NOTICE OF INTENT

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Hudson, Massachusetts

PREPARED FOR

EVERSOURCE ENERGY

NSTAR Electric Company
d/b/a Eversource Energy
247 Station Drive
Westwood, Massachusetts 02090

dcr Massachusetts

Massachusetts Department of
Conservation and Recreation
251 Causeway Street, 9th Floor
Boston, MA 02114

PREPARED BY

vhb

101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

JANUARY 2020

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www.vhb.com

January 2, 2020

Ref: 12970.00

Hudson Conservation Commission
78 Main Street
Hudson, MA 01749

Re: Notice of Intent Submission
Eversource Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Hudson Conservation Commission Members:

The Applicants, NSTAR d/b/a Eversource Energy ("Eversource") and the Massachusetts Department of Conservation and Recreation ("DCR"), are submitting this Notice of Intent ("NOI") under the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40) and its implementing regulations (310 CMR 10.00). The Project includes completion of a portion of the regional Massachusetts Central Rail Trail ("MCRT") and installation of a 115 kilovolt ("kV") underground electric transmission line. This Project is the direct result of a collaborative project-planning process between DCR, Eversource, and the MBTA. This coordinated effort combines two compatible uses within a single existing and under-utilized transportation corridor with a proposed phased construction sequence to minimize cost, the overall construction schedule, and potential impact to wetland resource areas.

In total, the Project in Hudson is approximately 4.7 miles in length, of which 3.3 miles is along the existing inactive MBTA ROW from the Hudson/Sudbury municipal border to Wilkins Street. At Wilkins Street, the MCRT and underground transmission line diverge. The MCRT continues across Wilkins Street and within Town of Hudson–owned property for approximately 230 feet, to connect to the existing ARRT. The underground transmission line continues southwest within Wilkins Street and Forest Avenue for approximately 1.4 miles to its termination at the Hudson Light and Power Department ("HLPD") Substation.

Portions of the proposed work are in areas jurisdictional to the Massachusetts Wetlands Protection Act, necessitating an Order of Conditions from the Hudson Conservation Commission. However, both the underground transmission line and MCRT qualify as a "limited project" per 310 CMR 10.53(3)(d) and 10.53(6), respectively. As such, the Project was designed to comply with wetland resource area performance standards to the maximum extent practicable.

On behalf of Eversource and DCR, we respectfully request that the Commission issue an Order of Conditions for the Project presented herein. As required, abutters within 100 feet of the property have been notified. A check made payable to the Commonwealth of Massachusetts in the amount of $362.50 was sent directly to the DEP Lock Box for payment of the state's share of the filing fee. A check made payable to the Town of Hudson in the amount of $387.50 to cover the local portion of the WPA filing fee is enclosed.

Engineers | Scientists | Planners | Designers

120 Front Street
Suite 500
Worcester, Massachusetts 01608
P 508.752.1001
F 508.459.0877

Should you have any questions concerning this submittal or require additional information, please contact me at 617-607-2157 or kkinsella@vhb.com.

Sincerely,

Katie Kinsella, PWS
Senior Environmental Scientist

CC: Denise Bartone – Eversource
Priscilla Geigis – DCR
MA DEP – Central Regional Office

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Attachment D – NOI Plans: Underground Transmission Line within Existing Public Roadways *(under separate cover)*

Attachment E – Site Photos

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Attachment G – Bordering Vegetated Wetland Delineation Forms

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Attachment I – Best Management Practices

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NOI Application

- WPA Form 3
- Copy of Filing Checks

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Hudson
City/Town

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

N/A MBTA ROW/Central Mass Line Railroad — a. Street Address
Hudson — b. City/Town
01749 — c. Zip Code

Latitude and Longitude:
d. Latitude
e. Longitude

Book 13156/Page 34 — f. Assessors Map/Plat Number
0016-0023 — g. Parcel /Lot Number

2. Applicant:

See Attached — a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☒ Check if more than one owner

See Attached — a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Katie Kinsella / Gene Crouch — a. First Name
b. Last Name
VHB — c. Company
2 Washington Square, Suite 219 — d. Street Address
Worcester — e. City/Town
MA — f. State
01604 — g. Zip Code
617-924-1770 — h. Phone Number
i. Fax Number
kkinsella@vhb.com / gcrouch@vhb.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$750.00 — a. Total Fee Paid
$362.50 — b. State Fee Paid
$387.50 — c. City/Town Fee Paid

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A. General Information (continued)

6. General Project Description:

The Project involves construction of a portion of the Mass Central Rail Trail and installation of an underground electric transmission line within an inactive Massachusetts Bay Transportation Authority railroad right-of-way and roadways in Hudson, Massachusetts. See attached narrative for more details.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☒ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

The underground transmission line and the DCR bike path qualify as a "limited project" per 310 CMR 10.53(3)(d) and 10.53(6), respectively

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

N/A - ROW
a. County

b. Certificate # (if registered land)

c. Book

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	1,936 (temporary) 1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	15,735/665 1. square feet 0 - Net Gain of 435.50 cy 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☒ Isolated Land Subject to Flooding	760/0 1. square feet 0 - Net Gain of 99.07 cy 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Fort Meadow Brook and tributary to Assabet River 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 326,503 square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
62,264 / 2,526	12,151 / 2,415	50,113 / 111

5. Has an alternatives analysis been done and is it attached to this NOI? ☒ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☒ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☒ Project Involves Stream Crossings

0
a. number of new stream crossings

1
b. number of replacement stream crossings

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C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

   a. ☒ Yes ☐ No

   If yes, include proof of mailing or hand delivery of NOI to:

   Natural Heritage and Endangered Species Program
   Division of Fisheries and Wildlife
   1 Rabbit Hill Road
   Westborough, MA 01581

   8/1/2017
   b. Date of map

   If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

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C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☒ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

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C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☒ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

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D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

See Attached
a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☒ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☒ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

355499 2. Municipal Check Number	12/17/19 3. Check date
355483 4. State Check Number	12/17/19 5. Check date
VHB 6. Payor name on check: First Name	VHB 7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
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F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date: 12/23/19
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

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Hudson
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

2. Date 4/11/19

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant: Holley Palmgren, MBTA
2. Date: 12/18/19
3. Signature of Property Owner (if different)
4. Date
5. Signature of Representative (if any)
6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Hudson
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date 10/23/2019
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

A. Applicant Information

1. Location of Project:

a. Street Address	b. City/Town
N/A - MBTA ROW/Central Mass Line Railroad	Hudson
c. Check number	**d. Fee amount**
355483	$362.50

2. Applicant Mailing Address:

a. First Name	b. Last Name
See Attached	

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name
See Attached	

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2e	1	500	750

Step 5/Total Project Fee:

Step 6/Fee Payments:

Total Project Fee:	$750 a. Total Fee from Step 5
State share of filing Fee:	$362.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$387.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

WPA Form 3 – Notice of Intent Additional Pages

A. General Information

2. Applicant:

Denise	Bartone	
a. First Name	b. Last Name	
NSTAR Electric Company d/b/a Eversource Energy		
c. Organization		
247 Station Drive, SE270		
d. Street Address		
Westwood	MA	02090
e. City/Town	f. State	g. Zip Code
781-441-8174		Denise.bartone@eversource.com
h. Phone Number	i. Fax Number	j. Email Address

Priscilla	Geigis	
a. First Name	b. Last Name	
Department of Conservation and Recreation		
c. Organization		
251 Causeway Street, Suite 600		
d. Street Address		
Boston	MA	02114
e. City/Town	f. State	g. Zip Code
(617) 626-1250		Priscilla.Geigis@massmail.state.ma.us
h. Phone Number	i. Fax Number	j. Email Address

3. Property owner (required if different from application)

a. First Name	b. Last Name	
Massachusetts Bay Transit Authority		
c. Organization		
10 Park Plaza		
d. Street Address		
Boston	MA	02116
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

a. First Name	b. Last Name	
Town of Hudson		
c. Organization		
78 Main Street		
d. Street Address		
Hudson	MA	01749
e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

D. Additional Information

Sudbury-Hudson Transmission Reliability Project Hudson Notice of Intent Plans

a. Plan Title	
VHB	Mark Shamon
b. Prepared by	c. Signed and Stamped by
Jan 2020	1"=20'
d. Final Revision Date	e. Scale

Mass Central Rail Trail in the Town of Hudson, Stow, Marlborough & Sudbury

a. Plan Title	
VHB	Tracie Lenhardt
b. Prepared by	c. Signed and Stamped by
Jan 2020	1"=20'
d. Final Revision Date	e. Scale

Sudbury to Hudson 115kV Underground Transmission Line

a. Plan Title	
POWER Engineers	Todd Goyette
b. Prepared by	c. Signed and Stamped by
12/30/19	1"=20'
d. Final Revision Date	e. Scale

355483

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

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

CHECK DATE

December 17, 2019

AMOUNT

Three Hundred Sixty Two and 50/100

$362.50

Commonwealth of Massachusetts
DEP-Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈355483⑈ ⑆211070175⑆ 113016137⑆

355499

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

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

CHECK DATE

December 17, 2019

AMOUNT

Three Hundred Eighty Seven and 50/100

$387.50

Town of Hudson
78 Main Street
Hudson, MA 01749

AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈355499⑈ ⑆211070175⑆ 113016137⑆

Abutter Notifications

- Abutter Notification Letter
- Certified Abutters List

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January 2, 2020

Ref: 12970.00

Notification to Abutters under the Wetlands Protection Act

Pursuant to the requirements of the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40), you are hereby notified of the following:

The applicants, NSTAR Electric Company d/b/a Eversource Energy ("Eversource") and the Massachusetts Department of Conservation and Recreation ("DCR") have filed a Notice of Intent ("NOI") with the Hudson Conservation Commission seeking approval for construction of the Sudbury-Hudson Transmission Reliability Project and the Mass Central Rail Trail ("the Project"). The Project involves construction of a new 115-kV underground transmission line and a multi-use path primarily within an existing inactive railroad right-of-way, with a portion of the transmission line to be installed within public roadways.

Information regarding this NOI can be obtained by calling the Hudson Conservation Commission at (978) 562-2948 between 8:30 AM and 4:30 PM, Monday through Friday. You can also call Katie Kinsella at (617) 607-2157 between 9:00 AM and 5:00 PM, Monday through Friday, with questions or to arrange to view the NOI.

Copies of the NOI can be obtained from the Hudson Conservation Commission or Katie Kinsella by calling the numbers above. You may be charged for a copy of the NOI.

The Hudson Conservation Commission will hold a public hearing on the NOI. Notice of the public hearing including the date, time and place, will be published in a local newspaper at least five (5) business days in advance and will be posted in Town Hall at least 48 hours in advance. You can also call the Hudson Conservation Commission at the number listed above to determine the date, time, and place of the hearing.

Information on this NOI and the Wetlands Protection Act can also be obtained by calling the Central Regional Office of the Massachusetts Department of Environmental Protection at (508) 792-7650.

www.vhb.com

Engineers | Scientists | Planners | Designers

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770
F 617.924.2286

HUDSON, MA

MAP	LOT	BOOK/PAGE	LOCATION	CURRENT OWNER	CO-OWNER
16	23	13156/0034	CENTERAL MASS LINE RR	COMMONWEALTH OF MASS MBTA	
22	5	19194/ 301	17 WILKINS ST	DECIERO FRANCIS P	MARYANN DECIERO
22	7	07263/0004	16 WILKINS ST	RIVERSIDE GUN CLUB OF HUDSON INC	
22	8	34351/ 517	WILKINS ST	TOWN OF HUDSON	
22	17	34614/ 551	19 WILKINS ST	CASS JUDITH HUNT	RICHARD CASS
22	20	41161/ 408	WILKINS ST	GUTKNECHT D RUTH	
22	22	69065/ 403	WILKINS ST	NSTAR ELECTRIC COMPANY	EVERSOURCE ENERGY
22	33	22052/ 550	4 ORCHARD DR	BEAULIEU EVERETT JR	SUZANNE M BEAULIEU
22	34	21393/ 132	6 ORCHARD DR	CLARK SHELDON	ELIZABETH CLARK
22	35	31155/ 109	8 ORCHARD DR	DUPREE DANIEL J	PATRICIA M DUPREE
22	36	71168/60	10 ORCHARD DR	JOSLYN HOPE G	
22	37	67720/ 35	12 ORCHARD DR	PAOLINI ANGELO D JR	C/O PAULA PAOLINI
22	38	22255/ 605	14 ORCHARD DR	SU ANN H	JORY TSAI
22	39	22153/ 424	16 ORCHARD DR	LLOYD STEVEN G	DONNA M YEE
23	16	67484/ 515	MAIN ST	FERJULIAN ERIC	ERIN PATRICIA FERJULIAN
23	18	41161/ 408	MARLBORO RD	GUTKNECHT D RUTH	
23	19	16959/0202	CHESTNUT ST	ARBELLA III JAMES J	
23	20	70468/344	2 CHESTNUT ST	MANTER ALAN C	PAULA M PAOLINI
23	22	32220/ 436	CHESTNUT ST	YLK REALTY TRUST	YVONNE L KANE TRUSTEE
23	23	32220/ 437	CHESTNUT ST	YLK REALTY TRUST	YVONNE L KANE TRUSTEE
23	25	54546/ 455	CHESTNUT ST	ST DENIS ADELE K	
23	27	15182/0120	CHESTNUT ST	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC WORKS
23	28	22184/ 010	CHESTNUT ST	KANE ALDEN	C/O YVONNE L KANE
23	31	59699/ 189	30 CHESTNUT ST	DESCHLER KURT W	MELISSA A MICHELON
24	2	14886/0040	MAIN ST	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC WORKS
33	3	67484/ 515	7 LEWIS ST	FERJULIAN ERIC	ERIN PATRICIA FERJULIAN
33	19	14886/0040	MAIN ST	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC WORKS
34	15	60703/ 74	HUNTER SWAMP	TOWN OF HUDSON	
34	16	72251/58	CHESTNUT ST	PAK LLC	
34	17	16768/0369	HUNTER SWAMP	KANE PERKINS CO INC	
34	19	16768/0369	556 MAIN ST	KANE PERKINS CO INC	
34	24	11591/0450	566 MAIN ST	RICH VAUGHN E	GWEN REALTY TRUST
34	25	16768/0369	558 MAIN ST	KANE PERKINS CO INC	
34	26	13180/0391	560 MAIN ST	KANE INDUSTRIAL TRUST	JAMES P KANE TRUSTEE
34	30	27979/ 353	564 MAIN ST	GREENSTEIN DANIEL A	
35	1	11591/0450	566 MAIN ST	RICH VAUGHN E	GWEN REALTY TRUST
35	35	15153/0504	567 MAIN ST	FIELDS MICHAEL J TR	HEATHERFIELD REALTY TRUST C/O HEATHERFIELD GROUP LLC
35	36	65529/ 2	569 MAIN ST	MOST NOBLE LLC	
35	74	61537/ 479	16 PARMENTER RD	KRYSA IRREVOCABLE TRUST	CLAIRE L KRYSA L/E
35	76	30285/ 130	577 MAIN ST	577 MAIN STREET LLC	
35	77	48996/ 521	571 MAIN ST	WALSH REALTY TRUST	JOHN M & FRANCIS J WALSH JR TRS
35	78	42896/ 566	565 MAIN ST	EXTRA SPACE EAST OF HUDSON LLC	C/O EXTRA SPACE PROPERTIES TEN LLC PTA - EX# 1002
35	79	11041/0302	2 KANE INDUSTRIAL DR	KANE INDUSTRIAL TRUST	JAMES P KANE TRUSTEE
35	93	13156/0034	PARMENTER RD & RR	COMMONWEALTH OF MASS	MBTA
35	106	19091/0482	MAIN ST	MORGAN ASSOCIATES LTD	C/O DANIEL A GREENSTEIN
35	116	65947/ 11	571A MAIN ST	KANE INDUSTRIAL TRUST	KATHLEEN ADAMS, JAMES & ROGER KANE TR
36	80	0/ 0	MAIN ST	DEPT OF FOREST AN	DEPT OF FOREST AN
46	1	64238/ 198	19 BRENT DR	BORG BROTHERS LLC	
46	2	30162/ 168	394 CHESTNUT ST	C/O CHARTER OAK COUNTRY CLUB	
46	3	67238/ 399	18 PARMENTER RD	ARENSTRUP FAMILY TRUST	ADA MAY ARENSTRUP TRUSTEE
46	4	52971/ 515	20 PARMENTER RD	KRUEGER SARAH	
47	3	25755/ 485	25 PARMENTER RD	MCNAUGHTON PETER J	MISTY COLLEEN MCNAUGHTON
47	4	28672/ 327	27 PARMENTER RD	TIPPS STEVEN W	DEBORAH E FINKLE
47	5	29592/ 124	31 PARMENTER RD	ONEILL BRIAN H	CHRISTINE M NELSON
47	6	LC1155501 1230/46	51 PARMENTER RD	DYLAN LIMITED PARTNERSHIP	
47	7	62086/ 22	29 PARMENTER RD	DESAI SHAILESH Y	JAYASHREE M PARANJAPE
47	9	0/ 0	PARMENTER RD	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC WORKS
47	12	11344/0419	PARMENTER RD	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC WORKS
47	13	60405/ 450	WHITE POND RD	JACKSON STERLING N	
47	14	31001/ 325	43 PARMENTER RD	LINCOLN TOOL REALTY TRUST	JAMES W FERRECCHIA/TRUSTEE
47	16	72839/42	67 WHITE POND RD	CALEB HELLERMAN	DAPHNE COPELAND
47	21	LC1808440 1541/74	PARMENTER RD	VERTICAL BRIDGE AM LLC	
48	3	0/ 0	MAIN ST & WHITE POND MLT	US GOVERNMENT FORT DEVENS	HEADQUARTERS
48	4	27376/ 576	145 WHITE POND RD	KING PAUL G	
59	4	11344/0417	PARMENTER RD	TOWN OF HUDSON TOWN HALL	DEPARTMENT OF PUBLIC
59	5	53104/ 536	CRANBERRY LN	TOWN OF HUDSON	
60	2	19674/ 189	WHITE POND RD	SHERRY ELIZABETH A	MARGARET L CAPASSO
60	6	17006/0153	159 WHITE POND RD	CHAMPAGNE LLOYD	DANA E STENQUIST
22	13	50377/ 565	462 MAIN ST	GREENSTEIN DANIEL	
22	14	36332/ 566	2 WILKINS ST	BOUVIER PATRICIA J	
22	15	51354/ 331	4 WILKINS ST	BRUSH CYNTHIA	
22	16	13963/0504	6 WILKINS ST	MURPHY DANIEL J	CYNTHIA J MURPHY
22	18	28988/ 30	5 WILKINS ST	WAITE CHRISTOPHER M	LILI A SCOTT
22	51	67209/ 444	1 ORCHARD DR	KING STEPHEN A	LORI E KING
22	53	26551/ 453	7 WILKINS ST	OLOUGHLIN MAUREEN L	EDWARD J OLOUGHLIN
30	196	71593/394	56 FOREST AVE	JOHN BLOOD	NICOLE WALTON

HUDSON, MA

30	199 13428/ 154	FOREST AVE	GUERARD RAYMOND J	CAROL GUERARD
30	200 57891/ 582	58 FOREST AVE	GUERARD CAROL A	
31	40 43366/ 536	134 FOREST AVE	HANSLIP NANCY M	
31	42 11299/0628	136 FOREST AVE	TOWN OF HUDSON TOWN HALL	ADM: SCHOOL DEPARTMENT
31	53 65128/ 318	151 FOREST AVE	GREEN DUDLEY	EBONY GREEN
31	54 49424/ 188	149 FOREST AVE	MONTEIRO MARK J	
31	55 67330/ 536	145 FOREST AVE	FIGUEIREDO PAULO	DANYELA FIGUEIREDO
31	56 72591/552	143 FOREST AVE	JOHN A DIPIETRO	
31	57 70870/536	141 FOREST AVE	FOWLER TRACEY	ROBERT A FOWLER JR
31	58 61521/ 250	140 FOREST AVE	LOW ISAAC	
31	59 51659/ 274	138 FOREST AVE	GILLIATT ARCHIE JR	PAULA GILLIATT
31	60 14363/0438	135 FOREST AVE	SALSER E GEORGE	JUDITH A SALSER
31	61 38637/ 222	137 FOREST AVE	REIS MARIZA	
31	62 34627/ 060	147 FOREST AVE	ASHMAN DAVID M	CAROLE L ASHMAN
31	63 73541/151	153 FOREST AVE	RICHARD T BUCKLEY JR	
31	68 43593/ 520	FOREST AVE	CUCCHI RONALD D	LISA M CUCCHI
31	86 19575/0439	142 FOREST AVE	GALUFFO ANTHONY	RITA GALUFFO
32	12 40218/ 060	158 FOREST AVE	CHAHINE GEORGE H	INAAM SALEM
32	14 71984/263	156 FOREST AVE	JQ HUANG 19 INC	
32	15 70561/218	154 FOREST AVE	ANDRADE WELLITON RF	EDILENE OLIVEIRA ANDRADE
32	16 09519/0107	152 FOREST AVE	RADIVONYK STEPHEN	PHYLLIS J RADIVONYK
32	17 21754/ 190	155 FOREST AVE	BARRY JOANNE M	
32	19 70881/313	157 FOREST AVE	FRAZITTA ROBERT M	DIANA FRAZITTA
32	20 21458/ 353	161 FOREST AVE	WOOLSEY WOODROW B	JANE L WOOLSEY
32	29 20424/ 164	FOREST AVE	SUDBURY VALLEY TRUSTEES	
32	31 48260/ 176	486 MAIN ST	MCCULLOUGH SEAN P	NOELLE M MCCULLOUGH
41	32 57414/ 127	104 FOREST AVE	APEX REALTY TRUST	ERIN J NEWBOULD TRUSTEE
41	33 28586/ 374	75 REED RD	INTEL MASSACHUSETTS INC	ATTEN: SC4-206
41	34 30771/ 328	100 FOREST AVE	VINLAND REALTY TRUST	ERIK J ANDRESEN
41	41 11836/ 305	49 FOREST AVE	TOWN OF HUDSON TOWN HALL	ADM: L & P DEPARTMENT
42	10 20521/ 551	130 FOREST AVE	EASTMAN DONALD R	EDWINA M EASTMAN
42	11 56509/ 59	114 FOREST AVE	MULA MICHAEL J	
42	12 42194/ 591	116 FOREST AVE	GRAY JEFFREY E	BRITTNEY LYNN MIHELICH
42	121 70678/535	123 FOREST AVE	MARANVILLE JOSEPH CHARLIE	BRITTANY LYNN MIHELICH
42	13 41675/ 138	118 FOREST AVE	HUDSON SCHOOLHOUSE INC	
42	14 72801/516	122 FOREST AVE	WILLIAM WARD GIBBS	KERIN GIBBS
42	15 15090/0556	2 MARLBORO ST	LOWE MICHAEL J	LAURIE J LOWE
42	16 55714/ 454	53 WOODROW ST	CABRERA FRANCISCO JR	MONICA FIGUEROA
42	17 19086/ 57	121 FOREST AVE	DAVIS RALPH	CATHERINE DAVIS
42	18 70922/456	125 FOREST AVE	JULIE E WOLFE	
42	30 41589/ 393	127FOREST AVE	CHILDRENS AFTER SCHOOL PROGRAM INC	
42	31 41589/393	JOHN ROBINSON RD	CHILDRENS AFTER SCHOOL PROGRAM INC	
42	58 11330/0736	131 FOREST AVE	LANDRY ROBERT W	JUDITH B LANDRY
42	59 72185/143	40 RICHARDSON RD	EMILY A CARUSO	NICHOLAS BURTON
42	6 12033/0544	124 FOREST AVE	KIRKPATRICK WILL E JR	ANNE L KIRKPATRICK
42	7 69370/ 180	126 FOREST AVE	COSCO NICHOLAS R	
42	71 32861/ 070	41 RICHARDSON RD	CUCCHI RONALD D	LISA M CUCCHI
42	79 64549/ 250	106 FOREST AVE	MCN REALTY LLC	
42	8 19093/ 205	119 FOREST AVE	FERRO STEVEN P	DIANE M
42	9 09659/0551	128 FOREST AVE	MCCARTHY CHARLES D	ELIZEBETH A MCCARTHY
42	93 58206/ 005	108 FOREST AVE	108 FOREST AVENUE REALTY TRUST	FRANCIS ALBERT TRUSTEE
42	94 23838/ 536	117 FOREST AVE	SMITH BRIAN P	JACQUELINE M SMITH

Date: December 16, 2019
To: VHB
From: Hudson Board of Assessors

Attached is a certified list of abutters MBTA.

Christine W DiMare

1

Introduction

On behalf of the co-applicants, the Massachusetts Department of Conservation and Recreation ("DCR") and NSTAR Electric Company d/b/a Eversource Energy ("Eversource"), VHB is submitting this Notice of Intent ("NOI") pursuant to the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, Section 40[1]) ("MWPA" or the "Act") and its implementing regulations (310 CMR 10.00[2]) ("the Regulations") for the construction of a portion of the Massachusetts Central Rail Trail ("MCRT") and for installation of an underground electric transmission line within an inactive Massachusetts Bay Transportation Authority ("MBTA") railroad right-of-way ("ROW") and roadways in Hudson, Massachusetts.

As proposed herein, "the Project" includes completion of a portion of the regional MCRT and construction of a new 115-kilovolt ("kV") underground electric transmission line ("the underground transmission line"). This Project is the direct result of a collaborative project-planning process between DCR, Eversource, and the MBTA. This coordinated effort combines two compatible uses within a single existing and under-utilized transportation corridor with a proposed phased construction sequence to minimize cost, the overall construction schedule, and potential impact to wetland resource areas.

Throughout the design phase of the Project, Eversource and DCR have coordinated closely and have jointly met with local municipalities as well as state regulatory agencies such as Massachusetts Department of Environmental Protection ("MassDEP") Wetlands Division, MassDEP Waterways (Chapter 91) Division, and the Natural Heritage & Endangered Species Program, to discuss the details for the proposed MCRT and the underground transmission line. DCR and Eversource have developed a Memorandum of Understanding ("MOU") to memorialize agreements to design, permit, construct, operate, and maintain the Project, and have made a concerted effort to design the Project to avoid and minimize impacts to wetland resource areas. This joint application by Eversource and DCR will allow federal, state, and local regulatory agencies to consider this coordinated effort and to condition the proposed work activities accordingly.

The Project will serve the dual purpose of increasing the reliability of the regional electric transmission system and advancing state-wide multi-use trail network initiatives. The underground electric transmission component of the Project will resolve thermal overloads

[1] Massachusetts Wetlands Protection Act (M.G.L. c. 131 §40). https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIX/Chapter131/Section40
[2] Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00). https://www.mass.gov/files/documents/2016/08/vy/310cmr10a.pdf

and low voltage conditions and will support the increased demand for electricity within this portion of the transmission system.

In Massachusetts, regional trails are an important priority for increasing the number of commuters who bike and walk to work and for providing recreational opportunities. The MCRT is one of these regional commuter trails that is American Disabilities Act ("ADA") compliant and accessible by people of all abilities. When completed, the MCRT will connect over 20 communities and provide over 100 miles of walking and biking trails. DCR has included the construction of the Sudbury to Hudson portion of the MCRT in a long-range capital planning request for Fiscal Year 2021. The Massachusetts Department of Transportation ("MassDOT") Project Review Committee has also approved the MCRT for design as MassDOT Project #608995. DCR constructed the Weston to Wayland portion of the MCRT, which was completed in fall 2019.

Proposed Project Overview

As shown in Figures 1 and 2 in Attachment A, the Project in Hudson is composed of three parts:

1. Construction of the MCRT and installation of the underground transmission line within the same alignment along the inactive MBTA corridor (plans provided in Attachments B and C);
2. Construction of an MCRT Connection to the existing Assabet River Rail Trail ("ARRT") alongside the existing ARRT parking lot (Sheet No. C-01 in the plans provided in Attachment C); and
3. Installation of the underground transmission line within existing public roadways (plans provided in Attachment D).

In total, the Project in Hudson is approximately 4.7 miles in length, of which 3.3 miles is along the existing inactive MBTA ROW from the Hudson/Sudbury municipal border to Wilkins Street. At Wilkins Street, the MCRT and underground transmission line diverge. The MCRT continues across Wilkins Street and within Town of Hudson–owned property for approximately 230 feet, to connect to the existing ARRT. The underground transmission line continues southwest within Wilkins Street and Forest Avenue for approximately 1.4 miles to its termination at the Hudson Light and Power Department ("HLPD") Substation.

The "Project Site" related to this Project is the entire width of the MBTA ROW, the property for the MCRT/ARRT connection, and the entire width of public roadways where the underground transmission line is proposed (see Figures 1 and 2 in Attachment A).

The Project will be constructed in a two-phased approach and is described in more detail in Section 3 of this NOI filing. In general, Phase 1 of the Project will be under the control and responsibility of Eversource and will include all major earthwork, bridge reconstruction, construction of the Chestnut Street underpass, and the installation of the underground transmission line. Phase 2 of the Project will be under the control and responsibility of DCR and will include installation of road crossings, paving the MCRT, and final restoration.

Summary of Wetland Resource Area Impacts in Hudson

A summary of the wetland resource area impacts proposed within Hudson is provided in Table 1.

Note that the Project was designed such that there are no permanent impacts to BVW in Hudson. In addition, the installation of underground utilities within existing paved roadways within 100-foot Buffer Zone or Riverfront Area is exempt pursuant to 310 CMR 10.02(2)(b)1; accordingly, impacts to these resources are not included below for the portion of the transmission line within existing public roadways (plans in Attachment D).

Table 1 Wetland Resource Area Impact Summary within the Project Site in Hudson

Wetland Resource Area	Permanent Disturbance Square Feet (Acres)	Temporary Disturbance Square Feet (Acres)[1]	Total Disturbance Square Feet (Acres)	Wetland Resource Area on Project Site[2] Square Feet (Acres)	Comments
Bordering Vegetated Wetland ("BVW")	0	1,936 (0.04)	1,936 (0.04)	121,359 (2.8)	Includes 1,342 square feet of temporary vegetation clearing along edge of wetland system.
Total Riverfront Area ("RFA")[3]	62,264 (1.4)	2,526 (0.06)	64,790 (1.5)	326,503 (7.5)	Includes 41,827 square feet of permanent vegetation clearing and 1,896 square feet of temporary vegetation clearing.
100' RFA	12,151 (0.3)	2,415 (0.06)	14,566 (0.3)	87,006 (2.0)	Includes 11,959 square feet of permanent vegetation clearing and 1,785 square feet of temporary vegetation clearing.
200' RFA	50,113 (1.1)	111 (0.003)	50,224 (1.2)	239,497 (5.5)	Includes 29,868 square feet of permanent vegetation clearing and 111 square feet of temporary vegetation clearing.
Isolated Land Subject to Flooding ("ILSF")	760 (0.02)	0	760 (0.02)	3,464 (0.1)	The ILSF impact area is not within an isolated vegetated wetland. Includes 760 square feet of permanent vegetation clearing. The Project will result in a net gain of 99.07 cubic yards of flood storage in ILSF.

Wetland Resource Area	Permanent Disturbance Square Feet (Acres)	Temporary Disturbance Square Feet (Acres)[1]	Total Disturbance Square Feet (Acres)	Wetland Resource Area on Project Site[2] Square Feet (Acres)	Comments
Bordering Land Subject to Flooding ("BLSF")	15,735 (0.4)	665 (0.02)	16,400 (0.42)	134,703 (3.1)	Includes 14,874 square feet of permanent vegetation clearing and 665 square feet of temporary vegetation clearing. The Project will result in a net gain of 435.50 cubic yards of flood storage in BLSF.
Isolated Wetland ("IW")	622 (0.01)	27 (0.0006)	649 (0.01)	11,340 (0.3)	Per the ORAD approved on February 5, 2018, there are 3 isolated wetlands within the Project Site that are subject to federal jurisdiction only under Section 401 of the Clean Water Act.

Source: VHB

1. Temporary impacts to all resource areas except isolated wetlands are from the placement of crane mats to the east and west of Fort Meadow Brook to accommodate replacement of the bridge. Temporary impacts to isolated wetlands are from cuts in grade; there will be no net loss.
2. The "Project Site" includes the entire 82-foot width of the MBTA ROW, the entire width of the public roadway layout, and the entire Town of Hudson parcel that the MCRT Connection crosses.
3. RFA overlaps other resource areas.

The Project was designed to be in full compliance with all applicable federal, state, and local wetland-related performance standards to the maximum extent practicable. In general, both components of the Project qualify for limited project status under either 310 CMR 10.53(3)(d) for the "construction, reconstruction, operation, and maintenance of underground or overhead public utilities," or under 310 CMR 10.53(6) for the "construction, rehabilitation, and maintenance of footpaths, bike paths, and other pedestrian or non-motorized vehicle access to or along riverfront areas but outside other resource areas, provided that adverse impacts from the work are minimized and that the design specifications are commensurate with the projected use and are compatible with the character of the riverfront area" (see Section 5.1).

The Project complies with all applicable performance standards for BVW, BLSF, and ILSF, and complies with RFA performance standards to the maximum extent practicable. However, due to the length and linear nature, the Project exceeds the 10 percent threshold in the RFA performance standards and disturbs vegetation within the inner 100-foot RFA. The Applicants are thus seeking relief from these RFA-related performance standards and respectfully request that the Commission use the discretionary authority allowed under the limited project provisions to approve the Project as proposed. The following sections of this NOI provide detailed information regarding existing conditions within the Project Site (Section 2.0), present details regarding the proposed work activities (Section 3.0), provide an overview of the avoidance and minimization strategies implemented relative to wetland resource areas (Section 4.0), and present a detailed summary of compliance with applicable performance standards and proposed mitigation measures (Section 5.0).

2

Existing Conditions

As shown in Figures 1 and 2 in Attachment A, the Project in Hudson is composed of three parts:

1. Construction of the MCRT and installation of the underground transmission line within the same alignment along an inactive MBTA corridor (plans provided in Attachments B and C);
2. Construction of an MCRT Connection to the existing ARRT alongside the existing ARRT parking lot (Sheet No. C-01 in the plans provided in Attachment C); and
3. Installation of the underground transmission line within existing public roadways (plans provided in Attachment D).

The "Project Site" includes the entire width of the MBTA ROW, the entire width of the public roadway layout, and the entire Town of Hudson parcel that the MCRT Connection crosses. The portion of the Project in Hudson is approximately 4.7 miles in total length, of which 3.3 miles is along the existing inactive MBTA ROW from the Hudson/Sudbury municipal border to Wilkins Street (see Attachment B). The MBTA ROW width is variable but averages 82 feet wide in most locations and travels past residential areas, commercial developments, agricultural fields, wooded areas, and roadways. At Wilkins Street, the MCRT and underground transmission line components of the Project diverge. The MCRT continues across Wilkins Street and within Town of Hudson–owned property for approximately 230 feet, to connect to the existing ARRT (see Sheet No. C-01 in Attachment C). The proposed MCRT Connection will travel alongside the existing parking lot for the ARRT. The underground transmission line continues south within Wilkins Street and Forest Avenue for approximately 1.4 miles within the existing roadway layout to its termination at the HLPD Substation (see Attachment D).

Within the proposed limits of work associated with the Project, the MBTA ROW is disturbed consistent with its previous use as a railroad, and in many locations the old track structure (e.g., rails and ties) is still mostly intact. In its present condition, the track structure sits on stone ballast and is approximately nine feet wide from rail tie edge to rail tie edge. In most areas along the proposed limits of work where wetland resource areas are crossed by the Project, some type of path exists. In some areas these paths are narrow and appear to be used predominantly by walkers, with some limited use by mountain bikers and all-terrain vehicle users. In other segments, such as the portion of the Project located between White Pond Road and the Sudbury/Marlborough/Hudson town lines, there are formal, wide pathways that appear to be part of a trail system. These wider existing paths are heavily used

by hikers and individuals walking dogs and riding horses, and appear to also be used by mountain bikers, snowmobile users, and all-terrain vehicle users.

Photographs of the existing conditions are provided in Attachment E.

2.1 Overview of Wetland Resource Areas Within the Project Site

The following freshwater wetland resource areas are present within or proximate to the Project Site: Bank, LUWW, BVW, BLSF, ILSF, and RFA. Major features consist of wetlands associated with the Assabet River and Fort Meadow Brook.

All wetland resource areas were delineated following the methodologies described in 310 CMR 10.55, the MassDEP 1995 manual[3] and are consistent with the US Army Corps of Engineers ("USACE") 1987 Manual[4] and its Northcentral and Northeast Regional Supplement.[5] Wetland resource areas outside of the Project Site were not field delineated due to property access restrictions and were digitized using available MassDEP Geographic Information Systems ("GIS") data and ortho-imagery. The imagery used was from spring 2011 and 2012 and is prior to leaf-out, which permits a more accurate interpretation of field conditions.

MBTA ROW and Public Roadway Layout

All wetland resource areas within the Project Site, except for the MCRT Connection to the ARRT, were reviewed and approved as part of the Abbreviated Notice of Resource Area Delineation ("ANRAD") process with the Hudson Conservation Commission in 2018 through the Order of Resource Area Delineation ("ORAD") issued on February 5, 2018 (see Attachment F). The ORAD included approving RFA and the 100-foot buffer zone to BVW.

MCRT Connection

Additional wetland resource areas are located near the MCRT Connection to the ARRT, described in Section 2.1.1, and were delineated by VHB scientists in January 2019. The applicants respectfully request that the Commission approve this delineation as part of the Order of Conditions for the Project.

HLPD Substation

HLPD submitted an Abbreviated Notice of Resource Area Delineation ("ANRAD") for their substation. The Hudson Conservation Commission issued an Order of Resource Area Delineation ("ORAD") on January 3, 2019, stating that the drainage ditch on the HLPD property is non-jurisdictional. HLPD is responsible for all upgrades within their substation, which does not have any jurisdictional areas and is not part of this filing.

[3] MassDEP Division of Wetlands and Waterways. Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act. March 1995. https://www.mass.gov/files/documents/2016/08/pn/bvwmanua.pdf

[4] U.S. Army Corps of Engineers. Corps of Engineers Wetlands Delineation Manual. January 1987. https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/4530

[5] U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region (Version 2.0). January 2012. https://usace.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/7640

2.1.1 MCRT Connection to the ARRT

The wetland resource areas near the MCRT Connection are adjacent to the existing parking lot of the ARRT and are shown on Sheet No. C-01 on the DCR NOI plans (see Attachment C). These areas were delineated by VHB in January 2019 and have not been reviewed by the Hudson Conservation Commission. The following sections provide a detailed description of the wetland resource areas to be reviewed and confirmed as part of this NOI filing.

2.1.1.1 Bordering Vegetated Wetlands

One BVW was delineated with pink flagging labeled BP-1 through BP-7 within a wooded area to the immediate west of the proposed MCRT Connection to the ARRT. The BVW is a palustrine forested broad-leaved deciduous[6] (PFO1) wetland. The wetland vegetation includes skunk cabbage (*Symplocarpus foetidus*), Japanese barberry (*Berberis thunbergii*), jack-in-the-pulpit (*Arisaema triphyllum*), cinnamon fern (*Osmundastrum cinnamomeum*), red maple (*Acer rubrum*), eastern white pine (*Pinus strobus*), and poison ivy (*Toxicodendron radicans*). Soils were reduced with a matrix of 2/1 and signs of hydrology included water-stained leaves. The BVW does not encroach into the Project limits for the MCRT Connection. See Attachment G for BVW Wetland Delineation Forms.

2.1.1.2 Riverfront Area

A portion of the outer 200-foot RFA from an unnamed perennial stream to the Assabet River is located on the Project Site. The stream is located to the north of the Project Site and the Bank could not be delineated due to lack of property access. Accordingly, the location of the stream was approximated using available GIS data. Within the Project Site, the RFA consists of manicured lawn adjacent to the paved parking lot for the ARRT. There are no trees or woody vegetation within the Project limits within this RFA.

2.2 Mapped Soils within the Project Site

According to the Natural Resources Conservation Service Web Soil Survey[7], there are several soil series mapped within the Project Site in Hudson (see Figure 3 in Attachment A and Table 2 below). However, because the previous use of the ROW was a railroad, the soils are disturbed and/or filled. This was confirmed during the advancement of geotechnical borings throughout the MBTA ROW, which identified fill material in subsurface soils ranging up to 12 feet below surface grade.

[6] Classification of Wetlands and Deepwater Habitats of the United States. (Federal Geographic Data Committee, 2013). https://www.fws.gov/wetlands/documents/NWI_Wetlands_and_Deepwater_Map_Code_Diagram.pdf

[7] U.S. Department of Agriculture – Web Soil Survey. Access February 20, 2019. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm?TARGET_APP=Web_Soil_Survey_application_u1wl5v13de1ikaypfk14ngvp

Table 2 NRCS Mapped Soil Types within the Project Site in Hudson

Map Unit Name/Soil Series	Map Unit Symbol	Hydric	Hydrologic Soil Group	Drainage Class
Scarboro mucky fine sandy loam, 0-3% slopes	6A	Yes	A/D	Very poorly drained
Freetown muck, 0-1% slopes	52A	Yes	B/D	Very poorly drained
Freetown muck, ponded, 0-1% slopes	53A	Yes	B/D	Very poorly drained
Hinckley loamy sand, 0-3% slopes	253A	No	A	Excessively drained
Hinckley loamy sand, 3-8% slopes	253B	No	A	Excessively drained
Hinckley loamy sand, 8-15% slopes	253C	No	A	Excessively drained
Hinckley loamy sand, 25-35% slopes	253E	No	A	Excessively drained
Merrimac fine sandy loam, 0-3% slopes	254A	No	A	Somewhat excessively drained
Windsor loamy sand, 0-3% slopes	255A	No	A	Excessively drained
Windsor loamy sand, 3-8% slopes	255B	No	A	Excessively drained
Deerfield loamy sand, 0-3% slopes	256A	No	B	Moderately well drained
Carver loamy coarse sand, 0-3% slopes	259A	No	A	Excessively drained
Carver loamy coarse sand, 3-8% slopes	259B	No	A	Excessively drained
Montauk fine sandy loam, 15-25% slopes	300D	No	C	Well drained
Paxton fine sandy loam, 25-35% slopes	305E	No	C	Well drained
Paxton fine sandy loam, 8-15% slopes	307C	No	C	Well drained
Pits, gravel	600	N/A	N/A	N/A
Merrimac-Urban land complex, 0-8% slopes	626B	No	A	Somewhat excessively drained
Udorthents-Urban land complex	656	No	N/A	N/A

Source: NRCS USDA Web Soil Survey

2.3 Protected Sensitive Habitats

The following sections provide an overview of sensitive habitats that fall under jurisdiction of either the Massachusetts Wetland Protection Act or the Massachusetts Endangered Species Act and include Estimated/Protected Habitat for State-Listed species, Outstanding Resource Waters, Areas of Critical Environmental Concern, and Coldwater Fisheries.

2.3.1 Estimated/Priority Habitat for State Listed Species

Based on the most recently published edition of the Massachusetts Natural Heritage Atlas (14th edition, effective August 1, 2017), a portion of the Project Site within the MBTA ROW east of White Pond Road to just east of the Hop Brook Bridge 128 crossing is within Priority and Estimated Habitat of rare species, PH1440/EH1040 (see Figure 4 in Attachment A). Within Hudson, the Priority and Estimated Habitat ends at the Hudson/Sudbury town line. Based on the August 4, 2017, response letter from Massachusetts Division of Fisheries and Wildlife ("MassWildlife") Natural Heritage and Endangered Species Program ("NHESP"), there are four state-listed species of special concern within PH1440/EH1040 (see Table 3 and Attachment H).

Table 3 State-Listed Protected Species

Scientific name	Common Name	State Status
Terrapene carolina	Eastern Box Turtle	Special Concern
Caprimulgus vociferus	Eastern Whip-poor-will	Special Concern
Catocala herodias gerhardi	Gerhard's Underwing Moth	Special Concern
Metarranthis pilosaria	Coastal Swamp Metarranthis Moth	Special Concern

Source: NHESP

2.3.2 Coldwater Fishery Resources

Coldwater Fishery Resources ("CFRs") are regulated under the MWPA (at 310 CMR 10.00) and the Massachusetts Surface Water Quality Standards (at 314 CMR 4.00[8]). Based on the latest mapping of CFRs by MassWildlife, there are no CFRs located on or near the Project Site within Hudson[9].

2.3.3 Areas of Critical Environmental Concern

Based on a review of available MassGIS data, the Project Site is not located within an Area of Critical Environmental Concern (ACEC)[10].

2.3.4 Outstanding Resource Waters

Outstanding Resource Waters ("ORWs") are defined in 314 CMR 4.00 as Class A Public Water Supplies and their tributaries, wetlands bordering Class A ORWs, active and inactive reservoirs approved by the MassDEP Drinking Water Program after December 29, 2006, and other waters as determined by MassDEP based on their outstanding socio-economic, recreational, ecological and/or aesthetic values. Vernal pools are designated as Class B ORWs, and wetlands bordering Class B, SB, or SA ORWs are also designated as ORWs (314 CMR 4.06(2)). As such, the two certified vernal pools on the Project Site in Hudson are considered ORWs. One of the certified vernal pools is located to the north of the MBTA rail line and is approximately 80 feet east of White Pond Road; the other is also to the north of the rail line and is approximately 450 feet west of the Hudson/Sudbury town line.

2.4 Public Water Supply Resources

Public water supply resources are presented here because Bank, BVW, LUWW, and RFA are presumed to contribute to the protection of private or public water supplies. In addition, ILSF may be significant to public or private water supply and to ground water supply when underlain by pervious material. Available MassGIS data was reviewed to identify potential

[8] Massachusetts Surface Water Quality Standards (314 CMR 4.00). Accessed February 1, 2019. https://www.mass.gov/files/documents/2016/11/nv/314cmr04.pdf

[9] MassWildlife Coldwater Fisheries Resource List. Accessed February 1, 2019. https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=56ddeb43ffc642feb3117ce7ebd1aa43

[10] MassGIS OLIVER – Areas of Critical Environmental Concern Data Layer. Accessed February 1, 2019. http://maps.massgis.state.ma.us/map_ol/oliver.php

Wellhead Protection Areas ("WPAs") and public water supply wells within the vicinity of the Project. There are two Zone II WPAs that overlay the Project Site within the MBTA ROW. Zone II WPAs are those portions of an aquifer that contribute to the recharge of an existing public water supply well or wellfield. There are no public water supply wells or Zone I's within or immediately surrounding the Project Site (see Figure 5 in Attachment A). As described further in Sections 5.1.4 through 5.1.6, the Project will comply with all applicable performance standards for BVW, ILSF, and RFA and will not impair ground water and surface water quality. There are no impacts to Bank or LUWW proposed in Hudson.

3

Proposed Work

The Project will be constructed in a two-phased approach and is described in more detail below. In general, Phase 1 of the Project will be under the control and responsibility of Eversource and will include all major earthwork, bridge reconstruction, construction of the Chestnut Street underpass, and the installation of the underground transmission line. Phase 2 of the Project will be under the control and responsibility of DCR and will include installation of road crossings, paving the MCRT and final restoration. During both phases, Best Management Practices ("BMPs") will be employed to minimize impacts and environmental monitors will be present to ensure that all activities are conducted in accordance with applicable permit conditions.

In summary, the general construction sequencing associated with each phase is as follows:

Phase 1 Construction Activities (some components listed may be conducted simultaneously)

- Development of Storm Water Pollution and Prevention Plan ("SWPPP")
- Monitoring and maintenance of all erosion and sediment controls for Phase 1
- MBTA ROW
  - Identification of contractor access and laydown areas, to be located outside of wetland jurisdictional areas
  - Vegetation clearing within the limit of work (no stumping)
  - Installation of erosion and sediment controls
  - Rail removal and grading of construction platform and installation of stormwater management features
  - Construction of bridge and culvert crossings (Bridge 130 and Chestnut Street underpass required for MCRT)
  - Installation of manholes and duct bank
  - Installation of electrical and signal conduit for MCRT at road crossings
  - Final grading of the gravel base
  - Cable pulling, splicing, testing, and commissioning
  - Loaming and seeding of disturbed areas, including installation of woody plantings within Estimated Habitat

- Construction within Public Roadways
  - Installation of sediment controls
  - Manhole installation
  - Roadway trench excavation, duct bank installation, and pavement restoration;
  - Cable pulling, splicing, and testing
  - Final pavement restoration
- Development of as-builts for all Phase 1 activities

Phase 2 Construction Activities (some components listed may be conducted simultaneously)

- Development of Storm Water Pollution and Prevention Plan ("SWPPP")
- Installation of erosion and sediment controls for MCRT Connection only
- Vegetation clearing and rough grading for MCRT Connection only
- Installation of posts and mast arms at road crossings
- Installation of gravel base for MCRT Connection only
- Monitoring and maintenance of all erosion and sediment controls for Phase 2
- Grading and compacting gravel base
- Placement of intermediate and surface course of pavement for MCRT and turn outs
- Installation of imprinted resin median and detectable warning panel at road crossings
- Installation of fencing, benches, bike racks
- Installation of woody vegetation plantings
- Loaming and seeding along shoulders, side slopes, and any other disturbed areas
- Installation of roadway and trail markings and signs
- Removal of erosion controls by hand and reseeding of footprint once vegetated areas are established and any other applicable permit conditions achieved
- Development of as-builts for all Phase 2 activities

The following sections provide detailed descriptions of the proposed work activities associated with each of the two phases of the Project.

3.1 Proposed Phase 1 Construction Activities

Phase 1 construction includes activities within the MBTA ROW and public roadways in Hudson from the Hudson/Sudbury municipal boundary to the existing HLPD Substation on Forest Avenue. Section 3.1.1 provides a detailed discussion of the proposed activities along the MBTA ROW associated with Phase 1 of the Project and Section 3.1.2 provides a detailed discussion of the proposed activities along public roadways associated with Phase 1 of the Project.

3.1.1 Construction within the MBTA ROW

Construction of Phase 1 of the Project will generally require a 22-foot-wide construction platform along the MBTA ROW to accommodate the Project (see Figure 6 in Attachment A). At some locations the proposed construction platform will be wider than 22 feet to meet existing grade, satisfy DCR design criteria, accommodate stormwater management features, and install proposed manholes. There are also locations where the construction platform will be 18 feet wide to minimize impacts to environmentally sensitive resources.

The construction platform within the MBTA ROW will generally consist of the following:

- A 14-foot-wide, 8-inch-deep gravel base;
- A four-foot-wide duct bank (offset from the 14-foot gravel base by one-foot in most locations);
- Manholes (requiring additional workspace outlined below); and
- Three feet of additional construction area to facilitate installation of the duct bank.

At each proposed manhole location, to accommodate installation, the limits of clearing will be temporarily expanded to an approximate width of 40 feet, for a length of 50 feet. Following construction, these areas will be allowed to grow back to a final maintained width of 19 feet. Each manhole is approximately eight feet wide by eight feet high and 24 feet long. Due to their size, most of the manholes will be located partially underneath the MCRT with the manhole covers adjacent to the MCRT and in the shoulder. The manhole depth will vary by location, with the base measuring approximately 12 to 15 feet below the proposed final grade of the MCRT. Manholes will be spaced approximately every 1,500 to 1,800 feet. At each manhole, a precast communication handhole measuring four feet by four feet by four feet will be installed parallel to each manhole.

Plans for this portion of the work are provided in Attachment B.

3.1.1.1 Vegetation Clearing

The Project requires clearing of existing vegetation, including trees, saplings, shrubs, and herbaceous vegetation within the construction platform to facilitate construction. Prior to the start of construction, the proposed clearing limits (i.e., construction platform) will be surveyed and staked and trees will be visibly marked for removal. In addition, prior to vegetation removal, the boundaries of wetlands will be clearly marked to prevent unauthorized encroachment.

Any limbs that overhang the construction platform will be selectively cut as needed for construction vehicle access and operation. Affected limbs will be cut in a manner that will maintain the health of the trees. The design has minimized tree clearing to the extent practicable by locating the construction platform along the existing rail bed where there are not likely to be mature trees growing. However, where tree removal is necessary, it will consist of cutting trunks as close to the ground as possible and leaving the stumps and roots

in place. Tree trunks and large limbs will be cut, and smaller limbs and brush will be chipped and then removed from the Project Site.

Typical equipment used to clear vegetation includes tree shears, brush mowing units, a skidder bucket and/or manual climbers, a forwarder or tree dump truck, and a chipper with a winch. Hand cutting using chainsaws and brush saws may be necessary in sensitive areas such as wetlands.

3.1.1.2 Erosion Prevention and Sediment Controls

To minimize impacts during construction, the construction crews will implement a variety of BMPs based on Eversource's BMP manual (see Attachment I) and can include, but are not limited to, the following:

- **Erosion and Sediment Controls** are generally installed between construction activities and sensitive resource areas such as wetlands. They are designed to prevent and minimize the transport of sediment carried by stormwater into sensitive resource areas down-gradient. In many situations they also act to mark the limit of work on a project site. Common erosion and sediment controls include silt fence, straw bales, compost filter tubes, silt socks, and/or straw wattles. Please note that hay will not be used.
- **Jute Mesh Erosion Control Blankets** are used to temporarily stabilize disturbed soils on steep slopes and promote rapid growth of vegetation for permanent stabilization, thus preventing erosion.
- **Hydro Seeding** is another form of erosion prevention and is used to promote rapid stabilization of disturbed soils (including slopes) and rapid growth of vegetation. In practice, fiber mulch suspended in water along with plant seeds and tackifiers are sprayed on disturbed areas covering the entirety of the disturbed area. The fiber mulch adheres to the ground surface forming a thin mat that stabilizes the soil surface, retains moisture, and helps to promote rapid germination of plant seeds.
- **Construction Signage** is typically used throughout the construction ROW alerting contractors of sensitive areas (including wetlands, rare species, vernal pools, tree protection and cultural resource areas), approved access locations, and non-approved access locations.
- **Turbidity Controls** are typically used in conjunction with other BMPs when work occurs either in or immediately adjacent to areas that are inundated by water such as at bridges. Typically, they consist of a geotextile fabric suspended from flotation booms and weighted at the bottom.
- **Frac Tanks/Filter Bags and Straw Bale Containment Areas** are used when it is necessary to remove water from an excavation. Sediment-laden water from an excavation is pumped into a frac tank or filter bag and straw bale containment area where the sediment is filtered from the water.
- **Construction mats** are primarily used to minimize soil disturbance for access, bridges, and work platforms for construction equipment in wetland or soft soils. The mats will be

thoroughly cleaned and will be free of vegetation before and after use on the Project, and Eversource maintains standards that contractors must abide by.

- **Only native indigenous plantings and seed mixes** will be used to revegetate and restore disturbed areas along the Project Site, and, if possible, will be obtained from a local nursery. If used, straw mulch will be spread over the seed mix in place of hay to prevent the spread of invasive plant species seed stock, retain moisture and encourage growth. The restored areas will be monitored annually by DCR for invasive species colonization.
- **All imported soil shall be certified as clean and free of invasive species** by the site contractor.
- **Construction Entrance Track Pads** are installed at construction entrances to prevent construction machinery from tracking soil onto paved roadways.

Following vegetation removal activities and prior to grubbing, erosion and sediment controls will be installed in accordance with Eversource's Best Management Practices manual and any applicable permit requirements. Eversource's Construction Supervisor and designated EM will oversee the installation of erosion and sediment controls by Eversource's contractor, which will be installed between the work area and environmentally sensitive areas, such as wetlands, streams, drainage courses, roads, and adjacent property. The erosion and sediment controls are shown on the Plans in Attachment B and construction details are provided on sheets 123 and 124 of those Plans. Syncopated silt fencing will be used (as shown on sheet 124 of the Plans) to permit animal crossings in Estimated Habitat and within 450 feet of vernal pools. At bridges, sediment controls and debris netting will be installed to prevent impacts to wetlands and waterways.

If any stockpiling within the Project Site becomes necessary, it will be very limited in size and duration and silt fence and/or straw bales will be installed around its perimeter. These sediment controls will be inspected regularly and promptly repaired or replaced, as needed.

If dewatering is required, efforts will be made to locate the discharge either in the construction trench or in uplands at least 100 feet from wetlands. BMPs such as dewatering basins and filter bags are shown on sheet 124 of the Plans. A soil and groundwater management plan will be developed that includes procedures for the management of any dewatering.

The Project will require coverage under the National Pollutant Discharge Elimination System ("NPDES") 2017 Stormwater Construction General Permit ("CGP"), given that there will be disturbance of over an acre of land from proposed construction activities. Actions required under the CGP include:

- Develop a Stormwater Pollution Prevention Plan ("SWPPP") that details how stormwater discharges will be controlled;
- Complete and submit a Notice of Intent ("NOI") to USEPA;
- Install and maintain erosion and sediment controls throughout the entire construction project so they operate effectively to control stormwater discharges;

- Implement pollution prevention controls to minimize the discharge of pollutants from stormwater and spilled or leaked materials;
- Conduct inspections on the site a) at least once every 7 calendar days, or b) once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25-inch or greater, or the occurrence of runoff from snowmelt enough to cause discharge;
- Take corrective action to address any issues with stormwater controls or discharges; and
- Keep the SWPPP up to date to reflect current conditions on the site.

Both Eversource and DCR will develop SWPPPs from the detailed plans provided in this application, specific to the proposed work to be undertaken during each phase of the project. The SWPPPs for the Project will include adequate soil erosion prevention measures, sediment control, and turbidity control plan to prevent the migration of soil and sediment from disturbed areas to adjacent wetlands and waterbodies.

3.1.1.3 Removal of Rails, Grading of Construction Platform, and Installation of Stormwater Features

The conversion of the existing rail bed to a gravel base requires the removal and salvage of the steel rails and disposal of the wooden rail ties, in accordance with all applicable regulations. The rails will be cut by hand using a cutoff saw or oxyacetylene torch and the ties will be removed using an excavator and fork loader. The existing rail bed will then be graded and leveled using a bulldozer to a "subgrade" below the final gravel base elevation for use during construction, and stormwater features (swales and check dams) will be installed. If necessary, stumps and roots will be grubbed during this stage. Eversource has developed a Soil Management Plan and all soil within the MBTA ROW will be managed in accordance with the requirements of the Massachusetts Contingency Plan. Refer to Section 5.2 and pages 122 and 125 of the plans in Attachment B for more information about the stormwater features.

3.1.1.4 Construction of Manholes and Duct Bank

The installation of pre-cast concrete manholes will follow the completion of the construction platform. Manholes are used to facilitate cable installation and splicing and enable access for future maintenance. Placement of manholes are determined by several factors including, but not limited to: allowable pulling tensions; sidewall pressure on the cables as they are pulled around a bend; the maximum length of a cable that can be transported on the width, height, and weight of the cable reel; and accessibility of the site based on existing environmental constraints.

For the Project, the size of each manhole is approximately eight feet wide by eight feet high and 24 feet long. The manhole depth will vary by location, with the base measuring approximately 12 to 15 feet below the proposed final grade of the gravel base. The manholes are located entirely underground with only manhole covers being visible at ground level at final grade. At each manhole, a precast communication handhole measuring

four feet by four feet by four feet will be installed parallel to each manhole. It is anticipated that each manhole will take approximately five to seven days to install.

In Hudson, a total of nine manholes within the MBTA ROW will be installed, with only two manholes in the following resource areas:

- One within RFA from Station 120+75 to 121+25
- One within 100-foot buffer zone from Station 157+75 to 158+25

There are no manholes within BVW.

After the manholes are installed, the duct bank that protects the cable will be constructed. Working in sections, the trench will be excavated, and the conduit is either assembled inside the trench or pre-assembled at the ground surface and lowered into the trench. High-strength thermal concrete will be placed around the conduit to form the duct bank. The trench will then back-filled with fluidized thermal backfill.

3.1.1.5 Installation of Electrical and Signal Conduit for MCRT at Road Crossings

At roadway crossings, the MCRT will use rectangular rapid flashing beacons ("RRFB") to stop traffic and allow safe crossing of roadways. Construction within public roadway during Phase 1 will be limited to installation of conduit and signal equipment under the existing roadways at the crossings. The existing pavement will be sawcut, a trench excavated, conduit installed, the trench backfilled and road surface repaved. Once the conduit is installed, the signal and power cables will be installed.

3.1.1.6 Construction of Gravel Base

Following the installation of the transmission line, additional grading will bring the construction platform subgrade up to the final elevation for the gravel base, and 8 inches of gravel will be installed. Upon completion of construction associated with the underground transmission line, Eversource will stabilize all disturbed areas outside of the 14-foot gravel base with loam and seed.

3.1.1.7 Cable Pulling, Splicing, Testing, and Commissioning

Each conduit will be tested and cleaned prior to cable installation. The cables will be installed in sections between two adjacent manholes. Adjacent cable sections will then be spliced together inside the manholes over the course of several extended work days. The splicing operation requires a specialized splicing van containing all the equipment and a generator. An air conditioning unit may also be used to control the moisture content in the manholes during the splicing activity. A portable generator will provide the electrical power for the splicing van and air conditioning unit and will be muffled to minimize noise. Typically, the splicing van is located over one manhole access cover. The air conditioner is located near the second manhole access cover and the generator is in a convenient area nearby out of the immediate work zone.

Once the electric cable is installed and spliced, the communications fiber cable will be pulled and spliced in the communications handholes. Splicing the communications fiber cable typically requires three (10-hour) work days to complete at each of the manholes. Once the cable system installation is complete, the cables will be field-tested from the substations. At the completion of successful testing, the line will be energized.

3.1.1.8 Crossings

The condition of each bridge, culvert, drainage pipe, and underpass was evaluated by VHB structural engineers along the entire length of the Project Site. For the purposes of this application, bridges are defined as structures that traverse over regulated streams, culverts are structures that convey regulated streams, and drainage pipes are structures that convey stormwater or overland flow only (no streams). Underpasses are structures that convey no water but carry a roadway over the MBTA ROW. The following sections describe the proposed improvements/replacements.

Fort Meadow Brook Crossing (Bridge 130)

The Project crosses Fort Meadow Brook via an existing timber open deck bridge. There are BVWs, BLSF, and RFA on either side of the existing bridge structure. The existing structure is in poor condition with widespread rot of the timber, most notably in the ties, pile caps, and tops of the stringers. On the eastern embankment, the bridge is supported with timber lagging. The west abutment wall and westernmost span was washed out, and the west embankment was eroded. Due to this, the existing decaying bridge structure will be removed, and a new replacement bridge will be built in the same location to support the MCRT.

Crane mats will be temporarily installed at either side of the crossing partially within BVW, RFA, and BLSF to facilitate replacement of the bridge. The new bridge will consist of a single span structure with new abutments that will be constructed landward of the existing abutment locations. The lowest chord of the new bridge will be at the same elevation as the existing bridge's low chord, which is at elevation NAVD88 180.4. The existing timber piers will be cut at the mudline and removed by hand. Steel sheeting will be installed around the bridge abutments to provide future scour protection during storm events and act as a retaining wall to minimize grading. The sheeting will also support temporary excavation to install the proposed abutments below ground. There will be no obstructions under the new bridge, which will improve the existing condition.

Fort Meadow Brook bridge will be reconstructed in full compliance with the Massachusetts Stream Crossing Standards. The following outlines the general sequence of construction activities proposed for Bridge #130:

1. Initial survey;
2. Vegetation removal and installation of erosion and sediment controls;
3. Grade the construction platform to subgrade;

4. Install debris containment measures, crane mats, and associated erosion and sediment controls for removal of the existing bridge;
5. Remove existing bridge piers and steel span;
6. Install sheeting to facilitate excavation for new bridge abutment installation;
7. Install new bridge abutments (landward of existing abutments);
8. Install new steel bridge sections including integrated duct system (including temporary steel decking);
9. Continue sheeting installation, removing crane mats as sheets are installed working away from the bridges;
10. Install jute mesh erosion control blankets, a native seed mix, and woody plantings to stabilize crane mat areas;
11. Connect duct bank on the bridge to the duct bank in the construction platform;
12. Final grading, installation of gravel base, and restoration of all disturbed areas; and
13. Remove temporary steel decking and install permanent wood decking.

Chestnut Street Underpass

Chestnut Street is currently elevated above the existing inactive railroad by approximately 12 feet, on a filled embankment. Eversource will open cut this area to bring the grade down to meet the proposed MCRT elevation and install a 3-sided, precast concrete arch culvert with a 12-foot clear width and 10-foot center vertical clearance. This underpass will allow the MCRT to cross beneath Chestnut Street. The proposed roadway grade will be the same as the existing roadway grade, and chain-link fence and guardrail will be installed at the top of the structure.

Other Crossings

Other crossings include culverts, cattle passes, and drainage pipes. The condition of each crossing was evaluated for being able to safely support the Project, as well as to identify any potential opportunities to improve conditions at these crossings without causing major disturbance to the resources around them. The results of the evaluation and the proposed work are summarized in Table 4 below.

Table 4 Other Crossings

Crossing ID	Station	Plan Sheet	Type	Size/Material	Work Proposed
132A	107+93	25	Culvert	2'x3' Stone Box and 30" Clay	None
New Pipe #1	119+37	26	Drainage Pipe	18"	Install new, 29-foot-long, 18-inch diameter Reinforced Concrete Pipe with headwall and stone apron to convey stormwater currently flowing through cattle crossing and causing erosion. Install deep sump catch basin on south side.
Cattle Crossing	119+45	26	Cattle Crossing	6'x6' Concrete Box	Remove unsound concrete. Clean and coat exposed steel. Minor concrete repairs to wingwalls and headwalls.
129C	206+10	35	Culvert	24" Clay	Clear debris from south end. Cut tree on top of northeast corner of pipe that is likely causing pipe to crack (no grubbing).

Source: VHB

3.1.1.9 Restoration

Restoration efforts following construction include removal of construction debris and stabilization of disturbed soil. All disturbed areas outside of the gravel base will be restored by loaming and seeding with a seed mix that contains only species native to New England such as little bluestem, red fescue, wild rye, fox sedge, path rush, New England aster, joe-pye weed, and/or rigid goldenrod. In addition, the crane mat locations and the slopes adjacent to Fort Meadow Brook will be planted with trees and shrubs and additional plantings will be installed within Estimated Habitat. All restoration plantings and seed mixes will consist of native species and, if feasible, be from local nursery stock.

3.1.2 Construction within Public Roadways

At Wilkins Street in Hudson, the underground transmission line diverges from the MCRT and continues south within Wilkins Street and Forest Avenue for approximately 1.4 miles to its termination at the HLPD Substation. Plans for this portion of the work are provided in Attachment D.

Portions of construction within the roadways will occur within RFA and the 100-foot buffer zone. In-road construction will be completed in the following phases:

- Installation of sediment controls;
- Manhole installation;
- Roadway trench excavation, duct bank installation, and pavement restoration;

- Cable pulling, splicing, and testing in roadways; and
- Final pavement restoration.

Catch basin protection measures such as filter fabric and/or filter baskets/bags will be installed to protect the stormwater management system during construction. If dewatering is necessary, frac tanks and/or filter bags and straw bale containment areas will be used to filter out sediment. Public roadways will be swept as needed during construction, and if necessary larger areas of exposed soil will be wetted to prevent windborne transport of any fine-grained sediment.

Similar to construction in the MBTA ROW, the manholes are located entirely underground and approximately 1,500 to 1,800 feet apart, with only manhole covers being visible at ground level. At each manhole, a precast communication handhole measuring four feet by four feet by four feet is installed parallel to the manhole. No tree clearing is anticipated to be necessary for construction within public roadways; however, some limited branch trimming may be needed.

Following installation of the manholes, the underground duct bank construction will begin. The primary method for underground duct bank construction in roadways is open-cut trenching. A "clean trench" or "live loading" method will be used in which soil is loaded directly into a dump truck to an off-site facility for recycling, reuse, or disposal. Soil will not be stockpiled along the edge of the roadway, thus reducing the size of the required work area and the potential for sedimentation or the creation of nuisance dust. Any rock encountered during excavation will be removed by mechanical means and brought to an off-site facility for recycling, reuse, or disposal. Eversource will develop a Soil Management Plan and all soil within roadways will be managed in accordance with the requirements of the Massachusetts Contingency Plan.

Working in sections, the trench will be excavated, and the conduit will either be assembled inside the trench or pre-assembled at the ground surface and lowered into the trench. High-strength thermal concrete will be placed around the conduit to form the duct bank. The trench will then be back-filled with fluidized thermal backfill or native soil (to be determined by final cable design). Each conduit will be tested and cleaned prior to cable installation. As described in Section 3.1.1.6, the cables will be installed between manholes and spliced together inside the manholes over several extended work days. The communications fiber cable will then be pulled and spliced in the communications handholes.

Following installation of the manholes, duct bank, and cables, roadway surfaces would be restored in compliance with applicable state standards and requirements of the Town of Hudson.

3.2 Phase 2 Construction Activities

Phase 2 construction will consist of work within:

1. The same MBTA ROW as Phase 1;

2. Town of Hudson–owned property for the MCRT Connection to the ARRT; and
3. Public road crossings along the MBTA ROW.

Please refer to the NOI plans in Attachment C for details regarding Phase 2 construction activities. Certain Phase 2 activities can begin once sections of Phase 1 activities are completed. However, construction of the MCRT Connection to the ARRT is not dependent upon completion of Phase 1 activities and therefore can be constructed independent of Phase 1.

The following sections provide further detail of activities associated with Phase 2 of the Project. Section 3.2.1 provides an overview of the proposed activities along the MBTA ROW, Section 3.2.2 provides details regarding the proposed activities associated with the MCRT Connection to the ARRT, and Section 3.2.3 provides details regarding the proposed activities at and within public roadways.

3.2.1 Construction within the MBTA ROW

For Phase 2 of the Project, Eversource will turn over the construction site to DCR following installation of the gravel base. DCR will fine grade and compact the surface, and then pave the MCRT. After paving, the shoulders will be loamed and seeded. Installation of railings and fencing, and planting of shrubs will complete the Project within the MBTA ROW.

Erosion and sediment controls will remain in place from Phase 1 and DCR will assume responsibility to maintain the controls for the duration of Phase 2 of the Project. Once the Project is complete and disturbed areas are stable with final vegetation, DCR will remove the controls. Plans for this portion of the work are provided in Attachment C.

3.2.2 Construction of the MCRT Connection to the ARRT

At Wilkins Street, the transmission line and MCRT diverge, and the MCRT continues across Wilkins Street and within Town of Hudson-owned property for approximately 230 feet to connect to the existing ARRT. Construction of this short connector will require grading in addition to that described in 3.3.1 because there is no rail bed in this location. A wetland is located immediately west of the connector alignment and the first task will be to install erosion and sediment controls along the limit of work. DCR will clear and grub the work area and then excavate and rough grade to establish an alignment for the connector path. The construction sequence for this portion of the Project is:

- Installation of conduit and foundations for crossing signals at Wilkins Street;
- Rough grading;
- Placement of gravel and pavement for the 10-foot wide MCRT;
- Placement of loam and seed on the shoulders and slopes; and
- Pavement markers and installation of crossing signals.

An existing concrete pad with a bike rack alongside the ARRT will be relocated approximately 20 feet to the west to connect the MCRT with the existing rail trail. Sheet C-01 in the plans provided in Attachment C detail this portion of the work.

3.2.3 Construction within Public Roadways

At roadway crossings, RRFBs will be installed that are activated by people using the MCRT to stop traffic and allow safe crossing of roadways. Construction within public roadway during Phase 2 will be limited to installation of signal equipment, pole foundations, signal poles, gateway details and pavement markings. Conduit for the crossing signals will be installed during Phase 1; during Phase 2, the signal equipment and crossing buttons will be installed. Plans for this portion of the work are provided in Attachment C.

3.2.4 Restoration

All disturbed areas outside of the 10-foot-wide paved MCRT will be restored by loaming and seeding with the same seed mix that is used in Phase 1, containing only species native to New England.

3.3 Operation and Maintenance

DCR will be responsible for operation and maintenance of stormwater features and a 19-foot-wide corridor that includes:

- The 10-foot-wide MCRT;
- Adjacent two-foot shoulders (four feet total); and
- A five-foot corridor over the duct bank.

DCR will mow and/or weedwhack the shoulders adjacent to the rail trail biweekly or as needed between Memorial Day and Columbus Day. Outside of the shoulders, DCR will mow the herbaceous area over the duct bank no more than once annually. Outside of the 19-foot maintained area, woody vegetation will be allowed to naturally revegetate and DCR will not implement vegetation management unless it poses a risk to MCRT users or to the underground transmission line. Eversource inspection vehicles will use the paved MCRT to access the transmission line facility once every three years.

3.3.1 Invasive Species Management

DCR will monitor for invasive species as part of its regular trail maintenance and will generally follow its BMPs for managing invasive plants as resources and priorities allow. The BMPs include the following guidelines:

- Prevention: Monitor properties annually for potential introductions, especially near boundaries and disturbed areas (e.g., roadsides, trailheads). Eliminate new infestations using hand pulling or weed wrenches when feasible.

- Management Planning: Identify population sizes and locations. Prioritize populations for management based on significance of the resource, aggressiveness of the species, and potential for long-term control.
- Mechanical Control: Hand pulling recommended for young plants and small populations. Cutting or mowing, repeatedly through the season before plants flower, can be good for large monocultures or when root systems are extensive. For species where a small fragment of root can start a new plant, one option may be to remove all above-ground invasive vegetation and cover the area with layers of black plastic, to remain in place for 1 to 4 growing seasons depending on the species.
- Chemical Control: Chemical treatments should only be used when another approach will not be effective. Herbicides must be applied only by a licensed applicator. For woody stemmed species, herbicide can be applied locally to the cut surface immediately after cutting. Generally speaking, broadcast chemical foliar application is not an appropriate control method along improved-surface trails and greenways.

Due to the linear nature of rail trails and their history of previous disturbance, it is usually not feasible to attempt to control invasive plants beyond the mowed area, with the following exceptions:

- Small, emerging populations of invasive plants within an otherwise native landscape matrix can be prioritized for control efforts.
- Species or individuals that may result in user safety issues should be addressed. For example, Oriental Bittersweet can impact canopy trees adjacent to rail trails and can create "hazard tree" conditions in certain cases.
- Species or individuals that are resulting in damage to the improved surface pathway infrastructure should be removed. For example, the roots of Black Locust and Japanese Knotweed can both cause significant damage to the paved trail surface.

If DCR finds it necessary to use chemical treatment, this work will be done in compliance with MDAR regulations at 333 CMR 11.00, which will limit impacts to sensitive areas such as groundwater and drinking water wells.

4

Avoidance and Minimization Measures

The Project has undergone an extensive and collaborative design process that included continuous evaluation of the Project to avoid and minimize impacts to wetland resource areas to the extent practicable.

Table 5 below summarizes the reduction in impacts followed by subsections discussing each measure that resulted in these reductions.

Table 5 Summary of Design Changes to Minimize and Avoid Impacts

Wetland Resource Area	Impact Amount Prior to Reduction in Footprint	Impact Amount Based on Current Design Plans	Summary of Change
Bordering Vegetated Wetlands ("BVW")	1,252 square feet – permanent fill within limits of grading 1,975 square feet – tree clearing (outside of permanent fill limits) ***3,227 square feet total***	No permanent BVW fill 1,936 square feet (1,342 square feet of vegetation clearing) – temporary impacts due to placement of crane mats near Fort Meadow Brook No additional vegetation clearing outside of the limits of grading ***1,936 square feet total temporary impacts***	**Reduction to BVW impacts.** Redesign rip rap slopes at Fort Meadow Brook crossing to retaining walls. Reduction in Project footprint to include tree clearing only within limits of disturbance. Reduction of width of construction platform.
Bordering Land Subject to Flooding ("BLSF")	27,539 square feet – land disturbance from limits of proposed grading 5,021 square feet – tree clearing in BLSF (outside of limits of grading) ***32,560 square feet total***	16,400 square feet (15,539 square feet of vegetation clearing) – land disturbance from limits of grading No additional vegetation clearing outside of the limits of grading 31.40 cubic yards of fill 466.90 cubic yards of cut ***16,400 square feet total*** ***-435.50 cubic yards net cut/gain (no fill)***	**Decrease to BLSF impacts.** Reduction in Project footprint to include tree clearing only within limits of disturbance. Reduction of width of construction platform. The Project is currently designed to have a net increase in flood storage (435.50 cubic yards net cut) along its length.

Wetland Resource Area	Impact Amount Prior to Reduction in Footprint	Impact Amount Based on Current Design Plans	Summary of Change
Riverfront Area ("RFA")	64,232 square feet – land disturbance from limits of proposed grading 11,050 square feet – tree clearing in RFA (outside of limits of grading) ***69,253 square feet total***	64,790 square feet (43,723 square feet of vegetation clearing) – land disturbance from limits of grading No additional vegetation clearing outside of the limit of grading ***64,790 square feet total***	**Decrease to RFA impacts.** Reduction in Project footprint to include tree clearing only within limits of disturbance. Reduction of width of construction platform.

Source: VHB
1. If the MCRT Connection to the ARRT across Town property is included (1,595 square feet of permanent RFA impact), the total RFA impact is 66,385 square feet, which is still a reduction in impacts.

4.1 Reduction of Construction Platform Width

During the alternatives analysis and design process, it was determined that the construction platform, except for manhole locations and other limited select locations, could be reduced in width from 30 feet to 22 feet. Several areas were also identified where the construction platform could be reduced to 18 feet. This reduction minimized grading, impacts to wetland resource areas and historic resources. Specifically, reductions occurred in the following areas:

- On sheets 25 through 27 (Station 112+87 to 126+85, excluding the manhole construction platform), there is a steep slope to the south that is draining towards the MCRT. An 18-foot-wide platform is proposed here to construct a swale without cutting into the slope. This is a reduction from the standard 22-foot-wide platform, which would necessitate a retaining wall on the northern side of the MCRT for several hundred feet. It also reduces the amount of clearing within this area from 22-feet to 18-feet. There is RFA, an isolated wetland, and a 100-foot wetland buffer within this section.
- On plan sheet 28 (Station 132+08 to 133+29), the transmission line is transitioning from the southern side of the construction platform to the northern side. In this segment, the transmission line will be in the center of the construction platform to limit the width of the proposed Chestnut Street underpass and to avoid cutting into the steep slope located on the southern side of the Project Site to the east of Chestnut Street. There is ILSF and buffer zone in this area.
- On plan sheet 30 (Station 146+66 to 147+85 and 150+15 to 152+77), the elevation of the MCRT is dictated by the design of Bridge #130 over Fort Meadow Brook. On either side of the bridge, the MCRT must be higher than it would otherwise be in an embankment section. An 18-foot platform is used in this location to minimize the impacts to BVW and RFA and avoid having a net fill in BLSF.
- On plan sheet 35 (Station 205+51 to 206+52), an 18-foot construction platform is used to avoid impacts to the existing culvert, Bank, and BVW on both sides of the ROW at station 206. The reduction in platform width also reduced impacts to the buffer zone.

4.2 Use of Retaining Walls

Rather than riprap or turf reinforcement, retaining walls were proposed where feasible to minimize Project related impacts within jurisdictional wetland resource areas. They reduce impacts because retaining walls allow for a vertical drop in the proposed grade down to the existing elevation, which reduces the Project footprint by eliminating the need to grade the slope back to the existing ground. Within Hudson, the Project proposes the use of retaining walls from Station 119+00 to 124+95, at the Hudson and Stow municipal border, which is within RFA.

4.3 Use of Steel Sheeting at Fort Meadow Brook

The original design included installing rip rap within Fort Meadow Brook. However, to avoid impacts to LUWW, the bridge replacement was redesigned to use steel sheeting instead of rip rap. The steel sheeting allows the permanent limit of disturbance to be a constant three feet from the edge of the construction platform, which minimizes grading and eliminated impacts to LUWW. In contrast, when using rip rap, the distance between the limit of disturbance and the edge of the construction platform varies based on the existing topography and is at least several feet further away than when using sheeting, thus causing greater impacts to wetland resource areas.

4.4 Location of Manholes

As discussed within Section 3.1.1.1, manholes require a larger construction footprint of approximately 40 feet by 50 feet. To minimize impacts to wetland resource areas and buffer zones, manholes were placed outside of jurisdictional wetland resource areas to the maximum extent practicable by spacing them a maximum of 2,100 feet apart where the curvature of the MBTA ROW allowed, which is greater than typical manhole spacing. This design consideration eliminated all manholes within BVW; however, one will be installed within RFA from Station 120+75 to 121+25 and one within the 100-foot buffer zone from Station 157+75 to 158+25.

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5

Proposed Wetland Impacts, Mitigation Overview and Regulatory Compliance Summary

Construction of the Project will result in unavoidable temporary and permanent impacts to jurisdictional wetland resource areas, including BVW, BLSF, ILSF, and RFA.

In summary, the Project complies with all applicable performance standards for BVW, BLSF, and ILSF, and complies with RFA performance standards to the maximum extent practicable. However, due to the length and linear nature of the Project, the Project exceeds the 10 percent threshold in the RFA vegetation clearing performance standards and disturbs vegetation within the inner 100-foot RFA. The Applicants are thus seeking relief from these RFA related performance standards and respectfully request that the Commission use the discretionary authority allowed under the limited project provisions to approve the Project as proposed. The Project was designed to meet the Massachusetts Stormwater Management Standards to the maximum extent practicable and fully complies with the Massachusetts Endangered Species Act (for work within Estimated Habitat). Table 1 in Section 1 provides a summary of wetland resource areas impacts within Hudson.

5.1 Limited Project Status

The Project is the result of a collaborative effort between Eversource, DCR, and MBTA to provide a project that incorporates dual uses, each serving public needs, within the footprint of a previously disturbed and currently under-utilized transportation corridor and within existing public roadways. Each of the components of the Project qualifies as a limited project under the MWPA regulations as detailed below.

5.1.1 Underground Transmission Line [310 CMR 10.53(3)(d)]

The underground transmission line portion of the Project qualifies as a limited project per 310 CMR 10.53(d) for the "construction, reconstruction, operation, and maintenance of underground or overhead public utilities." Limited Project status for this component of the Project was confirmed by MassDEP's Central Regional Office ("CERO") in their comments submitted on the ENF.

A limited project may be permitted by the issuing authority in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority:

1. *The issuing authority may require a reasonable alternative route with fewer adverse effects for a local distribution or connecting line* **not reviewed by the Energy Facilities Siting Council** *(emphasis added).*

   The underground transmission line component of the Project was reviewed by EFSB and as such, this general condition does not apply. Consistent with 310 CMR 10.53(3)(d)(1), reasonable route alternatives were considered and were described in submissions provided to the EFSB. The Certificate of Environmental Impact and Public Interest for the underground transmission line portion of the Project was issued by the EFSB on December 18, 2019.

2. *Best available measures shall be used to minimize adverse effects during construction.*

   Consistent with 310 CMR 10.53(3)(d)(2), BMPs will be implemented to minimize adverse effects to wetland resource areas. A discussion of BMPs that will be utilized are described in Section 3.1.1.2 of this NOI (see also Attachment I). In addition, as outlined in Section 4 of this filing, impacts to wetland resource areas from the Project were avoided and minimized to the extent practicable during the design phase.

3. *The surface vegetation and contours of the area shall be substantially restored.*

   Consistent with 310 CMR 10.53(3)(d)(3), surface vegetation and contours will be substantially restored within the construction platform. All disturbed areas within the construction platform that are outside of the 14-foot gravel base will be revegetated with a seed mix containing native plant species with a focus on developing an herbaceous and low-growing woody vegetation community over the duct bank (a five-foot corridor), and herbaceous and taller woody vegetation will be allowed to naturally revegetate in the remaining areas. In addition, woody shrubs and herbaceous vegetation will be planted within the Priority and Estimated Habitat area and within the crane mat locations at Fort Meadow Brook.

   The Project was sited within the MBTA corridor to maximize use of the existing raised rail bed and to minimize grading associated with the Project. The proposed Project topography generally follows the existing topography along those portions of the Project located along the MBTA ROW. Where the Project is proposed within public roadways, the existing road surface will be restored to its original elevation. Please refer to the profile for the Project on sheets 74 to 94 of Attachment B for a detailed comparison of the existing versus proposed elevations.

4. *All sewer lines shall be constructed to minimize inflow and leakage.*

   The Project does not involve construction of a sewer line.

5.1.2 Mass Central Rail Trail [310 CMR 10.53(6)]

The MCRT component of the Project qualifies as a "limited project" as per 310 CMR 10.53(6), which states that the issuing authority may issue an Order of Conditions permitting as a limited project the "construction, rehabilitation, and maintenance of footpaths, bike paths, and other pedestrian or non-motorized vehicle access to or along riverfront areas but outside other resource areas, provided that adverse impacts from the work are minimized and that the design specifications are commensurate with the projected use and are compatible with the character of the riverfront area. Generally, the width of access shall not exceed ten feet of pavement, except within an area that is already altered (e.g., railroad beds within rights of way). Access shall not be located in vernal pools or fenced in a manner which would impede the movement of wildlife."

DCR proposes to construct a 10-foot-wide paved surface within the 14-foot gravel base that will be developed by Eversource. The proposed grading for the Project has considered the requirements and typical approach DCR employs for the design and construction of multi-use trails in the Commonwealth. Considerations included avoidance and minimization of impacts to wetland resource areas with an emphasis on avoiding impacts to vernal pools.

5.1.3 Massachusetts Stream Crossing Standards [310 CMR 10.53(8)]

Within Hudson, the proposed Project will cross four intermittent/perennial waterbodies:

- **MCRT and Underground Transmission Line along the MBTA ROW**
  - Culvert 132A: Unnamed perennial tributary to the Assabet River (Station 107+93 in the plans in Attachment B). No culvert work proposed.
  - Bridge 130: Fort Meadow Brook (Station 148+50 to 149+00 in the plans in Attachment B). The Project proposes to replace this bridge.
  - Culvert 129C: Unnamed Intermittent Stream (Station 206+10 in the plans in Attachment B). The Project proposes to clear debris and cut a tree that is causing damage to the pipe.
- **Underground Transmission Line within Public Roadways**
  - Unnamed perennial stream (Station 58+25 in the plans in Attachment D). No culvert work proposed.

The MCRT Connection to the ARRT does not cross any waterbodies.

Applicability to and Compliance with Stream Crossing Standards

The Stream Crossing Standards apply to new structures and replacement structures. As described above, Bridge 130 at Fort Meadow Brook is the only stream crossing that is proposed to be replaced in Hudson (there are no new stream crossings proposed). As per 310 CMR 10.53(8), the replacement of an existing non-tidal crossing must comply with the Massachusetts Stream Crossing Standards ("the Standards") to the maximum extent

practicable. The proposed replacement bridge at Fort Meadow Brook was designed to fully comply with the standards as outlined in the following sections.

1. *Open-bottom span preferred (a bridge is optimal)*

   The Project proposes to replace the existing bridge with a new single-span bridge. There will be no disruption to the streambed.

2. *If a culvert, then it should be embedded…*

   The Project is not proposing a culvert in this location.

3. *Spans channel width (a minimum of 1.2 times the bankfull width)*

   Based on the *Scientific Investigations Report 2013–5155: Equations for Estimating Bankfull Channel Geometry and Discharge for Streams in Massachusetts* ("BFW Equation"), the 2006 Bent Equations, and field measurements taken on February 2, 2018, the bankfull width ("BFW") for Fort Meadow Brook at the bridge crossing was estimated to be approximately 31.1, 30.0, and 54.5 feet, based on each of these methods, respectively. Flows to Fort Meadow Brook at the bridge are affected by the one percent Annual Chance Backwater from the Assabet River as shown in the FEMA Flood Insurance Study Profile; therefore, the backwater of the Assabet River will affect the bankfull width through this crossing and estimating the bankfull width using the BFW Equation may not be appropriate for this site. The existing bridge spans the estimated bankfull width. The proposed bridge span of 70.5 feet exceeds the required span of 1.2 times the bankfull width (see Table 6).

Table 6 Bankfull Width at Fort Meadow Brook (Bridge 130)

Bankfull Method	Width (feet)
SIR2013 5155	31.1
Bent, 2006	30.0
Field Observation	54.5
Use largest to be conservative	
BFW (feet):	54.5
Required Span = 1.2*BFW	65.4
Proposed Span	70.5

Source: VHB

4. *Natural bottom substrate within the structure*

   The proposed bridge replacement will not disturb the existing natural bottom substrate.

5. *Match water depth and velocity in natural stream over a range of flows*

   The standards state that open-bottom spans are preferred. The Project does not propose a closed structure that would affect water depth and velocity.

6. *Openness > 0.82 feet (0.25 meters). Optimal Standard requires openness ratio of 2.46 feet (0.75 meters).*

   The ratio is calculated as the crossing's cross-sectional area divided by the length of the crossing. The proposed crossing complies with the standards with an openness ratio of 23.9.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

   The proposed abutments will be located landward of the existing abutments and will not result in changes to the horizontal profile of the existing stream and banks.

5.1.4 Bordering Vegetated Wetlands (310 CMR 10.55)

Summary of Impacts

The Project was designed to fully comply with all applicable performance standards for BVW and will avoid permanent impacts to BVW.

The Project will result in temporary disturbance to BVW at four locations within the MBTA ROW as outlined in Table 7. All four impact areas are near Fort Meadow Bridge, where a total of approximately 1,936 square feet of temporary impacts to BVW (Wetlands 6 and 7) will be required to facilitate the placement of crane mats, which are needed for reconstruction of the bridge. Wetlands 6 and 7 are best characterized as an emergent marsh system adjacent to Fort Meadow Brook.

Table 7 Permanent and Temporary Impacts to BVW (square feet)

Station	Wetland ID	Permanent Impacts	Temporary Impacts
147+85 to 148+40 (North)	7	0	180
147+85 to 148+40 (South)	6	0	441
149+25 to 150+15 (North)	7	0	483
149+10 to 150+15 (South)	6	0	832
Total		**0**	**1,936**

Source: VHB

Proposed Mitigation Measures

The following mitigation measures will be implemented at the Fort Meadow Brook crossing where temporary BVW impacts are proposed.

- Erosion and sediment controls will be installed prior to grading the approaches to the bridge.
- Debris containment measures and additional erosion and sediment controls will be installed at the bridge itself for the removal of the existing structure.

- Crane mats will be in place for the minimum duration necessary and will be removed immediately upon completion of activities where the use of a crane is required.
- Following removal of mats, the area where mats were placed will be restored by raking and re-grading the soil (if necessary due to soil compaction).
- The area will be stabilized with jute mesh erosion control blankets and planted with native woody plant species (see crane mat restoration detail on plan set in Attachment B, Sheet 129). The trees and shrubs will be planted after Phase 2 construction is completed to avoid disturbing and/or damaging the plants. If necessary, the area will be reseeded with an appropriate wetland seed mix that will allow for the regrowth of indigenous, non-invasive herbaceous species to supplement natural recruitment.

Regulatory Compliance Summary

The following paragraphs present a summary of how the Project will fully comply with the General Performance Standards for activities proposed within BVW, as per 310 CMR 10.55(4) (a) through (e):

(a) Where the presumption set forth in 310 CMR 10.55(4)(a), is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.

The Project was designed such that there is no permanent fill/wetland loss proposed. As described above, areas of temporary disturbance will be restored in situ and no BVW will be destroyed or impaired.

(b) Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an OOC permitting work which results in the loss of up to 5,000 square feet of BVW when said area is replaced…

The Project was designed such that there is no permanent fill/wetland loss proposed.

(c) *Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of a portion of Bordering Vegetated Wetland when…*

The Project was designed such that there is no permanent fill/wetland loss proposed.

(d) No project may be permitted which will have any adverse effect on specified habitats of rare vertebrate or invertebrate species, as identified by the procedures under 310 CMR 10.59.

The Project will not result in the loss of BVW and as determined by NHESP (the regulatory authority for administering the Massachusetts Endangered Species Act), will not have an adverse effect on specified habitats of rare vertebrate or invertebrate species. The Project was reviewed by NHESP and a conditional no-take determination

was issued (see Attachment H). See Section 5.1.7 for further discussion regarding rare species and consultation with NHESP.

(e) Any proposed work shall not destroy or otherwise impact any portion of a BVW that is within an ACEC…

The Project is not located within an ACEC.

5.1.5 Land Subject to Flooding (310 CMR 10.57)

5.1.5.1 Bordering Land Subject to Flooding

Summary of Impacts

The Project was designed to fully comply with all applicable performance standards for BLSF and will result in a net gain of flood storage.

As outlined in Tables 8 and 9, the Project will result in permanent and temporary impacts to BLSF at two locations within the MBTA ROW. Permanent impacts in both locations are due to grading for the MCRT and underground transmission line. The first area (between Station 128+50 and 132+00) is just west of Chestnut Street and is associated with a perennial stream located north of the ROW. The second area (between Station 142+50 and 164+00) is east of Chestnut Street and is associated with Fort Meadow Brook. Temporary impacts in the second location are from placement of crane mats to accommodate reconstruction of the bridge; these mats will not cause an increase in flooding. Table 8 identifies the square footage of impact in each area; Table 9 summarizes the changes to flood storage volume.

There is no BLSF along the MCRT Connection nor along the component of the Project within public roadways.

Table 8 Permanent and Temporary Impacts to BLSF (square feet)

Impact Area	Station	Permanent Impacts	Temporary Impacts
Station 131+10 – 132+00	131+10 to 132+00	47	0
Station 142+30 – 154+90	142+30 to 148+50	8,451	385
	149+10 to 153+00	7,226	280
	154+40	8	0
	154+90	3	0
	Total	**15,735**	**665**

Source: VHB

Table 9 Summary of Changes to Flood Storage Volume in BLSF

Impact Area	Elevation	Fill (Cubic Yards)	Cut (Cubic Yards)	Net Gain (Cut) (Cubic Yards)
Station 131+10 – 132+00	192′-192.3′	0.00	-1.52	-1.52
	191′-192′	0.00	-0.07	-0.07
Station 142+30 – 154+90	181′-182′	22.72	-320.02	-297.30
	180′-181′	8.43	-143.09	-134.66
	179′-180′	0.26	-2.20	-1.94
	Total	**31.40**	**-466.90**	**-435.50 (Net Gain)**

Source: VHB

Proposed Mitigation Measures

As required by the performance standards for BLSF, the Project was designed to provide compensatory storage for any flood storage volume that will be lost as a result of the Project. In addition, a detailed wildlife habitat evaluation has been completed for those areas within the limits of work for the Project that are in BLSF (see Attachment J for the Wildlife Habitat Evaluation). The following section provides more details related to compensatory flood storage and wildlife habitat features within BLSF.

Regulatory Compliance Summary

The following paragraphs present a summary overview of how the Project will fully comply with the General Performance Standards for activities proposed within BLSF, as per 310 CMR 10.57(4)(a)1 through 3 and 10.57(4)(c):

10.57(4)(a)1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

As shown in Table 9, the Project will result in 1.59 cubic yards of cut (net gain) of flood storage associated with an unnamed perennial tributary to the Assabet River from Station 131+10 to 132+00. The Project also results in 31.40 cubic yards of fill and 465.31 cubic yards of cut, which results in a net increase of 433.90 cubic yards of flood storage associated with Fort Meadow Brook from Station 142+30 to 154+90. Flood storage is provided at each incremental elevation within the floodplain where fill is proposed. As such, compensatory flood storage is not required or proposed.

10.57(4)(a)2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

The Project will not restrict flows and will not result in an increase in flood stage or velocity. No culverts will be replaced and the low chord at the Fort Meadow Brook bridge (Bridge 130) will maintain the same elevation.

10.57(4)(a)3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10 percent or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Table 9 provides a summary of the permanent and temporary impacts to BLSF. After the Project is constructed, all areas outside of the paved surface of the MCRT will be loamed and seeded along the side slopes and the immediate vicinity of Bridge 130 will be replanted with woody vegetation (see the crane mat restoration detail on sheet 129 of Attachment B).

Detailed "Appendix B" Wildlife Habitat Evaluations were completed to identify existing wildlife habitat features within all wetland resource areas, including BLSF. The evaluations determined that features such as woody vegetation, food plants, and large woody debris are abundant in the area surrounding the Project in BLSF, outside of the proposed disturbance. In addition, the Applicants propose to create brush piles and plant native trees, shrubs, and herbaceous cover to mitigate for the features that will be lost. The Project also involves removing the tracks and ties from the MBTA ROW, which removes a movement barrier for turtles and amphibians and improves existing conditions. For these reasons, the Project will not impair the capacity for these areas to provide important wildlife habitat functions. Please see Attachment J for the Wildlife Habitat Evaluation.

10.57(4)(c) *Notwithstanding the provisions of 310 CMR 10.57(4)(a) or (b), no project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.*

As determined by NHESP, the Project will not have an adverse effect on specified habitats of rare vertebrate or invertebrate species. The Project was reviewed by NHESP and a conditional no-take determination was issued (see Attachment H). See Section 5.1.7 for further discussion regarding rare species and consultation with NHESP.

5.1.5.2 Isolated Land Subject to Flooding

Summary of Impacts

The Project was designed to fully comply with the applicable performance standards for ILSF.

There is one ILSF that is partially located within the MBTA ROW in Hudson. There are no areas that qualify as ILSF associated with the installation of the underground transmission line within public roadways or with the MCRT connection to the ARRT. The Project will result in 760 square feet of permanent impacts to ILSF due to grading (cut) and vegetation removal (see Table 10 below). This ILSF is associated with a forested isolated wetland (Wetland 5); however, the ILSF impacts are upslope on the raised railroad embankment and will not impact the wetland itself.

Table 10 Permanent and Temporary Impacts to ILSF

Station	Permanent Impacts (Square Feet)	Temporary Impacts (Square Feet)
129+95 to 130+00	6	0
130+20 to 131+85	632	0
131+85 to 132+20	122	0
Total	**760**	**0**

Source: VHB
1. The ILSF impact area will be replanted with native woody shrubs after construction is complete.

Proposed Mitigation Measures

The Project will result in 760 square feet of permanent impacts to ILSF. However, impacts to the ILSF are a cut, not a fill, and will result in an increase of 99.07 cubic yards of flood storage. Therefore, mitigation for a loss in flood storage volume is not required and the only mitigation proposed is replanting. Once construction is complete, all disturbed areas will be loamed and seeded with a native seed mix and a portion of the ILSF will be planted with native shrubs as part of Phase 2 construction.

Regulatory Compliance Summary

The following paragraphs present a summary of how the Project will fully comply with the General Performance Standards for activities proposed within ILSF, as per 310 CMR 10.57(4)(b)(1) through (4) and 10.57(4)(c):

10.57(4)(b)1. *Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area;*

As shown in Table 11, the Project will require grading (cut) within the ILSF from station 130+50 to station 132+25; there is no proposed fill within the ILSF. This grading will result in a net increase of 99.07 cubic yards in flood storage and will not result in a lateral displacement of water.

Table 11 Summary of Changes to Flood Storage Volume in ILSF

	Elevation	Fill (Cubic Yards)	Cut (Cubic Yards)	Net Gain (Cut) (Cubic Yards)
Station 130+50 to 132+00	192'-193'	0.00	-24.31	-24.31
	193-194'	0.00	-59.66	-59.66
	194-194.2'	0.00	-15.10	-15.10
	Total	0.00	**-99.07**	**-99.07 (Net Gain)**

Source: VHB

10.57(4)(b)2. *An adverse effect on public and private water supply or ground water supply, where said area is underlain by pervious material;*

The portion of the Project that is within ILSF is also within a Zone II WPA. No net fill is proposed in ILSF and there will be no impact to the ILSF's ability to provide a point of exchange between ground and surface waters. A VHB professional hydrogeologist, who is a Certified Ground Water Professional ("CWGP"), completed a detailed groundwater hydrology assessment for the potential of the Project to affect the flow and quantity of water to public water supply wells.

The analysis determined that most of the Project would be above the elevation of the groundwater surface, where it would not have any effect on groundwater flow rates or directions. Manholes that will be installed near Fort Brook (between approximately Stations 190 and 134) would extend no more than 10-feet into the groundwater table. Relative to the roughly 100-foot depth of the aquifer, the manhole placement would be small and superficial to the flow of groundwater, and groundwater would be able to continue flowing as it does presently. Due to the high permeability and transmissivity of the sand and gravel materials in the aquifer, groundwater would be able to flow readily around and under the structures. The Project will not have any appreciable effect on groundwater flow rates or directions and will not impact the yield of the Hudson municipal wells.

A Construction Spill Prevention Control and Countermeasures Plan ("CSPCCP") will be developed to address Project construction equipment, fuels, lubricants, and any other liquid or hazardous materials that may be on site during construction. In addition, BMPs (e.g. spill kits) will be established to address steps to prevent spills and identify what to do if a spill does occur. Spill kits will be kept on site and will be accessible at all times in case of an emergency spill. The spill kits consist of emergency cleanup and spill containment materials that can be used in the event of a fuel or other chemical spill, and generally contain multiple absorbent socks and/or pillows and wipes, and temporary disposal bags.

For a draft CSPCCP, please see Attachment K.

10.57(4)(b)3. *An adverse effect on the capacity of said area to prevent pollution of the ground water, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck; and*

The portion of the ILSF that will be graded is beyond the limits of the isolated wetland (Wetland 5) and does not have a mat of organic peat and/or muck.

10.57(4)(b)4. *An impairment of its capacity to provide wildlife habitat where said area is vernal pool habitat, as determined by procedures contained in 310 CMR 10.60.*

VHB biologists visited this area in 2015, 2016, and 2017 and found that the ILSF does not meet the criteria to be characterized as a vernal pool as determined by the procedures within 310 CMR 10.60.

10.57(4)(c) *Notwithstanding the provisions of 310 CMR 10.57(4)(a) or (b), no project may be permitted which will have any adverse effect on specified wildlife habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.*

As determined by NHESP, the Project will not have an adverse effect on specified habitats of rare vertebrate or invertebrate species. The Project was reviewed by NHESP and a conditional no-take determination was issued (see Attachment H). See Section 5.1.7 for further discussion regarding rare species and consultation with NHESP.

5.1.6 Riverfront Area (310 CMR 10.58)

Summary of Impacts

The Project was designed to comply with the applicable performance standards for RFA to the maximum extent practicable. However, due to the length and linear nature of the Project, the Project exceeds the 10 percent threshold in the RFA vegetation clearing performance standards and disturbs vegetation within the inner 100-foot RFA. The Applicants are thus seeking relief from these RFA-related performance standards and respectfully request that the Commission use the discretionary authority allowed under the limited project provisions to approve the Project as proposed.

There are five locations of Riverfront Area impacts along the Project:

- **MCRT and Underground Transmission Line along the MBTA ROW**
  - Station 105+90 to 124+90: Associated with unnamed perennial stream east of Wilkins Street
  - Station 146+45 to 151+10: Associated with Fort Meadow Brook
- **MCRT Connection to the ARRT**
  - Station 10+20 to 10+80: Associated with an unnamed perennial tributary to the Assabet River, north of the existing ARRT.
- **Underground Transmission Line within Public Roadways**
  - Station 18+40 to 26+70: Associated with an unnamed perennial stream south of Forest Avenue, near the intersection with Marlboro Street.

- Station 50+00 to 60+40: Associated with an unnamed perennial stream currently conveyed through a culvert beneath Forest Avenue, just west of Glendale Road.

These five locations comprise 326,503 square feet of existing RFA within the Project Site in Hudson. As outlined in Table 12, the Project will result in permanent impacts to RFA from grading and vegetation removal in three locations (two within the MBTA ROW, and one at the MCRT Connection to the ARRT). The Project will also result in temporary impacts to RFA within the MBTA ROW, due to the placement of crane mats (and associated vegetation removal) to accommodate reconstruction of the bridge at Fort Meadow Brook.

As previously noted, the installation of underground utilities within existing paved roadways within Riverfront Area is exempt pursuant to 310 CMR 10.02(2)(b)1; accordingly, impacts are not included below for the portion of the transmission line within existing public roadways (plans in Attachment D).

In total, the Project will permanently and temporarily disturb 19.1 percent and 0.8 percent of the RFA, respectively.

Table 12 Permanent and Temporary Impacts to RFA (square feet)

		Inner 100' RFA		Outer 200' RFA	
Impact Area	**Station**	**Permanent Impacts**	**Temporary Impacts**	**Permanent Impacts**	**Temporary Impacts**
MCRT and Underground Transmission Line along the MBTA ROW					
105+90 to 124+90	105+90 to 109+90	0	0	2,394	0
	106+90 to 109+90	7,270	0	0	0
	109+90 to 124+90	275	0	42,190	0
146+45 to 151+10	146+45 to 147+50	0	0	1,976	0
	147+50 to 148+45	2,216	1,007	0	0
	149+10 to 151+10	2,390	1,408	1,958	111
MCRT Connection to the ARRT					
10+20 to 10+80	10+20 to 10+80	0	0	1,595	0
	Total	**12,151[1]**	**2,415[2]**	**50,113[3]**	**111[4]**

Source: VHB

1. This includes 11,959 square feet of permanent vegetation removal within the footprint of the MCRT in the Inner 100-foot RFA.
2. This includes 1,785 square feet of temporary vegetation removal to accommodate crane mats at Fort Meadow Brook within the Inner 100-foot RFA. Woody and herbaceous plantings are proposed to replace those that are removed for this work.
3. This includes 29,868 square feet of permanent vegetation removal within the footprint of the MCRT in the Outer 200-foot RFA.
4. This includes 111 square feet of vegetation removal to accommodate crane mats at Fort Meadow Brook within the Outer 200-foot RFA. Woody and herbaceous plantings are proposed to replace those that are removed for this work.

Proposed Mitigation Measures

The Project was designed to avoid and minimize impacts to RFA to the extent practicable by:

› Reducing the construction platform width to 18 feet in both locations along the MBTA ROW;

- Using a retaining wall from Station 119+00 to 124+95 (at the Hudson and Stow municipal border);
- Using steel sheeting at Fort Meadow Brook to minimize the limit of disturbance; and
- Placing all but one manhole (at Station 120+75 to 121+25) outside of RFA.

In addition, the following mitigation measures will be implemented in RFA:

- Erosion and sediment controls will be installed to protect the associated waterbodies.
- Crane mats at Fort Meadow Brook will be in place for the minimum duration necessary and will be removed immediately upon completion of activities where the use of a crane is required.
- Following removal of the crane mats, the area where mats were placed will be restored by raking and re-grading the soil (if necessary due to soil compaction).
- The crane mat area will be stabilized with jute mesh erosion control blankets and planted with native woody plant species (see crane mat restoration detail on plan set in Attachment B, Sheet 129). The trees and shrubs will be planted after Phase 2 construction is completed to avoid disturbing and/or damaging the plants. If necessary, the area will be reseeded with an appropriate seed mix that will allow for the regrowth of indigenous, non-invasive herbaceous species to supplement natural recruitment.
- After Phase 1 is constructed, permanent impact areas outside of the 14-foot gravel base will be loamed and seeded with the seed mix shown on the NOI Plans.
- After Phase 2 is completed, DCR will loam and seed the two-foot shoulders on either side of the MCRT so that all permanently disturbed areas except for the 10-foot wide MCRT are replanted.
- Once the Project is complete, all areas outside of the 19-foot-wide final maintained width will be allowed to naturally revegetate with woody vegetation.

Regulatory Compliance Summary

The following paragraphs present a summary of how the Project will comply, to the extent practicable, with the General Performance Standards for activities proposed within RFA, as per 310 CMR 10.58(4)(a) through (d):

(a) The work shall meet the performance standards for all other resource areas within Riverfront Area. When work in the RFA is also within the buffer zone to another resource area, the performance standards for the RFA shall contribute to the protection of the interests of M.G.L. c. 131 § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within the RFA;

As presented in detail in Sections 5.1.4 and 5.1.5, the Project was designed to fully comply with the performance standards of other wetland resource areas within RFA along the Project.

(b) No project may be permitted within the RFA which will have any adverse effect on specified habitat sites of rare wetland or upland vertebrate or invertebrate species … or certified vernal pool habitat;

There are no records of rare vertebrate or invertebrate species, or vernal pool habitat within the RFA along the Project in Hudson.

(c) There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effect on the interests in M.G.L. c. 131 § 40;

There are no practicable and substantially equivalent economic alternatives to the Project with less adverse effect on the interests in the MWPA. The underground transmission line went through an extensive alternatives analysis during the EFSB process, resulting in the issuance of a Certificate of Environmental Impact and Public Interest for the underground transmission line portion of the Project on the MBTA ROW on December 18, 2019.

In summary, Eversource considered many geographically distinct routes, including the use of both overhead and underground designs. Eversource also considered non-transmission alternatives ("NTAs"); however, the analysis determined that although the NTAs could hypothetically meet the need, they would be unprecedented in scope, would be costly, and would be difficult to implement. Additionally, no NTA can provide the additional transmission supply source and increased level of reliability to HLPD customers that the Project is able to provide. With regard to the transmission line component of the Project, Eversource proposed a project option that avoided and minimized impacts to the environment and which could be completed at a reasonable cost.

In addition, the inactive MBTA ROW that is within the Project Site is the most practicable alignment for the MCRT. Use of the rail bed keeps bicycle riders off public roadways which reduces conflicts with motorists. The alignment will connect with other rail trails, such as the existing ARRT, the Bruce Freeman Rail Trail, and other segments of the MCRT in Sudbury, Wayland, Weston, and east to Waltham and west to Berlin that would not be possible with a different alignment. Any other alignment would also be significantly costlier to design, build, and acquire ROW. Cost savings are recognized in removal and disposal of rail and ties, clearing and grubbing, rough grading to achieve a construction access and the rail trail path and shoulders, setting of temporary erosion and sediment controls, excavation and removal of contaminated soils, and gravel borrow backfill. In addition, the MBTA ROW is already owned by the Commonwealth of Massachusetts.

(d) The work, including proposed mitigation measures, must have no significant adverse impacts on the RFA.

1. Within 200-foot RFAs, alteration of up to 10 percent or 5,000 square feet (whichever is greater) on lots recorded before October 6, 1997, or up to 10 percent of the RFA on lots recorded after October 6, 1997, provided:

a. *At a minimum, maintain a 100-foot area of undisturbed area of vegetation. This area shall extend from the mean annual high-water along the river unless another location would better protect the interests identified in M.G.L. c. 131 § 40. If there is not a 100-foot wide area of undisturbed vegetation within the RFA, existing vegetative cover shall be preserved to the maximum extent feasible to approximate a 100-foot wide corridor of natural vegetation. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural condition; and*

   In total, the Project will permanently and temporarily disturb 19.1 percent and 0.8 percent of the RFA, respectively. It will also require permanent disturbance within the 100-foot RFA. As is common with long, linear projects, although efforts were made to avoid and minimize impacts within RFA it was not possible to fully meet this performance standard. However, the Applicants will stabilize and restore all disturbed areas outside of the paved portion of the MCRT by loaming and seeding with a native seed mix, and planting trees and shrubs in the vicinity of Fort Meadow Brook.

   The Applicants respectfully request that the Commission exercise the discretionary authority allowed under the limited project provisions to approve the Project as proposed.

b. *Stormwater is managed in accordance with the standards established by the Department in its Stormwater Policy.*

   The Project was designed to meet the stormwater standards to the greatest extent practicable. Please see Section 5.2 for details regarding compliance with the stormwater standards.

c. *Proposed work does not impair the capacity of the RFA to provide important wildlife habitat functions.*

   Detailed "Appendix B" Wildlife Habitat Evaluations were completed to identify existing wildlife habitat features within all wetland resource areas, including RFA. The evaluations determined that features such as woody vegetation, food plants, and woody debris are abundant in the area surrounding the Project in RFA, outside of the proposed disturbance. In addition, the Applicants propose to create snags and brush piles and plant native trees, shrubs, and herbaceous cover to mitigate for the features that will be lost. The Project also involves removing the tracks and ties from the MBTA ROW, which removes a movement barrier for turtles and amphibians and improves existing conditions. For these reasons, the Project will not impair the capacity for these areas to provide important wildlife habitat functions. Please see Attachment J for the Wildlife Habitat Evaluation.

d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.

The Project incorporates various BMPs, including erosion and sediment controls. Please see Section 3.1.1.2 for a discussion regarding erosion and sediment controls and Attachment I for BMPs that will be employed during construction.

5.1.7 Estimated Habitats of Rare Wildlife (310 CMR 10.59)

There is Estimated Habitat (EH 1440) within a portion of the MBTA ROW that extends from White Pond Road east to just east of Hop Brook (Bridge 128); however, within Hudson, it terminates at the Hudson/Sudbury town line. There is no Estimated Habitat within the MCRT Connection or public roadway components of the Project.

Consultation with the Natural Heritage and Endangered Species Program ("NHESP") for Eversource's underground transmission line began in March 2016. Based upon the latest information provided by NHESP in August 2017 in response to an information request, this area contains records for eastern box turtle (*Terrapene carolina*), eastern whip-poor-will (*Caprimulgus vociferous*), Gerhard's underwing *(Catocala herodias gerhardi*), and coastal swamp Metarranthis (*Metarranthis pilosaria*).

Based on discussions with NHESP, it was determined that Eversource and DCR would file separate MESA checklists for the two Phases of the Project, but under the same file number. Eversource submitted a MESA checklist to the NHESP on September 19, 2018, which included mitigation measures for all four species and time-of-year restrictions ("TOYR"). No construction will occur in areas mapped for eastern whip-poor-will during nesting season (May 1 to July 31). NHESP reviewed the checklist and issued a conditional no-take determination for Eversource's underground transmission line on October 19, 2018 (Attachment H). DCR submitted a MESA checklist on April 17, 2019 that included the same mitigation measures identified in Eversource's filing, and NHESP issued a conditional no-take determination for Phase 2 of the Project on May 17, 2019 (Attachment H).

5.1.8 Wildlife Habitat Evaluations (310 CMR 10.60)

As per 310 CMR 10.60(1) through (3), an applicant is required to consider and measure the potential effects to wildlife habitat characteristics within certain wetland resource areas when the proposed impact exceeds a certain threshold value. Alterations of wildlife habitat characteristics beyond permissible thresholds may be restored on site or replicated offsite in accordance with conditions outlined in 310 CMR 10.60(3)(a) through (h).

Summary of Impacts

Table 13 provides an overview of the wetland resource areas along the Project and identify the threshold requirements and the corresponding Project impacts to these resource areas.

Table 13 Wildlife Habitat Evaluation Thresholds per Wetland Resource Area

Wetland Resource Area	Appendix A Threshold	Appendix B Threshold	Project Impacts (square feet)
Bordering Vegetated Wetland *(no thresholds in regulations)*	Below 5,000 square feet	Above 5,000 square feet	1,936 square feet
Bordering Land Subject to Flooding – 10.57(4(a)3	10 percent or 5,000 Square Feet (whichever is less), except for work that would adversely affect vernal pool habitat	When triggered by Appendix A or for any impacts to certified or documented vernal pool habitat	16,400 square feet *(No impacts to certified or documented vernal pool habitat)*
Isolated Land Subject to Flooding – 10.57(4)(b)4	Not Applicable	When certified or documented vernal pool habitat present	760 square feet *(No impacts to certified or documented vernal pool habitat)*
Undeveloped Riverfront Area – 10.58(4)(d)1(c)	10 percent or 5,000 Square Feet (whichever is greater), outside of Habitat of Potential Regional or Statewide Importance or outside of certified or documented vernal pool habitat	5,000 square feet within Habitat of Potential Regional or Statewide Importance or for any alteration to certified or documented vernal pool habitat	72,815 square feet *(No impacts to certified or documented vernal pool habitat, nor within Habitat of Potential Regional or Statewide Importance)*

Source: MWPA Regulations (310 CMR 10.00); *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* (MassDEP 2006); VHB

As presented in Table 13, the Project exceeds the "Appendix A" thresholds for BLSF and RFA, and although the Regulations do not provide WHE thresholds for BVW, MassDEP's *Wildlife Habitat Protection Guidance for Inland Wetlands* ("the Guidance") states that a WHE should be prepared for impacts to BVW. A detailed "Appendix B" WHE was completed for the Project following the Guidance for each wetland resource area, regardless of whether the impacts exceeded the threshold (see Attachment J for the Wildlife Habitat Evaluation). Site visits to complete the WHE occurred on April 11 and 12, 2019, and 10 individual impact areas were evaluated. The evaluations determined that the Project will have no adverse effects on important wildlife habitat. Adverse effects will be avoided by substantially restoring important wildlife habitat functions during construction, and in many cases the important habitat features identified are abundant outside of the impact area.

Proposed Mitigation Measures

As identified in the Preface to the 1987 Regulatory Revisions to the Massachusetts Wetlands Protection Act regulations at 310 CMR 10.00, the regulations allow alterations of small amounts of wildlife habitat in most resource areas, reflecting MassDEP's conclusion that small, one-time alterations will not harm "important" (from a regional or statewide perspective) wildlife habitat functions, and that temporary disruptions of other wildlife habitat is permissible so long as its important wildlife habitat functions are substantially restored or replicated.

Eversource and DCR propose the following restoration and replication measures for the wildlife habitat features that will be impacted:

- Creating snags and brush piles;
- Loaming and seeding all disturbed areas outside of the 14-foot-wide gravel base with a native seed mix to promote regrowth of herbaceous vegetation; and
- Planting low growing woody vegetation within Priority and Estimated Habitat.

In addition, no construction will occur within 450 feet of a vernal pool during the migratory breeding period (March 1 to May 14).

For additional details regarding the results of the WHE and mitigation, please refer to Attachment J. For details regarding snag and brush pile creation, please refer to Attachment L.

Regulatory Compliance Summary

As described above, the Applicants propose to restore and replicate important wildlife habitat functions within Project impact areas. Pursuant to 310 CMR 10.60(3), restoration and replication should be completed in accordance with the following general conditions:

(a) the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");

Snags, brush piles, and plantings are proposed in an equal amount to that which will be lost. Please refer to Attachment L for details regarding the replacements proposed in each impact area. Typical details for creation of these features are provided in Attachment L.

(b) the elevation of groundwater relative to the surface of the replacement area shall be approximately equal to that of the lost area;

The Project will not result in changes to the elevation of groundwater.

(c) the replacement area shall be located within the same general area as the lost area. In the case of banks and land under water, the replacement area shall be located on the same water body or waterway if the latter has not been rechanneled or otherwise relocated. In the case of bordering land subject to flooding, the replacement area shall be located approximately the same distance from the water body or waterway as the lost area. In the case of vernal pool habitat, the replacement area shall be located in close proximity to the lost area;

Replacement features are proposed in the same general areas as the areas of impact. Typical details for creation of these features are included in the plans in Attachment B and details for snag and brush pile creation are in Attachment L.

(d) interspersion and diversity of vegetation, water and other wildlife habitat characteristics of the replacement area, as well as its location relative to neighboring wildlife habitats, shall

be similar to that of the lost areas, insofar as necessary to maintain the wildlife habitat functions of the lost area;

As described above and in more detail in Attachment J, replacement features and vegetation to be planted will be similar to that of the lost area and will maintain the wildlife habitat functions of the lost area. Typical details for creation of these features are included in the plans in Attachment B and details for snag and brush pile creation are in Attachment L.

(e) the project shall not alter ten or more acres of Land Subject to Flooding or Land under Water found to be significant to the protection of wildlife habitat, or 2,000 feet or more of Bank found to be significant to the protection of wildlife habitat (in the case of a bank of a stream or river, this shall be measured on each side of said stream or river).

The Project will alter less than half an acre of Land Subject to Flooding and will not alter any Land under Water or Bank.

(f) if the replacement area is located in an area subject to M.G.L. c. 131, § 40, there shall be no adverse effect on the existing important wildlife habitat functions of said area as measured by the standards of 310 CMR 10.60;

The proposed replacement features (snags, brush piles, and plantings) do not require substantial disturbance within the proposed area and will not have an adverse effect on the existing important wildlife habitat functions in said areas.

(g) the "thresholds" established in 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., 10.57(4)(a)3. and 10.58(4)(d)1.c. (below which alterations of resource areas are not deemed to impair capacity to provide important wildlife habitat functions) shall not apply to any replacement area; and

(h) the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in 310 CMR 10.51 through 10.60.

The replacement features require minimal disturbance and will be provided in a manner that is consistent with all other General Performance Standards for each resource area.

5.2 Stormwater Management Standards and Guidelines

Per 310 CMR 10.05(6)(m)6, the Stormwater Management Standards shall apply to the maximum extent practicable to footpaths, bike paths, and other paths for pedestrian and/or non-motorized vehicle access. The Project was designed to meet the SMS to the maximum extent practicable and includes an open stormwater system with vegetated water quality swales and check dams to promote infiltration and recharge. The MCRT will require 10 feet of paving and runoff will sheet flow to the vegetated shoulders, providing an additional opportunity for stormwater to infiltrate before it enters the swales. The swales were designed to convey water to appropriate discharge points to maintain existing drainage patterns along the Project and were sized such that they can accommodate a two-year storm to meet

DCR's standards and, according to the stormwater analysis, frequently meeting the 10-year storm requirements of the SMS as well.

The end use of the Project will be the MCRT, therefore it is not anticipated to increase the pollutant loads within the Project Site above the existing conditions. The Project will be used by pedestrians and bicyclists, which will not contribute contaminants to the path surface. Therefore, there will be little to no contaminants on the path surface to be washed off by stormwater runoff. Other than in emergency situations, vehicle access along the path will be limited to bi-weekly mowing over the shoulders by DCR, inspections by Eversource approximately once every three years, and other maintenance as needed by both Eversource and DCR. The MCRT will not be plowed and/or treated in the winter.

In developing the current Project design, the following tasks were completed to stormwater management features for the Project:

- Additional analysis was performed to provide appropriate swales and check dams to handle a two-year storm for compliance with the Massachusetts Stormwater Standards.
  - All designed swales were sized such that the proposed MCRT will not be overtopped during a two-year storm event, per DCR design standards.
  - Swales were designed to include check dams with a spacing that varies based on the longitudinal slope of the swale such that the check dams result in an "effective" maximum slope of two percent in all swales, thus preventing erosive flows.
  - Check dams were designed for swales having a longitudinal gradient below two percent to encourage greater infiltration.
  - Check dam details were revised to have a height of six inches, instead of the typical one-foot height, given that most of the swales are one foot deep, and as such, a six-inch check dam height provides free board for higher flows, ensuring that the flow of stormwater will stay within the swale.
  - The check dam details have a stone size of 3-inches to prevent dislodged stones from migrating downstream during high-flow conditions
- Erosion control barrier locations will be installed in all locations where water can flow off the Project limits at a slope of 2:1 or when water can sheet-flow off the Project limits within 100 feet of a wetland.
- Additional analyses of existing and proposed flows to vernal pools were performed using the TR-55 methodology to confirm that the Project will not impact the annual recharge of any of the vernal pools.
- A comprehensive analysis of peak flow rates was completed for all existing outfalls so that the Project will not increase peak flows to abutting private properties or closed drainage systems at crossing roadways considering the 25-year storm. In addition, widened swales were designed and are currently proposed at the Wilkins Street and Main Street roadway crossings in Hudson, such that the proposed peak discharge matches the existing peak flow for the storm event considered.

The Project was also evaluated and designed to address potential impacts to critical areas to the greatest extent practicable. As defined in the SMS, critical areas include:

- Outstanding Resource Waters as designated in 314 CMR 4.00;
- Special Resource Waters as designated in 314 CMR 4.00;
- Recharge areas for public water supplies as defined in 310 CMR 22.02 (Zone Is, Zone IIs and Interim Wellhead Protection Areas for groundwater sources and Zone As for surface water sources);
- Bathing beaches as defined in 105 CMR 445.000;
- Cold-water fisheries as defined in 310 CMR 10.04 and 314 CMR 9.02; and
- Shellfish growing areas as defined in 310 CMR 10.04 and 314 CMR 9.02.

The Project does not involve work within any Outstanding Resource Waters, Special Resource Waters, bathing beaches, shellfish growing areas, Zone I Wellhead Protection Areas, Interim Wellhead Protection Areas, or Zone As for surface water sources. However, the Project passes through two Zone II WPAs in Hudson. In addition, although the Project does not involve any work within vernal pools (which qualify as ORWs) or vernal pool habitat, there are three vernal pools within the Project Site in Hudson and each has been evaluated for potential stormwater impacts to these resources.

In critical areas, the SMSs require that at least 44 percent of the total suspended solids ("TSS") be removed prior to discharge into an infiltration structure. This requirement would typically require multiple pretreatment practices in series. The Stormwater Handbook identifies several acceptable stormwater treatment BMPs for critical areas, including bioretention areas, sand or organic filters, and infiltration basins, trenches, or subsurface structures. The SMSs also require that BMPs be set back 100 feet from vernal pools and that all infiltrating BMPs be located at least 50 feet from any surface water including wetlands. Meeting these standards would not be achievable without additional tree clearing, significant changes to existing topography, increases to the limit of disturbance near wetlands and vernal pools, and/or alterations to existing drainage patterns. Filtering BMPs must also be sufficiently raised to discharge into the receiving water while meeting minimum media depths, which would require raising the Project grade around the most environmentally sensitive areas. The Project will be used by pedestrians and bicyclists will not contribute contaminants to the path surfaces. Therefore, there will be little to no contaminants on the path surface to be washed off by stormwater runoff.

In summary, the Project includes the use of vegetated shoulders and water quality swales with check dams to promote infiltration and recharge. DCR will pave only 10 feet of the 14-foot-wide gravel access path and will loam and seed the shoulders with meadow mix. This loaming and seeding with meadow mix will provide an additional opportunity for stormwater shed from the paved surface to infiltrate before it enters the swales. The swales were designed to convey water to appropriate discharge points to maintain existing drainage patterns along the Project and were sized considering the volumes of runoff from the pavement such that they can accommodate a two-year storm. This design meets all

applicable SMS requirements to the maximum extent practicable, is consistent with the stormwater management for all DCR's rail trail facilities and is appropriate for the Eversource underground transmission line as well.

Please refer to the Stormwater Report in Attachment M for additional details regarding the stormwater management measures.

5.3 General Mitigation Measures and Best Management Practices Summary

The Project incorporates general mitigation measures and BMPs to avoid and/or minimize permanent and temporary impacts, including the following:

- **Erosion and Sediment Controls:** As discussed within Section 3.1.1.2, the Project will employ a variety of erosion and sediment controls, which may include:
  - Construction mats to support cranes at the Fort Meadow Brook crossing;
  - Silt fence, straw bales, compost filter tubes, straw wattles, and/or silt socks;
  - Jute mesh erosion control blankets;
  - Hydroseeding;
  - Turbidity controls; and
  - Frac tanks/filter bags and straw bale containment areas
- **ROW Restoration:** As discussed within Sections 3.1.1.8 and 3.2.4, restoration of the ROW will include:
  - Loaming and seeding all disturbed areas outside of the 10-foot-wide paved MCRT; and
  - Planting woody vegetation within the crane mat areas at Fort Meadow Brook, within the Priority and Estimated Habitat area, and at select locations as slope protection (see Attachment B for safety plantings).
- **Invasive Species Monitoring:** As discussed within Section 3.3.1, DCR will be responsible for monitoring for invasive species on an annual basis; and
- **Environmental Monitoring:** Eversource and DCR will employ a qualified EM during both Phases of construction. The EM will be responsible for daily inspections of work areas and will address potential issues related to the environment, if any (e.g., sediment migration, erosion controls, swamp mat installation, rare species, etc.). The EM will have stop work authority if site conditions are found to not be in conformance with permit conditions. During Phase 1, an Eversource EM will be responsible for ensuring that all construction activities are completed in accordance with applicable permit conditions. Once Phase 1 is complete, DCR's EM will assume all monitoring responsibilities during Phase 2 construction.

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Attachments

Attachment A – Site Figures

Attachment B – NOI Plans: MCRT and Underground Transmission Line along Inactive MBTA Corridor *(under separate cover)*

Attachment C – NOI Plans: MCRT Connection to Existing Assabet River Rail Trail *(under separate cover)*

Attachment D – NOI Plans: Underground Transmission Line within Existing Public Roadways *(under separate cover)*

Attachment E – Site Photos

Attachment F – Hudson Conservation Commission ORAD

Attachment G – Bordering Vegetated Wetland Delineation Forms

Attachment H – NHESP Correspondence

Attachment I – Best Management Practices

Attachment J – Wildlife Habitat Evaluation (provided under separate cover)

Attachment K – Draft Construction Spill Prevention Control and Countermeasure Plan

Attachment L – Snag and Brush Pile Details

Attachment M – Stormwater Report (under separate cover)

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Attachment A – Site Figures

- Figure 1 – Hudson USGS Locus Map
- Figure 2 – Hudson Aerial Map
- Figure 3 – Hudson Soils Map
- Figure 4 – Hudson NHESP Priority and Estimated Habitat Map
- Figure 5 – Hudson Public Water Supply and Groundwater Resources Map
- Figure 6 – Construction Conditions

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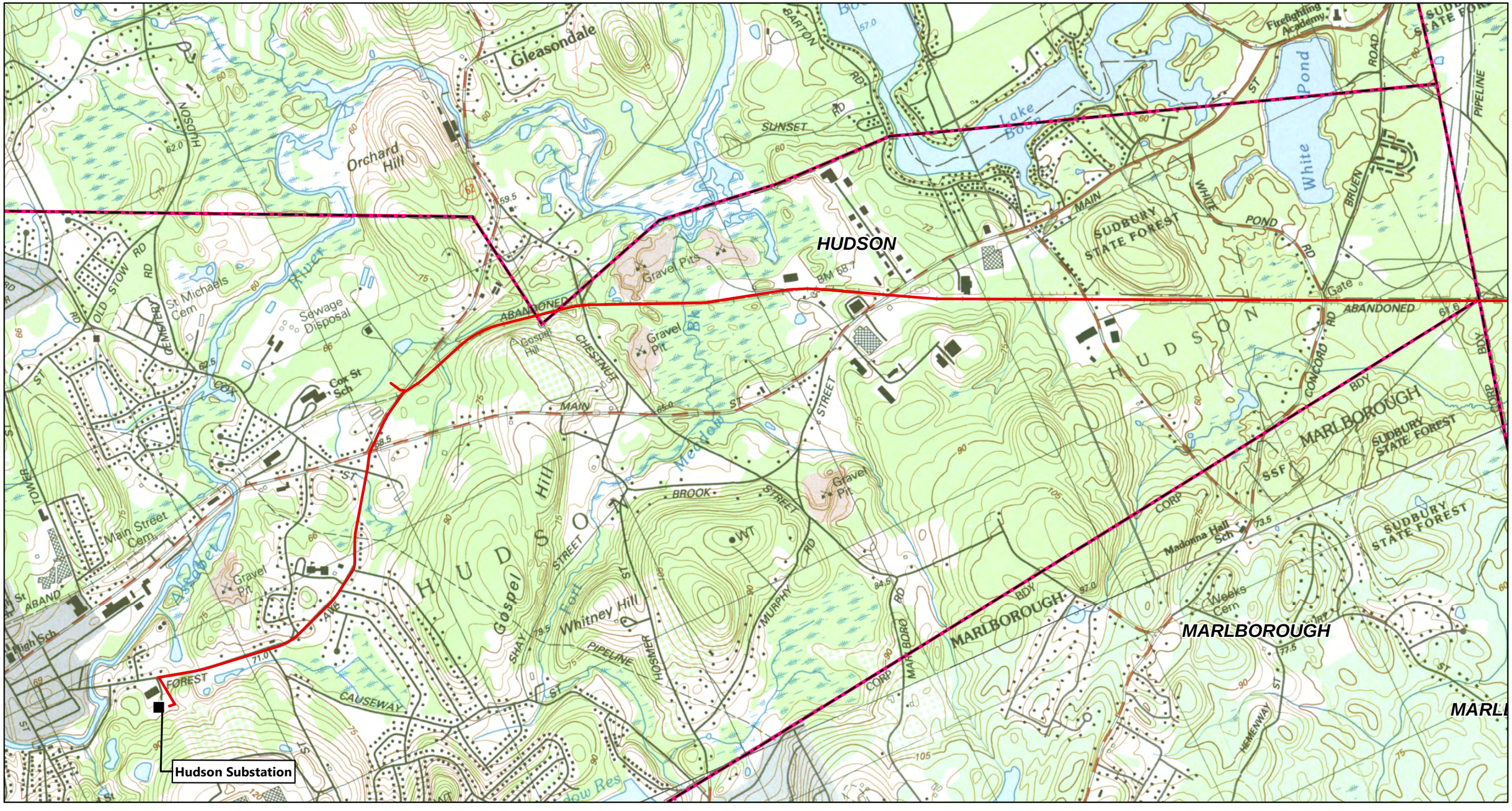
\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 1 Hudson USGS Map.mxd 12/23/2019



EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 1: Hudson Locus Map (USGS)

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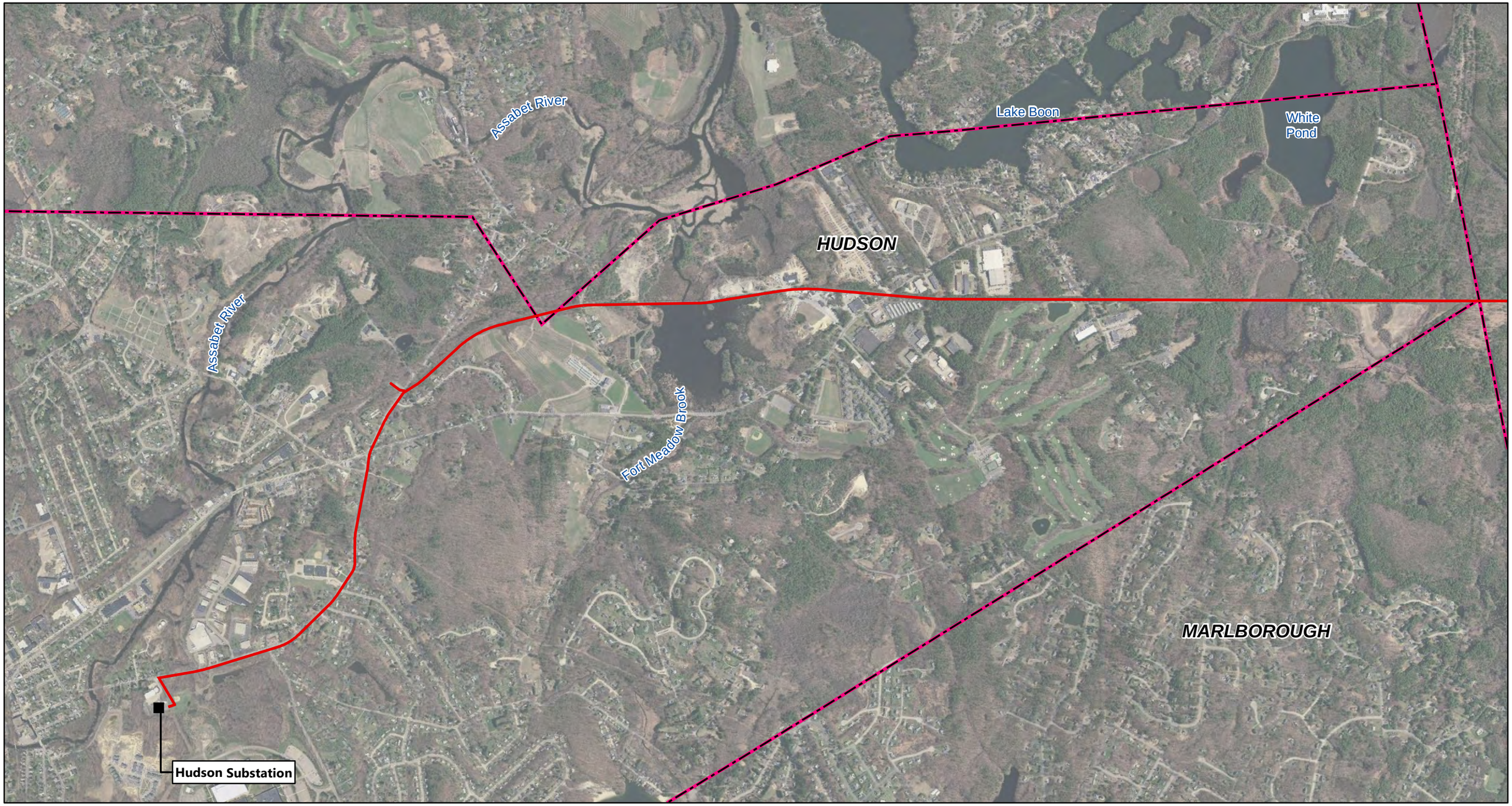
\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 2 Hudson Aerial Map.mxd 12/23/2019



Project

Substation Location

Municipal Boundary

Source:
MassGIS, VHB

12/23/2019

N

0 1,500 3,000 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 2: Hudson Aerial Map

vhb

\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 3 Hudson Soils Map.mxd 12/23/2019

Project

NRCS Soil Boundary

Substation Location

Municipal Boundary

Source: MassGIS, VHB

12/23/2019

N

0 300 600 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb

Project
Substation Location
Municipal Boundary
NRCS Soil Boundary

Source:
MassGIS, VHB

12/23/2019

N

0 300 600 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb

\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 3 Hudson Soils Map.mxd 12/23/2019

Project
Substation Location
Municipal Boundary
NRCS Soil Boundary

Source:
MassGIS, VHB

12/23/2019

N

0 300 600 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb

\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 3 Hudson Soils Map.mxd 12/23/2019

Project

Substation Location

Municipal Boundary

NRCS Soil Boundary

Source:
MassGIS, VHB

12/23/2019

N

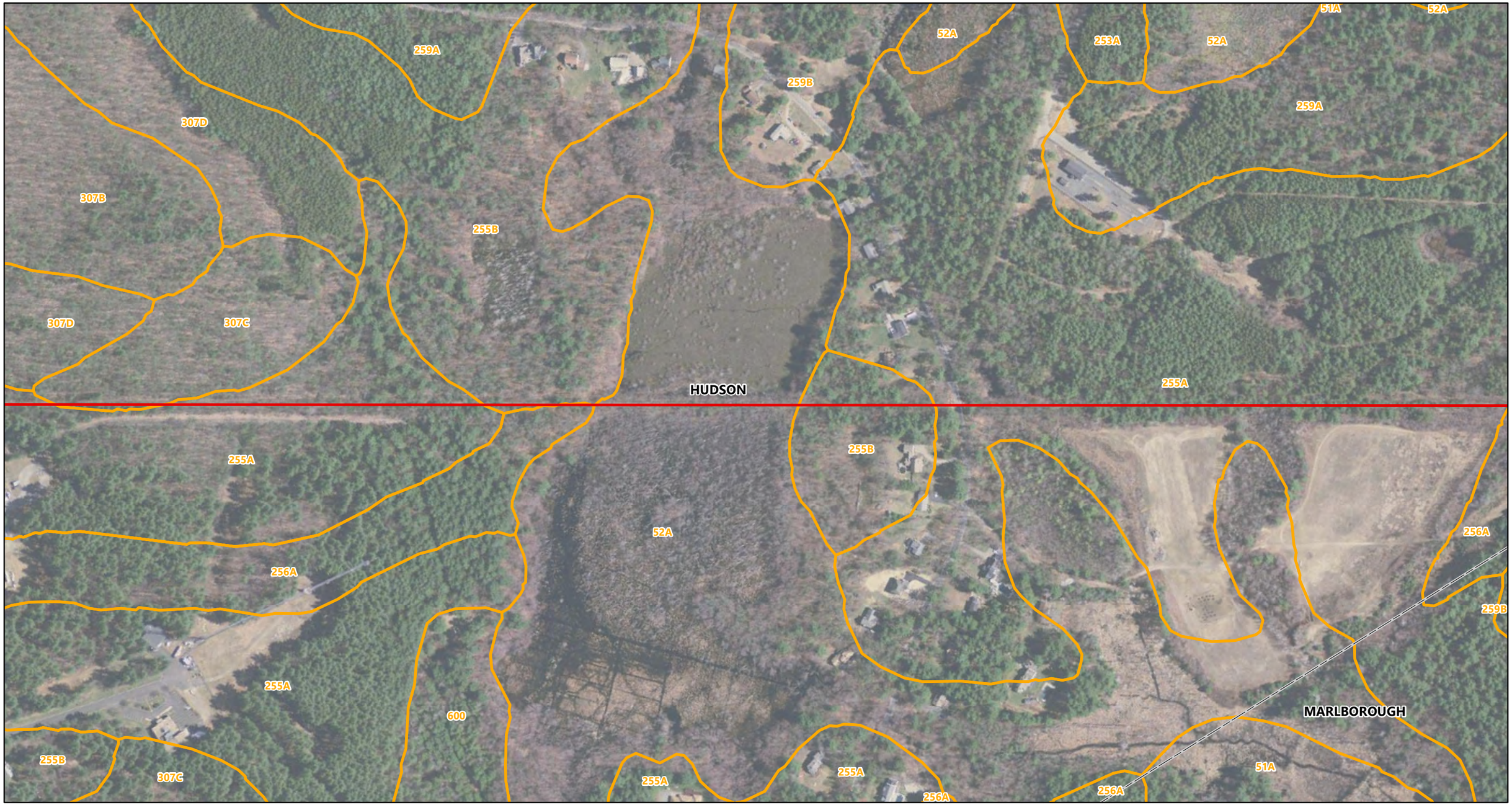
0 300 600 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb



Project
Substation Location
Municipal Boundary
NRCS Soil Boundary

Source:
MassGIS, VHB

12/23/2019

N

0 300 600 Feet

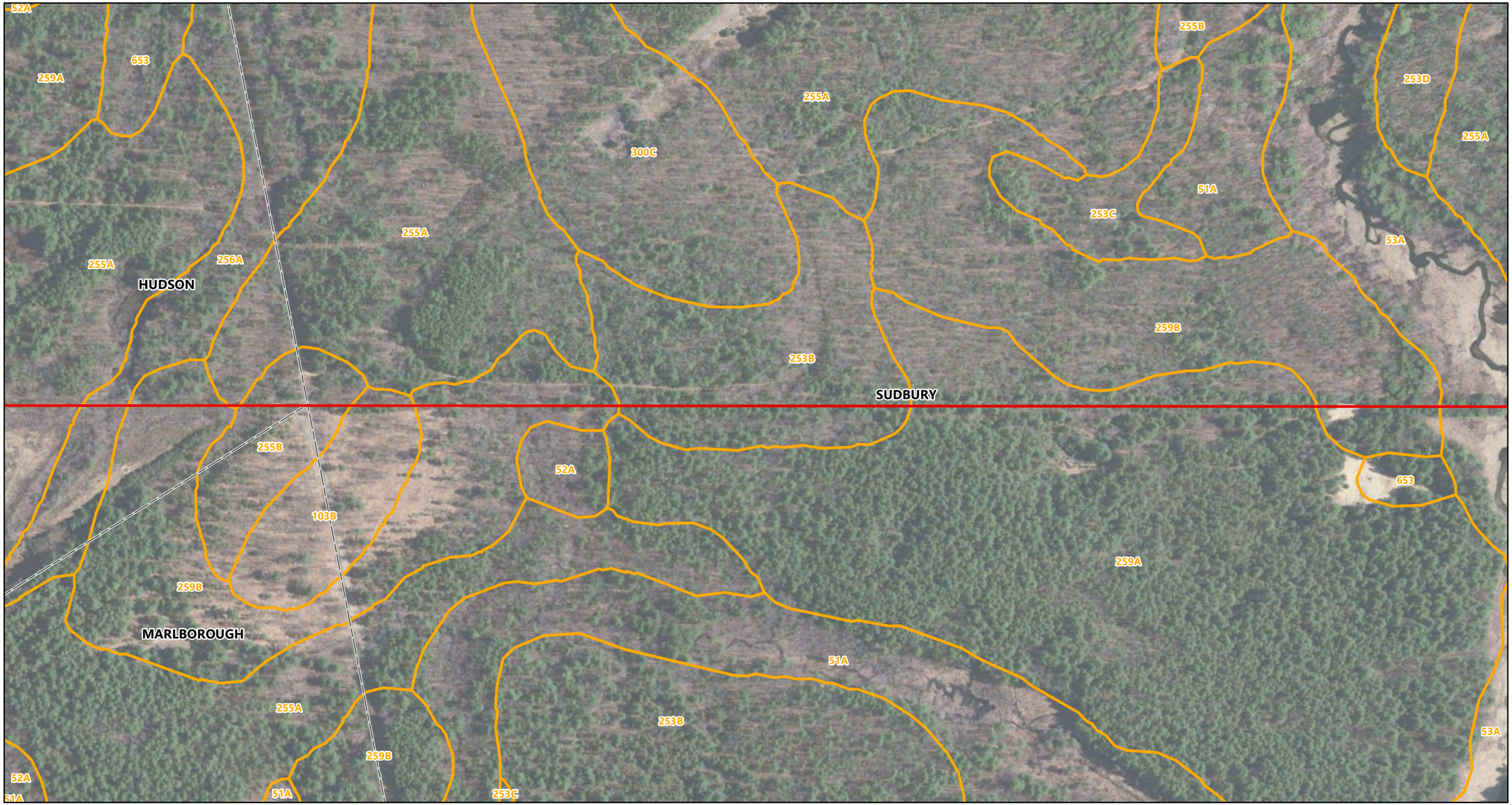
EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb

\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 3 Hudson Soils Map.mxd 12/23/2019



Project

Substation Location

Municipal Boundary

NRCS Soil Boundary

Source:
MassGIS, VHB

12/23/2019

N

0 300 600 Feet

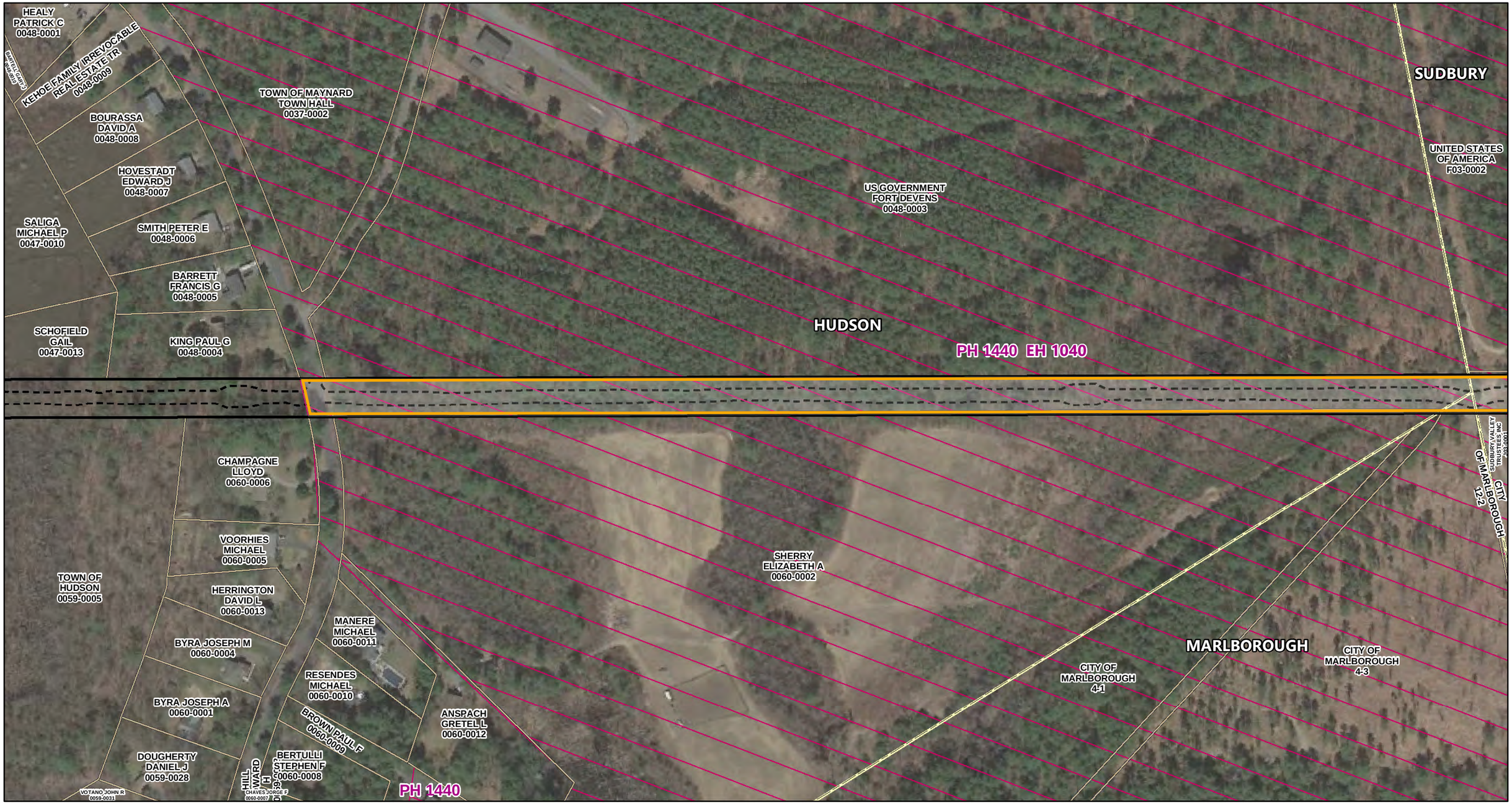
EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 3: Hudson Soils Map

vhb

\\WHBEDATA\gislib\WSTAR\SudburytoHudson\Figures\Geotech_NO\Hudson\Figure 4 Hudson NHESP Detail.mxd



MBTA ROW Boundary
Municipal Boundary
Parcel Boundaries (MassGIS)
Limit of Disturbance
Project Area with in NHESP Habiat
NHESP Priority Habitat

N

Source:
MassGIS, VHB

12/23/2019

0 200 400 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 4: Hudson NHESP Priority & Estimated Habitat Map

vhb

\\nhbedata\gislib\NSTAR\SudburytoHudson\Figures\Geotech_NOI\Hudson\Figure 5 Hudson_WaterSupplyResources.mxd Date: 12/24/2019

Well Name	Distance to Project (LF)
Chestnut Street Well #1	770
Chestnut Street Well #2	715
Chestnut Street Well #3	1,230
Kane Well	1,045
Cranberry Bog Well	714

Project

Open Space Protected for Water Supply
Aquifer
Outstanding Resource Water

MADEP Wellhead Protection Areas
Zone I
Zone II

Public Water Supplies
Community Groundwater Source
Surface Water Intake
Non-Community Groundwater Source
Emergency Surface Water
Groundwater Contour (FT)

NOTE: Not to scale. Alignments shown are for graphical purposes only.
Lines that appear immediately adjacent to each other should be assumed to follow the same alignment.

Source:
MassGIS,
Whitman & Howard (1991),
VHB

12/24/2019

N

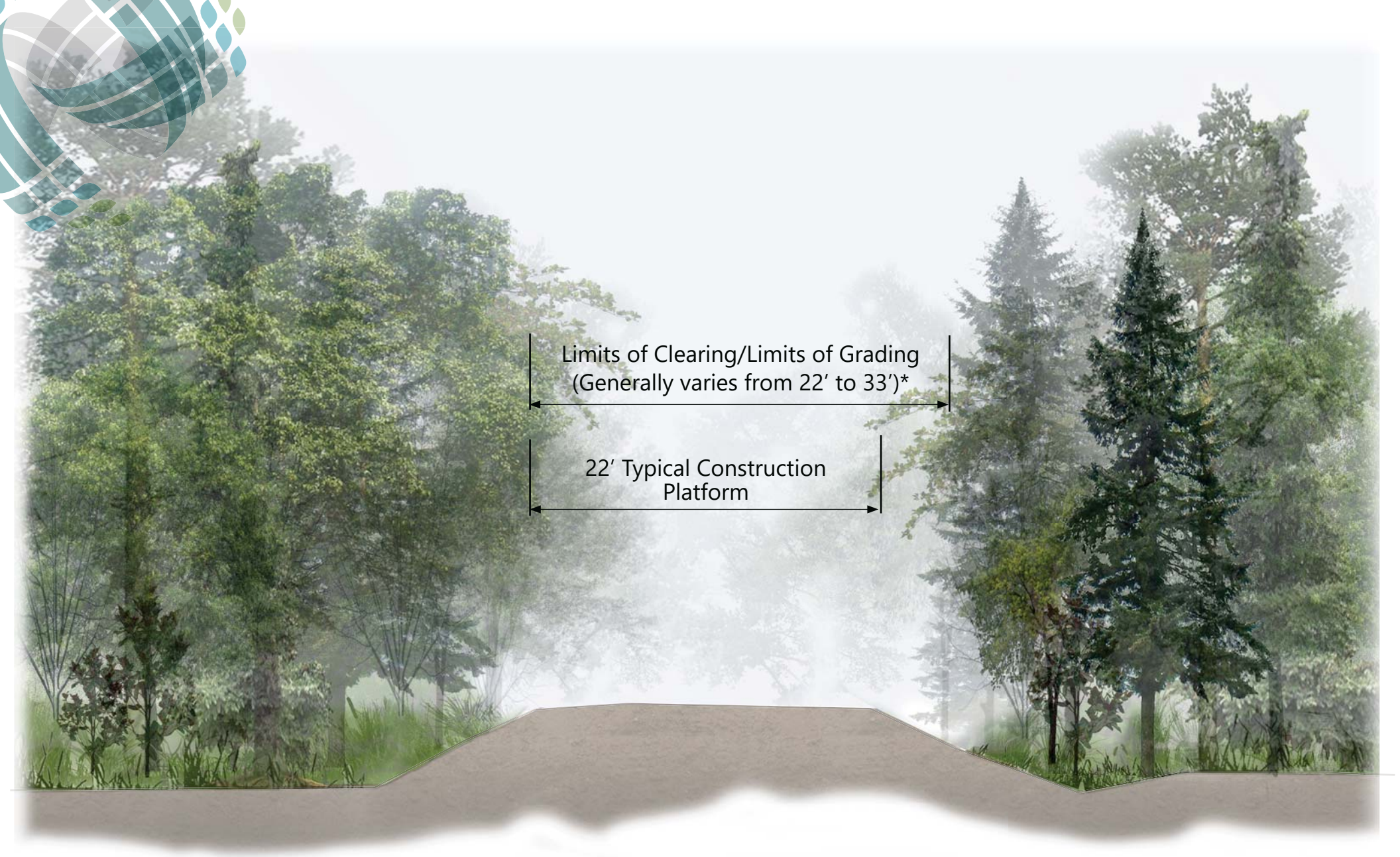
0 1,200 2,400 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 5: Hudson Public Water Supply and Groundwater Resources

vhb



* *Exceptions include manhole locations where limits of clearing are approximately 45′ wide, and near Hop Brook, where limits of clearing are approximately 18′ wide*

FIGURE 6-1
Eversource Construction Conditions
Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

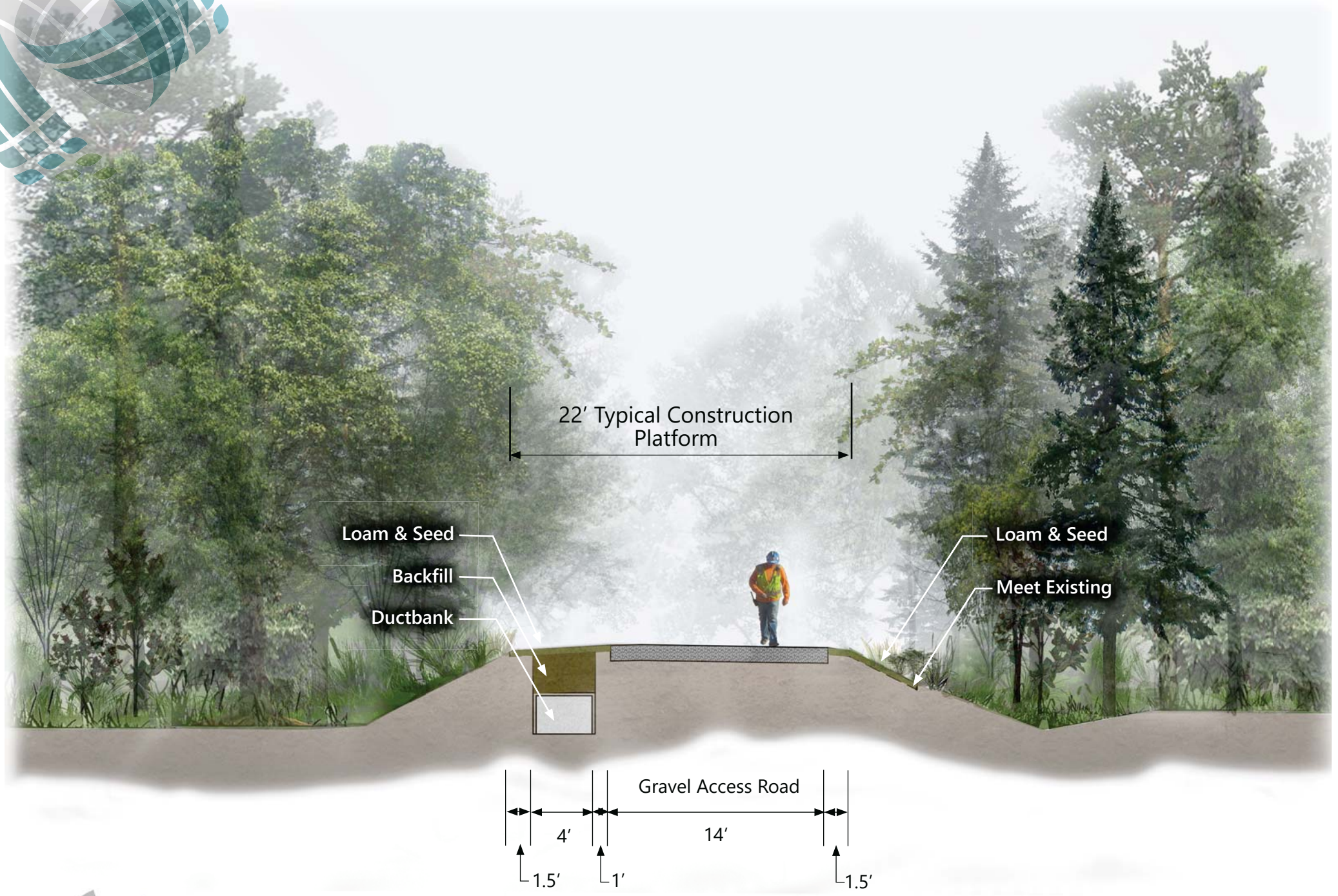


FIGURE 6-2

Post-Eversource Construction Conditions

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

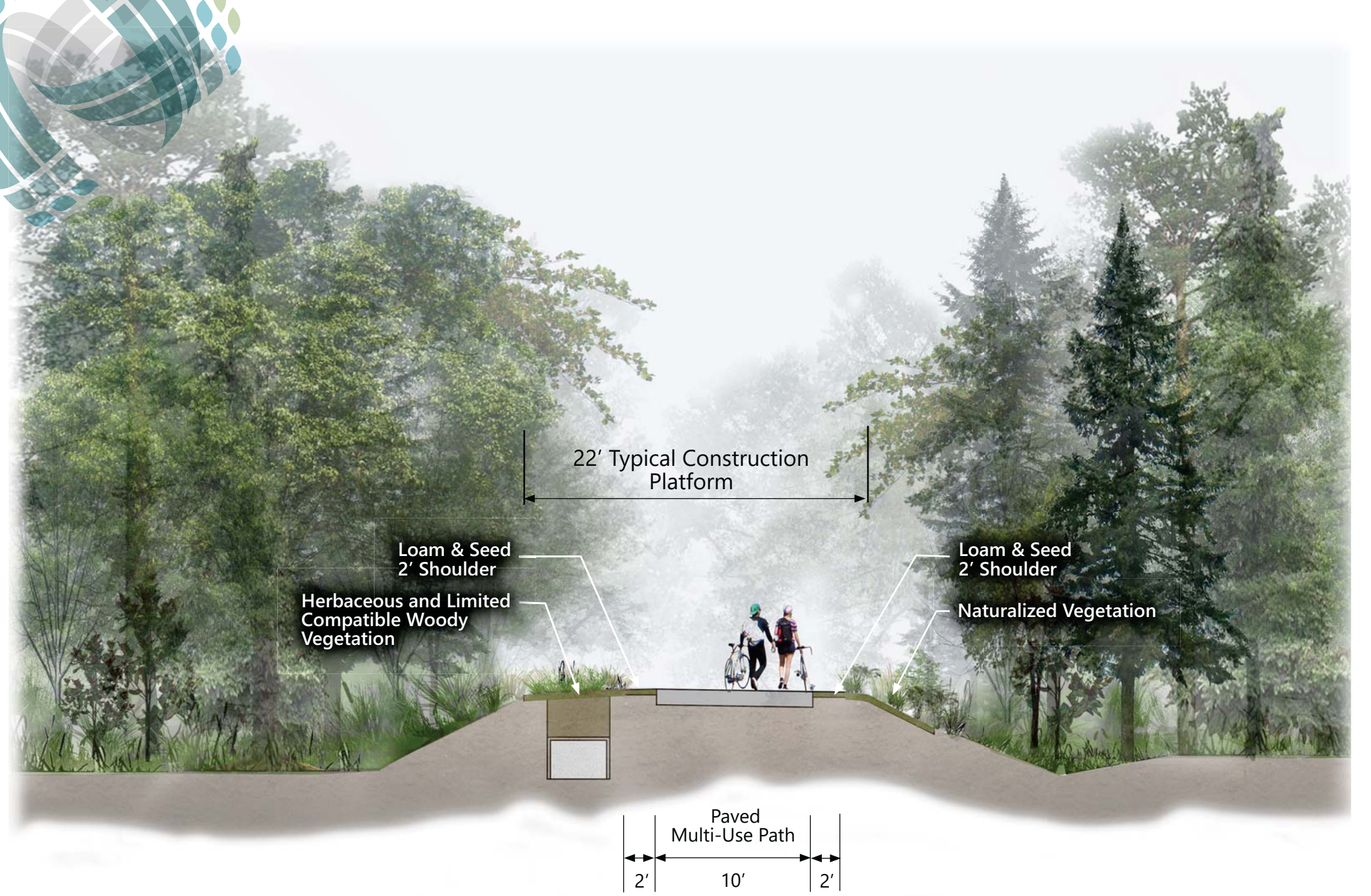


FIGURE 6-3

Post-DCR Construction Conditions

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

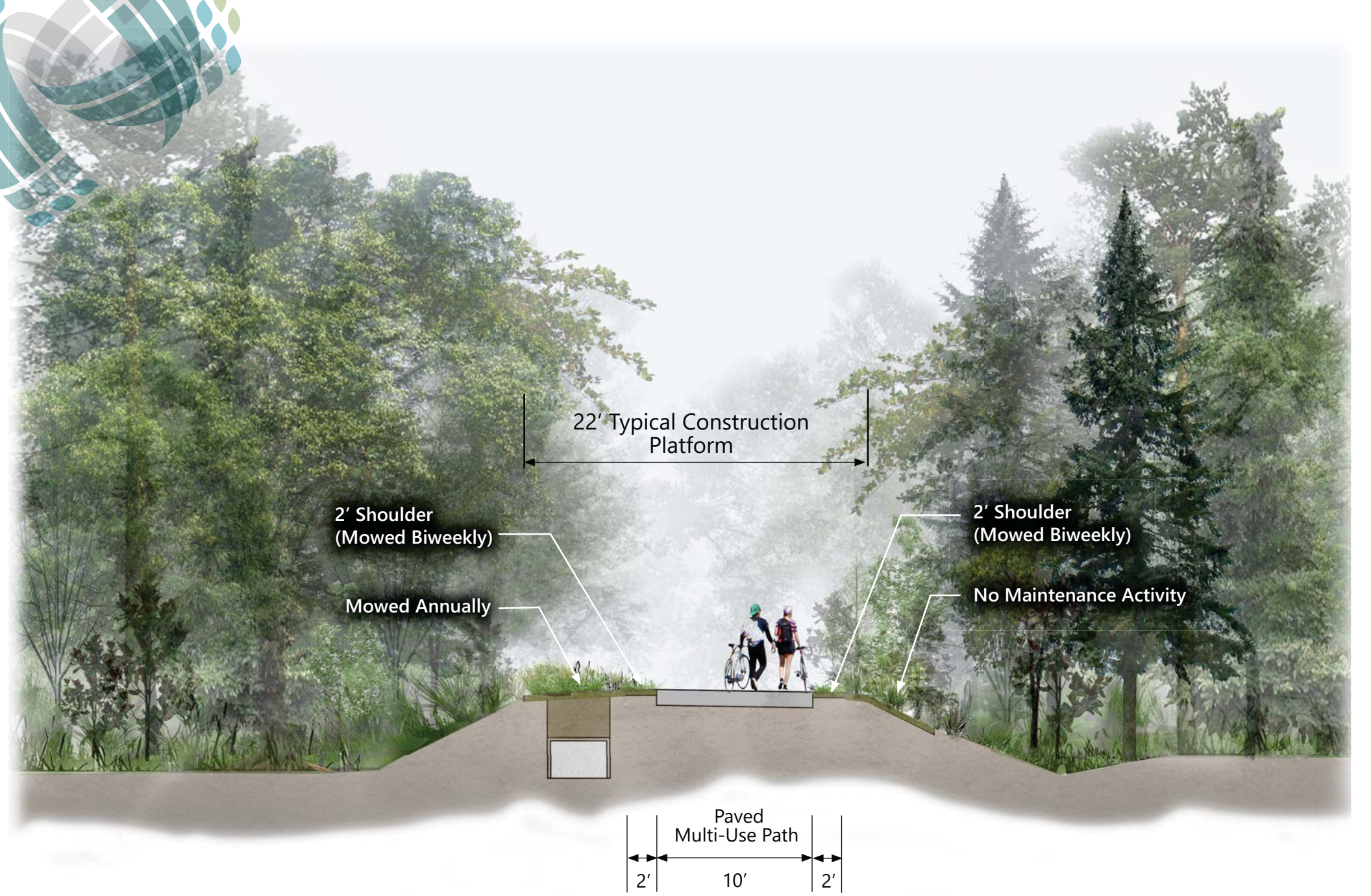


FIGURE 6-4
DCR Maintenance Conditions
Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Attachment B – NOI Plans: Underground Transmission Line along Inactive MBTA Corridor (under separate cover)

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Attachment C – NOI Plans: Mass Central Rail Trail (under separate cover)

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Attachment D – NOI Plans: Underground Transmission Line within Existing Public Roadways (under separate cover)

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Attachment E – Site Photos

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Photo 1 Looking west at the delineated BVW that is adjacent to the MCRT Connection to the ARRT

Photo 2 Looking south at proposed MCRT Connection to the ARRT at approximately Station 10+10

	Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project Hudson, MA - NOI Representative Photographs	EVERSOURCE ENERGY vhb

Photo 3 Looking east down MBTA ROW at approximately Station 103+10 near wetlands 20 and 21

Photo 4 Looking east down the MBTA ROW near Station 113+50. Ferjulian's is to the immediate right (south) of this picture.

Photo 5 Looking west down MBTA ROW near Station 139+00

Photo 6 Looking west down the MBTA ROW west of Fort Meadow Brook at approximately Station 147+60

	Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project Hudson, MA - NOI Representative Photographs	EVERSOURCE ENERGY vhb

Photo 7 Looking east at the Fort Meadow Brook crossing and the bridge proposed for replacement at approximately Station 149+25

Photo 8 Looking west down MBTA ROW near Station 175+10

	Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project Hudson, MA - NOI Representative Photographs	EVERSOURCE ENERGY vhb

Photo 9 Looking east down ROW near Main Street and Station 183+40

Attachment F – Hudson Conservation Commission ORAD

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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 4B - Order of Resource Area Delineation
Massachusetts Wetlands Protection Act M.G.L. c. 131 S40

Provided by MassDEP:
MassDEP File #:190-0611
eDEP Transaction #:990365
City/Town:HUDSON

2018 00026677
Bk: 70671 Pg: 324 Doc: ORD
Page: 1 of 5 02/27/2018 09:10 AM

A. General Information

1. Conservation Commission HUDSON
2. This Issuance is for (Check one):
   a. ☑ Order of Resource Area Delineation
   b. ☐ Amended Order of Resource Area Delineation

3. Applicant Details

a. First Name	DENISE	b. Last Name	BARTONE		
c. Organization	NSTAR ELECTRIC COMPANY DBA EVERSOURCE				
d. Mailing Address	247 STATION DRIVE, SE270				
e. City/Town	WESTWOOD	f. State	MA	g. ZIP	02090

4. Property Owner (if different from applicant):

a. First Name	COMMONWEALTH OF MASSACHUSETTS	b. Last Name	COMMONWEALTH OF MASSACHUSETTS		
c. Organization	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY				
d. Mailing Address	10 PARK PLAZA				
e. City/Town	BOSTON	f. State	MA	g. ZIP	02116

5. Project Location

a. Street Address	10 PARK PLAZA		
b. City/Town	HUDSON	c. Zip	01749
d. Assessors Map/Plat#	16	e. Parcel/Lot#	23
f. Latitude	42.39679N	g. Longitude	71.52928W

6. Dates

a. Date ANRAD Filed	11/3/2017	b. Date Public Hearing Closed	2/1/2018	c. Date Of Issuance	2/5/2018

7. Final Approved Plans and Other Documents

Plan Title	Plan Prepared By	Plan Signed By	Plan Final Date	Plan Scale
SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT, EXISTING CONDITIONS PLAN FOR ANRAD SUBMITTAL, SHEETS 1-24	VANASSE HANGEN BRUSTLIN, INC	RUSSELL J. BOUSQUET, PE# 35389	1/24/2018	1"=40'
SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT, ORTHOIMAGERY EXISTING CONDITIONS ANRAD PLANS, SHEETS 1-17	VANASSE HANGEN BRUSTLIN, INC		1/31/2018	1? =100?
EVERSOURCE ENERGY SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT, HUDSON, MASSACHUSETTS: ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION	VANASSE HANGEN BRUSTLIN, INC		11/2/2017	

LETTER, RE: PEER REVIEW, EVERSOURCE ? SUDBURY TO HUDSON TRANSMISSION RELIABILITY PROJECT	BRIAN WATERMAN, WDA DESIGN GROUP	12/27/2017
LETTER, RE: ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION: SUDBURY-HUDSON TRANSMISSION RELIABILITY PROJECT - SUPPLEMENTAL SUBMISSION - WETLAND RESOURCE AREA REVISIONS, MA DEP# 190-0611	VANASSE HANGEN BRUSTLIN, INC	1/25/2018

B. Order of Delineation

1. The Conservation Commission has determined the following (check whichever is applicable)

a. ☑ **Accurate:** The boundaries described on the referenced plan(s) above and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for the following resource area(s):

1. ☑ Bordering Vegetated Wetlands
2. ☑ Other resource area(s), specifically
   a.BANK, LAND UNDER WATER, RIVERFRONT AREA, CERTIFIED AND POTENTIAL VERNAL POOLS. BORDERING AND ISOLATED LAND SUBJECT TO FLOODING, ASSOCIATED BUFFER ZONES TO RESOURCE AREAS, ISOLATED VEGETATED WETLANDS

b. ☐ **Modified:** The boundaries described on the plan(s) referenced above, as modified by the Conservation Commission from the plans contained in the Abbreviated Notice of Resource Area Delineation, are accurately drawn from the following resource area(s):

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically
   a.

c. ☐ **Inaccurate::** The boundaries described on the referenced plan(s) and in the Abbreviated Notice of Recource Area Delineation were found to be inaccurate and cannot be confirmed for the following resource area(s):

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically
   a.
3. The boundaries were determined to be inaccurate because:

C. Findings

This Order of Resource Area Delineation determines that the boundaries of those resource areas noted above, have been delineated and approved by the Commission and are binding as to all decisions rendered pursuant to the Massachusetts Wetlands Protection Act (M.G.L. c.131, S 40) and its regulations (310 CMR 10.00). This Order does not, however, determine the boundaries of any resource area or Buffer Zone to any resource area not specifically noted above, regardless of whether such boundaries are contained on the plans attached to this Order or to the Abbreviated Notice of Resource Area Delineation. This Order must be signed by a majority of the Conservation Commission. The Order must be sent by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate DEP Regional Office (see http://www.mass.gov/dep/about/region/findyour.htm).

D. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Resource Area Delineation. When requested to issue a Superseding Order of Resource Area Delineation, the Department's review is limited to the objections to the resource area delineation(s) stated in the appeal request. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request

for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant. Any appellants seeking to appeal the Department?s Superseding Order of Resource Area Delineation will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order or Determination, or providing written information to the Department prior to issuance of a Superseding Order or Determination. The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, S 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 4B – Order of Resource Area Delineation

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number: 190-0611
eDEP Transaction Number: 990365
City/Town: HUDSON
Date of Issuance: 2/5/18

E. Signatures

Please indicate the number of members who will sign this form: 6 — 1. Number of Signers

Signature of Conservation Commission Member

Signature of Conservation Commission Member

Signature of Conservation Commission Member

Signature of Conservation Commission Member

Signature of Conservation Commission Member

Signature of Conservation Commission Member

This Order is valid for three years from the date of issuance.

If this Order constitutes an Amended Order of Resource Area Delineation, this Order does not extend the issuance date of the original Final Order, which expires on unless extended in writing by the issuing authority.

This Order is issued to the applicant and the property owner (if different) as follows:

2. ☐ By hand delivery on

a. Date

3. ☒ By certified mail, return receipt requested on

a. Date 2/6/18

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 4B – Order of Resource Area Delineation

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
190-0611
MassDEP File Number
990365
eDEP Transaction Number
Hudson
City/Town

Recording Information

Prior to commencement of work, this Order of Resource Area Delineation must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Resource Area Delineation. The recording information on this page shall be submitted to the Conservation Commission listed below.

Hudson Conservation Commission
Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Hudson Conservation Commission
Conservation Commission

Please be advised that the Order of Resource Area Delineation for the Project at:

MBTA Right-of-Way
Project Location

190-0611
MassDEP File Number

Has been recorded at the Registry of Deeds of:

Middlesex
County

13156
Book

34 ✓
Page

For: Massachusetts Bay Transportation Authority
Property Owner

and has been noted in the chain of title of the affected property in:

13156
Book

34
Page

In accordance with the Order of Resource Area Delineation issued on:

February 5, 2018
Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

Attachment G – Bordering Vegetated Wetland Delineation Forms

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MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Massachusetts DCR Prepared by: VHB, Inc. Project Location: Hudson, MA DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☐ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Vegetation	Observation Plot Number: Wet Plot BP-7		Transect Number:1	Date of Delineation: 1/16/2019
A. Sample Layer & Plant Species (by Common Name/Scientific Name)	B. Percent Cover (or Basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
Red Maple (*Acer rubrum*)*	63	95.5	Yes	FAC
Eastern White Pine (*Pinus strobus*)	3	4.5	No	FACU
Sapling/Shrub				
Winterberry (*Ilex verticillata*)*	38	52.8	Yes	FACW
Red Maple (*Acer rubrum)**	20.5	28.5	Yes	FAC
Eastern White Pine (*Pinus strobus*)	10.5	14.6	No	FACU
Japanese Barberry (*Berberis thunbergii*)	3	4.2	No	FACU
Herbaceous				
Eastern White Pine (*Pinus strobus*)	3	50	No	FACU
Japanese Barberry (*Berberis thunbergii*)	3	50	No	FACU

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: Midpoints used for dominance

Vegetation Conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes ☒ No ☐

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. **Soil Survey**

Is there a published soil survey for this site? Yes ☒ No ☐

Title/Date: N/A – NRCS Web Soil Survey used

Map Number: N/A

Soil Type Mapped: Merrimac fine sandy loam, 0-3 percent slopes

Hydric Soil Inclusions: No

Are field observations consistent with soil survey? Yes ☐ No ☒

Remarks: Soil not consistent with mapped soil survey unit

2. **Soil Description**

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-16	10 YR 2/1	None	Mucky loam
C	16-20+	10 YR 3/2	None	Fine sandy loam

Remarks: Saturated at the surface, groundwater at 8 inches

3. **Other:**

Conclusion: Is soil hydric? Yes ☒ No ☐

Other indicators of hydrology: (check all that apply and describe)

☐ Site inundated:

☒ Depth to free water in observation hole: 8 inches

☒ Depth to soil saturation in observation hole: Surface

☐ Water marks:

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

Other:

Vegetation and Hydrology Conclusion:

	Yes	No
Number of wetland indicator plants > number of non-wetland indicator plants:	☒	☐
Wetland hydrology present:		
Hydric soil present	☒	☐
Other indicators of hydrology present	☒	☐
Sample location is in a BVW	☒	☐

Submit this form with the Request for Determination of Applicability or Notice of Intent.

MassDEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Massachusetts DCR Prepared by: VHB, Inc. Project Location: Hudson, MA DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☐ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Vegetation	Observation Plot Number: Up Plot BP-7		Transect Number:1	Date of Delineation: 1/16/2019
A. Sample Layer & Plant Species (by Common Name/Scientific Name)	B. Percent Cover (or Basal Area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
Red Maple (*Acer rubrum*)*	20.5	49.4	Yes	FAC
Eastern White Pine (*Pinus strobus*)	10.5	25.3	Yes	FACU
White Ash (*Fraxinus americana*)	10.5	25.3	Yes	FACU
Sapling/Shrub				
Eastern White Pine (*Pinus strobus*)	20.5	98.6	Yes	FACU
Black Cherry (*Prunus serotina*)	3	1.4	No	FACU
Herbaceous				
Pennsylvania Sedge (*Carex pensylvanica*)	63	95.5	Yes	Not Classified
Black Huckleberry (*Gaylussacia baccata*)	3	.5	No	FACU

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: Midpoints used for dominance. Pennsylvania sedge wasn't included in the dominant non-wetland indicator plants because it does not have a wetland status. However, this species is commonly associated with uplands.

Vegetation Conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes ☐ No ☒

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent.

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. **Soil Survey**

Is there a published soil survey for this site? Yes ☒ No ☐

Title/Date: N/A – NRCS Web Soil Survey used

Map Number: N/A

Soil Type Mapped: Merrimac fine sandy loam, 0-3 percent slopes

Hydric Soil Inclusions: No

Are field observations consistent with soil survey? Yes ☐ No ☒

Remarks: Soil not consistent with mapped soil survey unit.

2. **Soil Description**

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-18	10 YR 2/2	None	Fine sandy loam

Remarks: Soil appeared altered/contained fill material, possibly from development of rail trail parking lot or from construction of the inactive rail line

3. **Other:**

Conclusion: Is soil hydric? Yes ☐ No ☒

Other indicators of hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _____

☐ Depth to soil saturation in observation hole: _____

☐ Water marks: _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____

Other: _____

Vegetation and Hydrology Conclusion:

	Yes	No
Number of wetland indicator plants > number of non-wetland indicator plants:	☐	☒
Wetland hydrology present:		
Hydric soil present	☐	☒
Other indicators of hydrology present	☐	☒
Sample location is in a BVW	☐	☒

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Attachment H – NHESP Correspondence

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MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

Jack Buckley, *Director*

August 04, 2017

Vivian Kimball
Vanasse Hangen Brustlin, Inc.
2 Washington Square
Union Station, Suite 219
Worcester MA 01604

RE: Project Location: Sudbury to Hudson Transmission Reliability Project (MTBA ROW)
Town: HUDSON, MARLBOROUGH, SUDBURY, STOW
NHESP Tracking No.: 15-34327

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 1040* (PH 1040) and *Estimated Habitat 1440* (EH 1440) as indicated in the *Massachusetts Natural Heritage Atlas* (14th Edition). Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

Scientific name	Common Name	Taxonomic Group	State Status
Terrapene carolina	Eastern Box Turtle	Reptile	Special Concern
Caprimulgus vociferus	Eastern Whip-poor-will	Bird	Special Concern
Catocala herodias gerhardi	Gerhard's Underwing Moth	Butterflies and Moths	Special Concern
Metarranthis pilosaria	Coastal Swamp Metarranthis Moth	Butterflies and Moths	Special Concern

The species listed above are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)
If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with

the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: http://www.mass.gov/eea/agencies/massdep/service/approvals/wpa-form-3.html.

MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: www.mass.gov/dfw/nhesp/regulatory-review.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (https://ecos.fws.gov/ipac). If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6385.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

Jack Buckley, *Director*

October 19, 2018

Denise Bartone
NSTAR Electric dba Eversource Energy
247 Station Drive, SE270
Westwood, MA 02090

Paul Jahnige
DCR Greenways & Trails Program
136 Damon Rd
Northampton, MA 01060

RE:	Applicant:	Denise Bartone
	Project Location:	MBTA Right of Way- Sudbury, Marlborough, Hudson, Stow
	Project Description:	Sudbury–Hudson Transmission Reliability; DCR Phase 2: Mass Central Rail Trail (MCRT)
	NHESP File No.:	**15-34327**

Dear Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received the MESA Project Review Checklist (dated September 2018) with plans, Corridor Management Plan, Turtle Protection Plan, and other required materials, including the for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

The proposed project includes the installation of an underground electrical transmission line in the existing MBTA right-of-way (Phase 1), totaling 4 acres of disturbance within Priority Habitat. Total habitat loss from the project will be minimized through compatible management of 1.9 acres of the duct bank and slopes of the construction platform. The Division understands that following the completion of the transmission line project the Department of Conservation and Recreation (DCR) proposes to install a segment of the Mass Central Rail Trail (MCRT) within the final construction platform layout (Phase 2). Eversource and DCR have coordinated to develop a Corridor Management Plan to address ongoing management activities within the right-of-way and an Eastern Box Turtle Protection Plan.

The MESA is administered by the Division, and prohibits the Take of state-listed species. The Take of state-listed species is defined as "in reference to animals…harm…kill…disrupt the nesting, breeding, feeding or migratory activity…and in reference to plants…collect, pick, kill, transplant, cut or process…Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

The Division has determined that this Project, as currently proposed, will occur **within** the actual habitat of the following state listed species. These species and their habitats are protected in accordance with the MESA. Fact sheets for state-listed species can be found at www.mass.gov/nhesp.

Scientific Name	Common Name	Taxonomic Group	State Status
Terrapene carolina	Eastern Box Turtle	Reptile	Special Concern
Caprimulgus vociferous	Eastern Whip-poor-will	Bird	Special Concern
Catocala herodias gerhardi	Gerhard's Underwing	Butterflies and Moths	Special Concern
Metarranthis pilosaria	Coastal Swamp Metarranthis	Butterflies and Moths	Special Concern

Based on the information provided and the information contained in our database, the Division finds that a portion of this project, as currently proposed, **must be conditioned** in order to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)). To avoid a prohibited Take of state-listed species, the following conditions must be met:

1. The Eastern Box Turtle Protection Plan (dated 5/31/2018) must be implemented as proposed.
2. The Corridor Management Plan for Massachusetts Central Rail Trail and Sudbury-Hudson Transmission Reliability Project (dated 5/31/2018) must be implemented as proposed.
3. Timing restrictions for construction activities within Whip-poor-will habitats must be implemented, as proposed unless otherwise approved by the Division.
4. Within thirty (30) days of the completion of the transmission line project, or as otherwise approved by the Division, the Applicant shall submit a compliance report containing, including a summary of construction timelines and photographs, to the Division documenting the completion of the project.

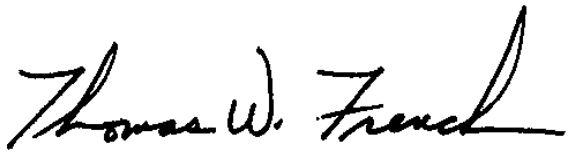
DCR Mass Central Rail Trail (Phase 2)

The Division has been involved in ongoing coordination with DCR regarding the proposed MCRT segment following completion of the transmission line. The Division's review of the Mass Central Rail Trail pursuant to the MESA is ongoing. DCR must submit a supplemental MESA Project Review Checklist which must include site plans for the MRCT for Division review and written approval.

Provided the above-noted conditions are fully implemented and there are no changes to the transmission line project plans, this project will not result in a Take of state-listed species. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Lauren Glorioso, Endangered Species Review Biologist, at 508-389-6361.

Sincerely,



Thomas W. French, Ph.D.
Assistant Director

cc: John Vieira, VHB
MBTA
Sudbury Conservation Commission
Hudson Conservation Commission
Marlborough Conservation Commission
Stow Conservation Commission

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

May 17, 2019

Priscilla Geigis
Massachusetts Dept. of Conservation & Recreation
251 Causeway Street
Boston, MA 02114

RE: Applicant: Priscilla Geigis, Massachusetts Dept. of Conservation & Recreation (DCR)
Project Location: MBTA Right of Way- Sudbury, Marlborough, Hudson, Stow
East of Wilkins St, Hudson to Eversource Substation, Rte. 20, Sudbury
Project Description: Phase 2 of Sudbury–Hudson Transmission Reliability: Mass Central Rail Trail (MCRT) Segment
NHESP File No.: 15-34327

Dear Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received the MESA Project Review Checklist (dated April 2019) with project plans (dated March 2019, prepared by VHB), a Corridor Management Plan (dated 5/31/2018), a draft Turtle Protection Plan (dated 5/31/2018, prepared by VHB), and other required materials for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

The MESA is administered by the Division, and prohibits the Take of state-listed species. The Take of state-listed species is defined as "in reference to animals…harm…kill…disrupt the nesting, breeding, feeding or migratory activity…and in reference to plants…collect, pick, kill, transplant, cut or process…Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

The Division has determined that this Project, as currently proposed, will occur **within** the actual habitat of the following state listed species. These species and their habitats are protected in accordance with the MESA. Fact sheets for state-listed species can be found at www.mass.gov/nhesp.

Scientific Name	Common Name	Taxonomic Group	State Status
Terrapene carolina	Eastern Box Turtle	Reptile	Special Concern
Caprimulgus vociferous	Eastern Whip-poor-will	Bird	Special Concern
Catocala herodias gerhardi	Gerhard's Underwing	Butterflies and Moths	Special Concern
Metarranthis pilosaria	Coastal Swamp Metarranthis	Butterflies and Moths	Special Concern

Phase 1 of this project consists of the installation of an underground electrical transmission line. The Division determined that Phase 1 would not result in a Take of rare species (determination letter dated 10/19/2018). The current proposal, which constitutes Phase 2 of the overall project, is for a 7.7 mile segment of shared-use path within the final construction platform layout of Phase 1. The shared-used path, a segment of the Mass. Central Rail Trail (MCRT), is proposed as a maintained 14 ft. wide corridor within the existing MBTA right-of-way and limits of work established by the Eversource transmission line project (Phase 1). An approximately 210 ft. extension at the western end of the shared-use path will be constructed to connect to the Assabet River Rail Trail. Work proposed within Priority Habitat consists of a 1.2 mile portion of the MCRT with one pull-off area (approx. 65 ft x 10 ft).

Phase 2 will result in 2.1 acres of disturbance within Priority Habitat, which will occur entirely within the previously-approved Limit of Work for Phase 1. This segment of the MCRT will be constructed using the gravel roadway installed by Eversource during Phase 1 construction. Ongoing maintenance of the MCRT shoulders and transmission line duct bank will be conducted by DCR.

Based on the information provided and the information contained in our database, the Division finds that Phase 2 of this project, as currently proposed, **must be conditioned** in order to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)). To avoid a prohibited Take of state-listed species, the following conditions must be met:

1. The Corridor Management Plan for Massachusetts Central Rail Trail and Sudbury-Hudson Transmission Reliability Project (dated 5/31/2018) must be implemented as proposed. If changes to said Plan are proposed, a revised Plan must be submitted to the Division for review and prior written approval.
2. Prior to the start of work, the Applicant must submit to the Division, for review and approval, a signage plan for the shoulder and duct bank mowing areas, which must describe sensitive dates for the Eastern Box Turtle.
3. Measures must be implemented to protect Eastern Box Turtles during construction. Prior to the start of work a final Eastern Box Turtle Protection Plan must be submitted to the Division for review and approval, and must be implemented as approved. Said Plan must include detailed turtle protection measures to be implemented by DCR. If changes to said Plan are proposed, a revised Plan must be submitted to the Division for review and prior written approval.
4. Prior to the start of work the Applicant must submit to the Division, for review and approval, a native seed mix proposed for any planting or loam and seed activities.
5. Unless otherwise approved by the Division, proposed wood railings must leave, at minimum, a 10 in. space beneath the lowest rail for wildlife passage.
6. Unless otherwise approved by the Division, construction activities within Priority Habitat must not occur during the Eastern Whip-poor-will breeding season (May 1 – August 1), as proposed.
7. Within thirty (30) days of the completion of Work, or as otherwise approved by the Division, the Applicant shall submit a compliance report to the Division documenting the completion of the project and compliance with all conditions herein, including a summary of construction timelines and photographs.

Provided the above-noted conditions are fully implemented and there are no changes to the transmission line project plans, this project will not result in a Take of state-listed species. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Lauren Glorioso, Endangered Species Review Biologist, at 508-389-6361.

Sincerely,

Jonathan V. Regosin, Ph.D.
Deputy Director

cc: Gene Crouch, VHB
MBTA
Sudbury Conservation Commission
Hudson Conservation Commission
Marlborough Conservation Commission
Stow Conservation Commission

Attachment I – Best Management Practices

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1.3 Straw (or Hay) Bales

Applications: Erosion and sedimentation control, mulch

Limitations:

- Hay bales degrade quickly.
- Hay bale height can provide an obstacle to movement of smaller wildlife.
- Should not be used as a temporary check dam/ stormwater control within waterways.
- Difficult to install during frozen conditions.
- Generally only effective for 3-6 months (hay) or 6-12 months (straw) before replacement.

Overview:

Hay/straw bales should be placed end-to-end to form a temporary sedimentation control barrier. This barrier should run perpendicular to the slope and direction of runoff, and should be installed downgradient of the disturbed site (i.e., construction area). Hay/straw bales are intended to slow flow velocity and trap sediments to prevent siltation in sensitive areas, specifically downgradient areas with open and/or flowing water. Barriers should be removed once the project is complete and soils are stabilized with erosion control blankets and/or well-established vegetation.

Installation:

- Install hay/straw bales end-to-end lengthwise along the toe of a slope or along a slope contour being sure the bales are butted tightly against each other without gaps between them. The outer ends of the barrier should be turned slightly upslope.
- Entrench to a minimum depth of 4 inches and backfill around the base of the bale. If additional protection is needed, backfill both upslope and downslope to create better ground contact and reduce sediment passage through or beneath hay/straw bales.
- Stake each hay/straw bale into the ground by two stakes each approximately 3 feet long
- If a silt fence is being used with the hay/straw bale barrier, position the silt fence downgradient of the hay/straw bales (hay bales filter first).
- Since hay/straw bales degrade quickly, check barriers often and replace as needed. Routinely remove and dispose of sediment buildup in a stable upland area.
- The hay/straw bale barrier should be as far away from downgradient sensitive areas, and as close to the work areas as construction limitations allow, in order to minimize the total work area and disturb as little area as possible.
- Once the project is complete and soils are stabilized, hay/straw bales should generally be compacted and allowed to decay in place, as their height can provide an obstacle to movement of smaller wildlife. Spreading hay bales around a site as mulch could introduce weed seeds. Using hay/straw as mulch is not generally

problematic if the site is already colonized by invasive species. Plastic bailing twine should be removed from hay/straw bales. Wooden stakes should also be removed.

Maintenance:

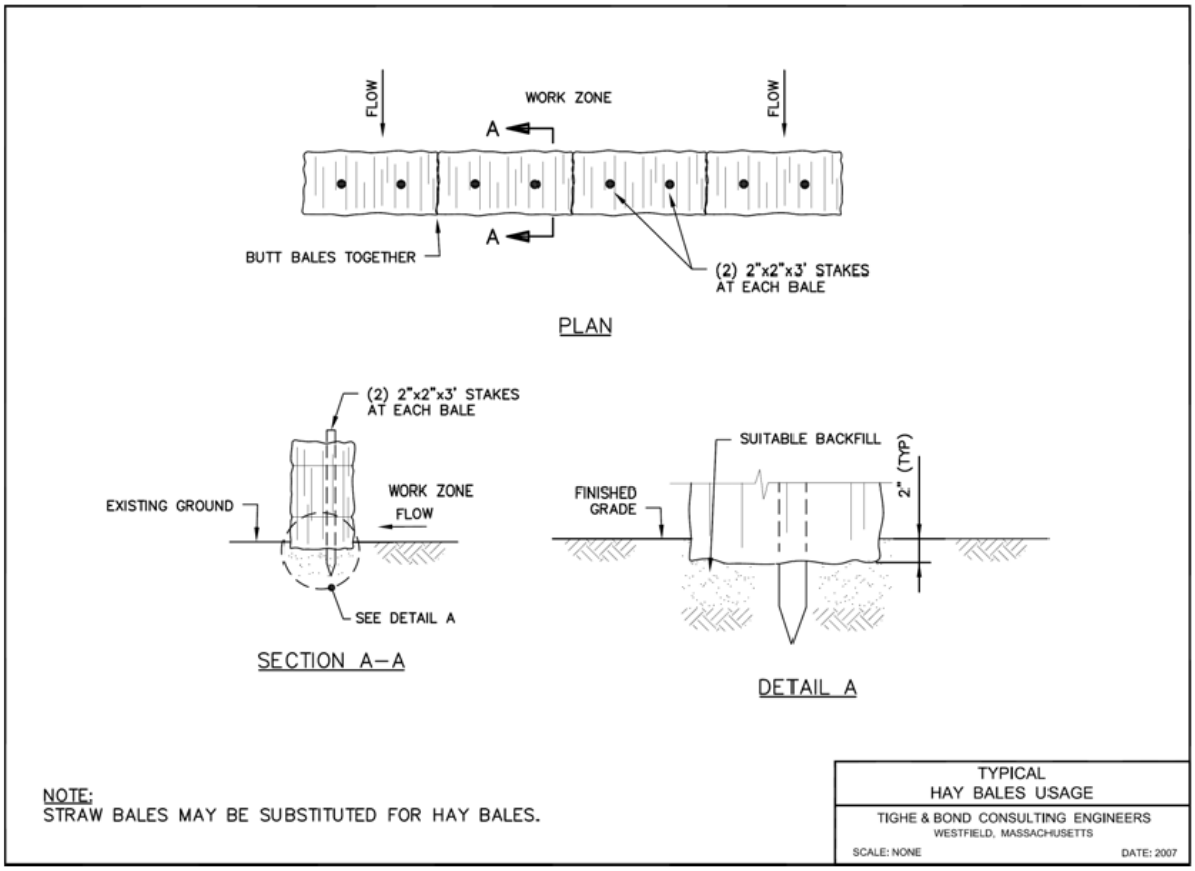
- Inspect before a forecasted storm event and daily during a prolonged rain event.
- Remove accumulated sediment and properly disposed outside sensitive areas when it has reached a thickness of ½ to ⅔ the height of the bale.
- Replace rotted or sediment-covered bales when necessary.

Additional Comments:

Straw bales are favored over hay bales for use as erosion control barriers. Since straw bales are composed of the dried stalks left over after a grain is harvested, they do not contain the plant's seeds and therefore will not spread growth of such species, some of which may be exotic, invasive or otherwise undesirable. Hay bales are generally less expensive, but consist of the seed heads and the upper, thinner portion of the stems which generally decay faster than straw.

Properly installed hay bale barrier with silt fence.

Properly installed hay bale barrier with silt fence.



1.4 Silt Fence

Applications: Sedimentation control, work limits, temporary animal barrier, slows flow on steep slopes

Limitations:

- Frozen or rocky ground (for installing stakes).
- May prevent critical movements of sensitive wildlife species.
- Disposal.

Overview:

Silt fence is constructed of a permeable geotextile fabric secured by wooden stakes driven into the ground. It is installed as a temporary barrier to prevent sediments from flowing into an unprotected and/or sensitive area from a disturbed site. A silt fence should be installed downgradient of the work area. Once the project is complete and soils are stabilized, silt fence materials (i.e., geotextile fabric and wooden stakes) must be removed and properly disposed off-site (see environmental scientist to determine if area is stabilized).

Installation:

- Install silt fence along the toe of a slope or along a fairly level contour with the outermost ends directed upslope. The fabric should be laid into a 6-inch wide by 6-inch deep trench dug on the upslope side of the fence and tamped down with fill material to ensure a sturdy base and so sediments will not flow beneath the fabric. Use of a Ditch Witch® or similar equipment is suggested for this task.
- Drive the silt fence stakes into the ground until secure (≥6 inches below grade).
- If a hay bale or straw bale barrier is being used with the silt fence, position the silt fence downgradient of the bales.
- The silt fence should be as far away from downgradient sensitive areas, and as close to the work areas as construction limitations allow, in order to disturb as little area as possible.

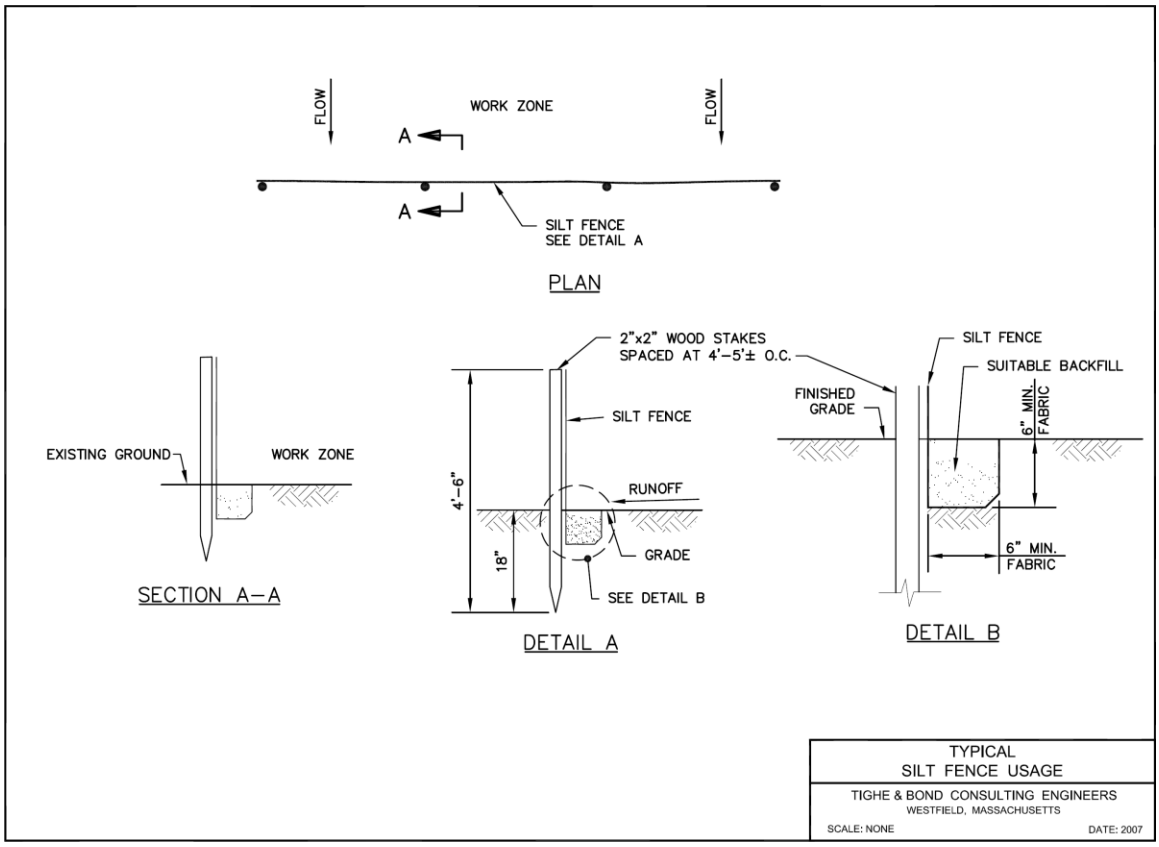
Maintenance:

- Inspect frequently and replace or repair as needed, especially during long-term projects.
- Routinely remove and properly dispose of sediment buildup in a stable upland area, outside of sensitive areas. Remove sediment when it has accumulated to a thickness of ½ the height of the silt fence.

Additional Comments:

A silt fence must be installed in an excavated trench and located where shallow pools can form so sediment can settle. The fence must be placed along the contour. If placed otherwise, water may concentrate to a low point and is likely to flow beneath the fence.

Properly installed and functioning silt fence. Direction of flow indicated by blue arrow.


FLOW
WORK ZONE
FLOW
A
A
SILT FENCE
SEE DETAIL A
PLAN
EXISTING GROUND
WORK ZONE
SECTION A–A
2"x2" WOOD STAKES
SPACED AT 4'–5'± O.C.
SILT FENCE
4'–6"
RUNOFF
18"
GRADE
SEE DETAIL B
DETAIL A
SILT FENCE
SUITABLE BACKFILL
FINISHED
GRADE
6" MIN.
FABRIC
6" MIN.
FABRIC
DETAIL B
TYPICAL
SILT FENCE USAGE
TIGHE & BOND CONSULTING ENGINEERS
WESTFIELD, MASSACHUSETTS
SCALE: NONE
DATE: 2007

1.5 Syncopated Silt Fence

Applications: Sedimentation control, work limits, slow flows on steep slopes, and permit wildlife movement.

Limitations:

- Frozen or rocky ground (for installing stakes).
- Complex installation compared to standard silt fence.
- Disposal.

Overview:

Syncopated silt fence refers to silt fence that is installed in a specific layout that permits wildlife movement. Many construction projects continue over at least one wildlife activity season, and silt fence may impede the movement of animals. Syncopated silt fencing is to be installed in areas where silt fencing may impede wildlife access to a resource (i.e., vernal pool, wooded area). These areas will be identified when developing wetland protection measures.

Installation:

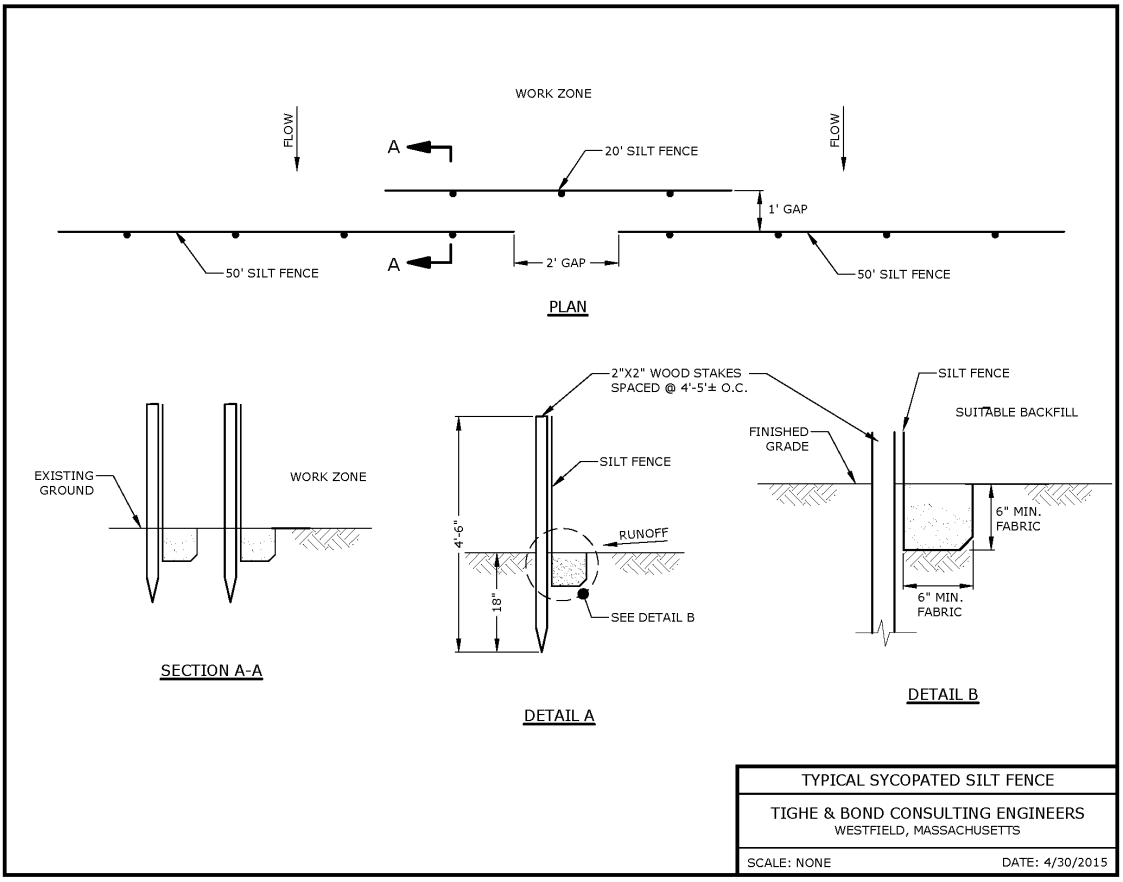
- The syncopated silt fence layout is shown on the typical below. For every 50 feet of siltation fence installed, allow for a gap of two feet before installing the next section. The gap allows wildlife movement One foot behind the main silt fence line, install a second row of silt fence approximately 20 feet in length and centered at the gap.
- Install silt fence along the toe of a slope or along a fairly level contour with the outermost ends directed upslope. The fabric should be laid into a 6-inch wide by 6-inch deep trench dug on the upslope side of the fence and tamped down with fill material to ensure a sturdy base and so sediments will not flow beneath the fabric. Use of a Ditch Witch® or similar equipment is suggested for this task.
- Drive the silt fence stakes into the ground until secure (≥6 inches below grade).
- If a hay bale or straw bale barrier is being used with the silt fence, position the silt fence downgradient of the bales.
- The silt fence should be as far away from downgradient sensitive areas, and as close to the work areas as construction limitations allow, in order to disturb as little area as possible.

Maintenance:

- Inspect frequently and replace or repair as needed, especially during long-term projects.
- Routinely remove and properly dispose of sediment buildup in a stable upland area, outside of sensitive areas. Remove sediment when it has accumulated to a thickness of ½ the height of the silt fence.

Additional Comments:

A silt fence must be installed in an excavated trench and located where shallow pools can form so sediment can settle. The fence must be placed along the contour. If placed otherwise, water may concentrate to a low point and is likely to flow beneath the fence.



1.6 Erosion Control Blankets

Applications: Slope stabilization, erosion and sedimentation control

Limitations:

- Can be used on steep (i.e. greater than 45°) slopes but not on rocky soils.
- Mulches may be more cost effective on flatter areas.

Overview:

Erosion control blankets are generally composed of biodegradable or synthetic materials and are used as a temporary or permanent aid in the stabilization of disturbed soil on slopes. These blankets are used to prevent erosion, stabilize soils, and protect seeds from foragers while vegetation is recolonized.

Installation:

- Always follow manufacturer's instructions for properly installing erosion control blankets. Different composition blankets are recommended for site-specific conditions (slope grades, contributing watershed areas) and use requirements (biodegradable, photodegradable, non-biodegradable).
- Prior to installation, clear the slope of any rocks, branches, or other debris.
- Rolled out blankets in a downward direction starting at the highest point of installation. Secure blankets above the crest of the slope using a berm tamped down along the top of the disturbed area.
- Tack down blankets with stakes or staples every 11 to 12 inches (or closer) horizontally and every 3 feet (or closer) vertically. Biodegradable staples are preferred.
- Overlap each blanket section horizontally with the next section by approximately 2 or 3 inches. Vertical overlaps should be approximately 6 inches, with the upslope section overlaying that of the down-slope section.

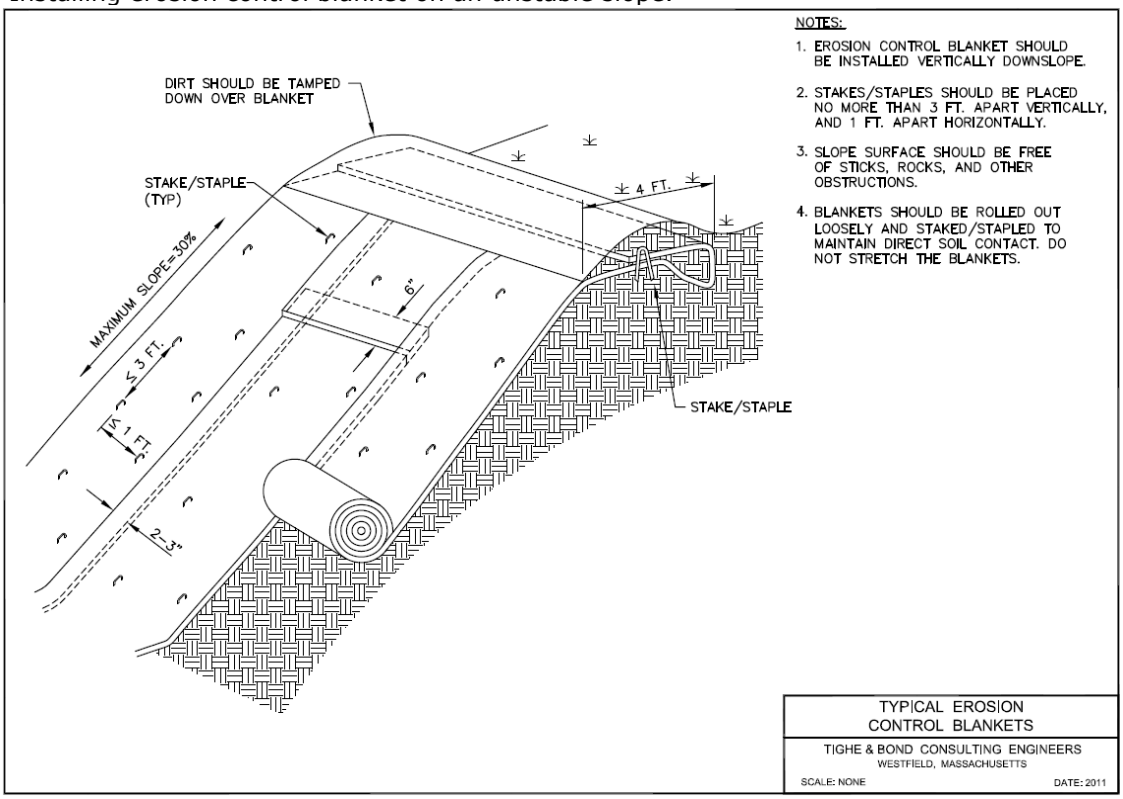
Maintenance:

- Inspect for movement of topsoil or erosion weekly and after major precipitation events. Inspect until vegetation is firmly established.
- Repair surface, reseed, replace topsoil, and install new netting if washout, breakage, or erosion occurs.

Additional Comments:

Additional materials used for erosion control with a continuous sheet or material include Jute Mats (sheets of woven jute fiber) and Turf Reinforcement Matting (geotextile matrix most effective for channels).

Installing erosion control blanket on an unstable slope.



1.7 Straw/Compost Wattles

Applications: Erosion and sedimentation control, work limits

Limitations:

- Not recommended for steep slopes.

Overview:

Straw wattles are used as an erosion control device to slow runoff velocities, entrain suspended sediments, and promote vegetation growth until an area is stabilized. They are not generally intended for steep slopes, but rather, to stabilize low to moderate grades where there is a broad area of disturbance. Straw wattles may also be used along small stream banks to protect areas before vegetation has stabilized the soils. The wattles are constructed from a biodegradable netting sock stuffed with straw and may be left to biodegrade in place once a project is complete.

Wattles should be placed lengthwise, perpendicular to the direction of runoff. The wattles are typically spaced about 10 to 40 feet apart, depending on the slope angle. Additionally, the soil texture should be considered – for soft, loamy soils, wattles should be placed closer together; for coarse, rocky soils, they may be placed further apart.

Installation:

- Install prior to disturbing soil in the upgradient drainage area.
- Install so that the ends of each row of wattles on a slope are slightly turned downhill to prevent ponding behind them.
- Where straw wattles are installed end-to-end, butt the wattles tightly together so as not to allow water/sediments to flow between them.
- Place straw wattles in a shallow trench to assure stabilization and soil should be packed against the wattle on the uphill side.
- Securely stake straw wattles to the ground by driving a stake directly through the wattle approximately every four feet. A portion of each stake should remain approximately 2 to 3 inches above the wattle.
- Use *without* silt fence reinforcement: at the base of shallow slopes, on frozen ground, bedrock, and rooted, forested areas.
- Use *with* silt fence reinforcement: at low points of concentrated runoff, below culvert outlets, at the base of slopes more than 50 feet long, and in places where standalone mulch wattles have failed.

Maintenance:

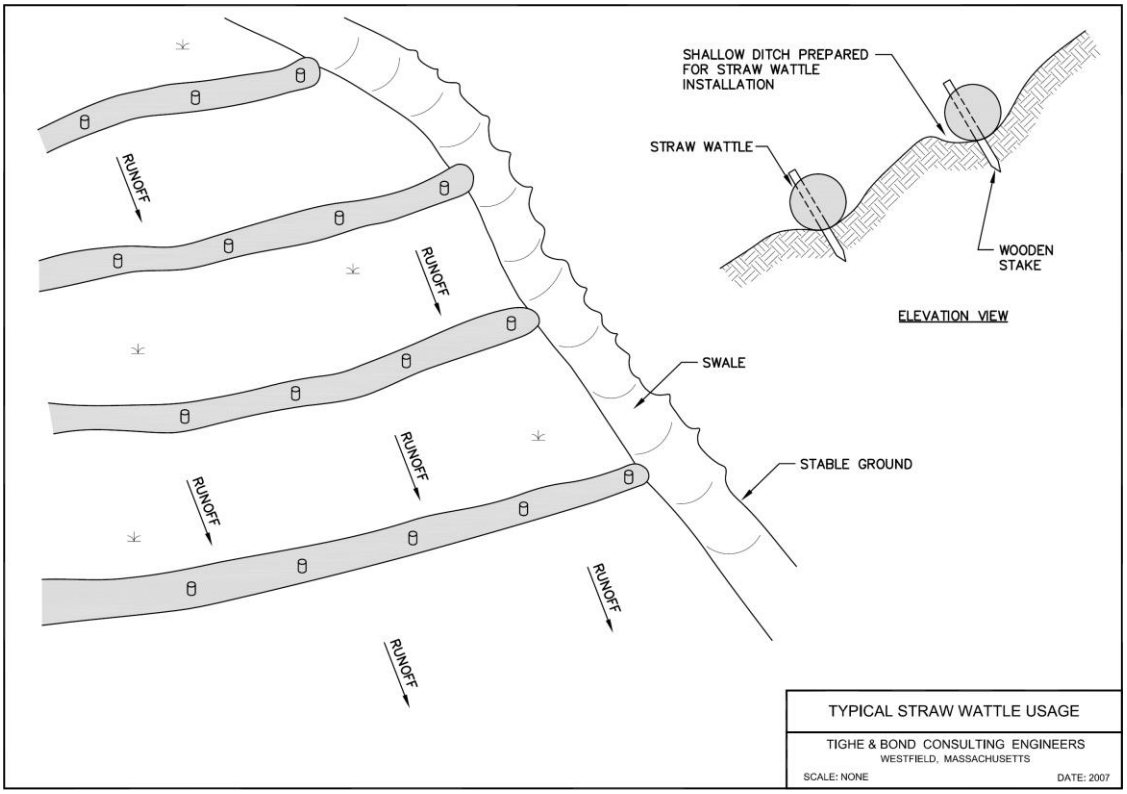
- Routinely inspect wattles and after rain events. Repair as needed with additional wattles and/or stakes.
- Remove sediment deposits when they reach half the height of the wattle. Repair or reshapes wattles when they have eroded or have become sediment clogged or ineffective.

- If flow is evident around the edges, extend the barriers or evaluate replacing them with temporary check dams.

- Reinforce the berm with an additional sediment control measure, such as silt fence or a temporary rock check dam, if there is erosion or undercutting at the base or sides of the berm or if large volumes of water are being impounded behind the berm.

Additional Comments:

Woody vegetation and tall grasses may need to be removed before installing the berm to prevent voids that allow sediment under the berm. Wattles can also be planted with woody vegetation and seeded with legumes for additional stability.


SHALLOW DITCH PREPARED FOR STRAW WATTLE INSTALLATION
STRAW WATTLE
WOODEN STAKE
ELEVATION VIEW
RUNOFF
SWALE
STABLE GROUND
TYPICAL STRAW WATTLE USAGE
TIGHE & BOND CONSULTING ENGINEERS
WESTFIELD, MASSACHUSETTS
SCALE: NONE
DATE: 2007

1.9 Catch Basin Protection

Applications: Erosion and sedimentation control

Limitations:

- For small quantity and low velocity stormwater flows.
- Hay/straw bales hard to stake into paved areas.
- Ineffective for very silty water.
- May require authorization from local government for discharge to municipal system.
- Fabric drop inlet should be used where stormwater runoff velocities are low and where the inlet drains a small, nearly level area.
- Undercutting and erosion under filter fabric if fabric is not buried at bottom.

1.9.1 Hay/Straw Bales, Filter Fabric, and Filter Baskets

Overview:

Hay bales, filter fabric, and filter baskets are all temporary devices placed around and within existing catch basin inlets to protect the stormwater management system from high sediment loads and high velocities during construction. Use in areas where stormwater runoff is relatively small and velocities are low and where shallow sheets of run-off are expected.

Hay/Straw Bales Installation: Hay/straw bales are recommended for areas which have the storage space to allow temporary ponding since they are one of the least permeable protection methods.

- Installation is similar to perimeter hay/straw bale barriers.
- Use bales that are wire bound or string tied. Place bales so that the bindings are on the sides of the bales rather than against the ground.
- Install hay/straw bales in a box configuration around the drop inlet with the ends of the bales placed tightly against each other.
- If the area is unpaved, anchor bales using two stakes driven through the bale and into the ground.
- Hay bales can be placed around the perimeter of the inlet in order to extend the life of the filter fabric and/or basket by removing much of the sediment before-hand.

Filter Fabric Installation: Filter fabric is used to protect catch basins from excessive sediment.

- Cut fabric from a single roll.
- Place fabric beneath catch basin grate.
- Avoid setting top of fabric too high, which will lead to flow bypassing the inlet.

Filter Baskets/Bags Installation: Install filter baskets/bags within catch basins in combination with hay bales, fabric, stone or sod drop inlets. They may be used alone where drainage area is small with shallow flows.

- Install per manufacturer's instructions.
- Filter baskets typically consist of a porous fabric bag which is fitted under the catch basin grate.
- Sediments are filtered out of the stormwater and accumulate in the basket or bag.

Maintenance:

- Inspect weekly and after each major rain event.
- Remove accumulated sediment on a regular basis.
- Replace or make repairs as needed.
- Remove after area is permanently stabilized.

Additional Comments:

Discharge of clean water into municipal system catch basins may be an option for certain sites. However, this activity must be coordinated with the municipality and shall not occur without their written consent.

1.9.2 Sod or Stone Mound Drop Inlets

Overview:

Sod or stone mound drop inlets are temporary devices placed around and within existing catch basin inlets to protect the stormwater management system from high sediment loads and high velocities. They are used in areas where stormwater run-off is relatively heavy and overflow capacity is necessary. Sod should only be used in well vegetated areas and when the general area around the inlet is planned for vegetation and is well suited for lawns. Stone mounds are well suited for the heaviest flows.

Installation:

- For Sod: Place a mound of permanently vegetated sod around the perimeter of the inlet to a minimum height of 6 inches.
- For Stone: Stone can be used alone or in combination with stacked concrete blocks. Gravel alone will slow drainage time and increase settlement.
- Place wire mesh with ½" openings over the inlet with 1 foot extending on each side. Overlay with filter fabric.
- Surround inlet with mound of gravel, 1" diameter or smaller, to a minimum height of 6", placed over the mesh.
- If blocks are used, stack them around the inlet, between 12 and 24" high, place mesh over the openings and pile the gravel against the outside face of the blocks.

Maintenance:

- Inspect weekly and after each major rain event.
- Remove accumulated sediment when it reaches ½ of the height of the filter mound. Stone especially must be regularly maintained.

- Repair erosion as necessary.
- If the storm flow bypasses inlet and causes erosion, the top of the structure is too high.
- If the trap is not efficient and/or there is sediment overload, the drainage area is too large to handle load. Consider constructing a temporary sediment trap.
- If scour holes develop (if blocks are being used), blocks are not placed snugly against the inlet grate.

Filter Baskets/Silt Bags

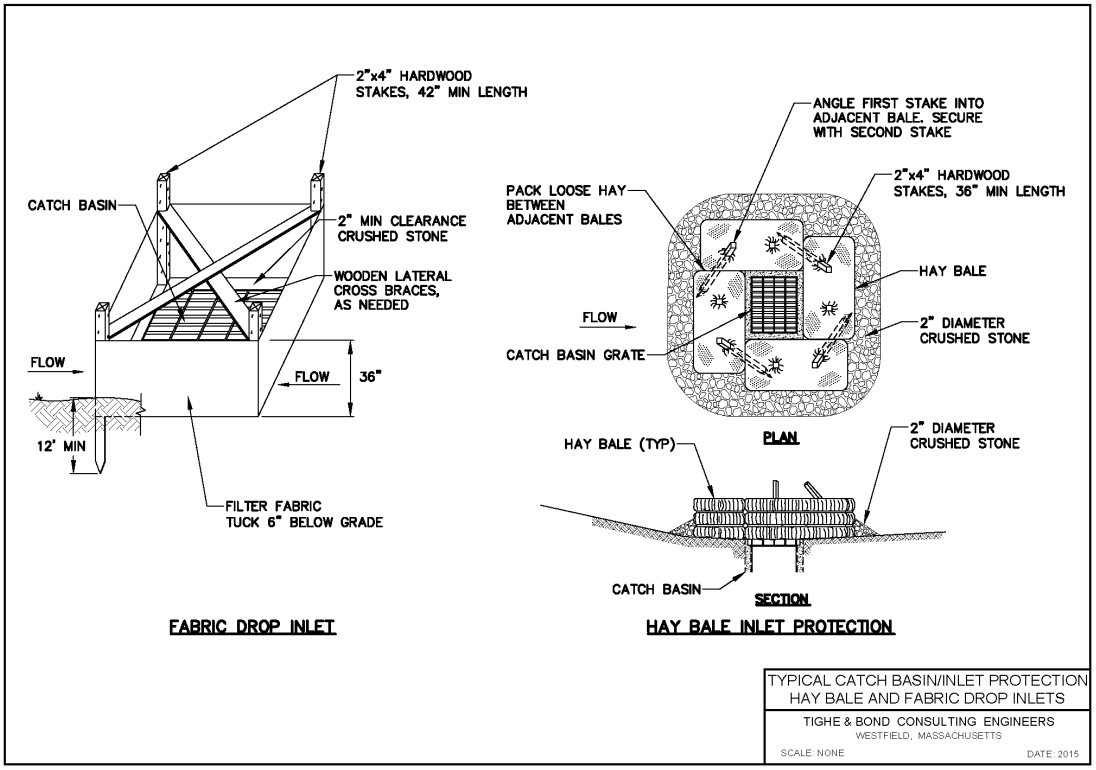
Filter baskets/silt bags are installed within catch basins in combination with hay bales, fabric, stone or sod drop inlets. They can potentially be used alone where drainage area is small with shallow flows. They may cause ponding or may rip under heavier flows without the additional external filtering method.

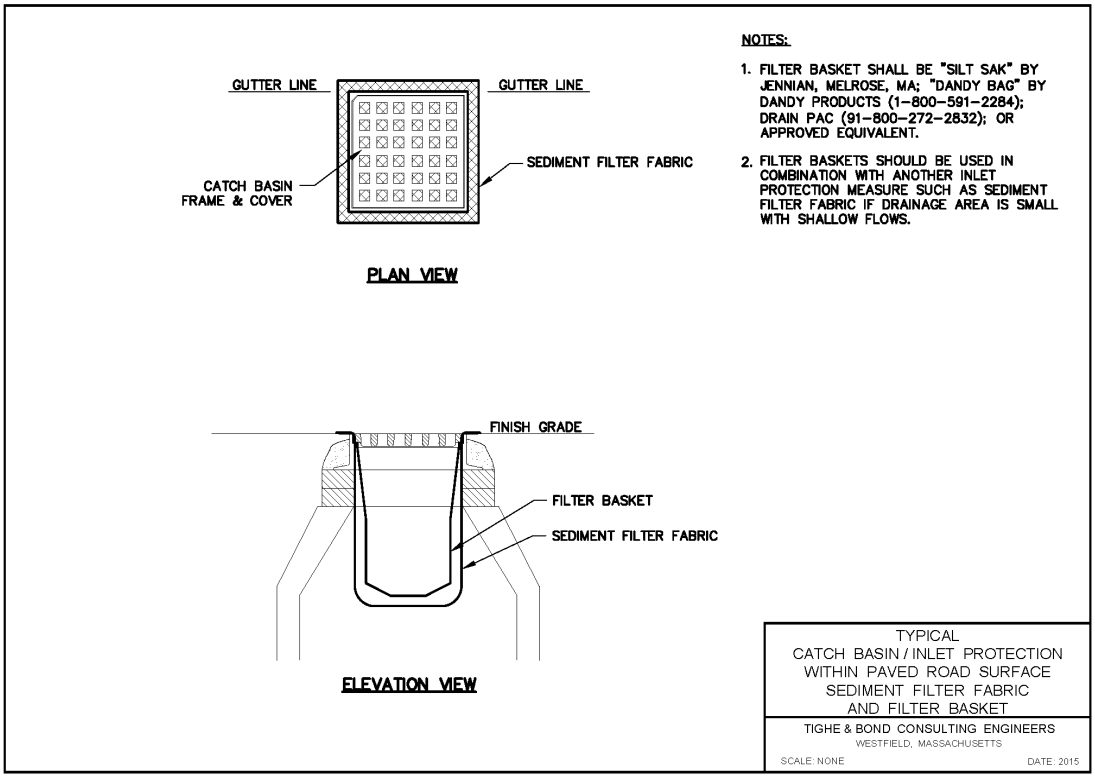
Installation:

- Several trademarked/name brand filter/silt bags exist and should be installed per the manufacturer's instructions. Almost all consist of a porous fabric bag which is fitted under the catch basin grate. Sediments are filtered out of the stormwater and accumulate in the bag.

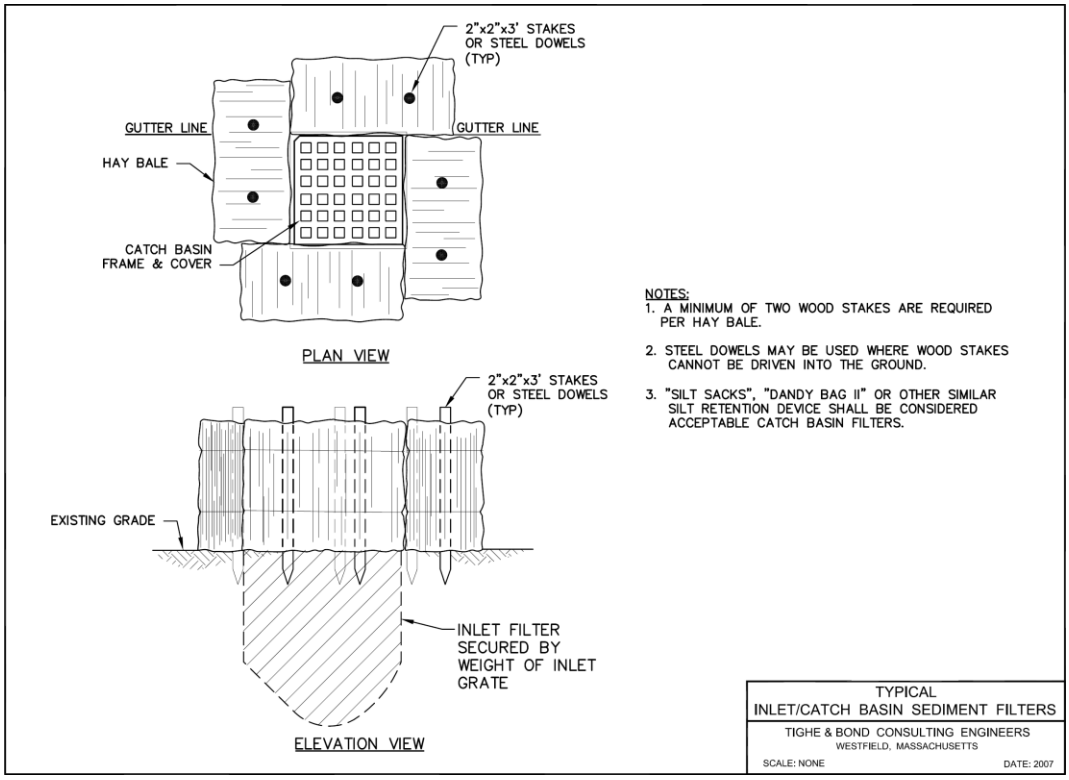
Maintenance:

- Inspect inlet and fabric weekly and after each major rain event.
- Remove sediment when the bag is halfway full.
- Replace bags as necessary due to wear or ripping.





Catchbasin protected from sedimentation by filter fabric.


2"x2"x3' STAKES
OR STEEL DOWELS
(TYP)
GUTTER LINE
GUTTER LINE
HAY BALE
CATCH BASIN
FRAME & COVER
PLAN VIEW
2"x2"x3' STAKES
OR STEEL DOWELS
(TYP)
EXISTING GRADE
INLET FILTER
SECURED BY
WEIGHT OF INLET
GRATE
ELEVATION VIEW
NOTES:
1. A MINIMUM OF TWO WOOD STAKES ARE REQUIRED PER HAY BALE.
2. STEEL DOWELS MAY BE USED WHERE WOOD STAKES CANNOT BE DRIVEN INTO THE GROUND.
3. "SILT SACKS", "DANDY BAG II" OR OTHER SIMILAR SILT RETENTION DEVICE SHALL BE CONSIDERED ACCEPTABLE CATCH BASIN FILTERS.
TYPICAL
INLET/CATCH BASIN SEDIMENT FILTERS
TIGHE & BOND CONSULTING ENGINEERS
WESTFIELD, MASSACHUSETTS
SCALE: NONE
DATE: 2007

1.10 Loaming and Seeding

Applications: Erosion control, soil stabilization, site restoration

Limitations:

- May be site specific limitations (e.g. permit or State requirements).
- Applies to upland areas only.

Overview:

Permanent seeding is appropriate for vegetated swales, steep slopes, or filter strips. Temporary seeding is used if construction has ceased and if an area will be exposed.

Installation:

- Apply loam/ topsoil prior to spreading seed mix per manufacturer's recommendations. Apply water, fertilizer, and mulch to seedbed, as needed.
- Plant native species of grasses and legumes where practicable.

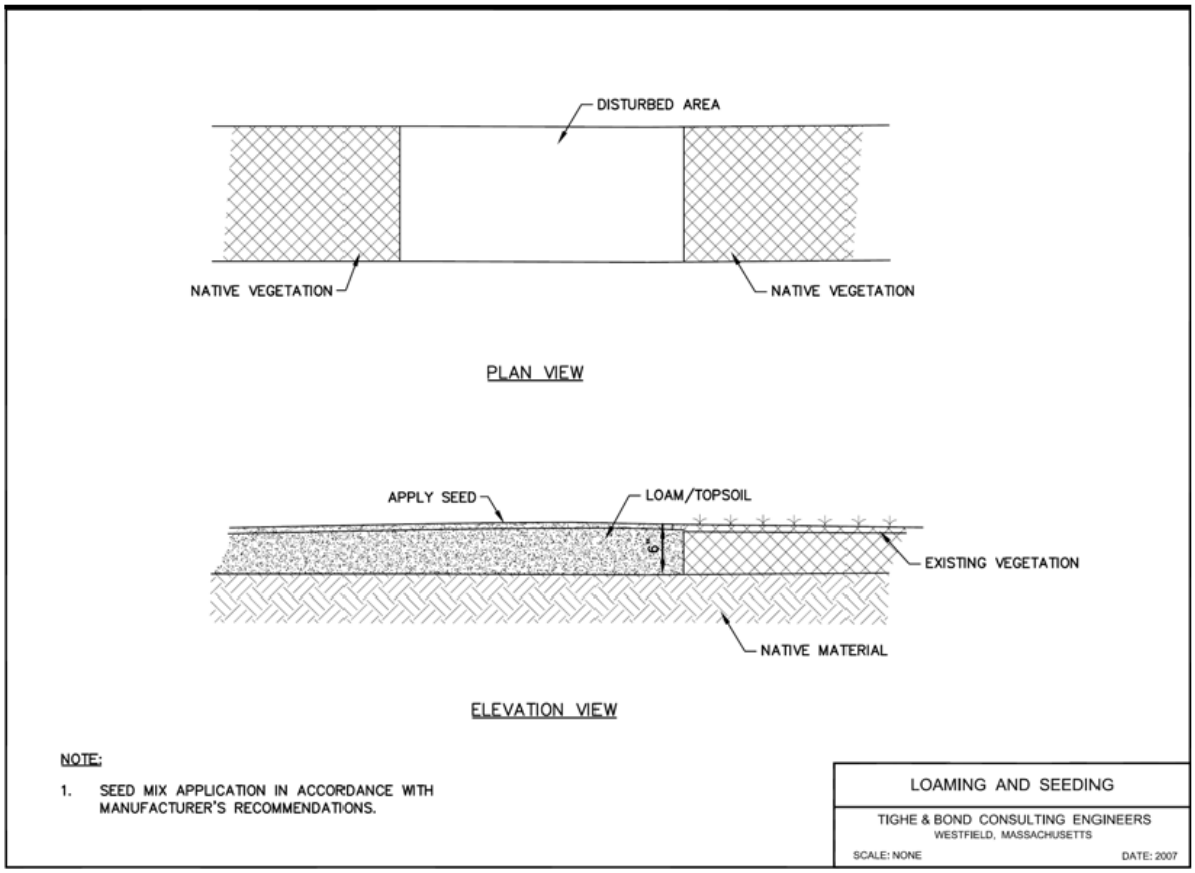
Maintenance:

- Inspect on regular basis until vegetation has established.
- If washout or erosion occurs, repair surface, re-seed, re-mulch and install new netting.
- Follow permit requirements regarding use of wetland seed mix in wetlands where required.

Additional Comments:

Cool Season Grasses	Warm Season Grasses
• Best growth in the cool weather of fall and spring, set seed in June and July. • Seed April 1-May 31 and Aug 1-Sept 10.	• Growth begins in the spring, accelerates in the summer, and plants set seed in the fall. • Seed April 1-May 15, dormant seeding Nov 1-Dec 15.

Loaming and seeding of recently disturbed right of way.



1.11 Mulching with Hay/Straw/Woodchips

Applications: Erosion control, soil stabilization, site restoration

Limitations:

- May be site specific limitations (e.g. permit or State requirements).
- Applies to upland areas only.
- Thick mulch may prevent seed germinations.
- Mulch on steep slopes must be secured with netting to prevent it from being washed away.

Overview:

Mulching consists of an application of a protective blanket of straw or other plant residue, gravel, or synthetic material to the soil surface to provide short term soil protection. It enhances plant establishment by conserving moisture and moderating soil temperatures, and anchors seed and topsoil in place. Mulch also reduces stormwater runoff velocity.

Application rates and technique depend on material used. Select mulch material based on soil type, site conditions and season. Straw/hay provides the densest cover if applied at the appropriate rate (at least ½ inch) and should be mechanically or chemically secured to the soil surface. Woodchip application can be less expensive if on-site materials are used.

Installation:

- Use in areas which have been temporarily or permanently seeded.
- Use mulch netting on slopes greater than 3% or in concentrated flows.
- Mulch prior to winter (ideally in mid-summer).

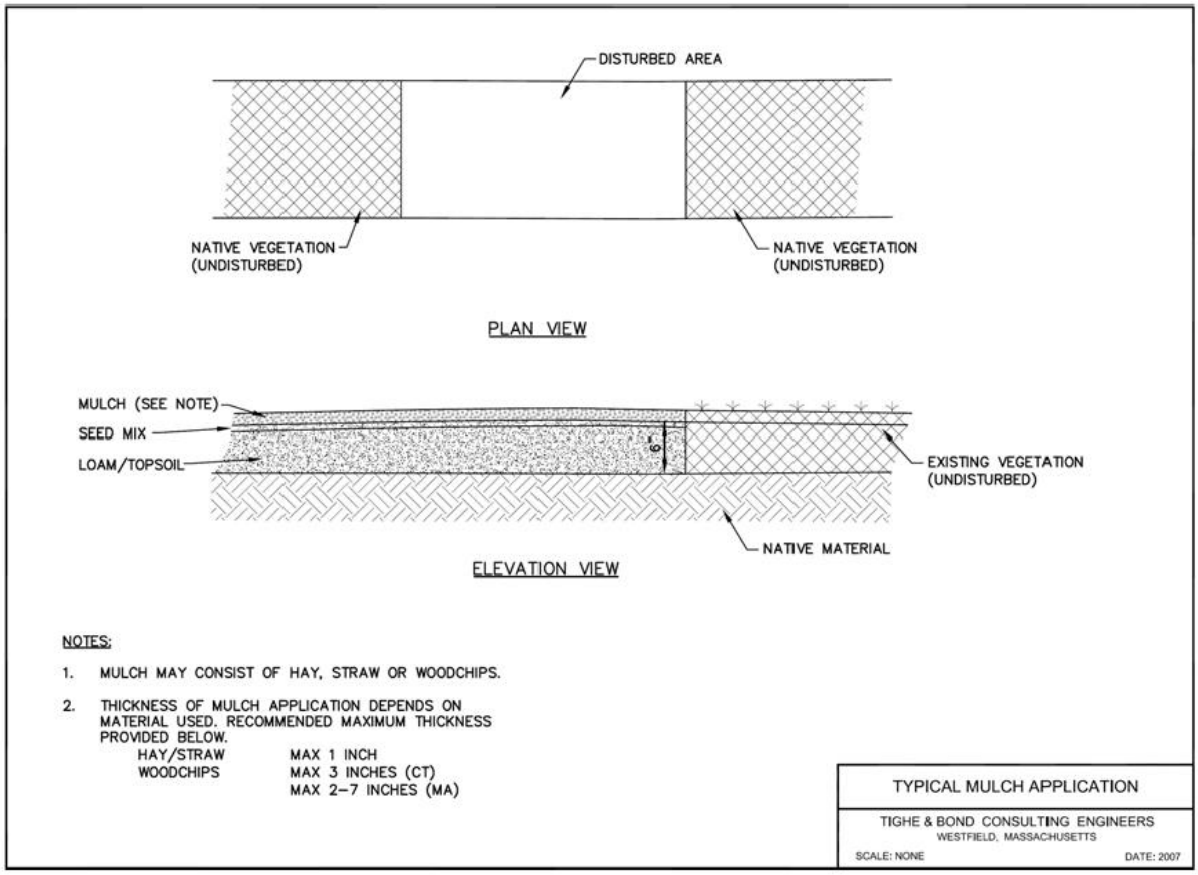
Maintenance:

- Inspect on regular basis until vegetation has established.
- If washout or erosion occurs, repair surface, re-seed, re-mulch, and install new netting.

Additional Comments:

Type	Description/Use
Straw/Hay	• Straw or hay applied to surface at 2-4 tons per acre • Mechanically or chemically secured to soil surface • Provides the densest cover to protect soil and seeds
Wood Fiber/Hydraulic Mulch	• Chopped up fibers applied to the soil surface with a hydroseeder • Tackifier when necessary can be applied with fiber, seeds and fertilizer in one step. This is best when done with fast growing seeds
Compost	• Compost acts as a soil amendment but is more expensive than most mulches • Its efficiency is comparable to wood fiber
Wood Chips	• Use of wood chips as a mulch saves money if on-site materials are used • Effective when applied at high levels (6 tons per acre) and on up to 35% slopes

Typical view of light mulching atop unstable, seeded soils.



1.12 Coir Log Use for Bank Stabilization

Applications: Bank stabilization, wetlands and watercourse restoration

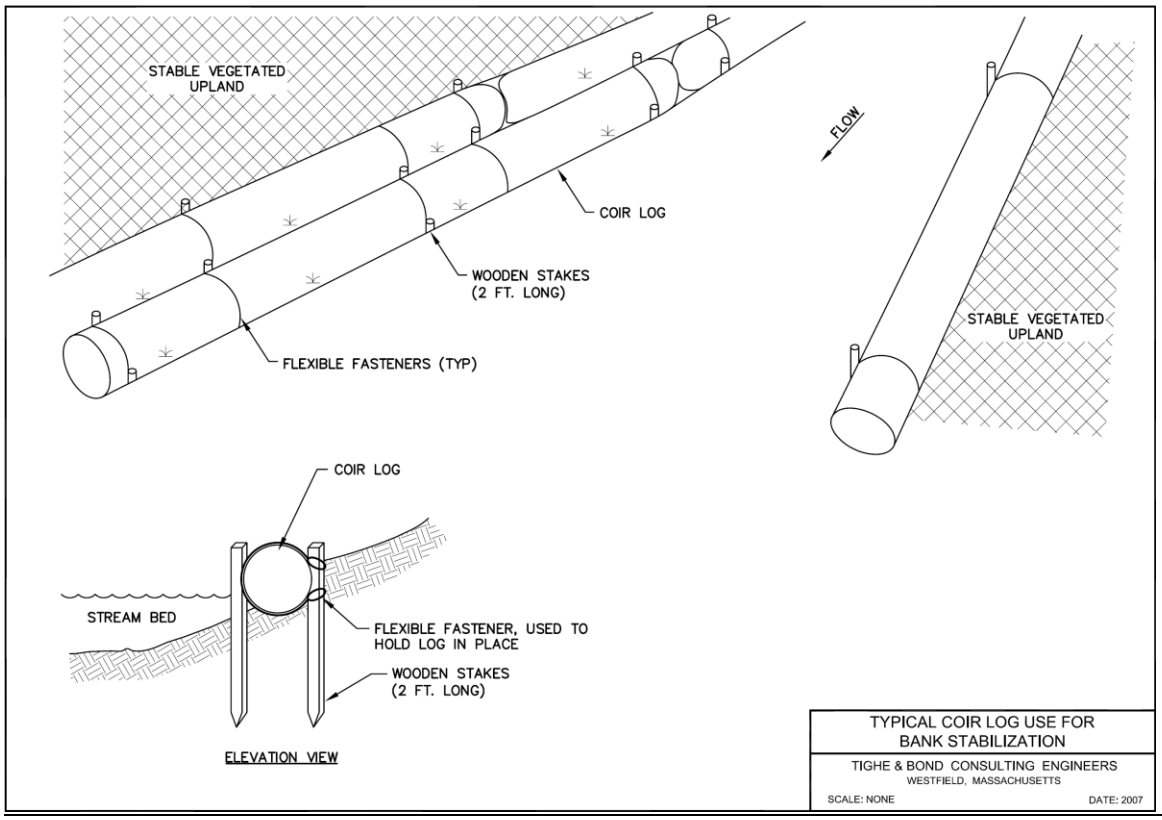
Limitations:

- Moderately expensive.

Overview:

- Refer to permit requirements (if applicable) and manufacturer's specifications.
- Install along banks between upland and watercourse using wooden stakes (2 foot long) and flexible fasteners (to hold log in place).

Coir logs used to restore a stream bed and banks.



1.14 Check Dams

Applications: Stormwater management, erosion control

Limitations:

- Need to be adequately sized based on expected rain events.

Overview:

Check dams are porous physical barriers placed across a drainageway to reduce the velocity of concentrated stormwater flows and erosion. Check dams also temporarily pond stormwater runoff to allow sediment in the water column to settle out. Permanent or long-term check dams are typically constructed of rip rap or other stone material. Short-term check dams can be constructed of rip rap. Rip rap check dams are preferred over hay bales.

Installation:

- Place stone by hand or machine, making side slopes no steeper than 1:1 and with a maximum height of 3 feet at the center of the check dam. A geotextile may be used under the stone to provide a stable foundation and/or to facilitate removal of the stone.
- The minimum height of the check dam shall be the flow depth of the drainageway, but shall not exceed 3 feet at the center.
- Install the check dam so that it spans the full width of the drainageway, plus 18 inches on each side. Leave the center of the check dam approximately 6 inches lower than the height of the outer edges.
- The maximum spacing between check dams should be such that the toe of the upstream check dam is at the same elevation as the top of the center of the downstream check dam.

Maintenance:

- For permanent stone check dams, inspect and maintain the check dam in accordance with the standards and specifications provided in the design for the site.
- For temporary check dams, inspect at least once per week and within 24 hours of the end of a precipitation event of 0.5 inches or more to determine maintenance needs.
- Maintenance may include, but are not limited to, the replacement of stone, repair of erosion around or under the structure, and/or the removal and proper disposal of accumulated sediment.

Problem	Solution/Explanation
Stone displaced from face of dam	Stone size too small and/or face too steep
Erosion downstream from dam	Install stone lined apron
Erosion of abutments during high flow	Rock abutment height too low
Sediment loss through dam	Inadequate layer of stone on inside face or stone too coarse to restrict flow through dam

Stone check dams at construction site.

Stone check dam at construction site.

2.1.2 Frac Tank

Applications: Dewatering, managing contaminated groundwater

Limitations:

- Expensive
- May be site specific limitations (e.g. extremely unlevel ground)
- May require proper disposal at a regulated facility (in cases of contaminated groundwater)

Overview:

Frac Tanks are pre-fabricated and self-contained units that contain a series of baffles that allow fine materials to settle out of the water column. Use frac tanks when the work requires dewatering in an area with very silt laden water and/or contaminated groundwater.

Frac tank on-site for dewatering activities.

2.1.3 Filter Bags and Hay Bale Containment Area

Applications: Dewatering

Limitations:

- Pumps require oversight at all times.
- Filter bags clog and require replacement.

Overview:

Use filter bags with hay bale containment area for dewatering when there is the potential for discharged water to flow overland into wetlands or waterbodies. Locate dewatering sites in well-vegetated areas within the right of way or approved work areas. Locate discharges outside of wetlands and over 100 feet from a streambank or waterbody, if practicable.

Installation:

- Place pump in a containment structure (i.e., child-sized plastic pool) to avoid fuel leakage to the wetlands or waterways.
- Properly place the discharge hose into a pre-manufactured, geotextile filter bag per the manufacturer's instructions.
- Place the filter bag in a well-vegetated area outside of a wetland area and over 100 feet from a waterbody, if practicable.
- Elevate the intake hose off the trench bottom and create a sump with clean rock in order to avoid pumping additional sediment.
- Build a hay bale corral for the filter bag if the water must be discharged within 100 feet of a wetland, waterbody, or other sensitive area.
- Stake a double vertical line of hay bales in an "L" or "U" shape on the downgradient sides of the bag to further filter the discharge water.

Maintenance:

- Man the pump at all times.
- Refuel pump within a plastic containment structure and/or over 100 feet from the wetland or waterbody.
- Routinely check the filter bag during pumping activities to ensure that it is not reaching its holding capacity.
- If the bag appears to be nearing its limits, stop dewatering until more water has filtered out and the bag can be replaced.
- Properly dispose of used filter bags and trapped sediment.

2.4 Silt Barriers

Applications: Turbidity control

Limitations:

- Must be rated to withstand anticipated flow velocity and quantity.

Overview:

Staked and floating silt barriers are temporary flexible barriers used within a waterbody to separate or deflect natural flow around a work area. Barriers are placed around the sediment source to contain the sediment-laden water, allowing suspended soil particle to settle out of suspension and stay in the immediate area. The staked barrier consists of geotextile fabric attached to support posts and a wire support fence and a chain sewn into a sleeve along the bottom edge to allow the barrier to conform to the channel.

The floating silt barriers are often called silt or turbidity curtains, and can be purchased from manufacturers or can be made on site. Construction generally includes a skirt (geotextile fabric) that forms the barrier, flotation segments such as styrofoam sealed in a seam along the top of the fabric, a ballast chain sealed into a sleeve along the bottom edge of the fabric, a loadline built into the barrier above or below the floatation segments, and piles or posts tied back to underwater or on shore anchor points.

Staked Silt Barriers

- For installations which only isolate a part of the stream, barriers can be used in higher flows (shallow streams with currents less than 0.5 ft/s).
- Do not use in streams/river with strong currents, strong waves, ice, floating debris, or boats and do not place barriers completely across stream channels unless they are minor or intermittent streams with negligible flow.

Installation:

- Place the staked barrier and wire support fence at least 1 foot above the waterline. Do not install in a waterbody deeper than 4 feet.
- Place support stakes 10 feet apart and drive them 2 feet into the channel bottom.
- Fasten the wire mesh securely against the fabric with heavy duty wire staples at least 1” long. If possible, use a continuous roll of fabric and fasten securely to the posts with heavy duty staples with a maximum spacing of 2”.
- Where possible, prefabricate a staked barrier on shore. Carefully roll it up lengthwise and move it into place.
- Secure the bottom edge of fabric to the channel bottom by placing a heavy chain into a sewn sleeve along the fabric edge, or by placing clean rockfill over the edge.

Floating Silt Barriers

- Use only in negligible or low flow conditions. Can be used for instream areas between 2.6 feet and 6 feet deep and with waves potentially up to 10 feet.

- Do not use to stop, divert, or filter a significant volume of water.

Installation:

- Purchasing a pre-manufactured silt curtain such as Siltmaster® will save time constructing the barrier. Follow manufacturer's advice for the area.

- Enclose the smallest area as practicable. Locate the barrier far enough away from construction equipment to avoid damage.

- Launch the furled barrier from a ramp, pier or shore. Set the shore anchor points and tie off one end of the barrier to the stream anchor point and the downstream end to a boat. Bring to the downstream point to be anchored.

- Anchor the barrier in the desired formation and make sure the skirt is not twisted around the flotation.

- Cut the furling ties and let the ballast sink to its maximum depth.

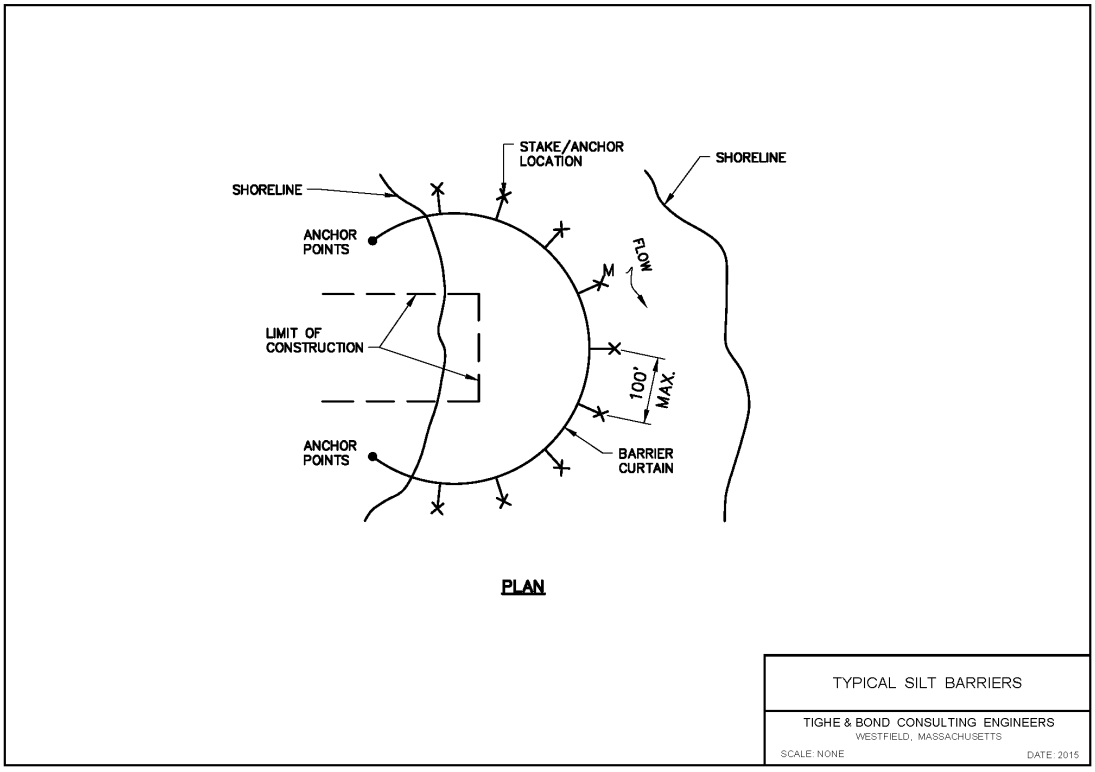
- Slant the barrier at an angle, not perpendicular to the flow. If the barrier will be exposed to reversing currents, anchor it on both sides.

Maintenance for both:

- Inspect daily for any rips or tears or turbidity in the stream flow. Repair immediately with overlapping pieces of geotextile fabric.

- Remove accumulated sediment from the base of the barrier. If necessary, dewater turbid water to an onshore filter bag before removing the barrier.

- Remove the barrier carefully when the work is completed and after suspended sediments have time to settle out.


STAKE/ANCHOR LOCATION
SHORELINE
SHORELINE
ANCHOR POINTS
FLOW
LIMIT OF CONSTRUCTION
100' MAX.
ANCHOR POINTS
BARRIER CURTAIN
PLAN
TYPICAL SILT BARRIERS
TIGHE & BOND CONSULTING ENGINEERS
WESTFIELD, MASSACHUSETTS
SCALE: NONE
DATE: 2015

Section 4
Inspection and Maintenance

A pre-construction meeting will be held to discuss how often and who will be checking that all erosion and sedimentation controls are in working order. All BMPs will be inspected at least once per week during construction and at least once per month during restoration. Construction sites will be inspected after major storm events (rainfall events greater than 0.25 inches).

4.1 During Construction

Construction sites, construction access roads, and the associated erosion and sedimentation controls should be inspected by the person(s) designated at the pre-construction meeting, as required by permit conditions. Any damage observed must be repaired in a timely matter, at least within 48 hours of observation. Repairs may include regrading and/or top dressing the surface with additional aggregate to eliminate ruts as well as those repairs required by each erosion and sedimentation measure used.

All inspections will be documented in the project folder.

4.1.1 Maintenance of E&S Controls

Spare erosion and sedimentation control materials such as straw wattles, hay/straw bales and silt fencing should be kept on site or readily available so they may be replaced if they become non-functional due to deterioration or damaged during a storm, extreme water or wind, or other unexpected events.

4.1.2 Rapid Wetland Response Restoration

In the event of unintended discharges of sediment into wetlands, Eversource will quickly control, contain and remove sediment using non- or marginally invasive methods. Responding quickly to unintended discharges minimizes the difficulty and cost of restoration if the sediment is left in place for an extended period of time. Eversource will conduct sediment removal activities at the time of discharge and will notify the appropriate regulators of the discharge and the restoration process.

4.1.3 Vehicle Storage

All storage and refueling of vehicles and other equipment must occur outside of and as far away as practical from sensitive areas such as wetlands, unless specifically agreed by the Project Team and an alternate protocol is developed and approved internally. Refueling for larger, less mobile equipment such as drill rigs or large cranes, may be allowed within wetland resources only with prior approval and if specified precautions and protocols are followed. A proper location for refueling should be identified and designated before site work begins. The recommended minimum distance from wetland areas for storage of fuel and refueling is 100 feet. Additionally, equipment should be checked regularly for evidence of leaks. Construction material storage should also be located at least 100 feet from wetlands.

4.1.4 Spills

Spill kits consist of emergency cleanup and spill containment materials that can be used in the event of a fuel or other chemical spill. Spill kits must be kept on site and accessible at all times in case of an emergency spill. Such kits should generally contain multiple absorbent socks and/or pillows and wipes and temporary disposal bags. Follow the applicable Eversource Contractor Work Rules.

4.1.5 Post Construction

Post-construction inspections of restored areas will be conducted at regular intervals throughout the growing season, as required by any applicable permits, and/or after major storm events. Sites should be inspected for success or failure of revegetation, invasive species colonization, and erosion and sedimentation. In the event additional measures are required to achieve site restoration and stabilization, corrective actions shall be identified and implemented.

All information collected during inspections, regular maintenance, and repair procedures should be documented in project folders. In addition, photographic or diagrammatic logs may be kept to help record certain events and for documentation of project progress and any noteworthy observations.

The construction work is not complete until all areas are restored.

Section 5
Rehabilitation and Restoration

5.1 Restoration

All areas disturbed by construction, repair, and maintenance activities shall be substantially restored to pre-construction conditions. Please refer to Appendix A Section I for photos and typicals for loaming, seeding, and mulching. Prompt restoration minimizes the extent and duration of soil exposure and protects disturbed areas from stormwater runoff. Stabilization should be conducted as soon as practicable. Where appropriate, it is preferable to allow wetlands to naturally revegetate.

5.1.1 Seed Mixes

Several different seed mixes are available for upland and wetland restoration. State-specific comprehensive summaries of seed mixes for both temporary and permanent seeding of disturbed sites can be found within the following documents:

- Massachusetts: Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, page 157: http://www.mass.gov/eea/docs/dep/water/essec1.pdf

- Connecticut: 2002 Connecticut Guidelines for Soil and Erosion Sediment Control, page 5-3-8: http://www.ct.gov/deep/cwp/view.asp?A=2720&Q=325660

Upland Seed Mix: If significant grading or upland alteration has occurred, annual rye grass seed shall be placed following manufacturer's recommendations after regrading activities.

Wetland Seed Mix: If significant grading or wetland alteration has occurred, a wetland seed mix shall be placed following manufacture's recommendations after regrading activities.

5.1.2 Upland

The following restoration techniques apply to restoration projects in upland areas.

- Soil excavated during construction and not used as backfill must be evenly spread onto disturbed areas to restore grades. Topsoil shall be stripped and separated to the extent practical, for re-use. Permanent soil protection shall be provided for all areas disturbed by construction activities. All areas will be seeded either by Hydro-seeding or broadcast seeding. If areas cannot be seeded due to the time of year, then mulch (hay or straw) is still required prior to the next precipitation event.
- Topsoil removed during construction activities will be replaced, seeded, and mulched.
- All areas that are broadcast seeded shall be treated with a layer of mulch, such as hay, but preferably straw, up to one inch thick to enhance moisture retention, dissipate disturbance from precipitation, and detract birds foraging on broadcast seed.

- Rehabilitation of access routes and other areas must be performed as soon as practicable after construction is completed, including reestablishment of water bars or other BMPs to control erosion of the access road, and the removal and restoration of temporary wetland or waterway crossings.
    - Temporary breaks in construction activities may warrant seeding and mulching of disturbed areas as interim erosion control measures.
- Erosion control measures shall remain in place until soils are clearly stabilized. Once soils are stable, erosion controls – especially silt fence, which presents an obstacle to movement of small animals shall be removed and properly disposed. Stakes should be removed from hay bales and spread as mulch to remove barriers to wildlife movement.
- Straw is preferred over hay to prevent the spread of invasive plant species seed stock.
- If a grading operation at a site shall be suspended for a period of more than 29 consecutive days, the disturbed area shall be stabilized by seeding, mulching, and/or other appropriate means within the first 7 days of the suspension of grading.
- Within 7 days after a final grade is established in any grading operation the disturbed area shall be stabilized by seeding, loaming, and/or other appropriate means.

5.1.3 Wetland/Watercourses

Regrading of Ruts: Upon removal of construction mats, or other BMPs, the wetland resource area should be inspected for rutting or disturbance from eroded upland soils. Any rutting should be regraded to pre-existing contours and upland soils removed from wetland areas while taking care not to compact soils.

The following restoration techniques apply to restoration project in wetlands:

Maintenance, Repair, and Emergency Projects (When No Permit is Required)

- Remove mats by "backing" out of the site and removing mats one at a time. Regrade soils to pre-existing contours while taking care not to compact soils.
- Soils excavated from wetland areas shall be segregated and stockpiled separately (i.e., topsoil/muck apart from mineral subsoil) in a dry/upland area at least 100 feet from wetland boundaries unless other provisions have been made to facilitate restoration activities.
- Excavated wetland soils that have been stockpiled during underground utility installations within wetlands shall be replaced in the same order (i.e., mineral subsoil beneath organic topsoil/muck) to the extent practicable and restored to pre-disturbance grades.
    - Grading activities should include the elimination of ruts within the area to be restored.
- If replacement of soil associated with temporary wetland or watercourse crossings for access roads is necessary, disturbed areas must be restored to pre- disturbance grades, either seeded and mulched, or allowed to revegetate from the natural seed bank.

- Disturbed wetland areas shall generally be allowed to revegetate from the natural seed bank. Measures to discourage the establishment or spread of plant species identified as non-native, invasive species by federal or state agencies shall be utilized. Environmental Licensing and Permitting can evaluate whether to let the wetland vegetate naturally.
- Any restoration plantings or seed mixes used in restoration shall consist of species native to the project area and, if feasible, from local nursery stock.
- Any stream banks and beds damaged shall be restored through use of geotextile erosion control blankets, and/or coir logs.
- All seeded areas shall be treated with a layer of mulch (i.e., hay, but preferably straw) up to one inch thick to enhance moisture retention, dissipate disturbance from precipitation, and detract songbirds foraging on broadcast seed.

5.2 Private Property

5.2.1 Improved Areas

Access to and along the ROW over private property must be improved to the extent necessary to ensure suitable passage for construction equipment, provide erosion control, and maintain proper drainage. Upon completion of construction activities, altered yards, lawns, agricultural areas, and other improved areas must be restored to a condition equal to or better than before their use for the construction project. If access is over a property off the transmission easement, then it is the responsibility of a construction representative to determine if legal access rights are available to cross the property.

5.2.2 Overall Work Site

Construction personnel should remove all work-related trailers, buildings, rubbish, waste soil, temporary structures, and unused materials upon satisfactory completion of work. All areas should be left clean, without any litter or equipment (wire, pole butts, anchors, insulators, cross-arms, cardboard, coffee cups, water bottles, etc.) and restored to a stable condition and close to the original condition. Debris and spent equipment should be returned to the operating facility or contractor staging area for disposal or recycling as appropriate.

5.2.3 Material Storage/Staging and Parking Areas

Upon completion of all work, all material storage yards, staging areas, and parking areas shall be completely cleared of all waste and debris. Unless otherwise directed or unless other arrangements have been made with an off ROW or off-property owner, material storage yards and staging areas shall be returned to the condition that existed prior to the installation of the material storage yard or staging area. Regardless of arrangements made with a landowner, all areas shall be restored to their pre-construction condition or better. Also any temporary structures erected by the construction personnel, including fences, shall be removed by the construction personnel and the area restored as near as possible to its original condition, including seeding and mulching as needed.

Attachment J – Wildlife Habitat Evaluation (under separate cover)

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Attachment K – Draft Construction Spill Prevention Control and Countermeasure Plan

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Hudson, Massachusetts Construction Spill Prevention Control & Countermeasures Plan

Construction personnel will be instructed regarding the following spill prevention practices and procedures. Notices stating these practices will be posted in the office trailer, and the site construction supervisor will be responsible for seeing that these procedures are followed.

Material Management Practices

The following material management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. These include good housekeeping practices and guidelines for the handling of hazardous products.

The following good housekeeping practices will be followed on-site during the construction period.

- No storage, stockpiling or staging of construction-related materials or products will occur within 100 feet of a wetland or waterway without adequate erosion control protection and without approval of the Conservation Commission.
- An effort will be made to store only enough product required to do the job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if necessary) under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The project superintendent will inspect the storage area(s) daily to ensure proper use and disposal of materials on-site.

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The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents).

- A copy of all Safety Data Sheets (SDS) for materials or products used during construction will be kept in the office trailer.
- Products will be kept in original containers unless they are not re-sealable.
- Original labels and SDS sheets will be retained; they contain important health, safety and product information.
- If surplus product must be disposed of, it will be done in accordance with Federal, State and Local regulations along with the manufacturer's recommended methods for proper disposal.

Product-Specific Practices

The following product-specific practices will be followed on-site. Recommendations are provided for petroleum products, fertilizers, solvents, paints, and other hazardous substances, and concrete.

Petroleum Products

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, the fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed; and the contents of any partially used bags will be transferred to a sealable, plastic bin to avoid spills. No fertilizer storage will occur within 100 feet of a wetland or waterway.

Solvents, Paints, and other Hazardous Substances

All containers will be tightly sealed and stored when not required for use. Excess materials will not be discharged to the storm sewer system but will be properly disposed according to manufacturer's instructions or state and local regulations. No storage will occur within 100 feet of a wetland or waterway.

Concrete Trucks

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water within 100 feet of wetland resources, except within the limits of the existing reservoir, or into catch basins that are already in place.

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Spill Control/Notification Practices

In addition to the good housekeeping and material management practices discussed above, the following practices will be followed for spill control, notification and cleanup.

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to, shovels, wheel barrows, brooms, dust pans, mops, rags, gloves, goggles, kitty litter or Speedi-Dry, sand, sawdust, and plastic and metal trash containers specifically designated for this purpose.
- All spills will be removed immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material in excess of reportable quantities, as established in the Massachusetts Contingency Plan (MCP), will be reported to the Massachusetts Department of Environmental Protection Division of Hazardous Waste [(617) 556-1133 or 1-888-304-1133]. The Emergency Spill Response Procedure is provided as Attachment A.
- The construction superintendent responsible for the daily operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

Source Control

Trash removal, designated trash storage areas, pavement sweeping and the controlled use of fertilizer and deicing agents on the site will reduce the pollutant load in the site's stormwater management system.

Construction Trash Removal

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers until disposed of properly off-site.

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Covered Trash/Storage Areas

Areas to be used for storing dumpsters, compactors or other raw or waste materials will be covered to prevent contact with stormwater.

Pavement Sweeping

Paved surfaces at the site will be swept at least twice annually (fall and spring). The sweeping program will remove contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater[1].

Fertilizer

Only slow-release organic fertilizers will be used in landscaped areas. This will limit the amount of nutrients that could enter the stormwater and wetland systems. Fertilizer use will be reduced once the proposed landscaping is established.

Deicing Agents

The use of road salt (sodium chloride) for maintenance of parking areas and circulation drives during the winter will be minimized. Sand will be the primary agent used during ice and snow conditions. De-icing or anti-caking agents, added to enhance performance and application characteristics of the sand mixture, will be included only as necessary and at minimum application rates. This will help to limit the amount of dissolved pollutants in snowmelt and stormwater runoff.

Waste Disposal

All non-demolition waste materials will be collected and stored in securely lidded metal dumpsters. The dumpster will meet all local and state solid waste management regulations. All trash and non-demolition construction debris from the site will be deposited in the dumpster; and the dumpster will be emptied as necessary. Trash will be hauled by a licensed contractor and disposed in accordance with federal, state, and local environmental regulations. No trash or construction waste will be buried on-site, and personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and the site construction supervisor will be responsible for seeing that these procedures are followed.

Hazardous Waste

Hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

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Sanitary Waste

Sanitary waste will be collected from the portable units by a licensed contractor a minimum of three times weekly, and disposed in compliance with state and local regulation.

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Spill Response Procedure

Initial Notification

In the event of a spill the facility and/or construction manager or supervisor will be notified immediately.

Construction Manager: (name) _____
(phone) _____

Project Supervisor: (name) _____
(phone) _____

Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. The supervisor will first contact the ***Hudson*** Fire Department and then notify the ***Hudson*** Police Department, ***Hudson*** Board of Health and Conservation Commission. The fire department is ultimately responsible for matters of public health and safety and should be notified immediately by calling **911**.

Non-emergency phone numbers

Fire Department:	(978) 562-5565
Police Department:	(978) 562-7122
Board of Health:	(978) 562-2020
Conservation Commission:	(978) 562-2948

Further Notification

Based on the assessment by the supervisor or manager, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection and the EPA may be notified depending upon the nature and severity of the spill. The supervisor or manager will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees.

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HAZARDOUS WASTE / OIL SPILL REPORT

Date____/____/____ Time_____ AM / PM

Approximate location _____

Type of equipment_____Make_____Size_____

S / N_____Weather Conditions_____

On or near water ☐ Yes If yes, name of body of water_____
☐ No

Type of chemical / oil spilled_____

Amount of chemical / oil spilled_____

Cause of spill_____

Measures taken to contain or clean up spill_____

Amount of chemical / oil recovered_____Method_____

Material collected as a result of clean up

_____drums containing_____

_____drums containing_____

_____drums containing_____

Location and method of debris disposal_____

Name and address of any person, firm, or corporation suffering damages_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring____

Spill reported to General Office by_____Time_____AM / PM

Spill reported to DEP / National Response Center by_____

DEP Date____/____/____ Time_____ AM / PM Inspector_____

NRC Date____/____/____ Time_____ AM / PM Inspector_____

Additional comments_____

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EMERGENCY RESPONSE EQUIPMENT
INVENTORY

The following equipment and materials shall be maintained at all times and stored in a secure area for long-term emergency response need.

--	SORBENT PADS	2 BALES
--	SORBENT BOOM	100 FEET
--	SAND BAGS (empty)	50
--	SPEEDI-DRI ABSORBENT	5 40# BAGS
--	SQUARE END SHOVELS	2
--	PICK	1
--	PRY BAR	2
--	DRAIN COVERS	2

The following items shall be placed in a convenient, readily accessible location on site.

--	HAY BALES & GRADE STAKES	10
--	SAND	10 CUBIC YARDS

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EMERGENCY NOTIFICATION PHONE NUMBERS

1. CONSTRUCTION MANAGER
   NAME: _____ MOBILE: _____
   PHONE: _____ HOME PHONE: _____

   ALTERNATE:
   NAME: _____ MOBILE: _____
   PHONE: _____ HOME PHONE: _____

2. HUDSON FIRE DEPARTMENT
   EMERGENCY: 911
   BUSINESS: (978) 562-5565

   HUDSON POLICE DEPARTMENT
   GENERAL NUMBER: (978) 562-7122

3. CLEANUP CONTRACTOR: _____
   ADDRESS: _____
   PHONE: _____

4. MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
   EMERGENCY: (888) 304-1133
   NORTHEAST REGION: (978) 694-3200

5. NATIONAL RESPONSE CENTER (Will contact EPA and other agencies, as necessary)
   PHONE: (800) 424-8802

6. HUDSON CONSERVATION COMMISSION
   CONTACT: Pam Helinek
   PHONE: (978) 562-2948

7. HUDSON BOARD OF HEALTH
   CONTACT: _____
   PHONE: (978) 562-2020

8. HUDSON DEPARTMENT OF PUBLIC WORKS (DISCHARGE TO STORM DRAIN)
   CONTACT: _____
   PHONE: (978) 562-9333

DRAFT

Attachment L – Snag and Brush Pile Details

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VHB **Computations**

Project _____ Project # _____

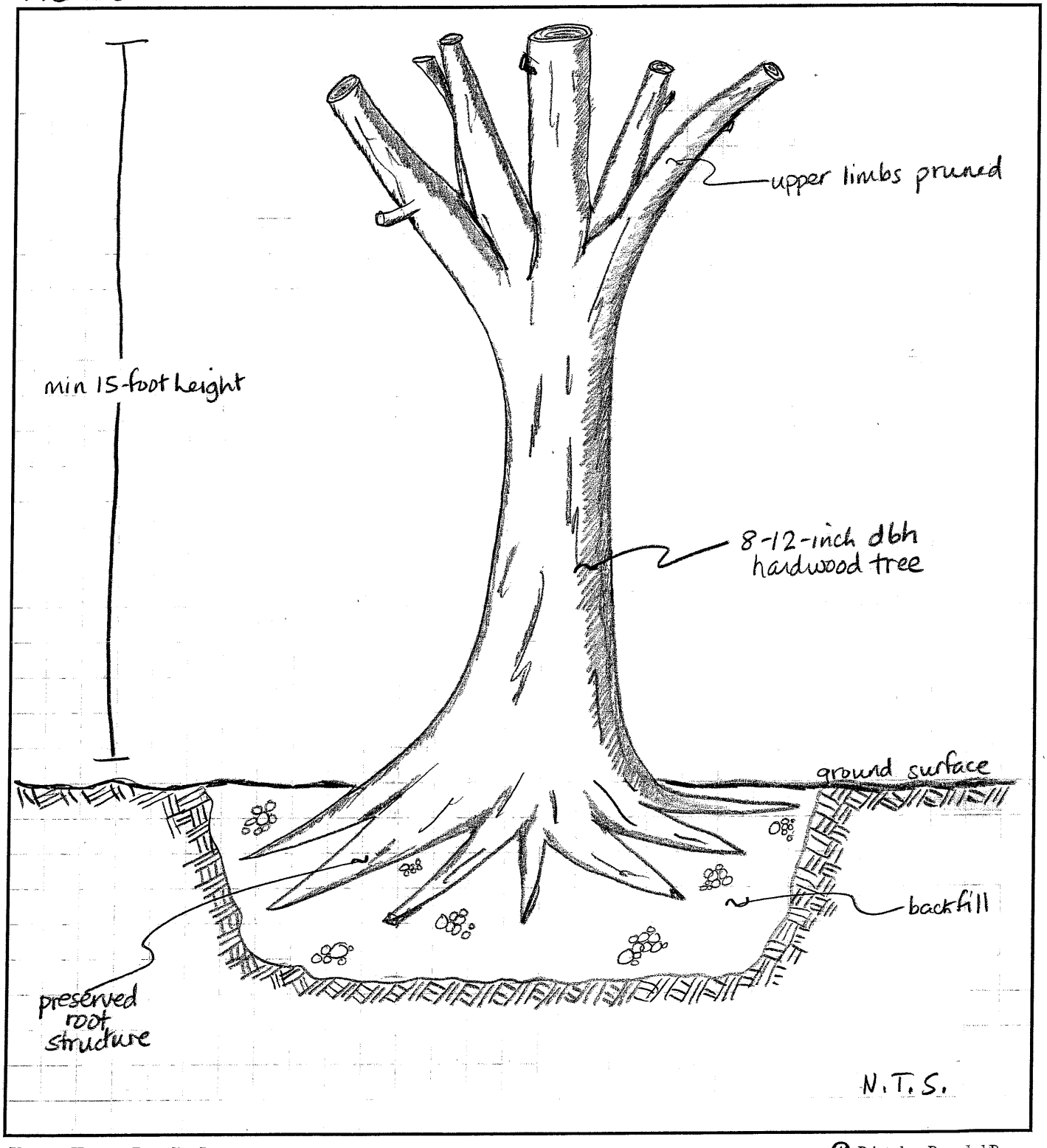
Location _____ Sheet _____ of _____

Calculated by _____ Date _____

Checked by _____ Date _____

Title Replacement Snag Detail

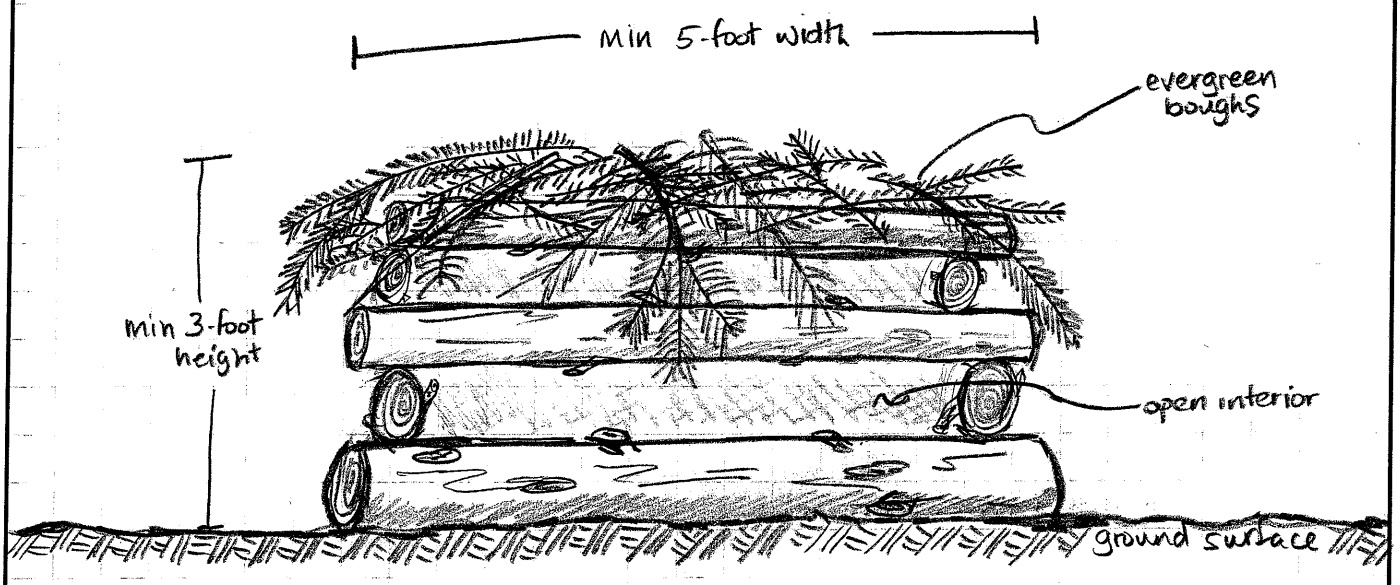
FIGURE A.



VHB Computations

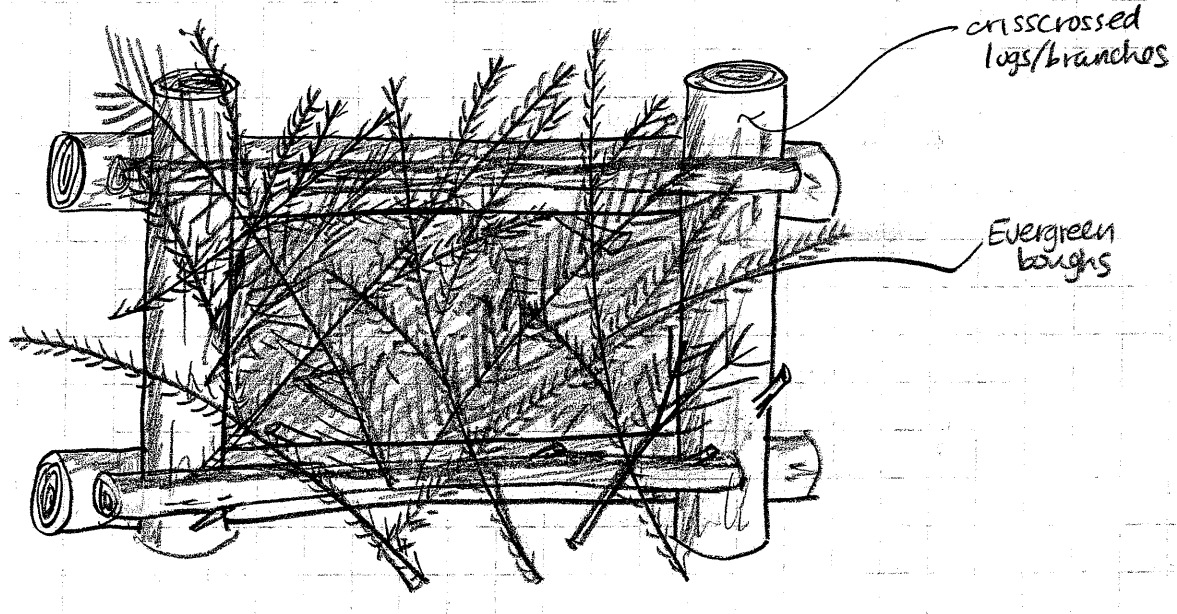
Project _____ Project # _____
Location _____ Sheet _____ of _____
Calculated by _____ Date _____
Checked by _____ Date _____
Title Brush Pile Detail

FIGURE B.



ELEVATION VIEW

N.T.S.



PLAN VIEW

Note: Description taken from "Landscaping for Birds" Mass. Audubon Society, Public Service Info.

Attachment M – Stormwater Management Report (under separate cover)

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