307 Electric Transmission Line OPGW Replacement Project

Deerfield, Nottingham, Barrington, Lee, Durham, Madbury and Dover, New Hampshire

PREPARED FOR

Public Service Company of NH (PSNH)
d/b/a Eversource Energy
c/o Kurt Nelson
13 Legends Drive
Hooksett, NH 03106
603.634.3256

PREPARED BY

2 Bedford Farms Drive
Suite 200
Bedford, NH 03110
603.391.3900

February 8, 2023

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Cover Letter

www.vhb.com

January 31, 2023

Ref: 52932.00

Mr. Ridgely Mauck
NHDES - Alteration of Terrain Bureau
29 Hazen Drive
Concord, NH 03302-0095

Re: 307 Electric Transmission Line Maintenance Project
Deerfield, Nottingham, Barrington, Lee, Durham, Madbury and Dover, NH

Dear Mr. Mauck,

On behalf of Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH), VHB respectfully submits for your consideration the attached Alteration of Terrain Application for the proposed optical ground wire (OPGW) installation and structure replacements along the 307 Electric Transmission Line. The 307 line is a 345kV line that originates at the Deerfield Substation in Deerfield, passes through Nottingham, Barrington, Lee, Madbury, Durham, and Dover, and culminates at the Eliot Substation in Eliot, Maine.

Eversource has identified the need to conduct routine maintenance work on the 307 Transmission Line involving optical ground wire (OPGW) installation to replace copper shield wire and utility structure replacements along the existing utility ROW. The fifteen (15) remaining existing wooden electric transmission line structures are proposed to be replaced with new weathered steel structures under the Asset Condition Replacement program. Structure replacement is needed due to the age and condition of the existing wooden structures resulting from woodpecker damage, insect damage, and pole rot. Weathered steel structures are more resilient to insect and woodpecker damage and pole rot and can further withstand typical New Hampshire storms and severe weather events. Most of the replacement structures will be installed within 10 feet of the existing structure footprints (back or forward on-line). Replacement structures are connected to the existing overhead circuit prior to the removal of the existing structures. One (1) structure is proposed to be removed entirely from the line.

Although much of the OPGW work will be performed aerially, i.e., by helicopter, some of the OPGW work and all structure replacements involve ground-based activities. Where required, new 16' wide gravel access path will be installed to facilitate equipment access and approximately 100'x100' gravel work pads will be installed at the structure replacement locations. Pull pad locations will be installed at several splice locations along the line to allow for the OPGW replacement. Since the proposed pole replacement work will occur within the limits of an existing cleared and maintained overhead electric utility ROW, no tree clearing or widening of the ROW is proposed.

Engineers | Scientists | Planners | Designers

2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495

The total land disturbance for the project was calculated to be approximately 15.4 acres. The disturbance area was conservatively calculated based upon the total length of access roads, assuming a typical 16-foot width, and the total area for construction work pads. Access roads currently exist between Deerfield Substation and Madbury Substation from previous work conducted in the shared ROW for ACR replacements along the L175, C129, and G128 115 kV lines.

In association with this application, the following documents are enclosed

- Unbound signed application form, application fee and color USGS maps.
- Alteration of Terrain Application Package.

Please feel free to contact me if there are any questions or comments regarding this project or the enclosed materials.

Sincerely,

Dave Fenstermacher

Director of Land Development

Vanasse Hangen Brustlin, Inc.

cc: Kurt Nelson – PSNH
Sherrie Trefry - VHB

Application Form & Checklist

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management
Check the Status of your Application: www.des.nh.gov/onestop

RSA/ Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)		
Applicant Name: PSNH d/b/a Eversource Energy	Contact Name: Kurt Nelson	
Email: kurt.nelson@eversource.com	Daytime Telephone: (603) 634-3256	
Mailing Address: 13 Legends Drive		
Town/City: Hooksett	State: NH	Zip Code: 03106
2. APPLICANT'S AGENT INFORMATION If none, check here: ☐		
Business Name: Vanasse Hangen Brustlin, Inc. (VHB)	Contact Name: Sherrie Trefry	
Email: strefry@vhb.com	Daytime Telephone: (603) 391-3951	
Address: 2 Bedford Farms Drive, Suite 200		
Town/City: Bedford	State: NH	Zip Code: 03110
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)		
Applicant Name: Same	Contact Name:	
Email:	Daytime Telephone:	
Mailing Address:		
Town/City:	State:	Zip Code:
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☐		
Business Name: Same as Applicant's agent	Contact Name:	
Email:	Daytime Telephone:	
Address:		
Town/City:	State:	Zip Code:
5. CONSULTANT INFORMATION If none, check here: ☐		
Engineering Firm: Vanasse Hangen Brustlin, Inc. (VHB)	Contact Name: Sherrie Trefry	
Email: strefry@vhb.com	Daytime Telephone: (603) 391-3951	
Address: 2 Bedford Farms Drive, Suite 200		
Town/City: Bedford	State: NH	Zip Code: 03110

6. PROJECT TYPE

☐ Excavation Only ☐ Residential ☐ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☒ Other: Utility

7. PROJECT LOCATION INFORMATION

Project Name: 307 Electric Transmission Line Maintenance Project

Street/Road Address: Existing Electric Transmission Line Right-of-Way (ROW)

Town/City: Deerfield, Nottingham, Barrington, Lee, Durham, Madbury and Dover, NH | County: Rockingham and Strafford County

Tax Map: N/A | Block: N/A | Lot Number: N/A | Unit: N/A

Location Coordinates: 43.143713°, -71.183459° ☒ Latitude/Longitude ☐ UTM ☐ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
2. Man-made pond created by impounding a stream or wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A lake or pond not covered previously? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond**

Is the project a High Load area? ☐ Yes ☒ No
If yes, specify the type of high load land use or activity: _____

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☒ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☒ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ☒ Yes ☐ No

Note: Guidance document titled "*Using NHDES's OneStop WebGIS to Locate Protection Areas*" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☒ Yes ☐ No
If yes: Cut volume: N/A cubic feet within the 100-year floodplain
Fill volume: N/A cubic feet within the 100-year floodplain

☒ Project **IS** within **¼ mile of a designated river** Name of River: Oyster River
☐ Project is **NOT** within ¼ mile of a designated river

☒ Project **IS** within **a Coastal/Great Bay Region community** - **include info required by Env-Wq 1503.08(l) if applicable**
☐ Project is **NOT** within a Coastal/Great Bay Region community

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The proposed project involves the replacement of copper shield wire with optical ground wire (OPGW) along the 307 Electric Transmission Line. The 307 line is a 345kV line that originates at the Deerfield Substation in Deerfield and culminates at the Eliot Substation in Eliot, Maine. Additionally, fifteen (15) existing wooden electric transmission line structures are proposed to be replaced with new weathered steel structures under the Asset Condition Replacement program. Structure replacement is needed due to the age and condition of the existing wooden structures resulting from woodpecker damage, insect damage, and pole rot. Weathered steel structures are more resilient to insect and woodpecker damage and can further withstand typical New Hampshire storms and severe weather events. One (1) structure will be removed entirely from the transmission line.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

Not Applicable

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)[1]: 2/8/23.
(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)[2]: 2/8/23.
(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ☒ Detailed Development ☐ Excavation, Grading & Reclamation ☐ Steep Slope

D. Additional plans required: ☐ Stormwater Drainage & Hydrologic Soil Groups ☐ Source Control ☐ Chloride Management

E. Total area of disturbance: 672,151 square feet

F. Additional impervious cover as a result of the project: 0* square feet (use the "-" symbol to indicate a net reduction in impervious coverage).
Total final impervious cover: 0 square feet
*Due to the linear nature of these types of utility replacement projects, the presence of existing, unquantified, gravel access roads and in association with the waiver request realted to stormwater calculations impervious cover is considered to be di minimis.

G. Total undisturbed cover: 27,593,642 square feet {= total right-of-way area between Deerfield Substation and Eliot Substation (28,265,793 SF) - area of disturbance (672,151 SF)}

H. Number of lots proposed: 0

I. Total length of roadway: 0 linear feet

J. Name(s) of receiving water(s): Bean River, North River, Oyster River, Beards Creek, Bellamy River, Piscataqua River

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	☐ Yes ☐ No ☒ N/A	☐	Permit number:
2. Wetlands Permit	☒ Yes ☐ No ☐ N/A	☐	Permit number:
3. Shoreland Permit	☒ Yes ☐ No ☐ N/A	☐	Permit number:
4. UIC Registration	☐ Yes ☐ No ☒ N/A	☐	Registration date:
5. Large/Small Community Well Approval	☐ Yes ☐ No ☒ N/A	☐	Approval letter date:
6. Large Groundwater Withdrawal Permit	☐ Yes ☐ No ☒ N/A	☐	Permit number:
7. Other:	☐ Yes ☐ No	☐	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: See NHB Letters included

M. Using NHDES's Web GIS OneStop program (www2.des.state.nh.us/gis/onestop/), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A."
Oyster River: Aluminum, Dissolved Oxygen, and E. Coli

N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? ☐ Yes ☒ No
If yes, name of staff member:

[1] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

[2] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

O. Will blasting of bedrock be required? ☐ Yes ☒ No If yes, estimated quantity of blast rock: _____ cubic yards
If yes, standard blasting BMP notes must be placed on the plans, available at:
http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)

LOOSE:

- ☒ Signed application form: des.nh.gov/organization/divisions/water/aot/index.htm (with attached proof(s) of delivery)
- ☒ Check for the application fee: des.nh.gov/organization/divisions/water/aot/fees.htm
- ☒ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BIND IN A REPORT IN THE FOLLOWING ORDER:

- ☒ Copy of the signed application form & application checklist (des.nh.gov/organization/divisions/water/aot/index.htm)
- ☒ Copy of the check
- ☒ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☒ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- ☒ Web GIS printout with the "Surface Water Impairments" layer turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ Web GIS printouts with the AOT screening layers turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ NHB letter using DataCheck Tool – www.nhdfl.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
- ☒ The Web Soil Survey Map with project's watershed outlined – websoilsurvey.nrcs.usda.gov
- ☒ Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- ☒ Photographs representative of the site
- N/A ☐ Groundwater Recharge Volume calculations (one worksheet for each permit application): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- N/A ☐ BMP worksheets (one worksheet for each treatment system): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- N/A ☐ Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- N/A ☐ Riprap apron or other energy dissipation or stability calculations
- N/A ☐ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*.
- N/A ☐ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- N/A ☐ Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): (http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge)
- N/A ☐ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- N/A ☐ Source control plan

PLANS:

- ☒ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- N/A ☐ Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- N/A ☐ Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

100-YEAR FLOODPLAIN REPORT:

- ☒ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☒ N/A See Checklist for Details

☒ **REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**

12. REQUIRED SIGNATURES

ST By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

☐ **APPLICANT** ☒ **APPLICANT'S AGENT**:

Signature: Sherrie Trefry Date: 1/26/2023

Name (print or type): Sherrie Trefry Title: _____

☒ PROPERTY OWNER ☐ PROPERTY OWNER'S AGENT:

Signature: _____ Date: 1/26/2023

Name (print or type): Kurt Nelson for PSNH dba Eversource Title: _____

ATTACHMENT A:
ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

DESIGN PLANS

☒ Plans printed on 34 - 36" by 22 - 24" white paper

N/A ☐ PE stamp Engineered design is limited to the electrical infrastructure and can be provided upon request.

☒ Wetland delineation

☒ Temporary erosion control measures

N/A ☐ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.

☒ Pre-existing 2-foot contours

N/A ☐ Proposed 2-foot contours

N/A ☐ Drainage easements protecting the drainage/treatment structures

☒ Compliance with the Wetlands Bureau, RSA 482- A http://des.nh.gov/organization/divisions/water/wetlands/index.htm. Note that artificial detention in wetlands is not allowed.

☒ Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. http://des.nh.gov/organization/divisions/water/wetlands/cspa

N/A ☐ Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.

N/A ☐ Check to see if any proposed ponds need state Dam permits. http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf

DETAILS

N/A ☐ Typical roadway x-section

N/A ☐ Detention basin with inverts noted on the outlet structure

N/A ☐ Stone berm level spreader

N/A ☐ Outlet protection – riprap aprons

☒ A general installation detail for an erosion control blanket

☒ Silt fences or mulch berm

N/A ☐ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.

N/A ☐ Hay bale barriers

☒ Stone check dams

☒ Gravel construction exit

N/A ☐ Temporary sediment trap

N/A ☐ The treatment BMP's proposed

N/A ☐ Any innovative BMP's proposed

CONSTRUCTION SEQUENCE/EROSION CONTROL

☒ Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.

☒ Note that perimeter controls shall be installed prior to earth moving operations.

☒ Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.

☒ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

☒ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

☒ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

☒ Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade

☒ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

☒ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: 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.

☒ Note the definition of the word "stable"

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

☒ Note the limit of time an area may be exposed
Example note: All areas shall be stabilized within 45 days of initial disturbance.

☒ Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)

☒ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing 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 on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, 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 per NHDOT item 304.3.

N/A ☐ Note at the end of the construction sequence that "Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable." – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

N/A **DRAINAGE ANALYSES**

Please double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

☐ PE stamp

☐ Rainfall amount obtained from the Northeast Regional Climate Center- http://precip.eas.cornell.edu/. Include extreme precipitation table as obtained from the above referenced website.

☐ Drainage analyses, in the following order:

- Pre-development analysis: Drainage diagram.
- Pre-development analysis: Area Listing and Soil Listing.
- Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
- Pre-development analysis: Full summary of the 10-year storm.
- Post-development analysis: Drainage diagram.
- Post-development analysis: Area Listing and Soil Listing.
- Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
- Post-development analysis: Full summary of the 10-year storm.

☐ Review the Area Listing and Soil Listing reports

- Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.
- There is the same or less HSG A soil area after development (check for each HSG).
- There is the same or less "woods" cover in the post-development.
- Undeveloped land was assumed to be in "good" condition.
- The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

☐ Check the storage input used to model the ponds.

☐ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☐ Check the outlet structure proposed and make sure it matches that modeled.

☐ Check to see if the total areas in the pre and post analyses are same.

☐ Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

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N/A **PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS** (See attached waiver request)

☐ Plans printed on 34 - 36" by 22 - 24" on white paper.

☐ Submit these plans separate from the soil plans.

☐ A north arrow.

☐ A scale.

☐ Labeled subcatchments, reaches and ponds.

☐ Tc lines.

☐ A clear delineation of the subcatchment boundaries.

☐ Roadway station numbers.

☐ Culverts and other conveyance structures.

N/A **PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS** (See attached waiver request)

☐ 11" × 17"sheets suitable, as long as it is readable.

☐ Submit these plans separate from the drainage area plans.

☐ A north arrow.

☐ A scale.

☐ Name of the soil scientist who performed the survey and date the soil survey took place.

☐ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.

☐ Delineation of the soil boundaries and wetland boundaries.

☐ Delineation of the subcatchment boundaries.

☐ Soil series symbols (e.g., 26).

☐ A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).

☐ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

N/A **Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:**

☐ Drainage report is not needed if site does not have off-site flow.

☐ 5 foot contours allowed rather than 2 foot.

☐ No PE stamp needed on the plans.

☐ Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.

☐ Add reclamation notes.

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at: http://des.nh.gov/organization/divisions/water/aot/categories/publications.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

N/A ☐ If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

N/A ☐ If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

N/A ☐ If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.

N/A ☐ If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(l) if applicable.

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Application Fee Calculation & Copy of Check

Project **307 Line OPGW Installation** Project # **52932.00**

Location **Deerfield, Nottingham, Barrington, Lee, Durham, Madbury, and Dover, NH (and Eliot, ME)**

Calculated by **Andrew Mahoney** Date **1/23/2022**

Title **NHDES Alteration of Terrain Permit Fee Calculation**

Computations

Make check payable to: "**Treasurer State of New Hampshire**"

Total Disturbance Area: 672,151 SF
15.41 AC

Fee Schedule:

Area of Disturbance in square feet	Fee
< 100,000	$500 + 0.005/SF
100,000 to 199,999	$3,125
200,000 to 299,999	$4,375
300,000 to 399,999	$5,625
400,000 to 499,999	$6,875
500,000 to 599,999	$8,125
600,000 to 699,999	$9,375
700,000 to 799,999	$10,625
800,000 to 899,999	$11,875
900,000 to 999,999	$13,125
1,000,000 to 1,099,999*	$14,375

*For each additional 100,000 SF, add $1,250 to the fee

Total Fee = $9,375

Alteration of Terrain
Permit Application Fee Schedule

The permit application fee is based upon the proposed area of disturbance, in square feet. The following tables illustrate the fee structure.

Fee schedule for projects not in the Protected Shoreland	
Area of disturbance in square feet (sf)	**Fee**
< 100,000	$500 + $0.005/sf
100,000 to 199,999	$3,125
200,000 to 299,999	$4,375
300,000 to 399,999	$5,625
400,000 to 499,999	$6,875
500,000 to 599,999	$8,125
600,000 to 699,999	$9,375
700,000 to 799,999	$10,625
800,000 to 899,999	$11,875
900,000 to 999,999	$13,125
1,000,000 to 1,099,999	$14,375
***For each additional 100,000 sf, add $1,250 to the fee.**	

Fee schedule for projects in the Protected Shoreland:	
Area of disturbance in square feet (sf)	**Fee**
< 50,000	$500 + $0.005/sf
50,000 to 199,999	$3,125
200,000 to 299,999	$4,375
300,000 to 399,999	$5,625
400,000 to 499,999	$6,875
500,000 to 599,999	$8,125
600,000 to 699,999	$9,375
700,000 to 799,999	$10,625
800,000 to 899,999	$11,875
900,000 to 999,999	$13,125
1,000,000 to 1,099,999	$14,375
*For each additional 100,000 sf, add $1,250 to the fee.	

Fee schedule for request to amend a permit that requires plan review
$500 + $0.10/square feet of disturbance

Please make checks payable to: "Treasurer State of New Hampshire."

376738

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

CHECK DATE

January 25, 2023

Nine Thousand Three Hundred Seventy Five and 00/100

AMOUNT

$9,375.00

Treasurer State of New Hampshire
NHDES - Wetlands Bureau
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈376738⑈ ⑆211070175⑆ 113016137⑆

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

EMILY BUSINESS FORMS 800.392.6018 VISION

376738

Check Date: 1/25/2023

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
Annette Snyder 01/23	1/23/2023	1444248	$9,375.00			$9,375.00
Treasurer State of New Hampshire		TOTAL	$9,375.00			$9,375.00
Citizens	109	0009232				

ENDORSE HERE

DO NOT WRITE, STAMP OR SIGN BELOW THIS LINE
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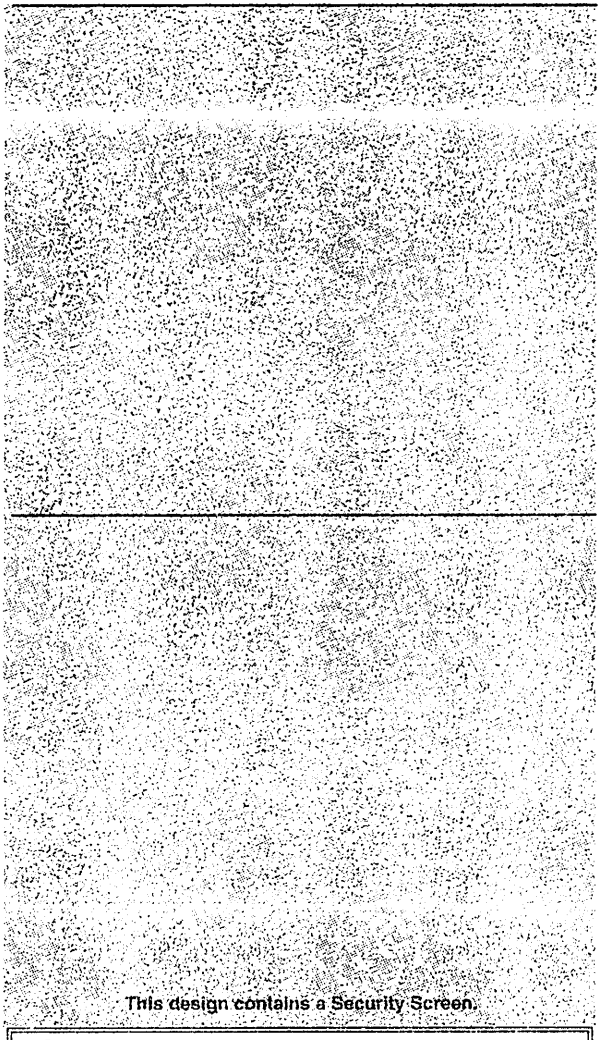

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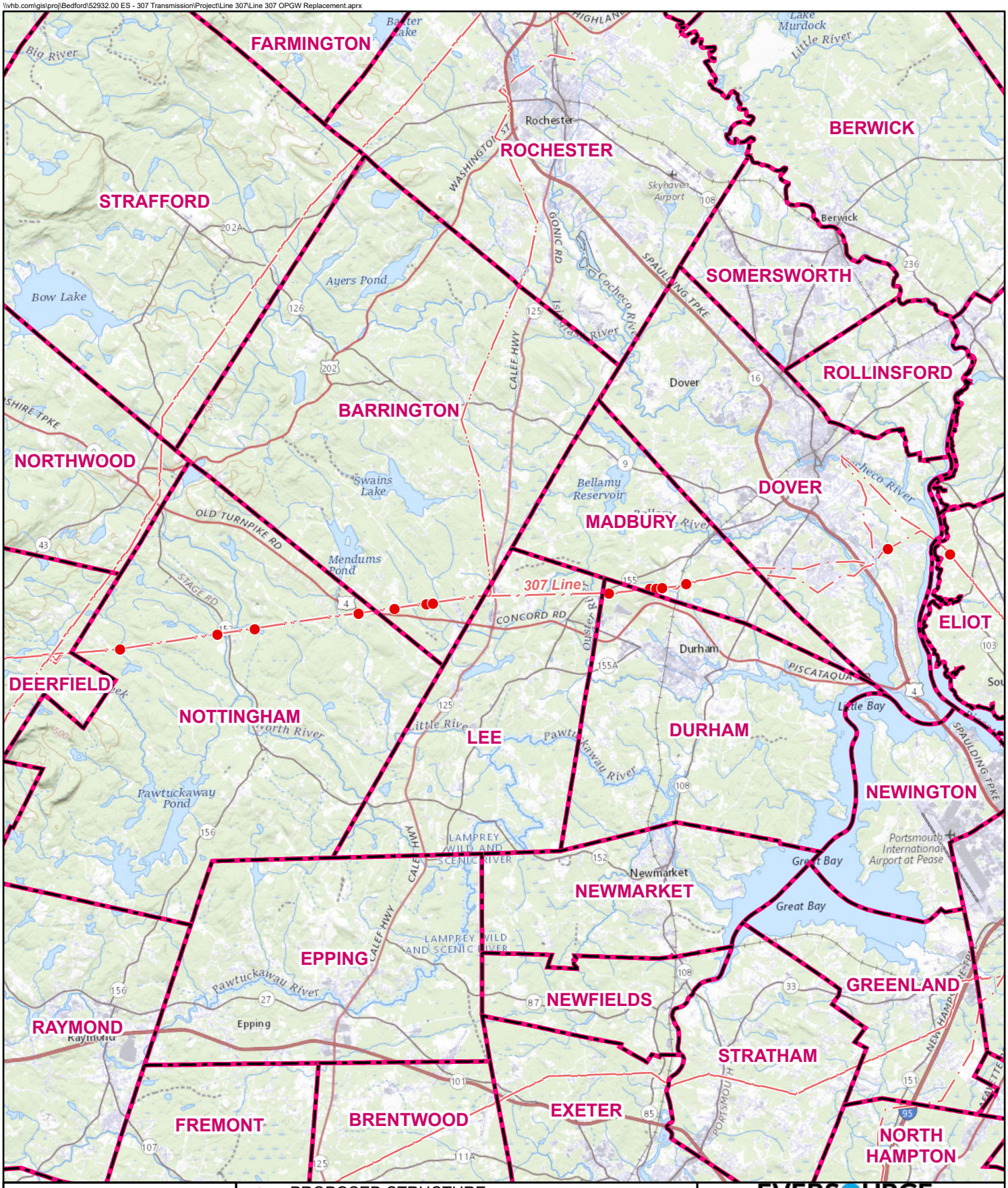
Fourdrinier Watermark	• True watermark visible from both sides, absence indicates alteration.

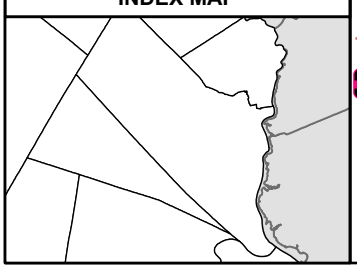
*FEDERAL RESERVE BOARD OF GOVERNORS REG. C.C.

USGS Site Location Maps

\\vhb.com\gis\proj\Bedford\52932.00 ES - 307 Transmission\Project\Line 307\Line 307 OPGW Replacement.aprx



INDEX MAP



- PROPOSED STRUCTURE
- OVERHEAD EVERSOURCE LINE
- MUNICIPAL BOUNDARY

N

1 Inch = 14,000 feet

0 5,000 10,000 Feet

EVERSOURCE ENERGY

307 Line Structure Replacement Project
USGS Locus Map
Deerfield, Nottingham, Barrington, Durham, Lee, Madbury, Dover, NH and Eliot, ME

Date: January 25, 2023

vhb

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Project Narrative

Project Narrative

On behalf of the Public Service Company of New Hampshire d/b/a Eversource Energy (PSNH), this Alteration of Terrain Permit Application was prepared by VHB pursuant to the New Hampshire Revised Statutes Annotated (RSA) Chapter 485-A:17, Terrain Alteration, and the Alteration of Terrain Bureau Code of Administrative Rules, Chapters Env-Wq 1500.

Site Description and Existing Conditions

The proposed project involves the replacement of copper shield wire with optical ground wire (OPGW) and structure replacements along the existing 307 345kV line (Project) that originates at the Deerfield Substation in Deerfield, passes through Nottingham, Barrington, Lee, Madbury, Durham, and Dover, and culminates at the Eliot Substation in Eliot, Maine (refer to the USGS Site Location Map attached). Fifteen (15) remaining existing wooden electric transmission line structures along the maintained 307 Electric Transmission Line Right-of-Way (ROW) which ranges in width from approximately 150 to 200 feet are proposed to be replaced with new weathered steel structures under the Asset Condition Replacement program. One (1) structure is proposed to be removed entirely from the line. It should be noted that the 307 line shares a ROW with the 115kV L175 and G128 lines from Structures 187-92, the 115kV M183 line from Structures 93-83, and the 115kV R169 line from Structures 52-48. Previous disturbances along the ROW include clearing and construction of structures and associated ROW access. The ROW is comprised of emergent and scrub-shrub wetlands, perennial and intermittent streams, and upland vegetation that is routinely maintained on a three to five-year cycle to achieve vertical clearance requirements between ground vegetation and overhead transmission lines. Additional existing disturbances noted during field work include portions of residential properties and driveways which intersect the ROW, as well as active agricultural fields.

The ROW is comprised of PSNH owned-property or PSNH controlled easements on privately or publicly-held property. Land use adjacent to the ROW is primarily made up of residential properties and undeveloped forest with some agricultural activity present. The project is bisected by portions of the Bean River, North River, Little River, Oyster River, Bellamy River, and Piscataqua River. The ROW is further intersected by public roadways and state routes, including Cate Road, Stevens Hill Road, Stage Road, Freshet Road, Priest Road, Kennard Road, Smoke Street, NH Route 4, Two Mile Road, Carriage Run Road, NH Route 125, Pinkham Road, Old Mill Road, Snell Road, Turtle Pond Road, Madbury Road, Perkins Road, Evans Road, Garrison Lane, Durham Road, Sunnybrook Drive, Morgan Way, Spruce Lane, Danielle Lane, Back River Road, Shaws Lane, NH Route 16, Dover Neck Road, Overlook Drive, Quaker Lane, Middle Road, and Houde Road (Eliot, Maine).

Natural Resource Review

According to the NHDES Wetlands Permit Planning Tool, eight Priority Resource Areas (PRAs) identified as wetlands adjacent to Tier 3 streams intersect the ROW corridor, immediately adjacent to the Bean River, Little River, North River, Dube Brook, Oyster River, Varney Brook, Bellamy River and Piscataqua River respectively. As the proposed work near the wetlands associated with seven of the aforementioned rivers will be limited to OPGW replacements to be completed aerially through the use of helicopters, project activity is not expected to impact these resources. One proposed structure replacement (Structure 105) is located close to the Oyster River but does not intersect the adjacent wetlands. Appropriate sediment and erosion controls will be installed at the limit of disturbance between the work pad and adjacent wetland. Therefore no impact to this resource is anticipated to occur as a result of the Project. No other PRAs (sand dunes, prime wetlands and their buffers, or tidal waters or wetlands) intersect or abut the project ROW.

One (1) structure proposed for replacement is located within the 250' Protected Shoreland Zone of the Oyster River and a NHDES Shoreland PBN Application will be filed. Utility Statutory Permit by Notification (SPN) Applications will also be filed (one per town – Deerfield, Nottingham, Barrington, Lee, Durham, Madbury and Dover) with the NHDES Wetlands Bureau to cover temporary impacts resulting from work within jurisdictional wetlands as further described in detail below.

Delineated Natural Resources

Jurisdictional wetlands and surface waters along the 307 ROW between Deerfield Substation and Madbury Substation were delineated by VHB Wetland Scientists within the past 5 years. Wetland and water resources between Madbury Substation and Eliot Substation were originally delineated by GZA Wetland Scientists and were recently field verified and reflagged by VHB Wetland Scientists in November 2022. Natural resource delineations were performed in accordance with the procedures and standards outlined in the *1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region,* Version 2.0 (January 2012). Field work also relied upon the *Field Indicators for Identifying Hydric Soils in the United States,* Version 8.2, published by the Natural Resource Conservation Service and the *Field Indicators for Identifying Hydric Soils in New England,* Version 4.0, published by the New England Interstate Water Pollution Control Commission in April 2019. Dominant wetland vegetation was assessed using the *2018 National Wetland Plant List* published by the U.S. Army Corps of Engineers.

The 307 line ROW will be assessed for potential vernal pools by VHB Wetland Scientists in the spring of 2023, as defined by the NHDES Administrative Rules Env-Wt 103.64 and 104.15. Vernal pool assessments will be conducted in accordance with the *Identification and Documentation of Vernal Pools in New Hampshire*, Third Edition (2016) published by the NH Fish and Game Department.

Numerous emergent and scrub-shrub palustrine wetlands, intermittent streams, and perennial streams intersect the proposed access and/or work pads associated with the proposed structure replacements. Additionally, the Oyster River and associated delineated top-of-bank is located adjacent to the work pad associated with one structure to be replaced as previously described. Delineated wetlands intersecting the proposed project area exhibit characteristics typically found within a cleared and periodically maintained electric utility ROW setting.

Proposed Project Description

PSNH proposes to replace existing copper shield wire with OPGW along the 307 Electric Transmission line from the Deerfield Substation in Deerfield to the Eliot Substation in Eliot, ME, as well as replace fifteen (15) wooden utility structures (Structures 47, 58, 90, 94, 95, 96, 105, 121, 130, 131, 136, 141, 159, 164, and 177) with new weathered steel structures under the Asset Condition Replacement program. One (1) structure is proposed to be removed entirely from the line. The 307 line spans approximately 19.24 miles. Structures proposed for replacement have been recently identified by project engineers as deficient due to weathering, internal rot, and/or woodpecker damage. The 15 wooden utility structures will be replaced with weathered steel in the same configuration in accordance with current utility standards. Weathered steel structures are more resilient to insect and woodpecker damage, and pole rot. The proposed project is part of PSNH's ongoing maintenance program conducted to ensure reliable electric service for their customers. The PSNH transmission system is an integral part of the regional power system delivering electricity to customers throughout New England. The proposed project meets the requirements for work conducted in a coastal/Great Bay Region community per Env-Wq 1503.08(l) as the new weathered steel structures and OPGW will improve resilience to typical New Hampshire storms and severe weather events. It is critical that this system remains operational without interruption from preventable outages. Contingent upon permit approvals, work is planned to commence in April 2023 and continue through November 2023.

Of the 15 structures to be replaced, four (4) of the proposed structure replacements are located in Nottingham, three (3) are located in Barrington, one (1) is located in Lee, one (1) is located in Durham, four (4) are located in Madbury, one (1) is located in Dover, and one (1) is located in Eliot, ME. The one (1) structure to be removed from the line is located in Deerfield. All of the replacement structures will be installed within 20 feet of the existing structure footprints (back or forward on-line). Replacement structures will be connected to the existing overhead circuit prior to the removal of the existing structures. The height of the new structures will generally increase between 5 and 15 feet to gain compliance with current regulatory standards, meet safety clearance requirements, accommodate the site topography, and minimize environmental impacts. Lastly, associated guy support wires and anchors will be replaced. Most of the OPGW installation work will be performed aerially, i.e., by helicopter. However, some of the wire pulling work will involve on the ground activities. Pulling pads for the OPGW installation will be utilized at various points throughout the ROW, as depicted in the project plans provided in **Appendix B.**

All of the proposed work will be contained within the existing cleared utility ROW, and no additional tree clearing or widening of the ROW is proposed. Some routine vegetation mowing within the limits of the existing cleared ROW might be required along the proposed access roads and structure work pads to permit clear and safe crew access. Work crews will access structures targeted for replacement from existing public roadways that intersect the transmission line ROW and will travel within the limits of the existing cleared ROW corridor to reach the structures.

Timber matting will be utilized to cross wetlands and streams within the ROW to access the structures targeted for replacement and minimize soil disturbance by avoiding rutting. An off-site marshalling yard in a previously disturbed or developed area is expected to be secured by the selected contractor. The yard will contain the field office and will be used for material storage and parking. The yard will be inspected by a qualified environmental scientist prior to use to ensure no impacts to natural resources are required.

Access

Access points to the project ROW originate from public roadways (Cate Road, Stevens Hill Road, Stage Road, Freshet Road, Priest Road, Kennard Road, Smoke Street, NH Route 4, Two Mile Road, Carriage Run Road, NH Route 125, Pinkham Road, Old Mill Road, Snell Road, Turtle Pond Road, Madbury Road, Perkins Road, Evans Road, Garrison Lane, Durham Road, Sunnybrook Drive, Morgan Way, Spruce Lane, Danielle Lane, Back River Road, Shaws Lane, NH Route 16, Dover Neck Road, Overlook Drive, Quaker Lane, Middle Road, and Houde Road (Eliot, Maine)) that run parallel to, or perpendicularly intersect the ROW in various locations along the corridor. VHB is currently pursuing access approvals from the NH Department of Transportation and host municipalities as required for work directly off of these public roadways. Improvements to existing ROW access roads will be required in upland areas to provide a safe and stable travel way during construction and for future maintenance and repair activities. The preferred access routes which minimize impacts to natural resources to the extent practicable were selected over the course of several field visits by the PSNH Project Manager, Licensing and Permitting Specialist, Project Engineer, Construction Representatives, and Project Services personnel.

Timber mats will be used at unavoidable wetland and stream crossings and surrounding structure installations that are within or near natural resources. **Total ground disturbance was calculated at 672,151 square feet**, assuming 16-foot wide roads. Access roads currently exist between Deerfield Substation and Madbury Substation from previous work conducted in the shared ROW for ACR replacements along the L175, C129, and G128 115 kV lines. Ground disturbance and grading within upland areas will be kept to a minimum during the structure replacements, and the largest work pad to be established around proposed replacement structures will be limited to approximately 100'x100' in size.

Construction Methods and Best Management Practices

Ground-based crews will approach each replacement structure utilizing the proposed access as indicated on the plans provided in **Appendix B**. Timber mats (typically with dimensions of 16 feet wide by 4 feet long) will be installed where the proposed access, the structure work pads, or the average 30'x100' pulling pads intersect wetlands and/or streams in order to safely stage equipment and crews while minimizing soil disturbance and rutting within these resources. Some work pads may need to be two-tiered or reconfigured due to site topography or to avoid wetland impacts. In general, 70' of the work pad is located in front of the proposed structure and 30' of the work pad is located behind the existing structure. Perennial and intermittent streams will be spanned with timber mats from beyond the jurisdictional banks in order to avoid bank and bed impacts and allow flow to pass freely during construction.

Any construction laydown areas required for equipment and material staging while the replacement work is carried out will be situated in upland areas along the existing ROW corridor where feasible. A laydown area west of Madbury Road will be matted for the staging of timber mats as indicated on the permitting plans. These areas are typically confined to the structure work pads or upland areas along the existing ROW near primary access points from public roadways.

Once access and work pads are established, the new steel poles will be installed through direct embedment using a caisson that is backfilled with gravel. Traditional auguring and installation procedures will be used. No structures are proposed to be installed within the bed and/or banks of any stream or river along the ROW.

Prior to commencing installation activities, crews will install wildlife friendly erosion and sediment control barriers in accordance with permitting plans and details, New Hampshire Department of Environmental Services (NHDES) conditions, and the *Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire* (or "Utility BMP Manual," March 2019), published by the New Hampshire Department of Natural and Cultural Resources (NHDNCR). Selected erosion and sediment control barriers may include silt sock, silt fence, and/or wood chip/compost berms/tubes. Additional Best Management Practices (BMPs) such as stabilized construction exits, water bars, and erosion control blankets will also be utilized along proposed access ways and adjacent to structure locations in order to manage stormwater run-off, reduce erosion and stabilize soils. During project construction, control of the spread of invasive plant species that are currently found within the project ROW will also be managed in accordance with NHDES permit conditions and the Utility BMP Manual.

Installed erosion controls and other installed utility BMPs will be inspected daily by the contractor crews and weekly by a qualified environmental monitor, hired by PSNH, to ensure proper functionality and maintenance. Erosion and sediment control barriers will not be removed until project work is complete, and project areas are stabilized in accordance with NHDES guidance.

As soon as possible after the completion of the structure replacement work, timber matting and construction debris will be removed from the project ROW. Construction debris will be properly disposed of off-site. Timber matting will not remain in place for longer than one growing season. Stabilization and restoration of disturbed areas/exposed soils will be initiated as soon as possible once timber mats are pulled and structure work is completed. Due to the use of timber mats, it is anticipated that minimal restoration within the ROW will be required, and that natural vegetative re-colonization of impacted areas will occur during growing seasons in 2023/2024. VHB will visit the project ROW post-construction to assess conditions, provide guidance to work crews on restoration, and to determine whether or not additional promotion of vegetation (seeding) is required. If necessary, a native upland and/or wetland seed mix will be applied to any areas where cover is slow to develop. Additionally, straw or weed-free hay will be applied in conjunction with seed. In accordance with Env-Wt 307.12(f), if the temporarily impacted areas do not have at least 75% revegetation after two growing seasons, replanting, or reseeding would occur in those areas.

Refer to the plans provided in **Appendix B** for the location of existing wetlands and surface waters, utility structures, proposed access routes, construction work pads, laydown areas, and timber matting.

Floodplains and Floodways

The project ROW is intersected by FEMA mapped 1% Annual Chance Flood Hazard Zones (100-year floodplains) in nine (9) locations along the ROW corridor. Only one (1) location, associated with the North River in Nottingham intersects a proposed access road and work pad in accordance with the effective Flood Insurance Rate Map (FIRM), Map No. 33015C0115E dated May 16, 2005. The amount of new fill associated with installation of the new structure is minimal and access to the structure will traverse temporary matting across wetland areas. Therefore, the project is not expected to cause or increase flooding. Refer to the figure provided in **Appendix C** for a detailed FEMA map of the project area.

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Transmittal Documentation to Municipalities and Local River Advisory Committees

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Waiver Requests

ALTERATION OF TERRAIN WAIVER REQUEST FORM

R.S.A. 485-A:17
Department of Environmental Services - Water Division
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

Application Date: January 26, 2023 File Number (DES use): _____

307 Electric Transmission Line Maintenance Project
Name of Project

Deerfield, Nottingham, Barrington, Lee, Durham, Madbury, and Dover
Location of Project (town)

Rockingham and Strafford
County

Utility Replacement
Project Type

1. Owner Information

Public Service Company of NH dba Eversource Energy
Name

kurt.nelson@eversource.com
Email address (optional)

Kurt Nelson
Contact Name

(603) 714-3031
Telephone Number

13 Legends Drive
Mailing Address

Hooksett
City/Town

NH
State

03106
Zip Code

2. Person Requesting Waiver(s)

VHB
Name

strefry@vhb.com
Email address (optional)

Sherrie Trefry
Contact Name

(603) 391-3951
Telephone Number

2 Bedford Farms Drive; Suite 200
Mailing Address

Bedford
City/Town

NH
State

03110
Zip Code

3. Waiver Request(s)

Rule	Brief Description of Rule
Env-Wq 1504.09	Stormwater Drainage Report, Site Specific Soil Mapping and Plans

Explanation of Request:	A waiver is requested from the requirements to prepare a Stormwater Drainage Report, Drainage Area Plans and Site Specific Soil Mapping as the project is a linear utility maintenance project and the disturbance areas are disconnected and are not concentrated to an individual site or watershed. The proposed project is primarily for the maintenance of an existing transmission line and there will be negligible new impervious area and therefore stormwater detention and treatment practices are not proposed.
Permanent or Temporary:	Permanent
Explanation of Alternative:	Not Applicable
Compliance with Env-Wq:	The proposed project involves the replacement of existing transmission line infrastructure. The land disturbance is associated with ground improvements for vehicle access and work pads at the structure replacement locations. Site specific soil mapping and drainage analysis calculations will provide no benefit to the public or the environment due to the disconnected nature of the work. NRCS web soil survey data will be used to provide a general understanding of the types of soils that may be encountered during construction activities so that the appropriate erosion control BMPs can be implemented. Given that the site has been previously disturbed by the existing transmission line facilities and other land uses, the NRCS web soil survey data, topographic information, and results of field analyses are anticipated to provide an adequate level of information necessary to construct the project without impacting water quality as compared to strict compliance with the rule.

4. Signature(s) Required

(1) The information provided is true, complete, and not misleading to the knowledge and belief or the signer; and

(2) The signer understands that any waiver granted based on false, incomplete, or misleading information shall be subject to revocation.

Signature (owner) and Date	Name (owner)
1/30/2023	Kurt Nelson for PSNH dba Eversource
Signature (person requesting waiver) and Date	Name (person requesting waiver)
1/30/2023	Sherrie Trefry

ALTERATION OF TERRAIN WAIVER REQUEST FORM

R.S.A. 485-A:17
Department of Environmental Services - Water Division
29 Hazen Drive, PO Box 95
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Contact Name

(603) 391-3951
Telephone Number

2 Bedford Farms Drive; Suite 200
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NH
State

03110
Zip Code

3. Waiver Request(s)

Env-Wq 1503.21(c)(2)	Pertinent to deviations from approved plans
Rule	Brief Description of Rule

Explanation of Request:	A waiver is requested from the requirements to prepare as-built drawings, stamped by a qualified engineer, and a detailed description of all deviations from the approved plans. The potential for various minor changes to access roads and work pad configuration are likely to be executed in the field by the civil crew during construction based on field conditions (e.g., slope, presence of ledge, previous disturbance, stonewalls, etc.) and needs of the line crew to allow for ease of access.
Permanent or Temporary:	Permanent
Explanation of Alternative:	As an alternative to submitting the plans and description required under 1503.21(c)(2), a plan reflecting the changes to access that have been made will be provided following the completion of the project. Changes to work pad configuration are generally within the 100' x 100' designated disturbance area and are, therefore, not included on the plans.
Compliance with Env-Wq 1509.04:	The proposed project involves the replacement of existing transmission line infrastructure. The land disturbance is associated with ground improvements for vehicle access and work pads at the structure replacement locations. Changes to the access road and work pad configurations do not require an amended permit or a new permit and will still maintain compliance with Env-Wq 1507.02 relative to permanent methods of protecting water quality. Total project disturbance will not exceed the total disturbance calculations identified in the permit. Modifications have not and will not result in any changes to wetlands or protected shoreland impacts and will not decrease any buffers required by law or established by a permit or other approval.

4. Signature(s) Required

(1) The information provided is true, complete, and not misleading to the knowledge and belief or the signer; and

(2) The signer understands that any waiver granted based on false, incomplete, or misleading information shall be subject to revocation.

1/30/2023	Kurt Nelson for PSNH dba Eversource
Signature (owner) and Date	Name (owner)
Sherrie Trefry 1/30/2023	Sherrie Trefry
Signature (person requesting waiver) and Date	Name (person requesting waiver)

ALTERATION OF TERRAIN WAIVER REQUEST FORM

R.S.A. 485-A:17
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VHB
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strefry@vhb.com
Email address (optional)

Sherrie Trefry
Contact Name

(603) 391-3951
Telephone Number

2 Bedford Farms Drive; Suite 200
Mailing Address

Bedford
City/Town

NH
State

03110
Zip Code

3. Waiver Request(s)

Env-Wq 1503.12 (d)(1&2)	Measurement of Contiguous Area Disturbed; Inclusion in Plans
Rule	Brief Description of Rule

Explanation of Request:	A waiver is requested by PSNH d/b/a Eversource Energy for including past terrain disturbance in the measurement of contiguous disturbed area included in this 307 Transmission Line Alteration of Terrain Application. No known future disturbance, beyond the scope of the 307 Transmission Line Maintenance Project described in this application, is known at this time.
Permanent or Temporary:	Permanent
Proposed Alternative:	Existing terrain alteration associated with past transmission line maintenance within the 307 Transmission Line right-of-way (ROW) is minimal. Any existing trails or access roads that may have been created within the last 10 years will be utilized and/or improved as part of this project and have been included in the current calculations within this application. Future structure maintenance may occur within they 307 ROW. Eversource, through consultation with NHDES, will evaluate whether future terrain disturbances within the 307 ROW will be permitted with an amendment to this application or subject to a new, separate application.
Compliance with Env-Wq:	The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Proposed disturbances anticipated for 2023 within the 307 ROW is included in this application and shown on the Project Plans. Project disturbances included in this application and subsequent permit approvals will be considered if future structure maintenance is proposed within the 307 ROW. Eversource respectfully requests a waiver from including past disturbance in this application. Future disturbances within the 307 ROW will be evaluated and discussed with NHDES and permit amendments or new permit applications will be submitted, if necessary.

4. Signature(s) Required

(1) The information provided is true, complete, and not misleading to the knowledge and belief or the signer; and

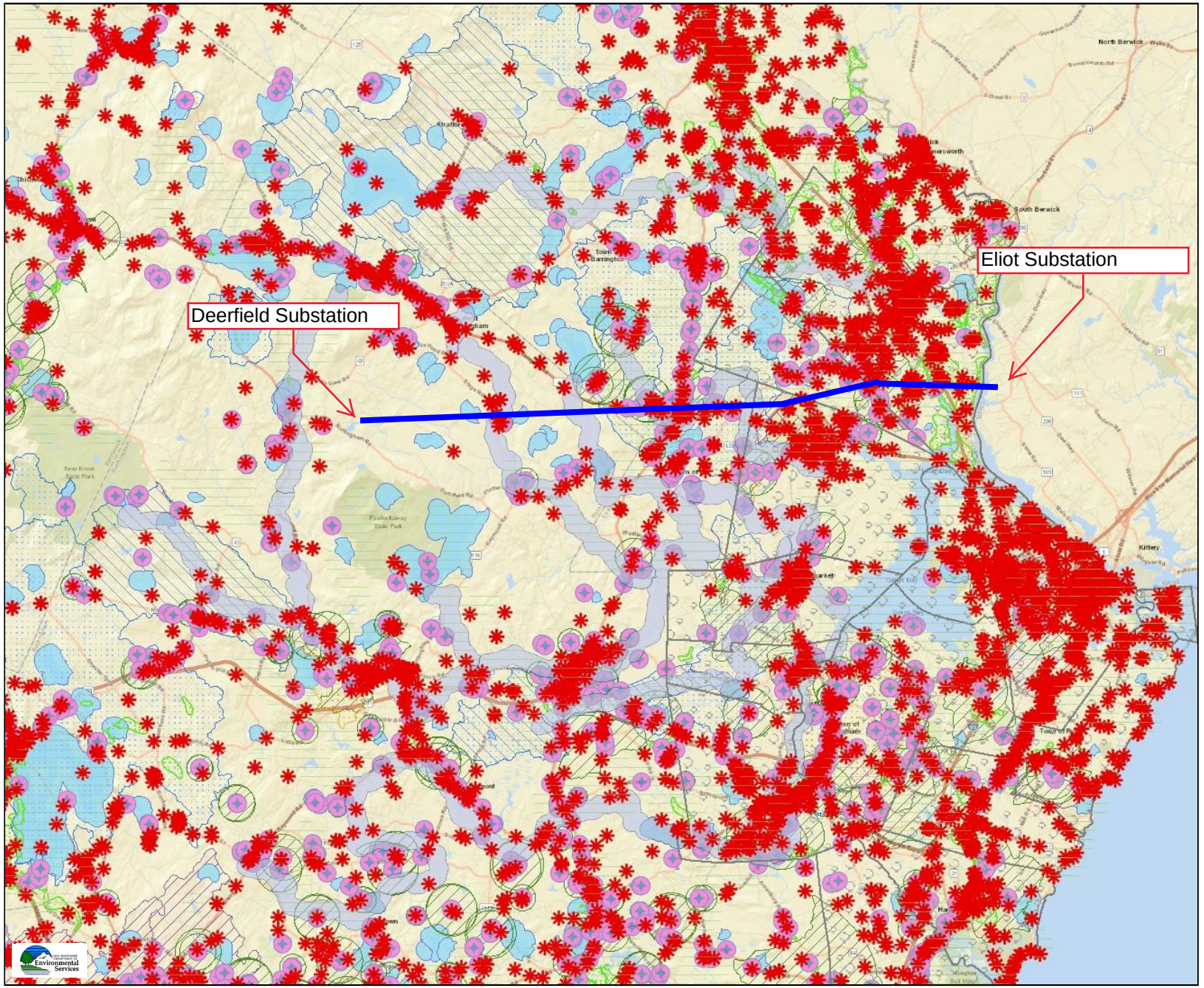
(2) The signer understands that any waiver granted based on false, incomplete, or misleading information shall be subject to revocation.

	2/2/2023	Kurt Nelson for PSNH dba Eversource
Signature (owner) and Date		Name (owner)
	2/2/2023	Sherrie Trefry
Signature (person requesting waiver) and Date		Name (person requesting waiver)

Appendix A – Support Data

- **Web GIS Printout with Water Impairments and AOT Screening Layers**
- **NHB Data Check Letters and Correspondence**
- **Web Soil Survey Maps**
- **Aerial Photograph**
- **Site Photographs**

307 Transmission Line Web GIS Printout AoT Screening Layer



Legend

- Surface Waters with Impairm 2022 with Quarter Mile Buffe
- Remediation Sites
- Coastal and Great Bay Regi Communities
- Designated Rivers Quarterm Buffer
- Public Water Supply Wells
- Groundwater Classification A GA1
- Groundwater Classification A GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarte Buffer
- Class A - All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Watersheds with Chloride Impairments

Map Scale

1: 250,000

Map Generated: 1/25/2023

Notes

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Andrew Mahoney, VHB
2 Bedford Farms Drive Suite 200
Bedford, NH 03103

From: NHB Review, NH Natural Heritage Bureau
Date: 12/8/2022 (valid until 12/08/2023)
Re: Review by NH Natural Heritage Bureau
Permits: NHDES - Alteration of Terrain Permit, NHDES - Utility Statutory Permit by Notification (SPN)

NHB ID: **NHB22-3690** Town: Deerfield, Nottingham, Barrington, Lee, Durham, Madbury, and Dover Location: 307 Transmission Line ROW

Description: The Public Service Company of New Hampshire (PSNH) d/b/a Eversource Energy intends to perform maintenance work on the 345kV 307 Transmission Line involving wooden utility pole replacements, and optical ground wire (OPGW) replacement along the existing utility ROW in Deerfield, Nottingham, Barrington, Lee, Durham, Madbury, Dover, New Hampshire (and Eliot, Maine). No tree clearing or additional widening of the ROW is proposed. In total, the project extends approximately 19.24 miles, from the Deerfield Substation, in Deerfield, New Hampshire to the Eliot Substation in Eliot, Maine, and includes replacement of 14 wooden utility poles in New Hampshire (and one in Maine), with weathered steel poles.

Although much of the OPGW work in will be performed aerially, i.e., by helicopter, some of the

cc: NHFG Review

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: Please provide existing and proposed conditions plans. Please provide representative photos during the growing season. Please provide proposed project timing. Will there be any work conducted in the water?**
F&G: Please refer to NHFG consultation requirements below. Please coordinate with Kat Wadiak.

Natural Community	State[1]	Federal	Notes
Low brackish riverbank marsh*	--	--	

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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Plant species	State[1]	Federal	Notes
Allegheny-vine (*Adlumia fungosa*)	E	--	The primary threat to this species is direct destruction of its habitat.
climbing hempvine (*Mikania scandens*)	E	--	Threats include changes to the hydrology (e.g., water levels) of its habitat and increased sedimentation or nutrients and pollutants in stormwater runoff.
crested sedge (*Carex cristatella*)*	E	--	This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
eastern grasswort (*Lilaeopsis chinensis*)*	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.
greater fringed-gentian (*Gentianopsis crinita*)*	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).
incurved umbrella sedge (*Cyperus squarrosus*)	T	--	Changes to local hydrology, or recreational activities along the shoreline, could threaten this species, which occurs on river or streambanks..
ivy-leaved duckweed (*Lemna trisulca*)*	E	--	Threats to aquatic species include changes in water quality, e.g., due to pollution and stormwater runoff, and significant changes in water level.
lopsided rush (*Juncus secundus*)*	E	--	Occurs on talus slopes, cliffs/ledges, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.
perennial saltmarsh American-aster (*Symphyotrichum tenuifolium var. tenuifolium*)*	E	--	Threats to this estuarine species 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.
red-root umbrella sedge (*Cyperus erythrorhizos*)	E	--	
river birch (*Betula nigra*)*	T	--	The population could be deleteriously affected by any project activities that alter the hydrology of its habitat, by increased sedimentation, and by increased nutrients/pollutants in stormwater runoff.
rufous bulrush (*Scirpus pendulus*)	E	--	Occurs in a variety of wetland habitats, including mesic forests, peatlands, and marshes. Potential threats include water level changes, water quality degradation,

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			development (of adjacent uplands), off road vehicles, and succession.
seaside brookweed (*Samolus parviflorus*)*	E	--	Occurs on river and streambanks, as well as estuarine and seashore habitats. Threats include direct destruction of the plants and major alterations of their habitat.
southern short husk grass (*Brachyelytrum erectum*)*	E	--	

Vertebrate species	**State[1]**	**Federal**	**Notes**
American Brook Lamprey (*Lethenteron appendix*)	E	--	Contact the NH Fish & Game Dept (see below).
American Eel (*Anguilla rostrata*)	SC	--	Contact the NH Fish & Game Dept (see below).
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Jefferson/Blue-spotted Salamander Complex (*Ambystoma pop. 3*)	--	--	Contact the NH Fish & Game Dept (see below).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see below).
Sea Lamprey (*Petromyzon marinus*)	SC	--	Contact the NH Fish & Game Dept (see below).
Smooth Green Snake (*Opheodrys vernalis*)	SC	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (*Glyptemys insculpta*)	SC	--	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 more than 20 years ago.

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

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG 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.

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NH Natural Heritage Bureau
NHB DataCheck Results Letter

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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://wildlife.state.nh.us/wildlife/environmental-review.html. 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: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to 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.

Department of Natural and Cultural Resources
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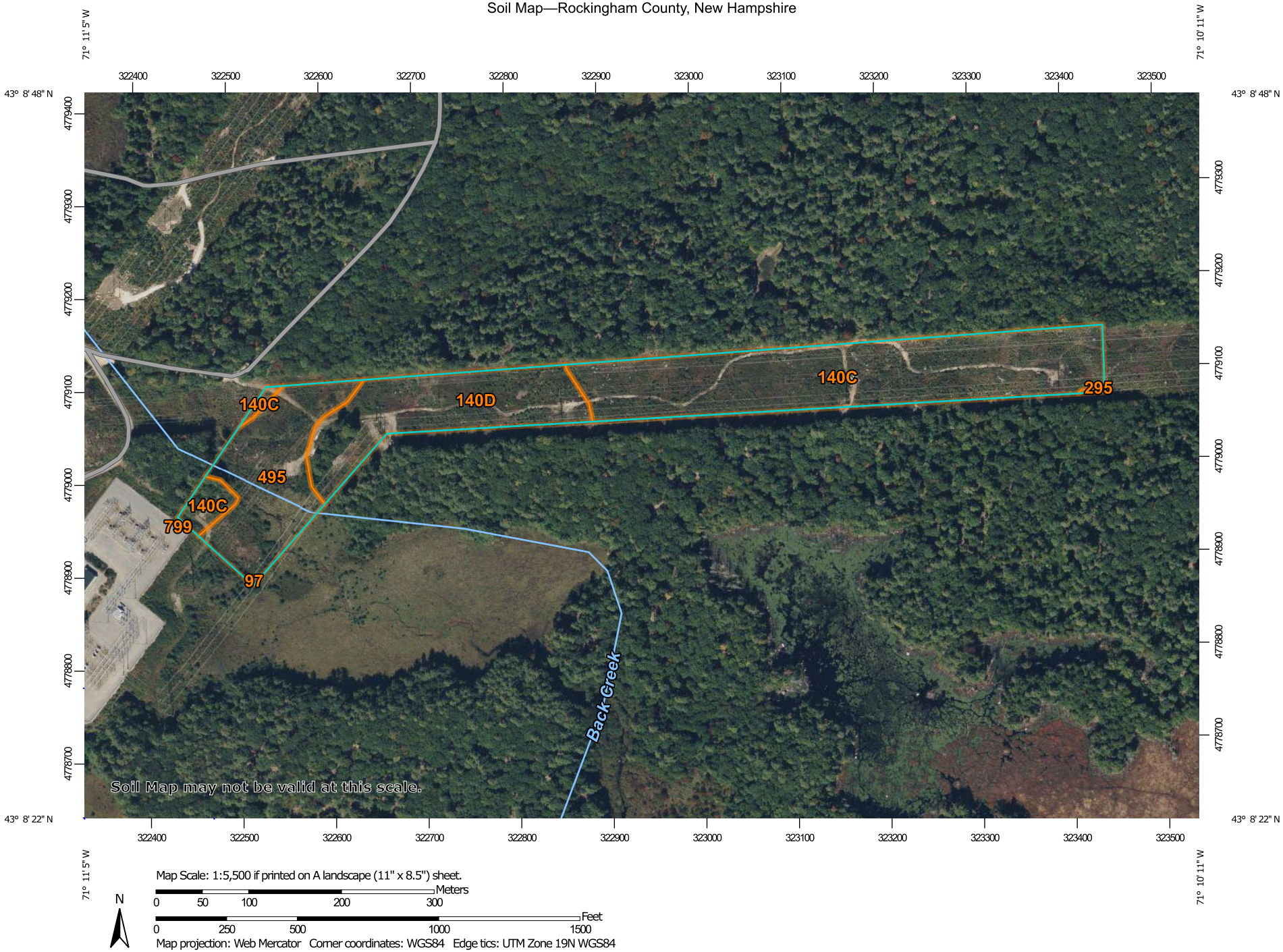


Map Scale: 1:5,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

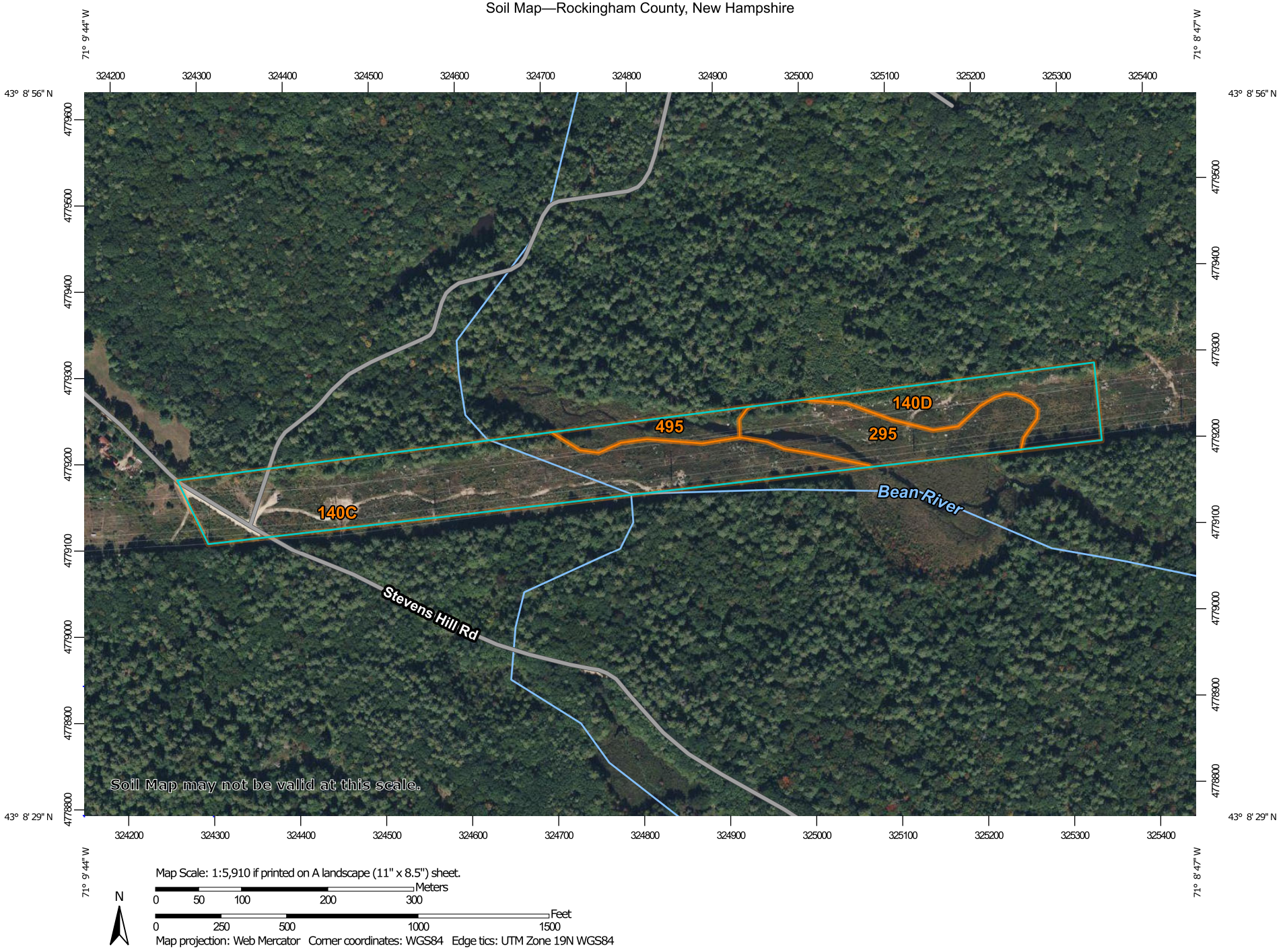
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	0.0	0.1%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	10.2	52.0%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	4.9	24.9%
295	Freetown mucky peat, 0 to 2 percent slopes	0.0	0.2%
495	Natchaug mucky peat, 0 to 2 percent slopes	4.5	22.9%
799	Urban land-Canton complex, 3 to 15 percent slopes	0.0	0.0%
Totals for Area of Interest		**19.5**	**100.0%**


71° 9' 44" W
71° 8' 47" W
43° 8' 56" N
43° 8' 29" N
324200
324300
324400
324500
324600
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324800
324900
325000
325100
325200
325300
325400
4779600
4779500
4779400
4779300
4779200
4779100
4779000
4778900
4778800
140D
495
295
140C
Bean River
Stevens Hill Rd
Soil Map may not be valid at this scale.
Map Scale: 1:5,910 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1000 1500
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	12.5	56.6%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	3.7	16.9%
295	Freetown mucky peat, 0 to 2 percent slopes	4.4	19.9%
495	Natchaug mucky peat, 0 to 2 percent slopes	1.4	6.5%
Totals for Area of Interest		**22.1**	**100.0%**

Map Scale: 1:5,620 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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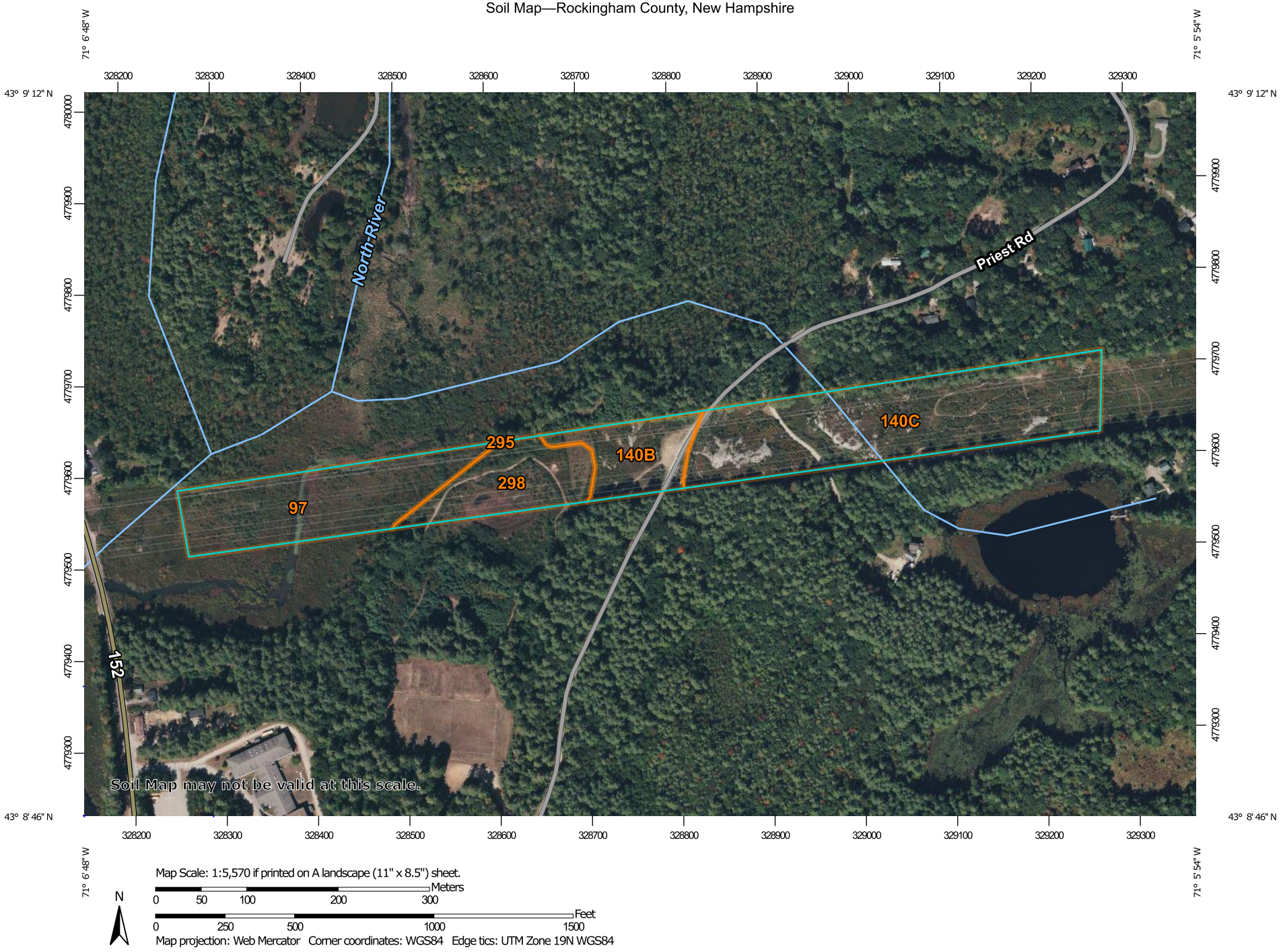
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26A	Windsor loamy sand, 0 to 3 percent slopes	2.1	10.6%
26B	Windsor loamy sand, 3 to 8 percent slopes	0.0	0.1%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	3.8	18.8%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	9.0	44.5%
298	Pits, sand and gravel	2.5	12.5%
395	Swansea mucky peat, 0 to 2 percent slopes	2.8	13.7%
Totals for Area of Interest		**20.2**	**100.0%**


71° 6' 48" W
71° 5' 54" W
43° 9' 12" N
43° 8' 46" N
328200
328300
328400
328500
328600
328700
328800
328900
329000
329100
329200
329300
4780000
4779900
4779800
4779700
4779600
4779500
4779400
4779300
North River
Priest Rd
295
298
97
140B
140C
152
Soil Map may not be valid at this scale.
Map Scale: 1:5,570 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1000 1500
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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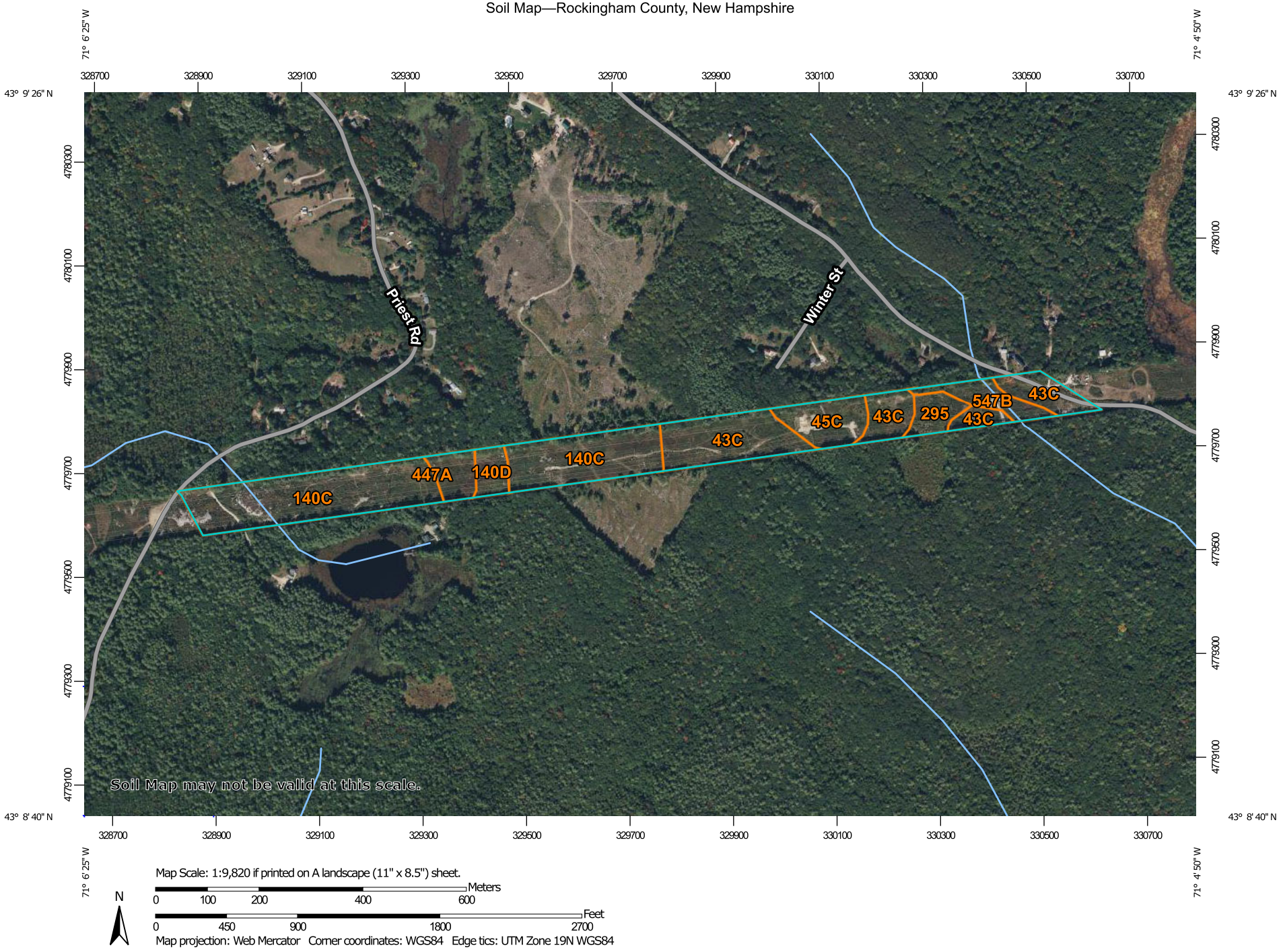
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	5.4	26.6%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	2.4	11.8%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	9.4	46.8%
295	Freetown mucky peat, 0 to 2 percent slopes	0.0	0.0%
298	Pits, sand and gravel	3.0	14.7%
Totals for Area of Interest		**20.1**	**100.0%**

Soil Map—Rockingham County, New Hampshire



Map Scale: 1:9,820 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	10.8	28.0%
45C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	3.2	8.3%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	17.6	45.5%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	1.4	3.6%
295	Freetown mucky peat, 0 to 2 percent slopes	1.7	4.3%
447A	Scituate-Newfields complex, 0 to 3 percent slopes, very stony	1.8	4.6%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	2.2	5.6%
Totals for Area of Interest		**38.7**	**100.0%**

Map Scale: 1:4,080 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

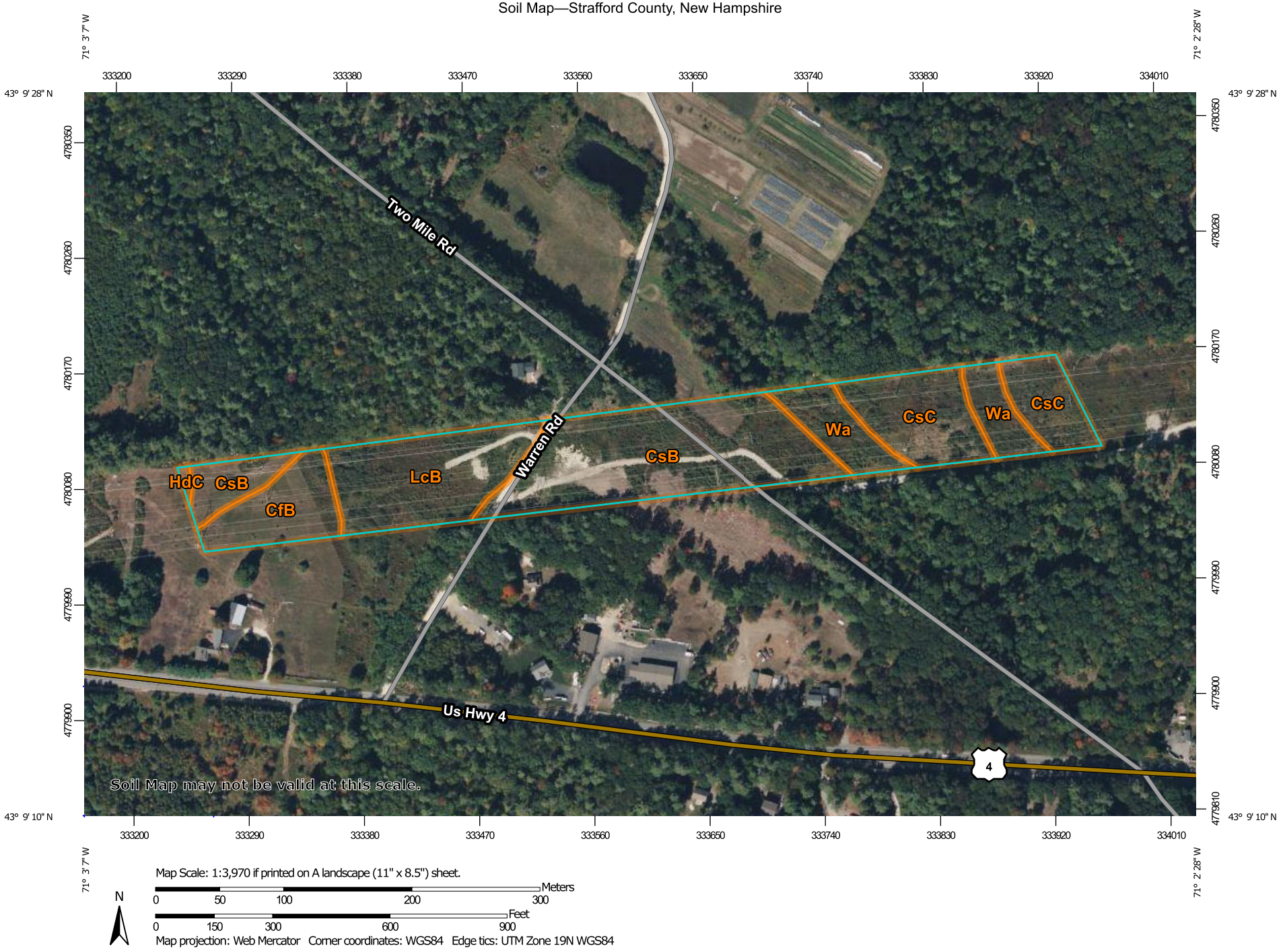
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	9.5	72.3%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	3.6	27.7%
Totals for Area of Interest		**13.1**	**100.0%**



Map Scale: 1:3,970 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

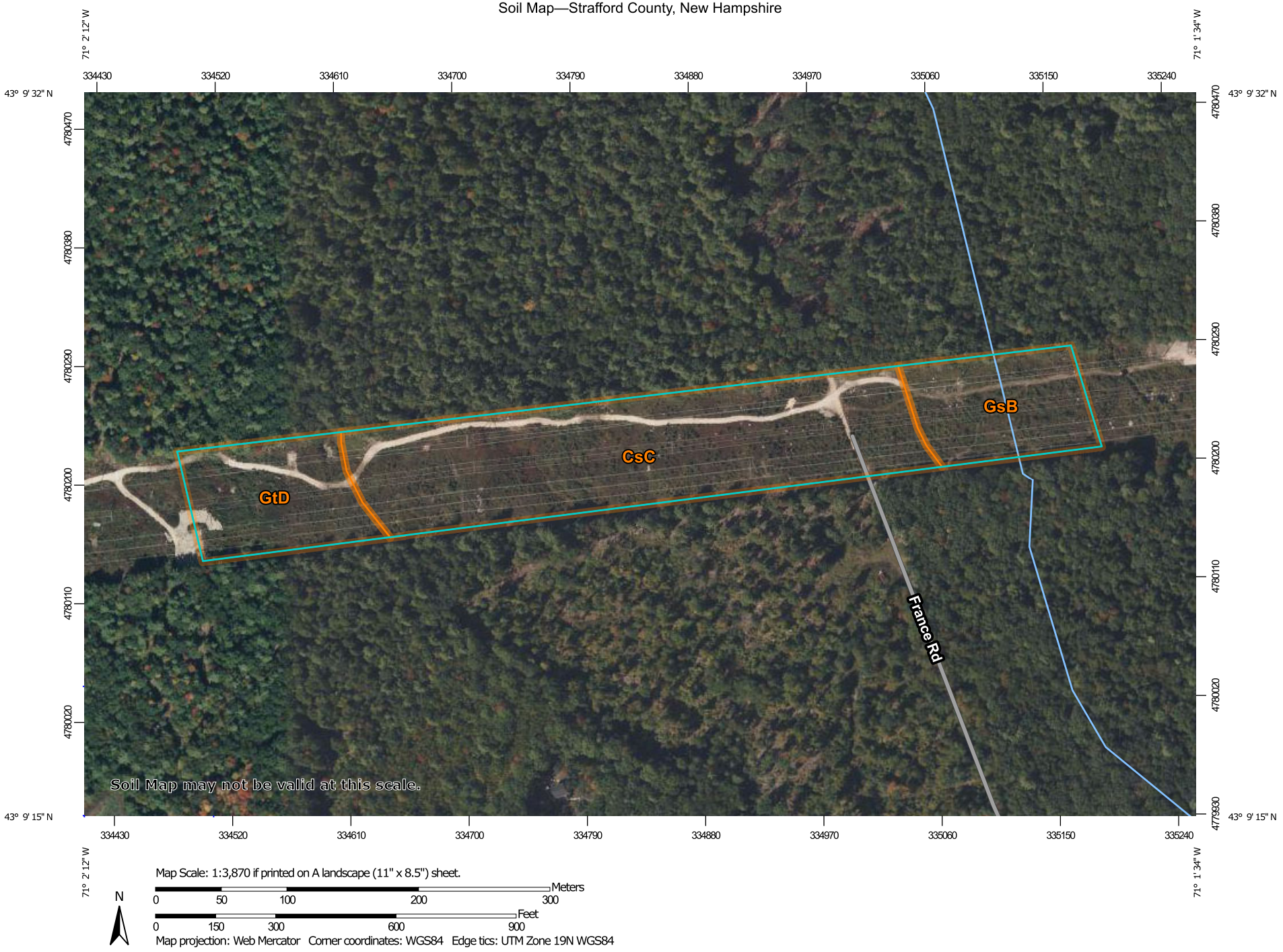
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CfB	Charlton fine sandy loam, 3 to 8 percent slopes	1.3	10.2%
CsB	Charlton fine sandy loam, 3 to 8 percent slopes, very stony	4.7	38.4%
CsC	Charlton fine sandy loam, 8 to 15 percent slopes, very stony	2.4	19.6%
HdC	Hollis-Charlton very rocky fine sandy loams, 8 to 15 percent slopes	0.0	0.4%
LcB	Leicester fine sandy loam, 0 to 8 percent slopes	2.4	19.7%
Wa	Whitman fine sandy loam, 0 to 3 percent slopes, very stony	1.5	11.8%
Totals for Area of Interest		**12.3**	**100.0%**



Map Scale: 1:3,870 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CsC	Charlton fine sandy loam, 8 to 15 percent slopes, very stony	8.7	62.2%
GsB	Gloucester very stony fine sandy loam, 3 to 8 percent slopes	2.6	18.5%
GtD	Gloucester extremely stony fine sandy loam, 8 to 25 percent slopes	2.7	19.3%
Totals for Area of Interest		**14.0**	**100.0%**

Map Scale: 1:1,950 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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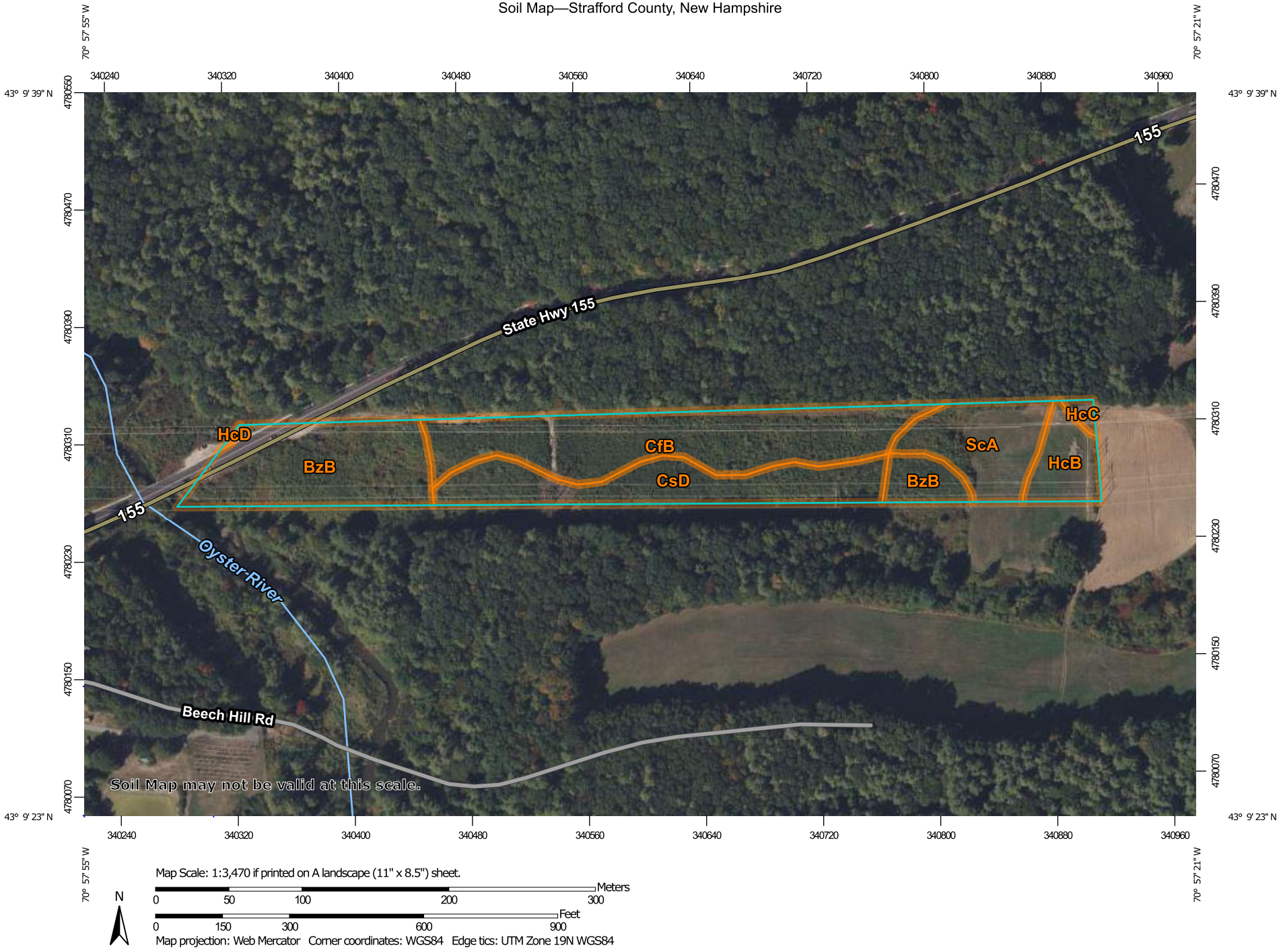
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GlC	Gloucester fine sandy loam, 8 to 15 percent slopes	0.4	6.8%
GsC	Gloucester very stony fine sandy loam, 8 to 15 percent slopes	2.4	37.2%
HaA	Hinckley loamy sand, 0 to 3 percent slopes	3.6	56.0%
Totals for Area of Interest		**6.4**	**100.0%**



Map Scale: 1:3,470 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

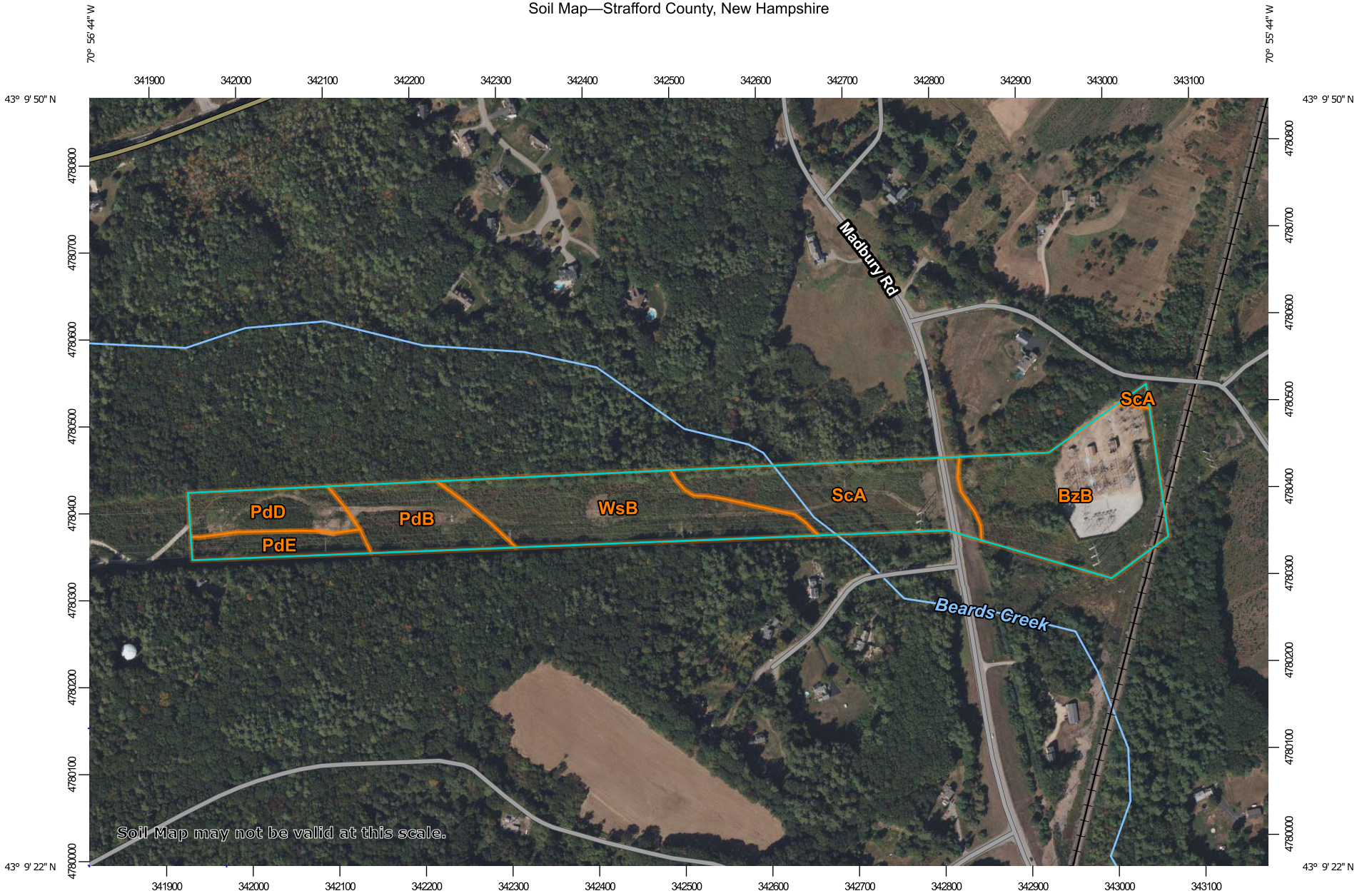
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	2.5	26.9%
CfB	Charlton fine sandy loam, 3 to 8 percent slopes	3.0	32.5%
CsD	Charlton very stony fine sandy loam, 15 to 25 percent slopes	1.9	20.2%
HcB	Hollis-Charlton fine sandy loams, 3 to 8 percent slopes	0.6	6.5%
HcC	Hollis-Charlton fine sandy loams, 8 to 15 percent slopes	0.1	0.9%
HcD	Hollis-Charlton fine sandy loams, 15 to 25 percent slopes	0.0	0.1%
ScA	Scantic silt loam, 0 to 3 percent slopes	1.2	12.8%
Totals for Area of Interest		**9.4**	**100.0%**



Map Scale: 1:6,220 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

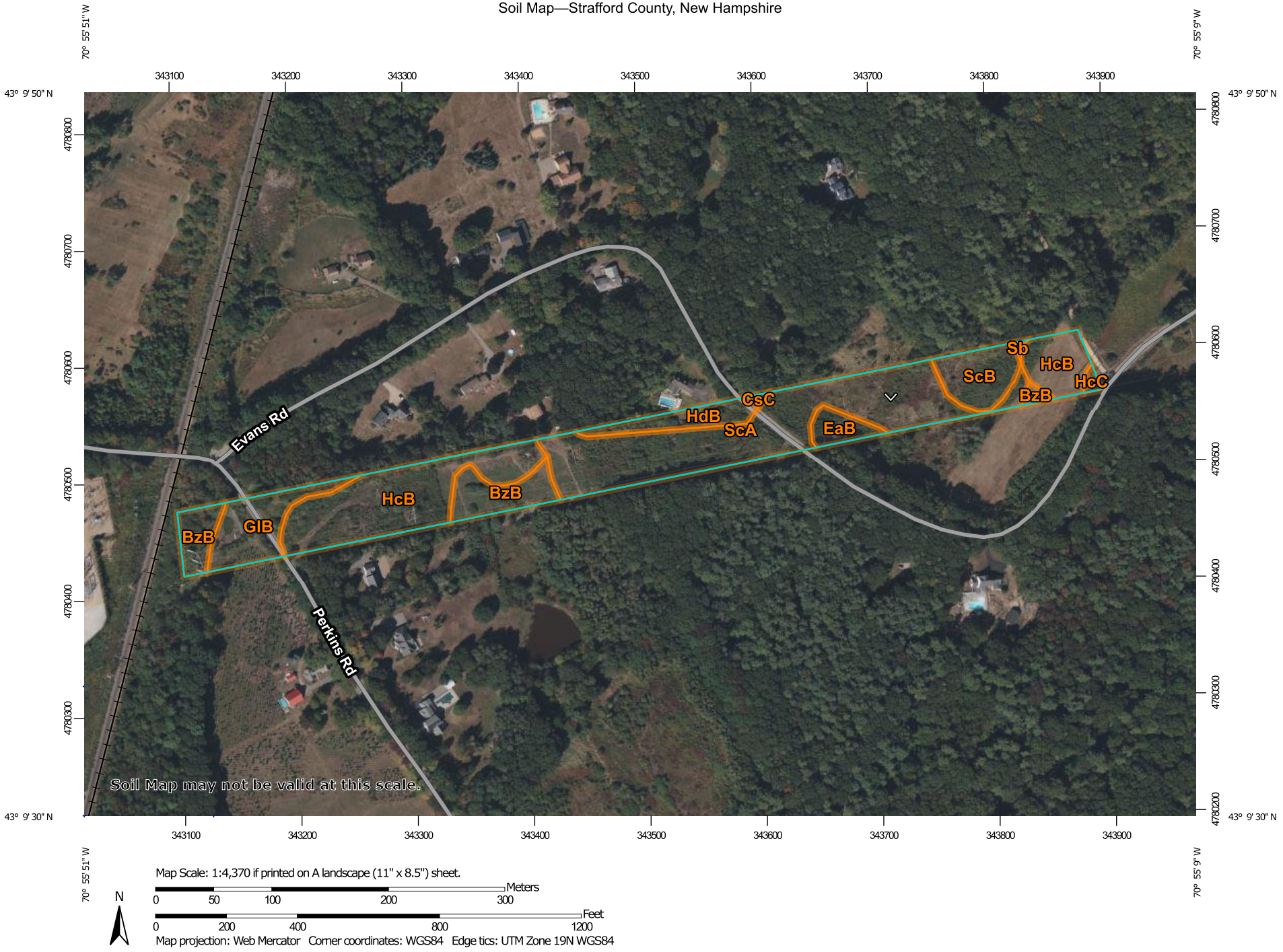
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	7.8	30.1%
PdB	Paxton fine sandy loam, 0 to 8 percent slopes, very stony	2.9	11.1%
PdD	Paxton fine sandy loam, 15 to 25 percent slopes, very stony	2.2	8.5%
PdE	Paxton very stony fine sandy loam, 25 to 60 percent slopes	1.4	5.5%
ScA	Scantic silt loam, 0 to 3 percent slopes	5.5	21.3%
WsB	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	6.1	23.6%
Totals for Area of Interest		**26.0**	**100.0%**



Map Scale: 1:4,370 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	1.2	10.7%
CsC	Charlton fine sandy loam, 8 to 15 percent slopes, very stony	0.0	0.3%
EaB	Elmwood fine sandy loam, 3 to 8 percent slopes	0.3	3.0%
GlB	Gloucester fine sandy loam, 3 to 8 percent slopes	1.0	8.9%
HcB	Hollis-Charlton fine sandy loams, 3 to 8 percent slopes	3.0	27.8%
HcC	Hollis-Charlton fine sandy loams, 8 to 15 percent slopes	0.1	0.5%
HdB	Hollis-Charlton very rocky fine sandy loams, 3 to 8 percent slopes	0.5	4.9%
Sb	Saugatuck loamy sand	0.0	0.2%
ScA	Scantic silt loam, 0 to 3 percent slopes	4.0	36.9%
ScB	Scantic silt loam, 3 to 8 percent slopes	0.7	6.9%
Totals for Area of Interest		**10.8**	**100.0%**

Map Scale: 1:2,470 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EaA	Elmwood fine sandy loam, 0 to 3 percent slopes	0.5	11.8%
WdB	Windsor loamy sand, 3 to 8 percent slopes	2.3	56.7%
WfB	Windsor loamy fine sand, clay subsoil variant, 0 to 8 percent slopes	1.3	31.6%
Totals for Area of Interest		**4.1**	**100.0%**


70° 50' 51" W
70° 50' 30" W
43° 10' 17" N
43° 10' 7" N
349820
349870
349920
349970
350020
350070
350120
350170
350220
350270
4781490
4781440
4781390
4781340
4781290
4781240
Canney Brook
WfC
BzB
WfC
BzB
Soil Map may not be valid at this scale.
Map Scale: 1:2,120 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 30 60 120 180
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Soil Survey Area: Strafford County, New Hampshire
Survey Area Data: Version 23, Sep 9, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BzB	Buxton silt loam, 3 to 8 percent slopes	3.2	78.9%
WfC	Windsor loamy fine sand, clay subsoil variant, 8 to 15 percent slopes	0.8	21.1%
Totals for Area of Interest		**4.0**	**100.0%**

Map Scale: 1:1,750 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: York County, Maine
Survey Area Data: Version 21, Aug 30, 2022

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

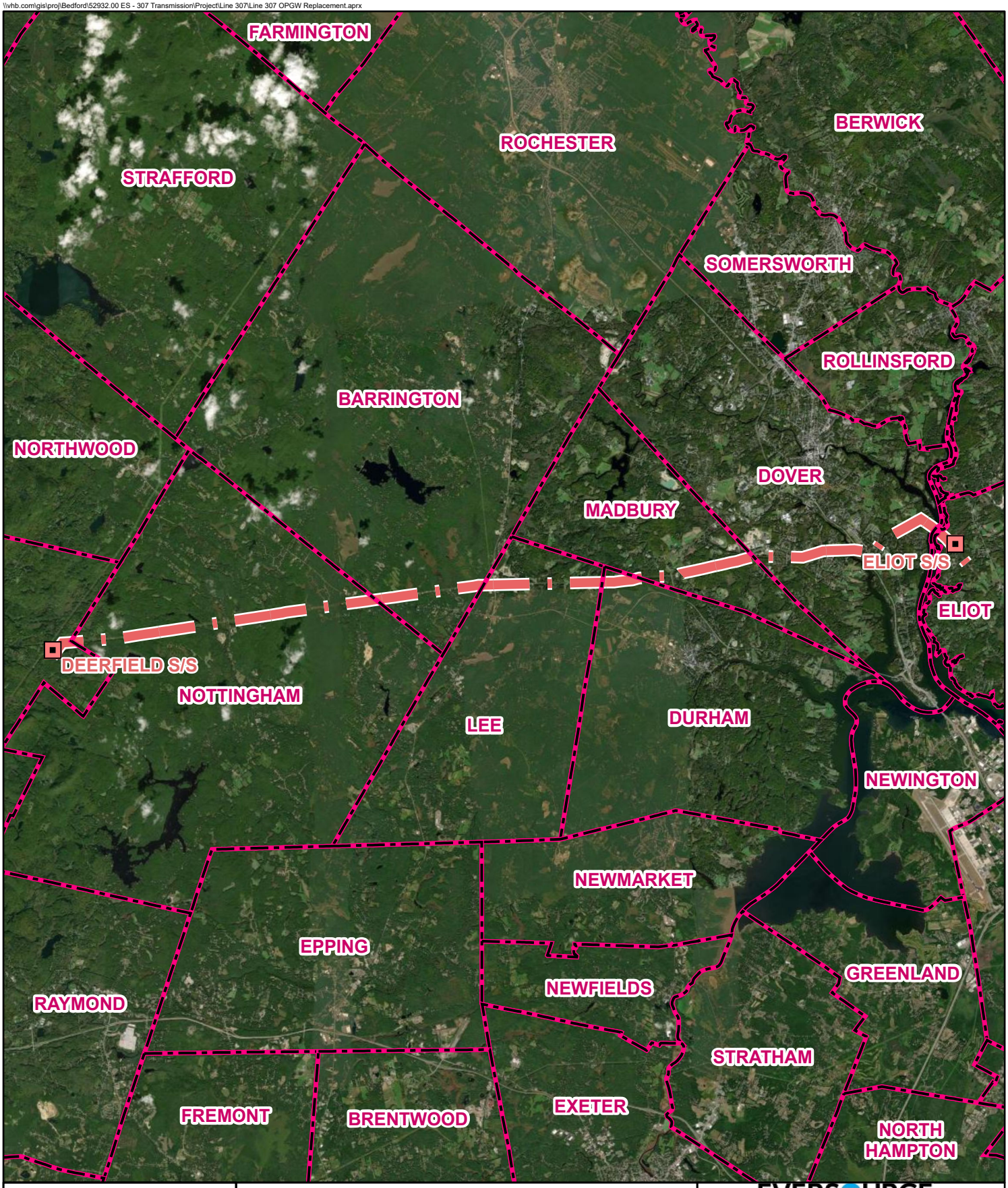
Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

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

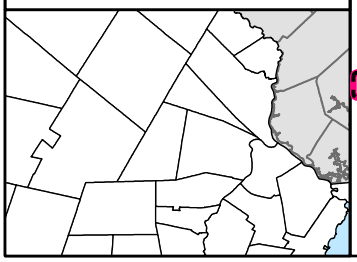
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdC	Adams loamy sand, 8 to 15 percent slopes	2.0	43.8%
Na	Naumburg sand	1.8	38.9%
Sa	Saco mucky silt loam	0.8	17.2%
Totals for Area of Interest		**4.7**	**100.0%**

\\vhb.com\gis\proj\Bedford\52932.00 ES - 307 Transmission\Project\Line 307\Line 307 OPGW Replacement.aprx



INDEX MAP



SUBSTATION

OVERHEAD EVERSOURCE LINE

MUNICIPAL BOUNDARY

N

1 Inch = 14,000 feet

0 5,000 10,000 Feet

EVERSOURCE ENERGY

307 Line Structure Replacement Project
Aerial Locus Map
Nottingham,Barrington, Lee,
Madbury, Dover, NH and Eliot, ME

Date: January 24, 2023

vhb

Representative Site Photographs
Line 307 OPGW Replacement Project

Photo 1: View southwest of proposed timber matting location at Structure 93 off Madbury Road in Madbury.

Photo 2: View looking northwest at proposed timber matting access location north of Structure 93 off Madbury Road in Madbury.

Representative Site Photographs
Line 307 OPGW Replacement Project

Photo 3: View looking west across Bears Creek through ROW toward Structure 94 off Madbury Road in Madbury.

Photo 4: View looking east at proposed timber matting location adjacent to Structure 92 by Madbury Substation in Madbury.

Representative Site Photographs
Line 307 OPGW Replacement Project

Photo 5: View looking west along ROW toward proposed timber matting location adjacent to Structure 140 off Smoke Street in Nottingham.

Photo 6: Representative photo of wetland and upland area along ROW off Smoke Street in Nottingham.

Representative Site Photographs
Line 307 OPGW Replacement Project

Photo 7: Representative photo looking east along existing access location off Cate Road toward Structure 187 in Deerfield.

Photo 8: Existing access location near Structure 187 off Cate Road in Deerfield.

Representative Site Photographs
Line 307 OPGW Replacement Project

Photo 9: View of proposed timber matting location near Structure 187 off Cate Road in Deerfield.

Photo 10: Representative photograph of upland and wetland area within ROW in Deerfield near Deerfield Substation.

Photo 11: View of proposed timber matting location near Structure 187 off Cate Road in Deerfield.

Photo 12: Representative photo of wetland and upland ROW area adjacent to Canney Brook and Structure 60 off Dover Point Road in Dover.

Photo 13: Representative photograph of upland and wetland area within ROW adjacent to Structure 81 off Freshet Road in Dover.

Photo 14: Representative photograph of upland area within ROW near Structure 58 off Overlook Drive in Dover.

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Appendix B – Alteration of Terrain Permitting Plans

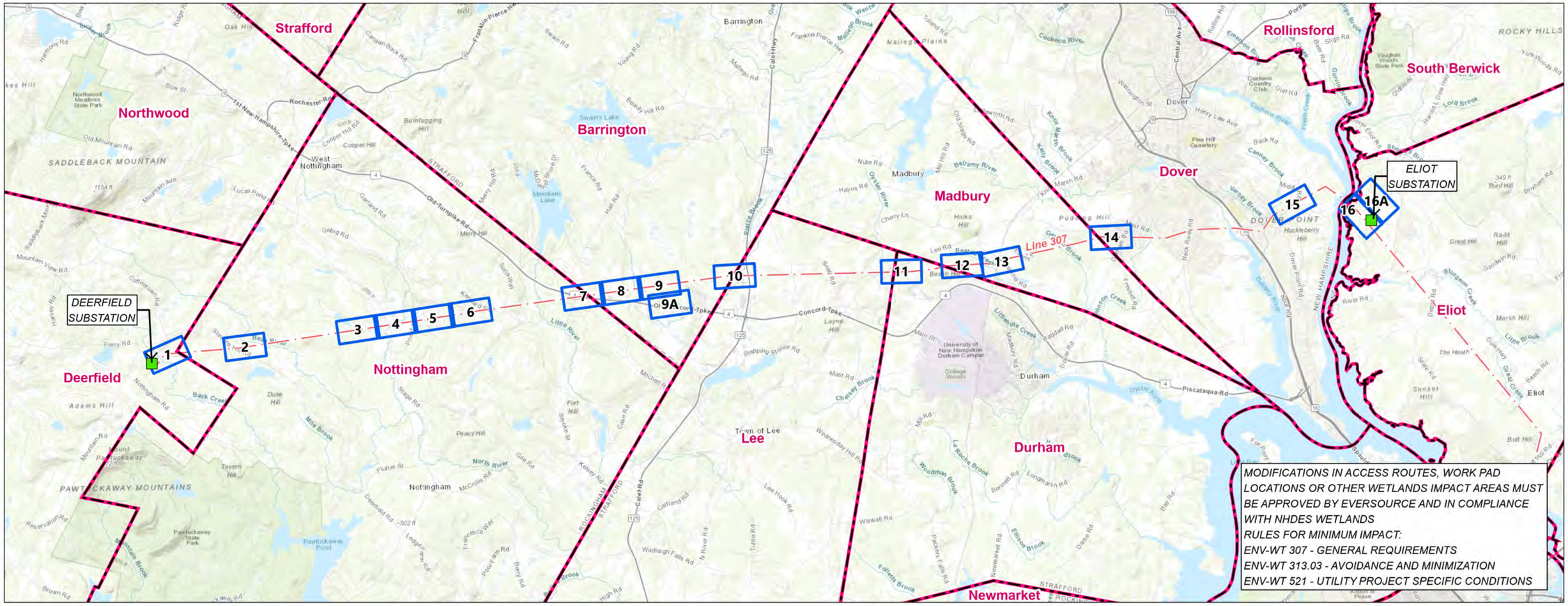
307 Line - OPGW Replacement Project

Deerfield, NH to Eliot, ME

Environmental Resources Map

FINAL Map Set

Date: April 21, 2023



Legend

- Substation
- Overhead Eversource Line
- Map Index
- Municipal Boundary

N

0 1 2 Miles

INDEX OF FIGURES

Title Sheet / Index Map
Map Sheets 1-33

NO.	DATE	REVISIONS

PREPARED FOR:

EVERSOURCE ENERGY

13 Legends Drive
Hooksett, NH 03106

PREPARED BY:

vhb

2 Bedford Farms Drive, Suite 200
Bedford, NH 03110

New Hampshire Fish and Game Permit Conditions:

1. **No work shall occur in Nottingham from line 307 structure 184 to 175 or in Madbury from line 307 structure 107 to Madbury road from September 15th to May 15th in order to minimize impacts to Northern black racers.**
2. **No work shall occur in Deerfield and Nottingham from the Deerfield substation to line 307 structure 185 and from line 307 structure 174 to Stage Road from May 15th to September 15th in order to minimize impacts to rare turtles. The following exception shall apply:**
    a. **Work pads at structures 188 and 189 may be constructed for wire pulling and structure replacements between August 15th and September 15th. Please note that a qualified biological monitor shall be on site at all times at all active work areas at these structures. See recommendation 4.**
3. Blanding's turtle (state endangered), spotted turtle (state threatened), wood turtle (state species of special concern), New England cottontail (state endangered), and Northern black racer (state threatened) occur within the vicinity of the project area. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See the Project Permit Plans for the species-specific flyers.
4. At least one qualified biological monitor shall be on-site at all times at all active work areas (including work pads, staging areas, access roads, vegetation removal/maintenance, etc.) in Deerfield and Nottingham from the Deerfield substation to Stage Road in Nottingham. A qualified biological monitor shall be someone with training and experience in turtle and reptile identification and handling techniques and shall operate under the guidance of a qualified herpetologist. A qualified herpetologist shall be a wildlife biologist well versed on and with extensive experience in turtle identification, life history, habitat preference, handling, and documentation, i.e. activity, sexing, aging, etc. Provide qualifications of both to NHFG.
    a. The qualified herpetologist shall be responsible for:
        i. Searching for, identifying, documenting, reporting and relocating any state-listed herpetofauna within the work areas.
        ii. Instructing and guiding biological monitor on matters pertaining to herpetofauna.
        iii. Ensuring proper documentation and handling techniques are abided to by the construction personnel and the biological monitor.
        iv. At the end of the project, the qualified herpetologist shall provide Eversource Licensing and Permitting staff a report, which includes a summary of observations, reporting logs documenting any documented state-listed species, and mapping and .shp files showing the location of any observed state-listed species. The report shall be reviewed and provided to NHFG for their records.
    b. The biological monitor shall:
        i. Inspect all work areas for S&E controls, the presence of state-listed species, to ensure compliance with environmental regulations and permit conditions.
        ii. Maintain regular contact with the project's qualified herpetologist on all matters pertaining to herpetofauna protection and surveys.
        iii. Report observations of state-listed species immediately to EL&P staff who shall in turn report those observations immediately to NHFG.
        iv. Document field activities and observations daily.
5. Observations of Northern black racers at any time shall be reported immediately to the New Hampshire Fish and Game Department Nongame and Endangered Wildlife Environmental Review Program. Please contact Melissa Winters (603-479-1129) or Brendan Clifford (603-944-0885). Please include photograph with text if feasible.
6. Turtles and snakes may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and other sandy/gravel work areas. All turtle species nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.
7. If a nest is observed or suspected, operators shall contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
8. Vernal pools and potential vernal pools shall be flagged prior to work, and impacts shall be avoided. No disturb vegetative buffers of 50' shall be maintained. Provide location of vernal pools on plan sheets to NHFG.
9. All matting which will be placed in waterbodies deemed suitable for hibernating rare turtles will be placed prior to the start of the inactive season (October 16-March 31) so as to prevent accidental placement atop hibernating turtles. Immediately prior to matting placement in these wetlands, the area shall be swept by a qualified biologist or herpetologist. They shall watch for signs that turtles are being disturbed in the area (ex. Heads coming above water, animals moving in water). Contact NHFG if biologist/herpetologist sees or suspects turtles in matting areas. Areas identified as suitable hibernation habitat shall be identified on plan sheets and provided to NHFG at least two weeks prior to beginning work. Biologist qualifications shall be provided to NHFG.
10. From the Deerfield substation to Stage Road in Nottingham, immediately prior to the placement of matting in wetlands during the active season (April 1-October 15), the areas shall be cleared by a qualified biologist or herpetologist. Biologist qualifications shall be provided to NHFG.
    a. In all other work areas, immediately prior to the placement of matting in wetlands during the active season (April 1-October 15), the areas shall be cleared by a trained individual. A trained individual shall be defined as any contractor who has gone through project-species protection education conducted by the qualified biologist on rare wildlife species at the site.
11. In all work areas in Dover, native topsoil shall be stockpiled prior to the placement of gravel required for access road improvements and work pad construction. Upon the completion of structure replacement work, gravel roads shall be top-dressed with stockpiled topsoil and work pads shall be reduced to 30' by 60'. Vegetation shall be allowed to regrow on top of graveled areas.
12. All work activities shall be restricted to the defined roads, construction areas, and staging areas, with no equipment or materials staged or stored outside of the defined areas as shown on plan sheets.
13. Work, pull pads, and access shall be minimized to the greatest extent possible.
14. Works pads shall be reduced post-construction to 30' x 60' and restored with a native vegetation seed mix.
15. All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;

16. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
17. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
18. In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
    a. Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
19. The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

Additional Recommendations:

- Smooth green snakes (state species of special concern) occur within the vicinity of the project site. All operators and personnel working on or entering the site should be made aware of the potential presence of these species and should be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) should be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See Project Permit Plans for the species-specific flyer.

New England Cottontail *(Sylvilagus transitionalis)*

(New Hampshire State-Endangered)

- Adults are 15-17” in length
- Brown and gray coat that does NOT change color with the seasons.
- Black spot between the years is sometimes visible but not always present.
- Can be mistaken for non-native Eastern cottontails.

Please report sightings to NH Fish and Game at RAARP@wildlife.nh.gov or at 603-271-2461. Photo documentation, location, and date/time of observation is helpful.

PLEASE REPORT RARE TURTLES

The NH Fish & Game Department is requesting observations of three turtle species that could be encountered onsite.

Report sightings immediately to NHFG Wildlife Division at 603-271-2461 (M-F 8-4) or to NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) anytime.

Please report promptly, noting specific location and date – Photographs strongly encouraged

Blanding's turtle (state endangered)

- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land

Wood turtle (special concern)

- Sculpted, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land

Spotted turtle (state threatened)

- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

Northern Black Racer

(New Hampshire state threatened species)

Emerge from hibernacula in April, Basking April - August,

Hatchlings emerge August - September, Return to hibernacula mid-September - mid-October

- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned

Immediately report sightings to NH Fish and Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)

Please report promptly, noting specific location and date
Photographs strongly encouraged

Cλă мплмɸлo ólú bƻ ǇŜǊăƻʏăKlﬀ úlʅŜ ƻǋ ǇƻăăŜăă a black racer
(*Coluber constrictor*)ɸɸɸƻǋ lʏè ŜƎƎ ƻǋ ǇlǋúúKŜǋŜƻŦɸ

REPORT OBSERVATIONS
Smooth Green Snake
(Species of Special Concern)

Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.
Please report promptly, noting specific location and date.
Photographs strongly encouraged.

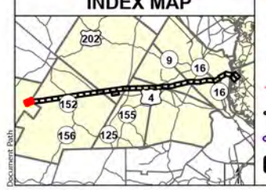
- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue

D118 Line
385 Line
391 Line
G146 Line
Cate Road
L175 Line
C129 Line
307 Line
385 Line
373 Line
Nottingham
Deerfield
Back Creek
Deerfield S/S

TEMPORARY WETLAND IMPACT: 889 SF
TEMPORARY WETLAND IMPACT: 615 SF
TEMPORARY WETLAND IMPACT: 1,553 SF
TEMPORARY WETLAND IMPACT: 477 SF
TEMPORARY WETLAND IMPACT: 10,000 SF
TEMPORARY WETLAND IMPACT: 3,600 SF

172 187 188 189 190 185 186

INDEX MAP



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- Proposed Structure
- Overhead Eversource Line
- Existing Access
- Existing Off ROW Access
- Existing Right-of-Way
- Watercourse (not delineated)
- Delineated Stream
- Field Delineated Wetland
- Open Water
- FEMA 100-Year Flood Zone
- Gate
- Culvert Inlet/Outlet
- Sediment Control Barrier
- Stonewall
- Temporary Construction Matting
- Temporary Upland Matting
- Pull Pad/Work Pad
- Environmentally Sensitive Area
- Eversouce Owned Property
- Parcel Boundary
- Municipal Boundary

N

1:2,400
0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Deerfield, NH | Page 1 of 33

Date: April, 2023

vhb

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1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH

Date: April, 2023

vhb

Bean River

Nottingham

L175 Line

C129 Line

307 Line

Stevens Hill Road

TEMPORARY WETLAND IMPACT:
942 SF

TEMPORARY WETLAND IMPACT:
405 SF

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0 50 100 200 Feet

NO.	DATE	REVISIONS

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307 Line OPGW Replacement

Nottingham, NH | Page 3 of 33

Date: April, 2023

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0 50 100 200 Feet

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307 Line OPGW Replacement

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Date: April, 2023

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N

1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

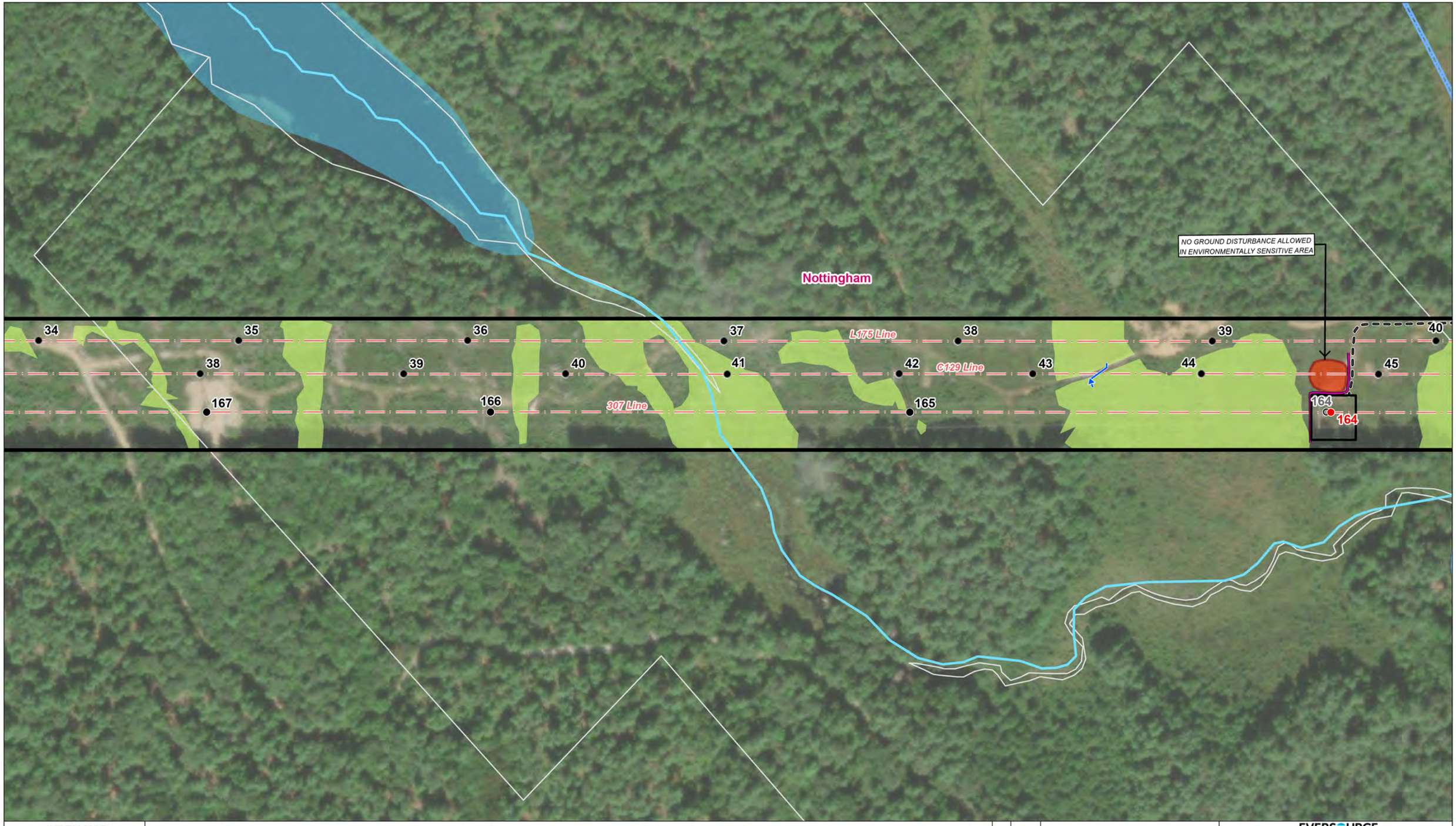
EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH | Page 5 of 33

Date: April, 2023

vhb



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0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH | Page 6 of 33

Date: April, 2023

vhb

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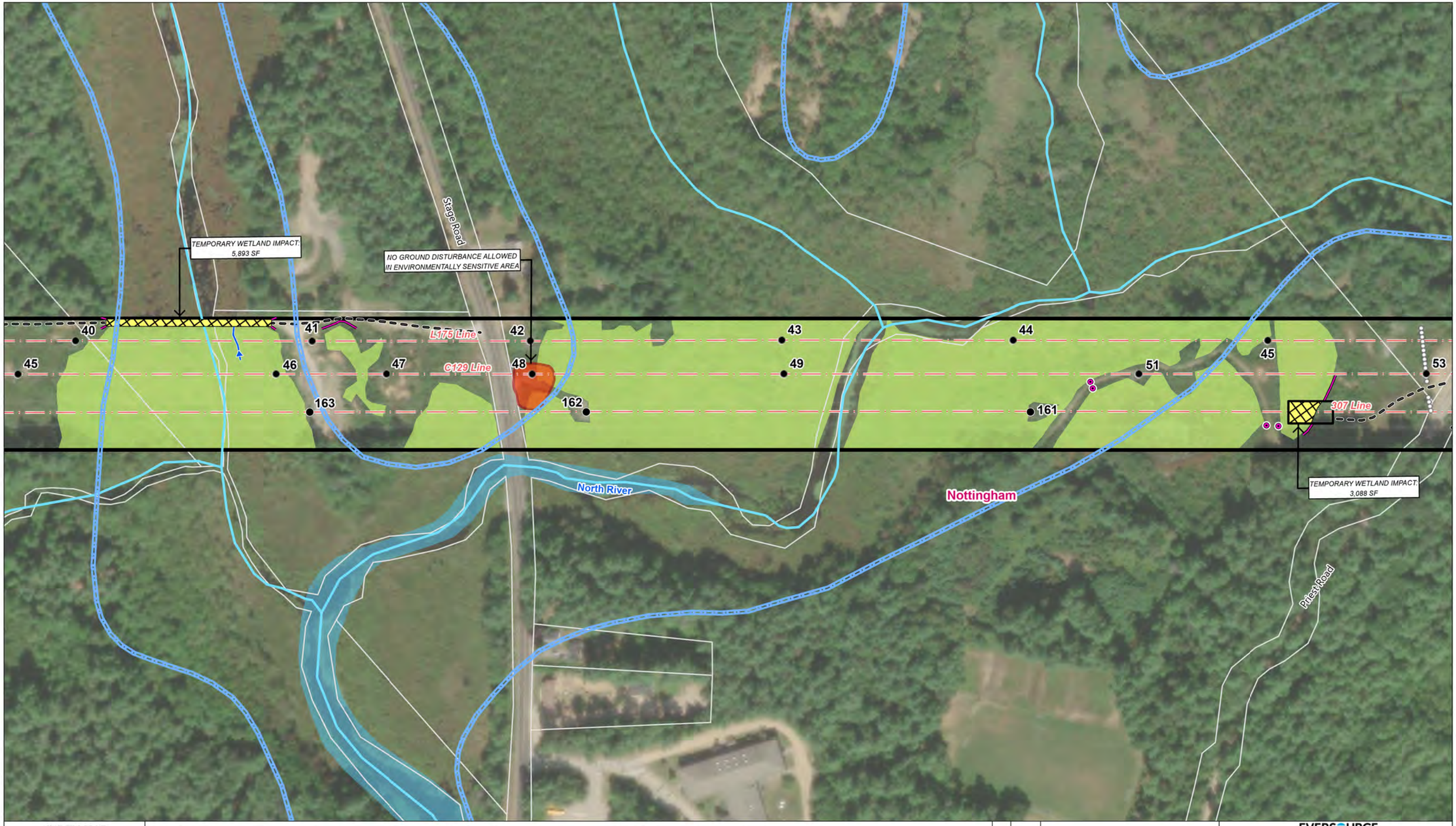

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1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH | Page 7 of 33

Date: April, 2023

vhb

Document Path:

Priest Road

TEMPORARY WETLAND IMPACT: 954 SF

TEMPORARY WETLAND IMPACT: 3,109 SF

Nottingham

L175 Line

C129 Line

307 Line

46 47 48 49 50 51 52

53 54 55 56 57 58 59 60

157 158 159 159 160

POLICE DETAIL NEEDED FOR PULLING ACTIVITIES OVER PRIEST ROAD

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N

1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH | Page 8 of 33

Date: April, 2023

vhb

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1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Nottingham, NH | Page 9 of 33

Date: April, 2023

vhb

Document Path:

Nottingham

Sofia Way

59 60 61 62 63 64 65

69 70 71 72 73 74 75 76

150 149 148 147 146

L175 Line

C129 Line

307 Line

Kennard Road

INDEX MAP

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307 Line OPGW Replacement

Nottingham, NH

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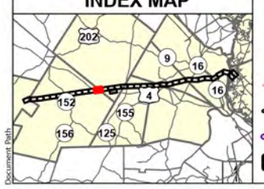

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Barrington

Warren Road

ROCK WALLS TO BE AVOIDED OR AIR-BRIDGED

ROCK WALLS TO BE AVOIDED OR AIR-BRIDGED

Two Mile Road

Old Concord Turnpike

Caldwell Brook

L175 Line

C129 Line

307 Line

79 80 81 82 83 84

91 92 93 94 95 96 97 98

135 134

136 136 137

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Holly Lane

Old Concord Turnpike

Caldwell Brook

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91 92 93 94 L175 Line 95 96 97

105 106 107 108 C129 Line 109 110 111 112

128 307 Line 127 126 125

Emerald Drive

Tibbetts Road

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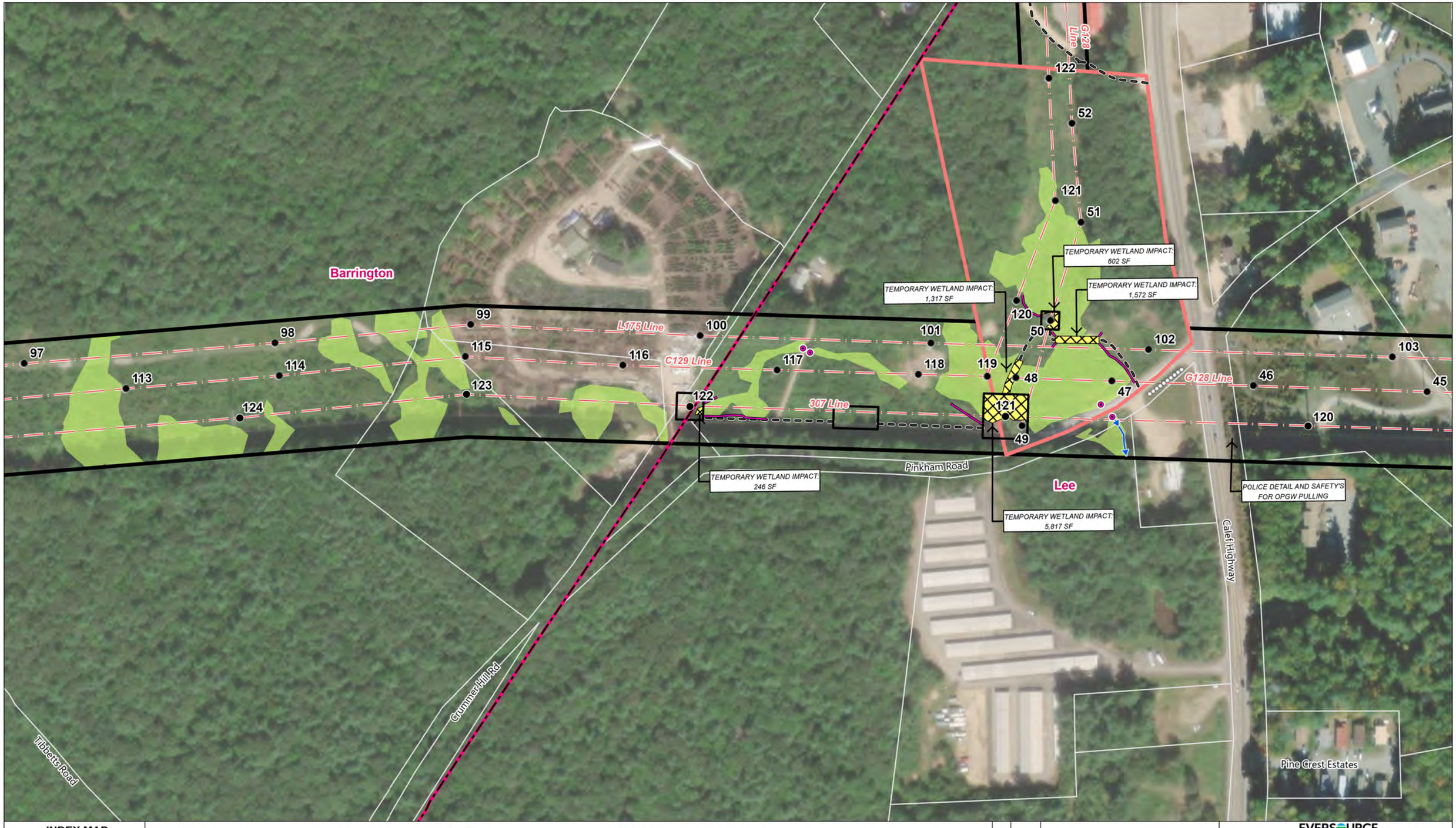

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Pinkham Road

Old Mill Road

Lee

103 104 105 L175 Line 106 107 108 109

45 44 43 G128 Line 42 41 40 39

119 118 307 Line 117

Pine Crest Estates

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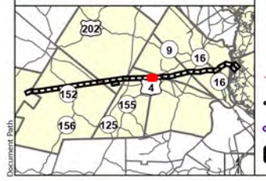

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Lee Road

Madbury

Durham

Beech Hill Road

130 131 132 L175 Line 133 134 135 136 137

16 15 14 G128 Line 13 12 11 10 9

104 103 307 Line 102 101 100 99

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Beards Creek

Madbury

TEMPORARY UPLAND MATTING IMPACT: 11,543 SF

TEMPORARY UPLAND MATTING IMPACT: 11,125 SF

TEMPORARY WETLAND IMPACT: 1,109 SF

TEMPORARY WETLAND IMPACT: 671 SF

TEMPORARY WETLAND IMPACT: 9,937 SF

TEMPORARY WETLAND IMPACT: 1,617 SF

137 138 139 140 141 142

9 8 7 6 5 4 3

99 98 97 96 95 94

L175 Line

G128 Line

307 Line

TWO TIERED PAD

TEMPORARY UPLAND MATTING IMPACT: 10,000 SF

TEMPORARY UPLAND MATTING IMPACT: 8,813 SF

TEMPORARY UPLAND MATTING IMPACT: 9,265 SF

TEMPORARY UPLAND MATTING IMPACT: 433 SF

TEMPORARY UPLAND MATTING IMPACT: 1,268 SF

Durham

Sarah Paul Road

Beech Hill Road

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Madbury Road
Miles Lane
Evans Road
Beards Creek
Sarah Paul Road
Perkins Road
Madbury
Madbury S/S
TEMPORARY WETLAND IMPACT: 9,937 SF
TEMPORARY WETLAND IMPACT: 2,552 SF
TEMPORARY UPLAND MATTING IMPACT: 2,498 SF
POLICE DETAIL AND SAFETY'S FOR OPGW PULLING
TEMPORARY WETLAND IMPACT: 3,747 SF
TEMPORARY WETLAND IMPACT: 2,325 SF
TEMPORARY WETLAND IMPACT: 6,574 SF
TEMPORARY WETLAND IMPACT: 890 SF
TEMPORARY WETLAND IMPACT 5,000 SF
TEMPORARY WETLAND IMPACT: 8,616 SF
143
144
145
L175 Line
G128 Line
M183 Line
307 Line
1
1.5
2
3
4
89
90
91
92
93

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Gerrish Brook

Gerrish Brook

Madbury

4 5 6 M183 Line 7 8 9 10

89 88 307 Line 87 86

Evans Road

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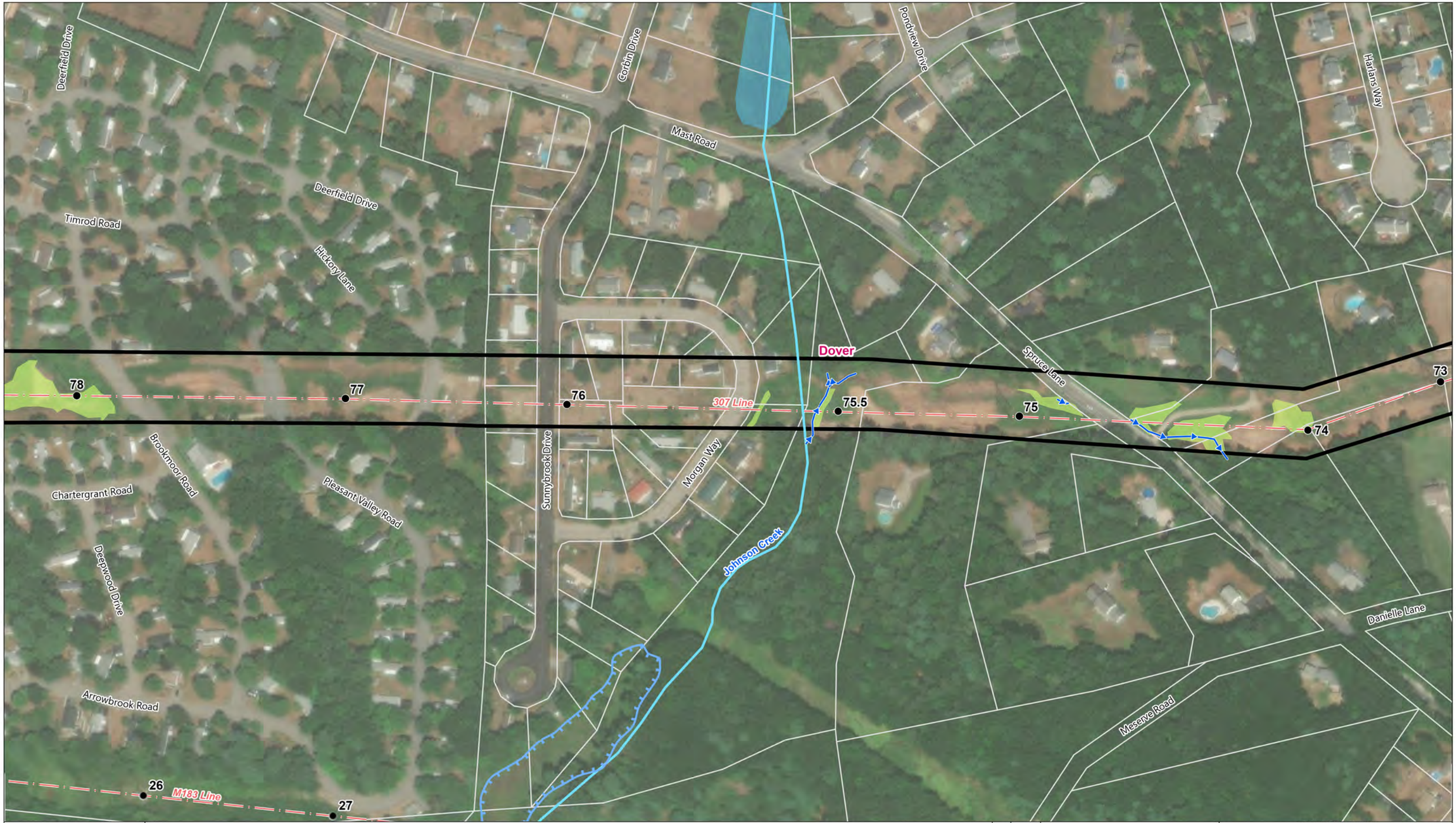

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Mast Road
Harlans Way
Danielle Lane
Mathes Hill Drive
Digby Lane
Dover
307 Line
70
71
72
73
69
Tideview Drive
Back River Road
Wolcott Drive
Garrison Road
Shaws Lane
Benjamin Way
Partridge Lane
Spruce Lane
James Street
Shadow Drive
Morningside Drive
Shady Lane

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POLICE DETAIL AND SAFETY'S FOR OPGW PULLING

Old Colony Road

Old Dover Point Road

Spaulding Tpke South

Spaulding Tpke North

Toftree Lane

Toftree Lane

Canney Brook

Dover

Dover Neck Road

Overlook Drive

Tuttle Lane

Ivans Lane

Varney Brook

Polly Ann Park

Gerrish Road

Spur Road

Spur Road

Spur Road

Finch Lane

307 Line

M183 Line

52 53 54 55 56 57 58 59 60 61 62 63

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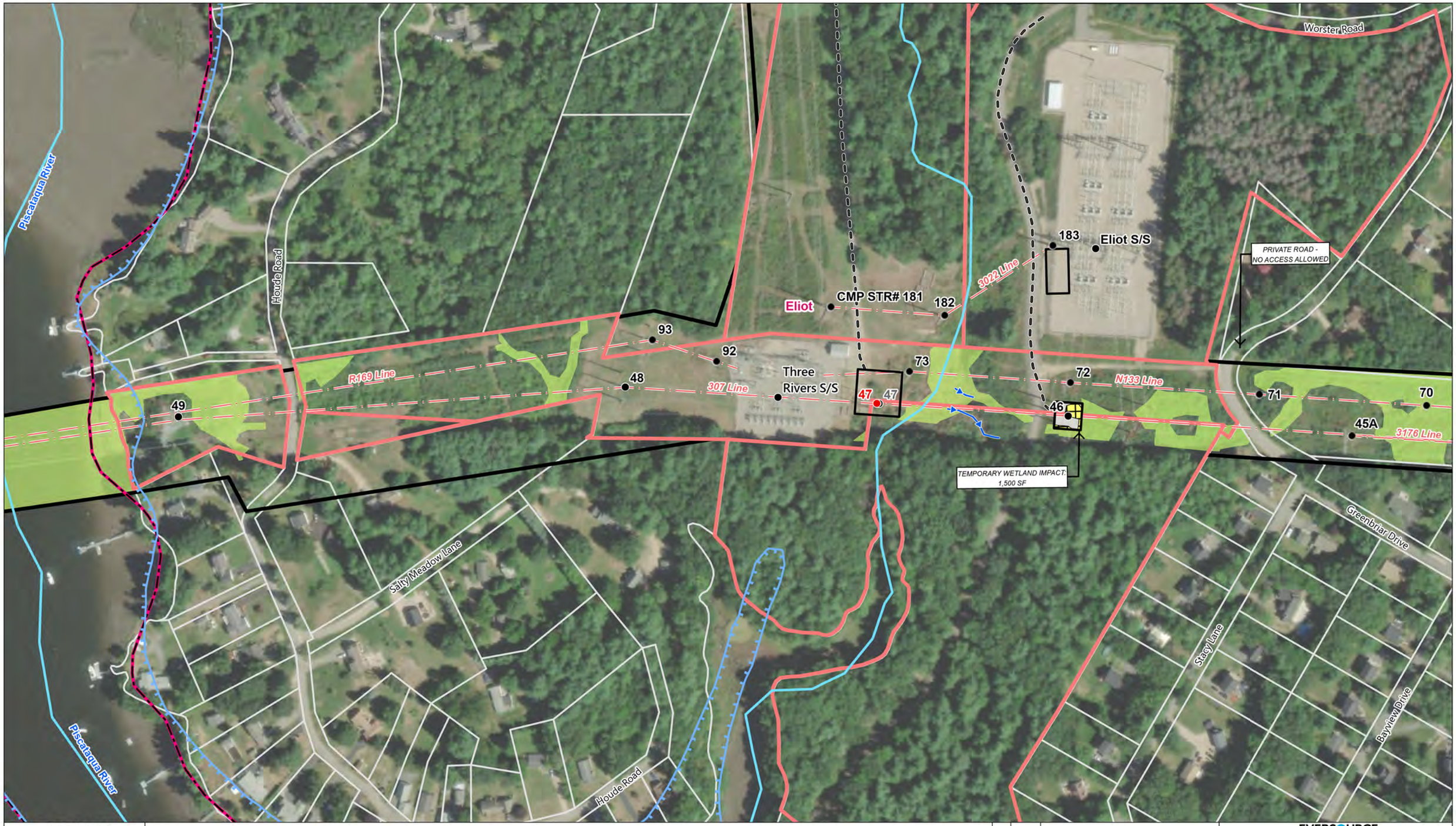

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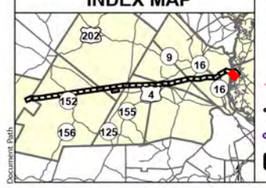

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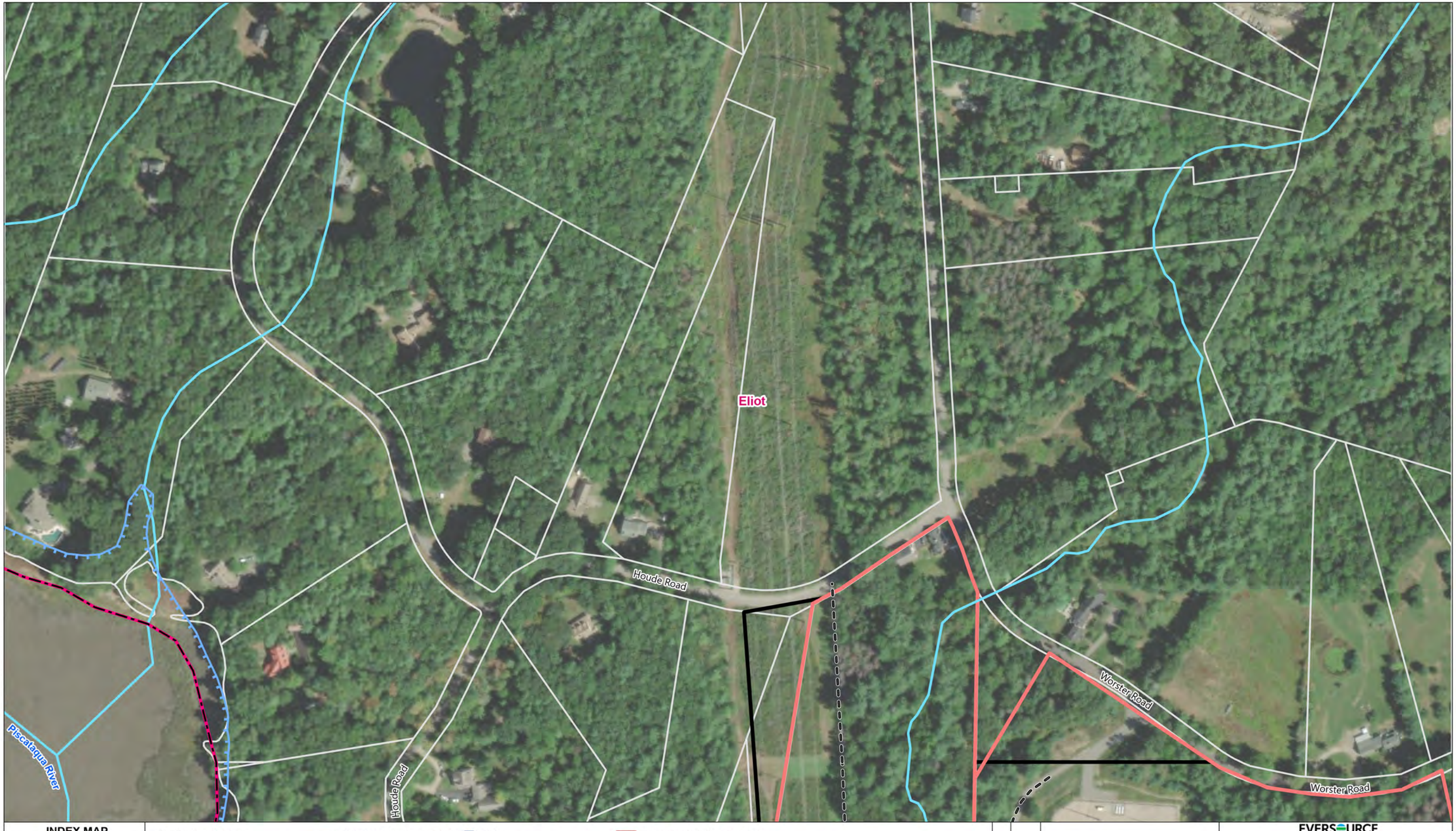
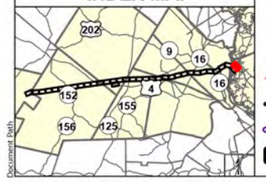


INDEX MAP



- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Overhead Eversource Line
- Existing Access
- Existing Off ROW Access
- Existing Right-of-Way
- Watercourse (not delineated)
- Delineated Stream
- Field Delineated Wetland
- Open Water
- FEMA 100-Year Flood Zone
- Gate
- Culvert Inlet/Outlet
- Sediment Control Barrier
- Stonewall
- Temporary Construction Matting
- Temporary Upland Matting
- Pull Pad/Work Pad
- Environmentally Sensitive Area
- Eversouce Owned Property
- Parcel Boundary
- Municipal Boundary

N

1:2,400

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

307 Line OPGW Replacement

Eliot, ME | Page 33A of 33

Date: April, 2023

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Document Path:

Appendix C – FEMA Floodplain Map

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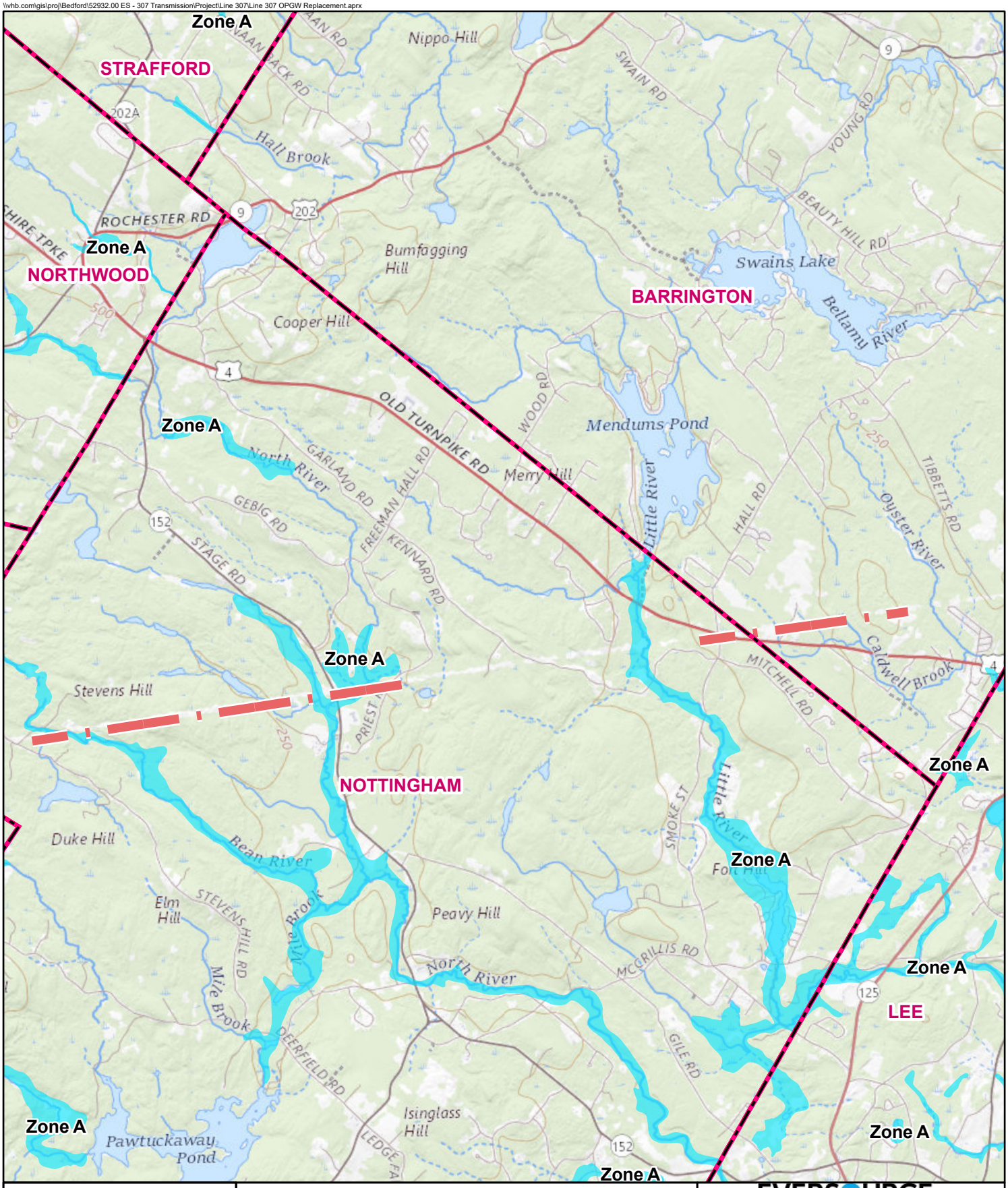
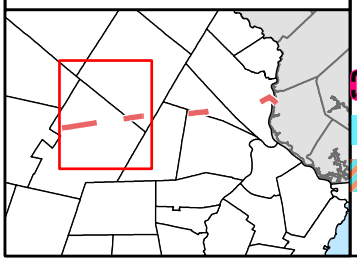


INDEX MAP



- SUBSTATION
- OVERHEAD EVERSOURCE LINE
- MUNICIPAL BOUNDARY
- FEMA 100-YEAR FLOOD ZONE
- FEMA FLOODWAY

N

1 Inch = 5,000 feet

0 2,500 5,000 Feet

EVERSOURCE ENERGY

307 Line Structure Replacement Project
FEMA Locus Map
Nottingham and Barrington, NH

Date: January 24, 2023

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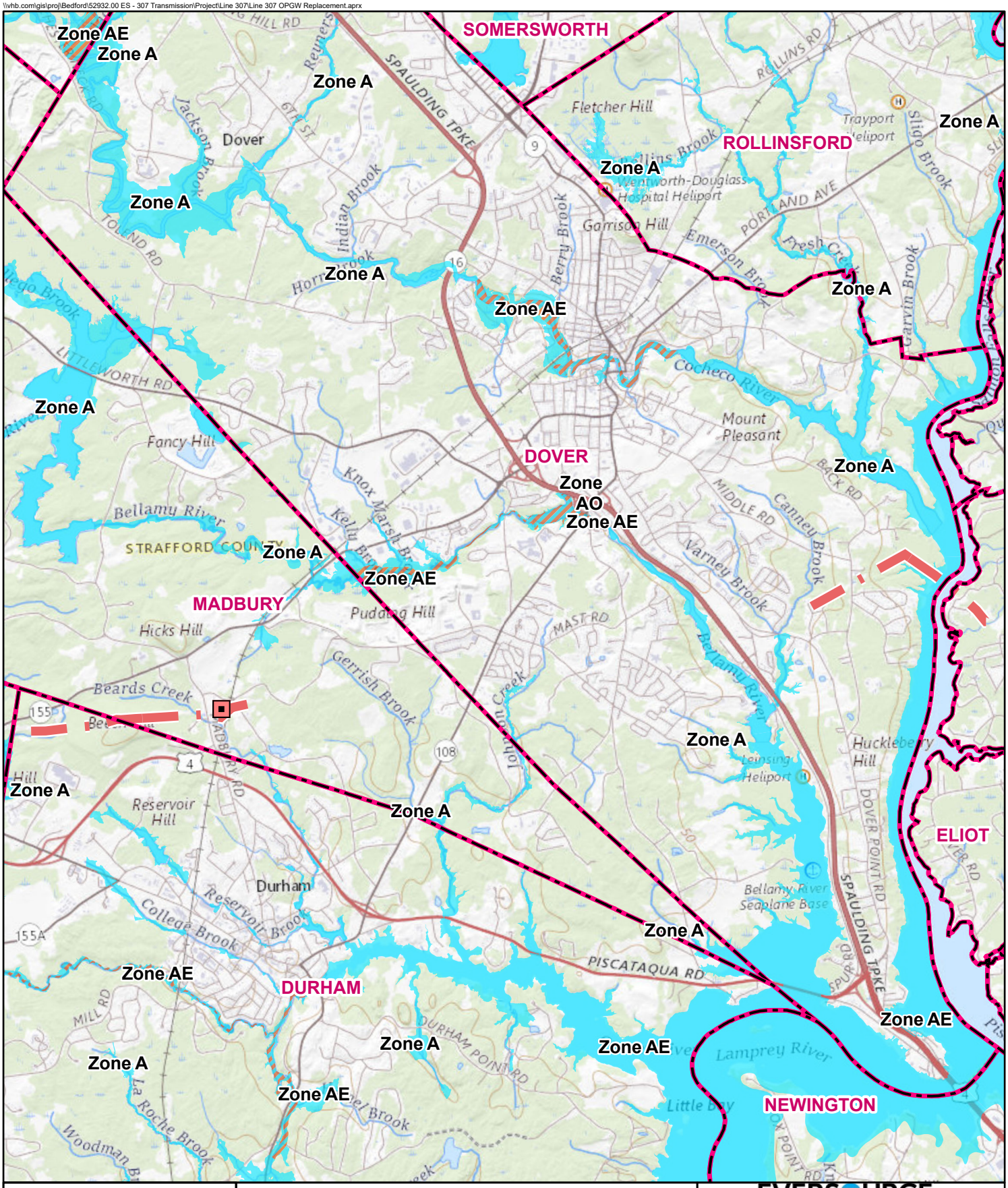
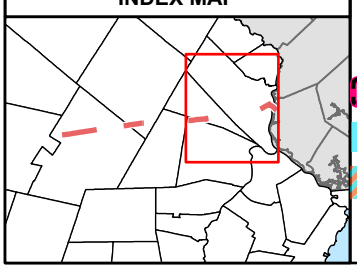


INDEX MAP



SUBSTATION
OVERHEAD EVERSOURCE LINE
MUNICIPAL BOUNDARY
FEMA 100-YEAR FLOOD ZONE
FEMA FLOODWAY

N

1 Inch = 5,000 feet

0 2,500 5,000 Feet

EVERSOURCE ENERGY

307 Line Structure Replacement Project
FEMA Locus Map
Madbury, Dover, NH and Eliot, ME

Date: January 24, 2023

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