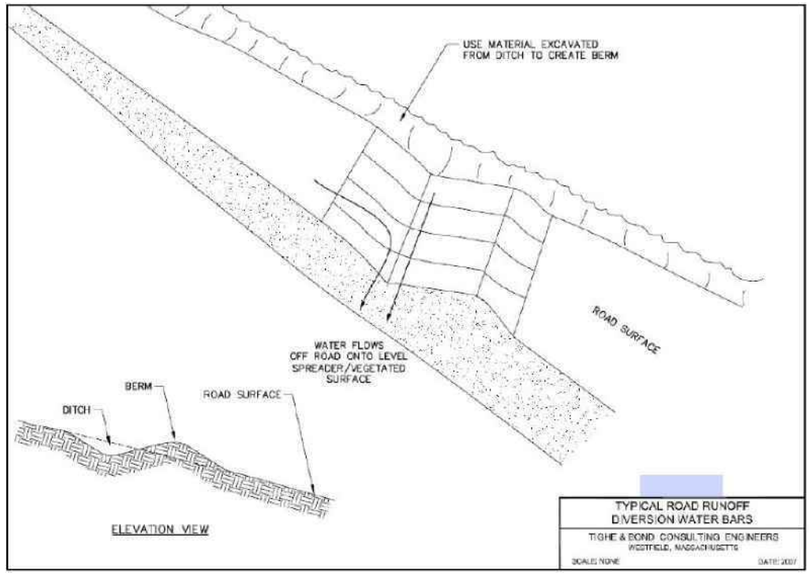


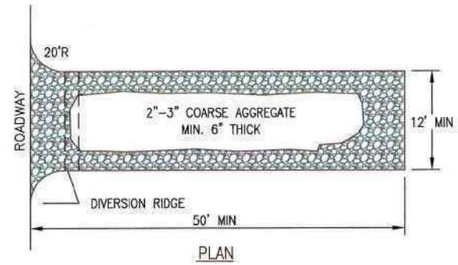

FRONT VIEW




SIDE VIEW

*NOTES (SILT FENCE)*
*1. THE HEIGHT OF THE BARRIER SHALL NOT EXEED 36 INCHES.*
*2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6—INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.*
*3 POSTS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.*
*4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS*
*5. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.*
*6. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.*
*7. FABRIC BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.*
*8. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DAILY DURING PROLONGED RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.*
*9. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.*
*10. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE—HALF THE HEIGHT OF THE BARRIER.*
*11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.*



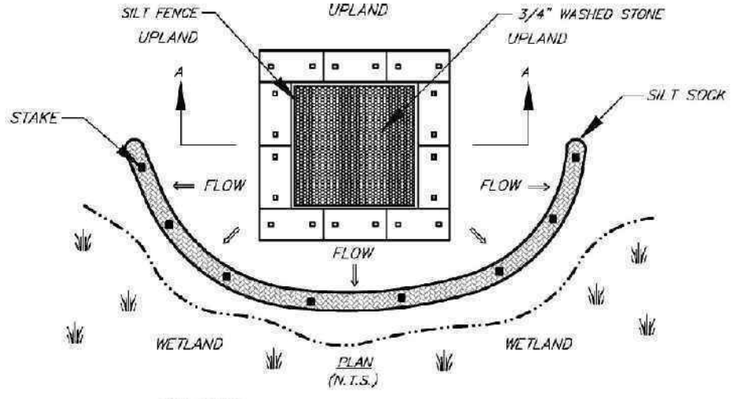

PLAN

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

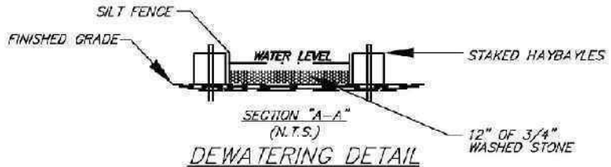
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

## CONSTRUCTION ENTRANCE

NOT TO SCALE




PLAN
(N.T.S.)




SECTION "A-A"
(N.T.S.)

## DEWATERING DETAIL
N.T.S.



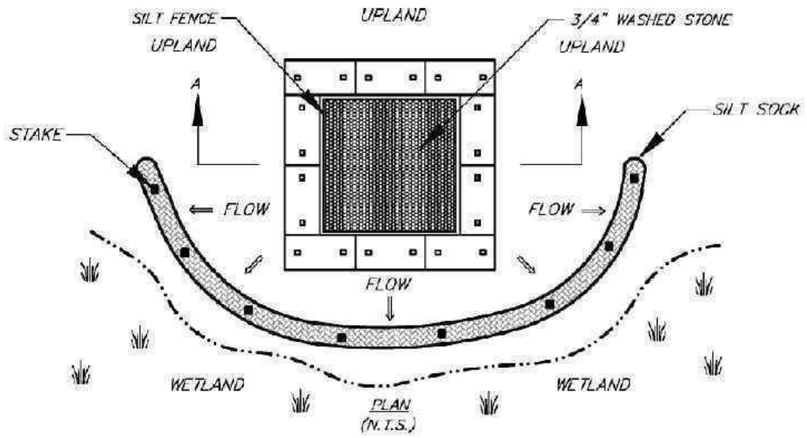
RESISTANCE SUBSTATION RETIREMENT PROJECT
GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

BMP DETAILS

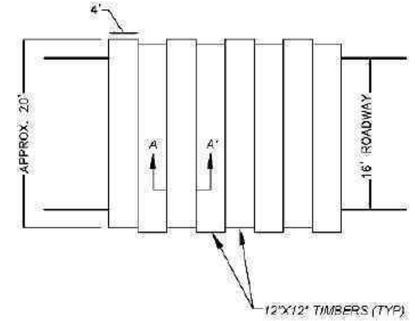
PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

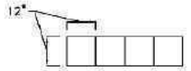
| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET S2 |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |



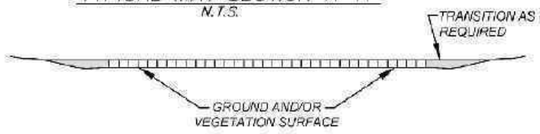

DEWATERING DETAIL
N.T.S.



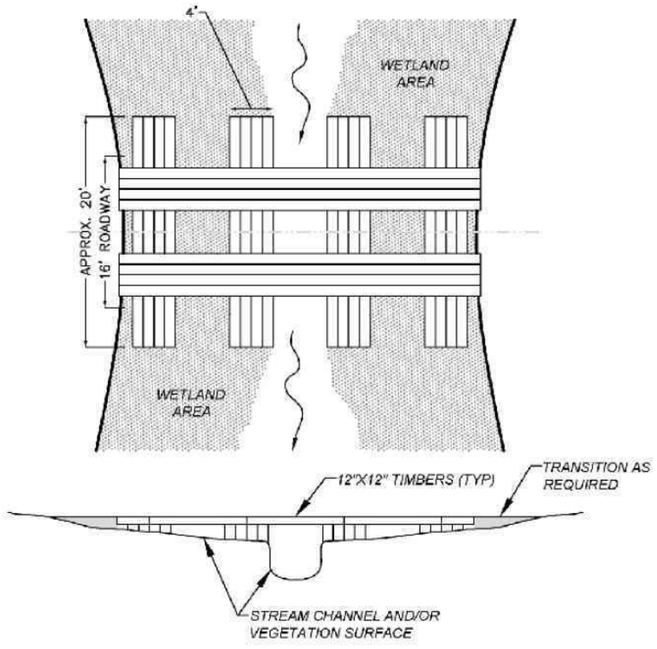

TYPICAL SWAMP MAT PLAN VIEW
N.T.S.



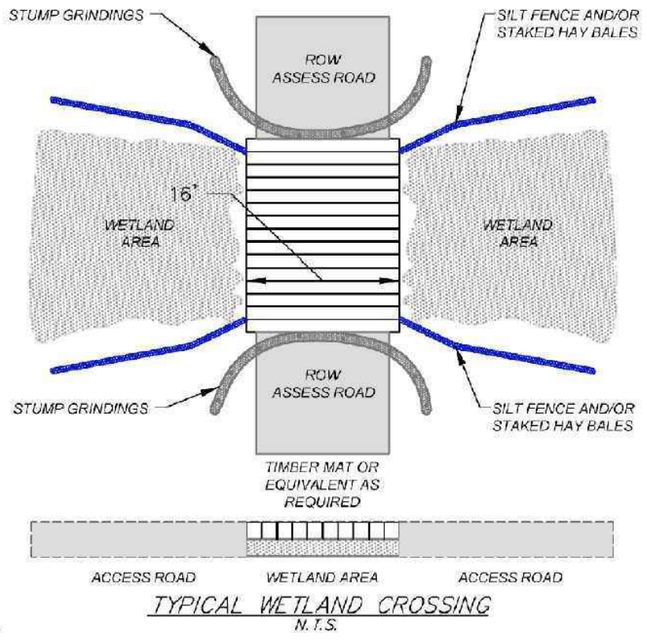

TYPICAL MAT SECTION A-A
N.T.S.




TYPICAL SWAMP MAT SECTION DETAIL
N.T.S.




TYPICAL STREAM CROSSING
N.T.S.




TYPICAL WETLAND CROSSING
N.T.S.



RESISTANCE SUBSTATION RETIREMENT PROJECT
GREENLAND AND PORTSMOUTH
NEW HAMPSHIRE

# BMP DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

| | | | |
|---|---|---|---|
| PROJ MGR: LEW | REVIEWED BY: TLT | CHECKED BY: DMZ | SHEET |
| DESIGNED BY: MJD | DRAWN BY: MJD | SCALE: | S3 |
| DATE: 08/15/2023 | PROJECT NO. 04.0191410.47 | REVISION NO. | |

# APPENDIX K – UTILITY PROJECTS WORKSHEET FOR STANDARD APPLICATIONS

# UTILITY PROJECTS;
# PROJECTS IN PUBLIC RIGHT-OF-WAY
# PROJECT-SPECIFIC WORKSHEET
# FOR STANDARD APPLICATION

Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

**RSA/Rule**: RSA 482-A/ Env-Wt 521

**APPLICANT LAST NAME, FIRST NAME, M.I.: Eversource Energy, Attn: Kurt Nelson**

This worksheet summarizes the criteria and requirements for a Standard Permit for "Utility Projects; Projects in the Public Right-of-Way", as outlined in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Applications must meet the criteria and requirements listed in the Standard Dredge and Fill Wetlands Permit Application form (NHDES-W-06-012).

## SECTION 1 - APPLICABILITY (Env-Wt 509.02(b); Env-Wt 521.01)

This worksheet is for residential utility projects and other utility projects within a public right-of-way.

Do **not** use this worksheet for utility projects that involve the construction of a substation, parking lot, or storage facility on utility property, which must be reviewed under the standards for commercial projects specified in Env-Wt 524.

Do **not** use this worksheet if the project is located in a coastal (tidal) area.

## SECTION 2 - APPROVAL CRITERIA FOR STANDARD UTILITY PERMITS (Env-Wt 521.03)

In addition to meeting the criteria established in Env-Wt 300, an application for a utility project must meet the following approval criteria:

☒ If the project as a whole crosses multiple properties, it is submitted as a single project and is not segmented into multiple proposed projects for the purpose of avoiding eligibility or classification requirements.

☒ The project is, to the greatest extent practicable, within existing rights-of-way and developed areas.

☒ Construction will be undertaken in the least environmentally-impactful manner.

☒ If the project involves greater than one acre of contiguous permanent wetland or watercourse impact, an off-site alternatives analysis is done.

## SECTION 3 - APPLICATION REQUIREMENTS FOR UTILITY PROJECTS (Env-Wt 521.04)

An application for a utility project must include the following project-specific information:

A plan showing:

☒ The extent and location of all wetlands and watercourses within the project area.

☒ A wetland delineation, functional assessment, and impact analysis in accordance with Env-Wt 300.

☒ The location of any existing utility corridors and facilities.

☒ The location of the proposed utility corridors and facilities.

☒ The location of any proposed impacts, crossings, construction areas, and clearings.

☒ A recent aerial photograph of the project area overlain by the items specified above.

☒ An invasive species control plan.

☒ A construction sequence plan describing measures proposed to minimize impacts to water quality, impacts to nesting and breeding species, and to prevent compaction of wetlands soils.

☒ The locations of staging areas, off right-of-way access roads, temporary access roads, and new station locations.

A description of the methods, techniques, vehicles, and equipment proposed to access and conduct the project.

Prior to the start of work, perimeter erosion controls (i.e. silt fence and/or straw wattle) will be temporarily installed in uplands to prevent sedimentation into wetlands and protect water quality. In wetlands, replacement of the structures will be completed from temporary work pads constructed using timber mats. Timber matting is utilized to prevent rutting and compaction of wetland soils. A drill rig and crane will be operated from temporary work pads to excavate the new pole locations, install the caisson grounding rings, and erect the structures, respectively. Upon completion of work, exposed soils in impacted areas will be restored to original grades, seeded with native seed mix as necessary, and stabilized using jute erosion control blankets as necessary or loose mulch.

A description of measures proposed to minimize and avoid impacts to wetlands and surface waters.

Impacts to wetlands have been minimized and avoided to the greatest extent by utilizing existing upland access routes where possible, utilizing temporary timber matting to access through wetlands, and adjusting access to cross the narrowest portion of wetlands. Off right-of-way access routes are proposed to further avoid and minimize impacts to wetland but are dependent on securing agreements with underlying property owners. Where agreements are secured, Eversource will utilize off ROW access routes to avoid and minimize wetland impact. Although access and work pad placement within wetlands is necessary due to the required engineered span widths between structures, impacts were minimized by avoiding wetlands to the greatest extent possible while continuing to provide safe and adequate work areas for construction and meeting engineering constraints. Upon completion of construction, timber matting will be removed and temporarily impacted wetland areas will be seeded, as necessary, and mulched for restoration.

**SECTION 4 - DESIGN & CONSTRUCTION REQUIREMENTS FOR UTILITY PROJECTS (Env-Wt 521.05)**

In addition to the design and construction requirements in Env-Wt 300, the following requirements apply to utility projects:

☒ The project must be designed to avoid and minimize construction access over, or work in or upon, organic soils.

☒ The project must be designed in accordance with Env-Wt 313.03.

☒ Construction access or work shall be prohibited in priority resource areas unless the work:

- Is authorized as an SPN or a project type exception under Env-Wt 407, or
- Causes only temporary impacts.

☒ All project activities must be performed, located, constructed, and maintained in accordance with the Best Management Practices Manual, Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire (Utility BMPs).

☒ No project shall cause permanent filling of wetlands in excess of 10,000 square feet unless mitigation is provided in accordance with Env-Wt 800.

☒ Swamp mats shall be:

- Used in any area necessary to provide access,
- Removed as soon as the work is completed, and
- In no case left in place longer than one growing season.

**SECTION 5 - MAINTENANCE & REPAIR (Env-Wt 521.07)**

☒ Maintenance and repair must be carried out in accordance with the Utility BMPs.

**SECTION 6 - UTILITY PROJECT CLASSIFICATION (Env-Wt 521.06)**

Refer to Env-Wt 521.06 for project classification.

# APPENDIX L – CERTIFIED MAIL RECEIPTS

# APPENDIX M - LIMITATIONS

**USE OF REPORT**

1. GZA GeoEnvironmental, Inc. (GZA) has prepared this report on behalf of, and for the exclusive use of Eversource Energy ("Client") for the stated purpose(s) and location(s) identified in the report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's risk, and without any liability to GZA.

**STANDARD OF CARE**

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the data gathered and observations made during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.

**LIMITS TO OBSERVATIONS**

4. Natural resource characteristics are inherently variable. Biological community composition and diversity can be affected by seasonal, annual or anthropogenic influences. In addition, soil conditions are reflective of subsurface geologic materials, the composition and distribution of which vary spatially.

5. The observations described in this report were made on the dates referenced and under the conditions stated therein. Conditions observed and reported by GZA reflect the conditions that could be reasonably observed based upon the visual observations of surface conditions and/or a limited observation of subsurface conditions at the specific time of observation. Such conditions are subject to environmental and circumstantial alteration and may not reflect conditions observable at another time.

6. The conclusions and recommendations contained in this report are based upon the data obtained from a limited number of surveys performed during the course of our work on the site, as described in the Report. There may be variations between these surveys and other past or future surveys due to inherent environmental and circumstantial variability.

**RELIANCE ON INFORMATION FROM OTHERS**

7. Preparation of this Report may have relied upon information made available by Federal, state and local authorities; and/or work products prepared by other professionals as specified in the report. Unless specifically stated, GZA did not attempt to independently verify the accuracy or completeness of that information.

**COMPLIANCE WITH REGULATIONS AND CODES**

8. GZA's services were performed to render an opinion on the presence and/or condition of natural resources as described in the Report. Standards used to identify or assess these resources as well as regulatory jurisdiction, if any, are stated in the Report. Standards for identification of jurisdictional resources and regulatory control over them may vary between governmental agencies at Federal, state and local levels and are subject to change over time which may affect the conclusions and findings of this report.

**NEW INFORMATION**

9. In the event that the Client or others authorized to use this report obtain information on environmental regulatory compliance issues at the site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this work, may modify the conclusions stated in this report.

**ADDITIONAL SERVICES**

10. GZA recommends that we be retained to provide further investigation, if necessary, which would allow GZA to (1) observe compliance with the concepts and recommendations contained herein; (2) evaluate whether the manner of implementation creates a potential new finding; and (3) evaluate whether the manner of implementation affects or changes the conditions on which our opinions were made.


GZA GeoEnvironmental, Inc.