APPENDIX 1-1 EXPANDED ENVIRONMENTAL NOTIFICATION FORM (PROVIDED UNDER SEPARATE COVER)

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Erin Whoriskey
Lead Environmental Scientist
NE Environmental Permitting

September 30, 2021

Secretary Kathleen A. Theoharides
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Subject: New England Power Company
N12/M13 Double Circuit Tower Separation Project
Expanded Environmental Notification Form
Somerset and Fall River, Massachusetts

Dear Secretary Theoharides:

The New England Power Company (NEP) is pleased to submit the enclosed Expanded Environmental Notification Form (Expanded ENF) for the N12/M13 Double Circuit Tower Separation Project (Project) located in the municipalities of Somerset and Fall River, Massachusetts.

The Project involves eliminating the N12/M13 Double Circuit Tower (DCT) configuration of the existing N12 and M12 115 kilovolt (kV) transmission lines located between the Somerset Substation (now Pottersville Switching Station) in Somerset, MA, crossing the Taunton River, and extending to the Sykes Road Substation in Fall River, MA.

The existing DCT configuration of the N12 and M13 Lines between the Pottersville and Sykes Road Substations contributes significantly to the potential for widespread voltage collapse and loss of load under the studied contingencies. Separation of the two circuits onto separate transmission structures will eliminate this configuration and, with it, the risks posed to customers serviced by this portion of NEP's transmission system.

NEP is filing the enclosed Expanded Environmental Notification Form (Expanded ENF) in accordance with the 301 CMR 11.05(7), and we respectfully request that the Secretary allow for the preparation of a Single Environmental Impact Report (Single EIR) in accordance with 301 CMR 11.06(8).

NEP respectfully requests that the Notice of Availability for this Expanded ENF be published in the October 08, 2021 issue of the Environmental Monitor to initiate the public review and comment period. We acknowledge that the review period for the Expanded ENF requesting a Single EIR lasts for 37 Days. Copies of the Expanded ENF have been distributed to public agencies and municipal officials in accordance with 301 CMR 11.16 (see enclosed circulation list). The Spectator and the Fall River Herald News will each publish a Public Notice of Environmental Review on October 04, 2021.

Please do not hesitate to contact me at (781) 907-3598, or Erin.Whoriskey@nationalgrid.com, or Jamie Durand at (401) 439-3020, or jamie.durand@powereng.com, if you have any questions or require additional information. Thank you for your consideration and review.

Sincerely,

Erin Whoriskey
Lead Environmental Scientist
National Grid

James Durand
Environmental Project Manager
POWER Engineers Consulting, PC

Attachments

c: Circulation List (attached)
D. Beron, NEP
W. Levine, NEP
L. Peloquin Shea, NEP

Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: ———————————

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: **N12/M13 Double Circuit Tower Separation Project**		
Street Address: **Right-of-Way located between the Pottersville Substation (1981 Riverside Avenue) in Somerset to the Sykes Road Substation in Fall River (521 Sykes Road) and existing overhead transmission rights-of-way in Somerset and Fall River**		
Municipality: **Somerset and Fall River**	Watershed: **Taunton River Basin & Mount Hope Bay**	
Universal Transverse Mercator Coordinates: **UTM 19T NAD83 (Meters)** **321344 Easting, 4622939 Northing (Pottersville)** **324052 Easting, 4623151 Northing (Sykes)**	Latitude: **41.738214, -71.148383 (Pottersville)** Longitude: **41.740725, -71.115868 (Sykes)**	
Estimated commencement date: **2nd Quarter 2023**	Estimated completion date: **4th Quarter 2024**	
Project Type: **New replacement transmission line**	Status of project design: **~30% complete**	
Proponent: **New England Power Company (NEP)**		
Street Address: **40 Sylvan Road**		
Municipality: **Waltham**	State: **MA**	Zip Code: **02451**
Name of Contact Person: **Jamie Durand**		
Firm/Agency: **POWER Engineers Consulting, PC**	Street Address: **2 Hampshire St.; Suite 301**	
Municipality: **Foxborough**	State: **MA**	Zip Code: **02035**
Phone: **774-643-1829**	Fax: **774-643-1899**	Email:**jamie.durand@powereng.com**

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☒Yes ☐No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☒Yes ☐No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes ☒No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?
EIR

Wetlands:

- Alteration of one or more acres of bordering vegetated wetlands (301 CME 11.03(3)(a(1)(a)

ENF

Waterways and Tidelands:

- New fill or structure or expansion of existing fill or structure, except a pile supported structure, in a velocity zone or regulated floodway. (301 CMR 11.03(3)(b)(1)(e))

Wetlands:

- Alteration of 1,000 or more square feet of salt marsh or outstanding resource waters (301 CMR 11.03(3)(b)(1)(c))
- Alteration of 5,000 or more square feet of bordering or isolated vegetated wetlands (301 CMR 11.03(3)(b)(1)(d))

Which State Agency Permits will the project require?

AGENCY/ REGULATORY AUTHORITY	PERMIT AND/OR PURPOSE OF APPROVAL
Massachusetts Department of Public Utilities (DPU)	Petition for "Right of Convenience and Necessity" pursuant to G.L. c. 164 § 72
Massachusetts Department of Environmental Protection (MassDEP), Waterways Division	Chapter License (potential)
MassDEP	Individual Section 401 Water Quality Certification
MassDEP	Massachusetts WPA – Superseding Order of Conditions (potential)
Massachusetts Historical Commission	Authorization under National Historic Preservation Act (NHPA) of 1966 and Massachusetts General Law [M.G.L.] c. 9 § 27C
Massachusetts Office of Coastal Zone Management	Federal Consistency Review
Massachusetts Natural Heritage & Endangered Species Program	MESA Checklist
Massachusetts Department of Transportation (MassDOT)	State and Interstate Highway Right-of-Way Encroachment Permit and Crossing Permit

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

No land transfer is required for this project.
No financial assistance from the Commonwealth will be used for this project.

Summary of Cumulative Project Size & Environmental Impacts[1]	Existing	Change	Total
LAND			
Total site acreage	~85 acres		
New acres of land altered		1.34[2]	
Acres of impervious area	N/A	N/A	N/A
Square feet of new bordering vegetated wetlands alteration		388 sf[3] permanent fill 12,162 sf permanent cover type conversion from forested wetland to scrub-shrub wetland	
Square feet of new other wetland alteration		6,850 sf temporary impact to salt marsh for low ground pressure equipment access	
Acres of new non-water dependent use of tidelands or waterways		N/A	
STRUCTURES			
Gross square footage	N/A	N/A	N/A
Number of housing units	N/A	N/A	N/A
Transmission Line Structures	15	-Install 16 new transmission structures, including 2 "Y-Frame" steel monopoles for the M13N Line -Replace 7 transmission structures for the N12 Line -Install 4 new intermediate structures for the N12 Line	20
Maximum height (feet)	300 feet (river crossing structure) 105-110 on the N12 Line	A second, parallel river crossing structure is proposed. 110-115 feet on the rebuilt N12 Line & new/replacement M13N Line	~300 feet (Existing) ~300 feet (New) ~ 5-10 feet increase in height for new structures, not including the proposed river crossing structures
TRANSPORTATION			
Vehicle trips per day	N/A	N/A	N/A
Parking spaces	N/A	N/A	N/A
WASTEWATER			
Water Use (Gallons per day)	N/A	N/A	N/A
Water withdrawal (GPD)	N/A	N/A	N/A
Wastewater generation/treatment (GPD)	N/A	N/A	N/A
Length of water mains (miles)	N/A	N/A	N/A

Length of sewer mains (miles)	N/A	N/A	N/A

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Notes:

[1] Refer to the Expanded ENF narrative for a description of impacts from the Project.

[2]Includes select removal of tree limbs and trees (danger and hazard trees) within the existing NEP ROW and tree removal within the existing NEP ROW between State Route 24 and Sykes Road (where tree clearing generally ranges from 15-feet to 28-feet wide). Tree clearing is also required to construct proposed Structure M13N-6 and the associated structure work pad.

[3] Total permanent fill in BVW for the replacement of transmission structures that cannot be feasibly located outside of inland wetlands.

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

The attached Expanded ENF contains the following: Section 1.0 Project Introduction, and Purpose and Need (Section 1.2); Section 2.0 Project Description; Section 3.0 Alternatives Analysis; Section 4.0Land Use; Section 5.0 Wetlands. Flowed Tidelands and Wildlife; Section 6.0 Historical and Archaeological Resources; Section 7.0 Climate Change Adaptation and Resiliency, Section 8.0 Greenhouse Gas Analysis, Air Quality and Noise; Section 9.0 Construction-Period Considerations; Section 10.0 Regulatory Compliance; and Section 11.0 Mitigation Overview.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:
Is the project within or adjacent to an Area of Critical Environmental Concern?
☐Yes (Specify_____)
☒No
if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.
_____
Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.
_____

RARE SPECIES:
Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)
☐Yes
☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:
Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
☒Yes (Specify_____) ☐No
If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☒No

WATER RESOURCES:
Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site?
__Yes __X_ No;
if yes, identify the ORW and its location.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? _X Yes _No; if yes, identify the water body and pollutant(s) causing the impairment:_

- **Taunton River, Fecal Coliform (EPA TMDL No. 40310), Dissolved Oxygen (TMDL needed), and fish bioassessments (TMDL needed)**

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes _X_ No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations.

According to the National Pollution Discharge Elimination System (NPDES) program in Massachusetts, Notices of Intent (NOI) will be submitted to the United States Environmental Protection Agency (USEPA) under the (NPDES) Stormwater Construction General Permit for Stormwater Discharge from Construction Activities. As required under this program, a site-specific Stormwater Pollution Prevention Plan (SWPPP) will be developed to ensure that the best management practices (BMPs) are implemented during construction to minimize pollutant discharges. Implementation of this plan will include extensive use of erosion and sediment control measures designed to minimize site disturbance and prevent opportunities for sedimentation to occur offsite or toward wetland resource areas.

The Project has been designed to limit the creation of new impervious surfaces to the extent practicable.
NEP will utilize existing gravel and/or crushed stone upland access roads and paved roads to gain access to the transmission structures. Where required structure work pads will be built using gavel and stone.

Some minor increases to impervious surfaces incidental to the necessary transmission system upgrades are unavoidable. Installation of concrete caisson structure foundations necessary to upgrade and/or refurbish existing public electric utility will result in negligible increases in impervious surfaces.

No direct point source stormwater discharges are proposed as part of this project.

MASSACHUSETTS CONTINGENCY PLAN:
Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes _X No ___ ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):_ **Shell Oil, New Street, Release Site Number 4-0000749 and Secondary RTNs 4-0000930, 4-00225522 and 4-0023361**

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No X; if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No X ; if yes, please describe:_____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:

The Project will comply with MassDEP's Solid Waste and Air Pollution control regulations, pursuant to M.G.L c40, s.54.

It is the intent for all existing wood and steel towers proposed for removal be transported to an appropriate recycling facility, consistent with all applicable regulations. If contaminated soils are encountered during construction, the soils will be handled in accordance with the following NEP's Environmental Guidance Documents regarding excess soil handling, management and disposal from construction projects on ROW.

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes _ _ No X__ ; See response below.
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:

NEP will take measures to limit vehicle idling times and to reduce air emissions, including the following:

- **Diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of Project construction will either be USEPA Tier 4-compliant or will be retrofitted with USEPA-verified (or equivalent) emission control devices such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine.**

- **The use of ultra-low sulfur diesel fuel in its diesel-powered construction equipment and limits idling time to five minutes except when engine power is necessary for the delivery of materials or to operate accessories to the vehicle such as power lifts.**

- **Vehicle idling is to be minimized during the construction phase of the Project, in compliance with the Massachusetts Anti-idling Law, G.L. c. 90 § 16A, c. 111 §§ 142A – 142M, and 310 CMR 7.11.**

- **In addition, NEP contractors will adhere to NEP's Environmental Guidance (EG-802MA) Vehicle Idling**.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes X_ No ___ ;
if yes, specify name of river and designation: **Taunton River**

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?
Yes ___ No __X_ ; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___ ;
if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document.
   - Cover Letter
   - Expanded ENF Circulation List
   - Expanded ENF Project Narrative
   - Project Figures
   - Appendices A through H
   - Environmental Monitor Notice
   - Newspaper Notifications

2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000)

indicating the project location and boundaries. **(See Appendix A)**

3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities. **(See Appendix A)**

4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts. **(See Appendix A)**

5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase). **(See Appendix A)**

6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2). **(Circulation List - attached)**

7. List of municipal and federal permits and reviews required by the project, as applicable. **(See Table 1-3 in the Expanded ENF Narrative - Anticipated Permits, Reviews and Approvals)**

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to land (see 301 CMR 11.03(1)
___ Yes _X_ No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	N/A	N/A	N/A
Internal roadways	N/A	N/A	N/A
Parking and other paved areas	N/A	N/A	N/A
Other altered areas[1]	11	5.0	19.0
Undeveloped areas	N/A	N/A	N/A
Total: Project Site Acreage	11.0 acres	5.0 acres	19.0 acres

Notes:
[1] *Other Altered Areas* include electric utility easements and/or rights-of-way.

B. Has any part of the project site been in active agricultural use in the last five years?
Yes ___ No _X_; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
Yes __ No _X_; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? Yes ___ No _X_; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? Yes
___ No _X_; if yes, does the project involve the release or modification of such restriction?
___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? Yes ___ No _X_; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No X_; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title: City of Fall River Master Plan 2009-2030 Date: 12/11/2009
Tile: City of Fall River Open Space and Recreation Plan Date: 2010
Title: Town of Somerset Draft Master Plan Date: 2019
Title: Town of Somerset Conservation, Recreation and Open Space Plan Date 2017

B. Describe the project's consistency with that plan with regard to:
   1) economic development __See Below_____
   2) adequacy of infrastructure __See Below _____
   3) open space impacts _See Below _____
   4) compatibility with adjacent land uses See Below_____

The new, replacement M13N Line and associated system upgrades will be located within existing NEP ROW, and are not expected to change or significantly impact land uses or the adjacent lands, despite limited tree removal activities which are required within the existing NEP ROW. The work is consistent with the existing public utility presence within and around the existing N12/M13 ROW.

Community Preservation Plans

In terms of regional and local land use planning, the system upgrades are anticipated to remain consistent with the Community Preservation Plans of the area. These plans discuss community preservation goals and projects specific to preservation within each of the four designated purposes of the Community Preservation Act (these include open space, recreation, historic preservation, and community housing). These plans do not specifically address energy or electrical transmission lines.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
   RPA: Southeastern Regional Planning and Economic Development District

   Title: _Regional Land Use: Role, Policies and Plan Outline for Southeastern Massachusetts_____ Date _June 1996_____

D. Describe the project's consistency with that plan with regard to:
   1) economic development __See Below_____
   2) adequacy of infrastructure ___See Below_____
   3) open space impacts _____See Below_____

The Project is located within the areas covered by the Southeastern Regional Planning and Economic Development District (SRPEDD). The SRPEDD's existing plans include the *Regional Land Use: Role, Policies and Plan Outline for Southeastern Massachusetts (1996), Southeastern Massachusetts: Vision 2020 - An Agenda for the Future (1999), and the Regional Transportation Plan (2012).* These documents review growth trends within the region, and outline the strategic goals and policies aimed at promoting sound land use planning. The policies discussed in these Plans are primarily concerned with preventing sprawl; reducing the loss of open space and farmland; and encouraging appropriate infill in more developed "growth" areas. Utility facilities or services are not explicitly addressed in these documents.

The purpose of the proposed Project is to improve electric transmission reliability in the Southeastern Massachusetts area. The system upgrades will also maintain compliance with regional and national electric standards. No new cross-country ROW are proposed, and the upgrades do not result in any change in land use. As a result, Project is consistent with the policies contained in the planning documents.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to rare species or habitat (see 301 CMR 11.03(2))? __ Yes __X_ No; if yes, specify, in quantitative terms:

(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)

B. Does the project require any state permits related to rare species or habitat? __ Yes X__ No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes _X__ No.none

D. If you answered "No" to all questions A, B and C, proceed to the Wetlands, Waterways, and Tidelands Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes __X_ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? _X__Yes ___No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes _X__ No; if yes, attach the letter of determination to this submission.

Project consultation meetings have been held with NHESP, NEP, and NEP's environmental consultants (POWER Engineers Consulting, PC [POWER]) on March 27, 2018 and March 24, 2021. NHESP has requested a MESA Review Checklist for the Project, which NEP is preparing and will file with the NHESP.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _X__ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

3. Which rare species are known to occur within the Priority or Estimated Habitat?

Based on the information provided by Massachusetts Natural Heritage and Endangered Species Program (NHESP), the Project is not located within Priority Habitat (PH) or Estimated Habitat as indicated in the *Massachusetts Natural Heritage Atlas (15th Edition)* (NHESP 2021). However, one species is likely to occur within a portion of the Project limits. An anadromous fish species, the Atlantic sturgeon (*Acipenser oxyrinchus*) seasonally occurs within the Taunton River.

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes __X_ No

4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes __X_ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

NEP will file Notices of Intent under the Massachusetts Wetlands Protection Act (MA WPA) with the Town of Somerset and the City of Fall River for work activities associated with the Project.

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes _X__ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to wetlands, waterways, and tidelands (see 301 CMR 11.03(3))? _X_ Yes ___ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits (or a local Order of Conditions) related to wetlands, waterways, or tidelands? _X_ Yes ___ No; if yes, specify which permit:

Municipal Conservation Commissions – Massachusetts Wetlands Protection Act (WPA)
MassDEP – Individual Section 401 Water Quality Certification
MassDEP – Chapter 91 License (potential)

C. If you answered "No" to both questions A and B, proceed to the Water Supply Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _X_ Yes ___ No;
if yes, has a Notice of Intent been filed? ___ Yes _X_ No;
if yes, list the date and MassDEP file number: _____;
if yes, has a local Order of Conditions been issued? ___ Yes ___ No;
Was the Order of Conditions appealed? ___ Yes ___ No.
Will the project require a Variance from the Wetlands regulations? ___ Yes _X__ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site: **See Section 5.0 of the attached narrative.**

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Coastal Wetlands		
Land Under the Ocean	1,397 sf	Temporary crossing with Low Ground Pressure (LGP) equipment to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires.

	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Designated Port Areas		
	90, 657 sf	Temporary Construction mats where work pads for construction overlap with DPA
	1,018 sf	Permanent Structure foundations where DPA could not be avoided.
Coastal Beaches	___None___	_____
Coastal Dunes	__None____	_____
Barrier Beaches	____None__	_____
Coastal Banks	None	
Rocky Intertidal Shores	____None__	_____
Salt Marshes		
	6,850 sf	Temporary crossing with low ground pressure equipment to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires.
Land Under Salt Ponds	__None____	_____
Land Containing Shellfish	____None_	_____
Fish Runs	___None___	_____
Land Subject to Coastal Storm Flowage (LSCSF)		Temporary Construction mats for temporary work pads where LSCSF could not be avoided.
	119,313 sf	Temporary grading/earthwork where level area is necessary to create a safe and effective work pad for equipment and crews
	53,066 sf	Permanent Structure foundations where LSCSF could not be avoided.
		Permanent access route and operations and maintenance work pad where LSCSF could not be avoided.
Inland Wetlands		
Inland Bank (lf)	208 lf	Temporary Construction mats where work pads for construction and pull pads overlap with IB.

	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Bordering Vegetated Wetlands (BVW)	120,996 sf	Temporary Construction mats for access routes where BVW crossings could not be avoided. Construction mats where work pads for construction and pull pads overlap with BVW.
	388 sf	Permanent Structure foundations where BVW could not be avoided.
	12,162 sf	Permanent Conversion of forested wetlands to scrub-shrub wetlands due to tree removal (12,162 sf).
Land Under Water (LUW)	___None___	_____
Bordering Land Subject to Flooding (BLSF)	____None__	_____
Riverfront Area (RFA)	Approximately 75,037 sf, of which approximately 16,099 sf of these impacts are accounted for as LCSF temporary impacts above.	Temporary Construction mats for access routes where RFA crossings could not be avoided (Fall River).
	1,018 sf	Construction work pads and pull pads on existing paved surfaces where activities within RFA could not be avoided (Somerset).
	2,329 sf of which approximately 1,951 sf of these impacts are accounted for as BVW permanent impacts (above)	Permanent Structure foundations where RFA could not be avoided in Somerset.

Notes: Impacts are based on 30% engineering design and represent a conservative estimate of Project-related disturbances.

D. Is any part of the project:

1. proposed as a **limited project**? _X_ Yes __ No; if yes, what is the area?

2. the construction or alteration of a dam? ___ Yes _X_ No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? _X__ Yes __ No

The construction of proposed Structure M13N-6 will require the placement of a new galvanized steel single circuit dead end structure on a caisson foundation within a FEMA Zone VE (Velocity Zone), the Fall River side of the Taunton River.

4. dredging or disposal of dredged material? ___ Yes _X_ No; if yes, describe the volume of dredged material and the proposed disposal site:

5. a discharge to an Outstanding Resource Water (ORW) or an Area of Critical Environmental Concern (ACEC)? __ Yes __X_ No

6. subject to a wetlands restriction order? ___ Yes _X__ No; if yes, identify the area (in sf):

7. located in buffer zones? _X_ Yes ___No; if yes, how much (in sf) _20,935 sf of permanent impacts to 100' buffer zones. Approximately 6,654 sf of temporary impacts to 100 ft buffer zones.

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? __ Yes __X_ No

2. alter any federally-protected wetlands not regulated under state law? __ Yes _X_ No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? _X__ Yes __ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? _X__ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

- **Chapter 91 Permit (License Plan No. 4353) dated May 1960**
- **Chapter 91 Permit (License Plan No. 4781), dated March 1964**

B. Does the project require a new or modified license or permit under M.G.L.c.91? _X_ Yes __ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use?

If yes, how many square feet of solid fill or pile-supported structures (in sf)? **N/A**

NEP will coordinate with the MassDEP Waterways Program to review project plans as they relate to Chapter 91 jurisdiction and will obtain any necessary approval(s) under the Chapter 91 Waterways Program.

C. For non-water-dependent use projects, indicate the following:

Area of filled tidelands on the site: N/A_____

Area of filled tidelands covered by buildings:_____

For portions of site on filled tidelands, list ground floor uses and area of each use:

_____

Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No ___
Height of building on filled tidelands_____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? ___ Yes _X_ No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes _X_ No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? __ Yes _X_ No;
(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? ___ Yes _X_ No; if yes, answer the following questions:
What type of dredging? Improvement ___ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys) _____
What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);
Will dredging impact the following resource areas?
Intertidal Yes__ No__; if yes, ___ sq ft
Outstanding Resource Waters Yes__ No__; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) Yes__ No__; if yes __ sq ft
If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?
If no to any of the above, what information or documentation was used to support this determination?
Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.
Sediment Characterization
Existing gradation analysis results? __Yes ___No: if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ____No; if yes, provide results.
Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____

Out-of-state landfill disposal ____
(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? _X_ Yes __ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

Portions of the proposed system upgrades are located within the Massachusetts Coastal Zone (Coastal Management Zone, or CMZ). Work activities within the CMZ comprise of the construction of a new 115 kV transmission line spanning the Taunton River and two new transmission structures.

The Office of Coastal Zone Management (CZM) has established enforceable program policies in the categories of Coastal Hazards, Energy, Growth Management, Habitat, Ocean Resources, Ports and Harbors, Protected Areas, Public Access, and Water Quality[1]. Below find a table addressing the proposed system upgrades and their consistency with each CMZ policy category.

CZM POLICY CATEGORY	PROPOSED SYSTEM UPGRADE CONSISTENCY
Coastal Hazards	System upgrades require construction of a single circuit steel monopole "Y-Frame" transmission structure within a FEMA Velocity Zone (Structure M13N-6). The structural engineering design for a structure located within an area of coastal vulnerability is explained within the Expanded ENF narrative (attached). Construction of the new structure will not result in fill within the adjacent coastal waterway (Taunton River) nor within Flowed Tidelands. Best Management Practices (BMPs) will be installed and maintained during construction to prevent sediment transport to resource areas.
Energy	The proposed system upgrades are coastally dependent as they serve to transport energy from a transfer point located in the coastal zone (Pottersville Switching Yard in Somerset, Massachusetts). These energy facilities were originally sited for proximity to the now out-of-service Montaup Power Plant, located on the west bank of the Taunton River. The Project facilities will provide a more robust and flexible transmission grid. The Massachusetts Department of Public Utilities (DPU) will review NEP's pending Petition for authority to construct a new transmission line pursuant to G.L. c. 164 § 72.
Growth Management	The goal of the system upgrades is to resolve reliability-based transmission needs in the southeastern Massachusetts and Rhode Island (SEMA-RI) area. Upgrades to the utility infrastructure system are necessary to serve existing area customers, including public institutions such as hospitals, schools, and community centers.
Habitat	Construction of new utility structures within the coastal zone have been sited to avoid coastal resources to the extent feasible. The limit of work within the Coastal Zone is outside of any NHESP mapped areas of Estimated or Priority Habitat.
Ocean Resources	Proposed system upgrades will have no effect on ocean resources, including marine resources, minerals, fisheries, or navigational, recreational, or other uses.
Ports and Harbors	Portions of the new M13N 115kV Line are located within the Mount Hope Bay Designated Port Area (DPA). The New M13 Transmission Line is a utility infrastructure upgrade which will support the existing water-dependent industrial use of the DPA. The new M13N 115 kV Transmission Line will be sited within rights-of-way which have been maintained for the purposes of electric utility service for decades. Therefore, the system upgrades will not result in any conversion of land on the waters edge for non-industrial related activities.
Protected Areas	The system upgrade components are not located within any designated Area of Critical Environmental Concern (ACEC). The Taunton River is a federally designated Scenic and Wild River. The new transmission line will span the Taunton River from Somerset to Fall River within an existing NEP easement. No in-water work is proposed, and the wild

[1] *The Massachusetts Office of Coastal Zone Management Policy Guide – October 2011.*

CZM POLICY CATEGORY	PROPOSED SYSTEM UPGRADE CONSISTENCY
	and scenic values of the Taunton River will be unaffected by the utility upgrades. A boat may be used to cross the Taunton River to facilitate wire pulling activities across the River but no impacts to the Taunton River are anticipated.
Public Access	NEP will seek authorization under the Chapter 91 Waterways Program in consultation with the MA DEP for the Project. The system upgrade components will maintain compliance with the Massachusetts Public Waterfront Act and its requirements.
Water Quality	No new point-source discharges or no new withdrawals will result from the electric utility upgrades. Best Management Practices for soil erosion and sedimentation control will be employed during construction, as described in NEP's EG-303 document, to prohibit nonpoint source pollution to adjacent coastal resources.

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes _X_ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to water supply (see 301 CMR 11.03(4))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to water supply? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the Wastewater Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? _____Will the project require an increase in that withdrawal? ___Yes ___No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No. If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to wastewater (see 301 CMR 11.03(5))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to wastewater? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the Transportation -- Traffic Generation Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____

	Existing	Change	Total
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to traffic generation (see 301 CMR 11.03(6))? Yes ___ No _X_; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to state-controlled roadways? Yes _X__ No ; if yes, specify which permit:

- **MassDOT State and Interstate Highway Right-of-Way Encroachment Permit and Crossing Permit**

C. If you answered "No" to both questions A and B, proceed to the Roadways and Other Transportation Facilities Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	N/A	N/A	
Number of vehicle trips per day	N/A	N/A	
ITE Land Use Code(s):	N/A	N/A	

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1.			
2.			
3.			

Proposed system upgrades will not result in any permanent changes to area vehicular traffic or estimated average daily trips on roadways (Route 79 and Route 24) serving the Site.

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

Construction-related traffic associated with construction will occur intermittently along the ROW and adjacent roadways. Construction traffic will occur within Town of Somerset and City of Fall River streets and off public roadways within the NEP ROW. Construction vehicles and equipment will access work areas within ROW from public roadways, crossing the ROW in various locations along the route. Because construction tasks will occur at different times and locations over the course of the construction, traffic will be intermittent at these entry roadways. Traffic will consist of vehicles ranging from pick-up trucks to heavy construction equipment to large trailers delivering poles.

MassDOT is responsible for the Permit to Access State Highway/Non-Municipal Utility for crossing over state roads with utility lines. The proposed system upgrade impacts relative to MassDOT are associated with the installation of new overhead wires across state roadways by a non-municipal utility. The installation could temporarily affect traffic flow of the roadway but does not involve physical modifications to the roadway or roadway ROW. Prior to the start of construction, a Traffic Management Plan with completed, as warranted, details of proposed work will be developed with MassDOT input and submitted for their review and approval. NEP will comply with all required measures to ensure a safe environment for traffic safety flow and construction crews in and around the roadways.

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

The Project is not designed for public use (other than for electric transmission) , and therefore will not affect transit, pedestrian, or bicycle transportation facilities. Should traffic management controls or detours be required by the MassDOT or through the municipalities, NEP will coordinate with these agencies to prepare and implement the appropriate traffic control measures.

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? Yes ____ No __X__; if yes, describe if and how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? Yes __X__ No ____; if yes, generally describe:

- **The Project transmission lines cross the railroad currently operated by Mass Coastal Rail and land now owned by the MBTA for the ongoing construction of the South Coast Rail yard (EEA File No.14346) in Fall River. NEP is coordinating with the MBTA on the construction needs and schedule for the Project, including access requirements.**
- **The new M13N transmission line will span the Taunton River between Somerset and Fall River. The Taunton River and its east and west banks are located within the Mount Hope Bay Designated Port Area.**

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?:

- **Two new single circuit steel monopole "Y-Frame" structures will exceed FAA thresholds for height. These structures span the new M13N 115kV Line over the Taunton River. NEP will file with the FAA under Section 77 of FAA document 49 Code of Federal Regulations.**

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

The Project is being proposed in response to certain transmission system needs identified by ISO-NE in a series of studies assessing the reliability of the transmission system serving Southeastern Massachusetts and Rhode Island. Separating the N12/M13 double circuit configuration will significantly reduce the risk for widespread voltage collapse and loss of load to those customers serviced by NEP. The transmission upgrades will have no permanent appreciable impact on municipal, regional, state, or federal transportation plans or facilities. The Project facilities and ROW are not designed for public use (other than for a source of electric transmission), and therefore will not affect transit, pedestrian, or bicycle transportation facilities.

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to roadways or other transportation facilities (see 301 CMR 11.03(6))? Yes ___ No _X_; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to roadways or other transportation facilities? Yes _X__ No __; if yes, specify which permit:

- MassDOT State and Interstate Highway Right-of-Way Encroachment Permit and Crossing Permit

C. If you answered "No" to both questions A and B, proceed to the Energy Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

- **The system upgrades' impacts relative to MassDOT are associated with the installation of overhead wires across state roadways by a non-municipal utility. The Company will comply with all required measures to ensure a safe environment for traffic flow and construction crews in and around the roadways.**

- **The N12 and M13 115kV transmission lines cross a railroad and a portion of land owned by the MassDOT in existing and proposed conditions. The rail and adjacent land are part of the planned Southcoast Rail Layover Facility in Fall River.**

- **The new M13N Line will span the Taunton River between Somerset and Fall River. The Taunton River and its east and west banks are located within the Mount Hope Bay Designated Port Area.**

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? The Project will not alter any bank or terrain significant to transportation infrastructure
2. Cutting of living public shade trees (number)? _N/A_____
3. Elimination of stone wall (in linear feet)? ___0_____

NEP has contracted Public Archeologic Laboratory (PAL) to evaluate historical and archeological resources with the Project limits. PAL staff conducted background research conducted a cultural resources due diligence and archaeological sensitivity assessment of the existing N12 and M13 ROW in April 2018. In addition, PAL conducted a series of intensive (locational) archaeological survey and archaeological site examination investigations throughout the entire NEP ROW corresponding with the proposed Project, in consultation with the MHC and Native American Tribes. PAL has submitted multiple reports to the MHC and Tribes, as referenced above, and will submit the results of an additional archaeological site examination, along with recommendations for further investigations, if any, to the MHC and Tribes in the 4th quarter of 2021.

III. Consistency -- Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services,

including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

The Project is being proposed in response to certain transmission system needs identified by ISO-NE in a series of studies assessing the reliability of the transmission system serving Southeastern Massachusetts and Rhode Island. Separating the N12/M13 double circuit configuration will significantly reduce the risk for widespread voltage collapse and loss of load to those customers serviced by NEP. The transmission upgrades will have no permanent appreciable impact on federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to energy (see 301 CMR 11.03(7))? Yes ___ No _X_; if yes, specify, in quantitative terms:

The system upgrades will exceed the following energy review threshold:

C. Does the project require any state permits related to energy? Yes _X_ No __; if yes, specify which permit:

"Right of Convenience and Necessity" (Section 72) from the Department of Public Utilities

C. If you answered "No" to both questions A and B, proceed to the Air Quality Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	__1.85__	1.85____	1.85___
Capacity of transmission lines (in kilovolts)	_115 kV	N/A__	115 kV

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

D. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? Yes ____ No __X_; if yes, please describe:

E. Describe the project's other impacts on energy facilities and services:

The Project has no appreciable effect on generation or other energy facilities as they are being constructed to address existing system capacity shortages. The transmission upgrades will improve the reliability of transmission stem and provide a more robust transmission facilities to allow for future interconnections from renewable energy projects such as offshore wind.

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

The Project is necessary to address thermal overloads, improve system reliability, address thermal overloads and reduce consequential load loss. The system upgrades will enhance the capacity of existing infrastructure.

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to air quality (see 301 CMR 11.03(8))? Yes ___ No _X_; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to air quality? Yes ___ No _X_; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the Solid and Hazardous Waste Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? Yes ___ No ___; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to solid or hazardous waste (see 301 CMR 11.03(9))? Yes ___ No _X_; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to solid and hazardous waste? Yes ___ No _X_; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the Historical and Archaeological Resources Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? Yes ___ No ___; if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? Yes ___ No ___; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos? Yes ___ No ___

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? Yes _X_ No ___; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? ____Yes ____ No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes _X No __; if yes, does the project involve the demolition of all or any exterior part of such historic structure? Yes ___ No ___; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? Yes _X_ No __; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes __ No; if yes, please describe:

Review of the Inventory of Historic and Archaeological Assets of the Commonwealth indicates that several previously recorded historic and archaeological sites are located within and immediately adjacent to the Project area. Additional information regarding surveys to identify and evaluate historic and archaeological resources for the Project can be found in Section 6.0 of the attached narrative.

D. If you answered "No" to all parts of both questions A, B and C, proceed to the Attachments and Certifications Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

NEP's cultural resource consultant, The Public Archaeology Laboratory, Inc. (PAL) has conducted intensive (locational) archaeological survey and site examination investigations to identify historic and archaeological resources throughout the Project corridor. NEP does not anticipate that the Project will have any adverse effects on historic properties. However, if any significant historic or archaeological resources are identified within the Project impact footprint, NEP will consult with the MHC to avoid, minimize, or mitigation any adverse effects the Project may have on historic properties.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

NEP is coordinating with both the USACE and MHC to avoid adverse effects to historic and archaeological resources eligible for listing in the NRHP, to the extent required by law. As part of its Section 404 permit review, pursuant to Section 106, the USACE will also consult with Native American Tribes that express an interest in the historic resources that may be affected by portions of the projects within USACE jurisdiction. NEP has contracted PAL to address the Section 106 concerns of the USACE and seek the comments of the MHC and Native American Tribes. PAL conducted background research and a physical inspection of the limits of work associated with the system upgrade components. Background research involved a review of existing cultural resource reports on file at PAL and at MHC. PAL completed an archaeological site examination in 2021 and is providing PAL's

recommendations in a survey report to be filed with the MHC this Fall. NEP will continue to consult with the MHC and Federally Recognized Tribes throughout the permitting process.

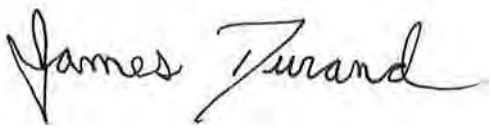
CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name)___Fall River Herald News____ (Date)___10/4/21 and 10/11/21____ (Fall River)
   (Name)The Spectator (South Coast Today) (Date)___10/6/2021_____(Somerset)

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:



Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

Erin Whoriskey	Jamie Durand
Name (print or type)	Name (print or type)
National Grid	POWER Engineers
Firm/Agency	Firm/Agency
40 Sylvan Road	2 Hampshire Street, Suite 301
Street	Street
Waltham, MA 02451	Foxborough, MA 02035
Municipality/State/Zip	Municipality/State/Zip
781-907-3598	774-643-1829
Phone	Phone

N12/M13 Double Circuit Tower Separation Project - ENF Distribution List

ENF Circulation List

Secretary Kathleen A. Theoharides
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

MEPA@mass.gov (Email only)

Department of Environmental Protection **Boston Office** Commissioner's Office One Winter Street Boston, MA 02108 helena.boccadoro@mass.gov	**MassDEP Southeastern Regional Office** Attn: MEPA Coordinator 20 Riverside Drive Lakeville, MA 02347 george.zoto@mass.gov jonathan.hobill@mass.gov	**Massachusetts Natural Heritage and Endangered Species Program** Division of Fisheries & Wildlife 1 Rabbit Hill Road Westborough, MA 01581 melany.cheeseman@mass.gov emily.holt@mass.gov
Massachusetts Bay Transit Authority Attn: MEPA Coordinator 10 Park Plaza, 6th Fl, Boston, MA 02116-3966 MEPAcoordinator@mbta.com	**Massachusetts Department of Public Health** Director of Environmental Health 250 Washington Street Boston, MA 021115 DPHToxicology@State.MA.US	**Massachusetts Department of Public Utilities** c/o Environmental MEPA Review 1 South Station, 5th Floor Boston, MA 02110 Siting.Board@mass.gov
Massachusetts Department of Transportation-Boston Public/ Private Development Unit 10 Park Plaza, Suite #4150 Boston, MA 02116 MassDOTPPDU@dot.state.ma.us	**Massachusetts Department of Transportation-District Office** District #5 Attn: MEPA Coordinator 1000 County St. Taunton, MA 02780 barbara.lachance@dot.state.ma.us	**Massachusetts Historical Commission** The MA Archives Building 220 Morrissey Boulevard Boston, MA 02125 Mail a hard copy of the filing

Southeastern Regional Planning & Economic Development District 88 Broadway Taunton, MA 02780 info@srpedd.org	**Fall River Planning Board** One Government Center, Room 534 Fall River, MA 02722 planning@fallriverma.org	**Fall River Conservation Commission** One Government Center, Room 534 Fall River, MA 02722 conservation@fallriverma.org
Fall River Board of Health One Government Center, Room 431 Fall River, MA 02722 **healthdepartment@fallriverma.org**	**Fall River City Council** One Government Center, Room 221 Fall River, MA 02722 city_council@fallriverma.org	**Department of Energy Resources** Attn: MEPA Coordinator 100 Cambridge Street, 10th floor Boston, MA 02114 paul.ormond@mass.gov brendan.place@mass.gov
Somerset Planning Board Town Hall, First Floor 140 Wood Street Somerset, MA 02726 Mail hard copy	**Somerset Conservation Commission** Town Office Building, Room #22-2nd floor 140 Wood Street Somerset, MA 02726 Mail hard copy	**Somerset Board of Health** Town Hall, Room #22-2nd Floor 140 Wood Street Somerset, MA 02726 Mail hard copy
Somerset Board of Selectmen Town office, Room #23 140 Wood Street Somerset, MA 02726 Mail hard copy	**Coastal Zone Management** Attn: Project Review Coordinator 251 Causeway Street, Suite 800 Boston, MA 02114 robert.boeri@mass.gov patrice.bordonaro@mass.gov	**Division of Marine Fisheries** DMF-South Shore Attn: Environmental Reviewer 836 South Rodney French Blvd. New Bedford, MA 02744 DMF.EnvReview-South@mass.gov

September 30, 2021

NEW ENGLAND POWER COMPANY

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form

Filed in Accordance with the Massachusetts Environmental Policy Act 301 CMR 11.00

PROJECT NUMBER:
146782

PROJECT CONTACT:
Jamie Durand
EMAIL:
jamie.durand@powereng.com
PHONE:
774-643-1829

POWER ENGINEERS CONSULTING, PC

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Expanded Environmental Notification Form

N12/M13 Double Circuit Tower Separation Project

PREPARED FOR:
NEW ENGLAND POWER COMPANY

PREPARED BY:
POWER ENGINEERS CONSULTING, PC.
2 HAMPSHIRE STREET
SUITE 301
FOXBOROUGH, MA 02035

SEPTEMBER 30, 2021

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TABLES:

FIGURES: (REFER TO SEPARATELY BOUND APPENDIX A)

APPENDICES (VOLUME II):

ACRONYMS AND ABBREVIATIONS

ACCC	Aluminum Conductor Composite Core conductor
ACCR	Aluminum Conductor Composite Reinforced conductor
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
AUL	Activity and Use Limitation
BE	Coastal Beach
Blowout	Refers to the magnitude of the horizontal displacement of an overhead conductor, due to wind conditions
BLSF	Bordering Land Subject to Flooding
BMP	Best Management Practice
Bussing/Bus	Defined as the meeting point (or connecting point) of various electrical components, such as overhead conductors
BVW	Bordering Vegetated Wetland
CB	Coastal Bank
CD	Coastal Dune
C.F.R.	Code of Federal Regulations
CMR	Code of Massachusetts Regulations
CVP	Certified Vernal Pool
CWA	Federal Clean Water Act
DCT	Double Circuit Tower
DPA	Designated Port Area
DPU	Massachusetts Department of Public Utilities
E1UB	Estuarine Subtidal Unconsolidated Bottom
E2EM	Estuarine Intertidal Emergent
E2US	Estuarine Intertidal Unconsolidated Shore
EFI	Environmental Field Issue
EG303NE	National Grid's Environmental Guidance on Access, Maintenance and Construction Best Management Practices
EJC	Environmental Justice Community
EIR	Environmental Impact Report
ENF	Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
Expanded ENF	Expanded Environmental Notification Form
^{0}F	Degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographic Information System
HDD	Horizontal Direction Drill
HUC	Hydrologic Unit Code
IB	Inland Bank
IPaC	Information for Planning and Consultation
ISO-NE	ISO New England Inc., the Independent System Operator for New England
IVM	Integrated Vegetation Management
Kcmil	thousands of circular mils
kV	Kilovolt
lf	linear feet
LSCSF	Land Subject to Coastal Storm Flowage
LGP	Low Ground Pressure
LUO	Land Under the Ocean

LTE	Long Term Emergency
LUWW	Land Under Water Bodies and Waterways
MACRIS	Massachusetts Cultural Resources Information System
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MassGIS	Massachusetts Geographic Information Systems
MBTA	Massachusetts Bay Transportation Authority
MHW	Mean High Water
MHHW	Mean Higher High Water
MLW	Mean Low Water
MEPA	Massachusetts Environmental Policy Act
M.G.L.	Massachusetts General Law
MHC	Massachusetts Historical Commission
Montaup	Electric Company
MW	Megawatt
N-1	A first contingency; the largest impact on the system when a first power element (generation or transmission facility) of a system is lost.
N-1-1	A second contingency; the loss of the facility that would have the largest impact on the system after the first facility is lost.
NOAA	National Oceanic and Atmospheric Administration
NEP	New England Power Company
NERC	North American Electric Reliability Corporation
NHD	National Hydrography Dataset
NHESP	Natural Heritage and Endangered Species Program
NHPA	National Historic Preservation Act
NPCC	Northeast Power Coordinating Council
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OHWM	Ordinary High-Water Mark
OPGW	Optical Ground Wire
ORW	Outstanding Resource Waters
PAL	Public Archaeological Laboratory, Inc.
PCN	Pre-Construction Notification filed with the USACE
PEM	Palustrine Emergent
PFO	Palustrine Forested
PNF	Project Notification Form
POWER	POWER Engineers Consulting, PC
Project	N12 and M13 Double Circuit Transmission Separation Project
PSI	Pounds per Square Inch
PSS	Palustrine Scrub-Shrub
PVP	Potential Vernal Pool
RAO	Response Action Outcome
RFA	Riverfront Area
ROW	Right-of-Way
SEMA-RI	Southeastern Massachusetts and Rhode Island
sf	square feet
SF	Land Containing Shellfish
Single EIR	Single Environmental Impact Report
SM	Salt Marsh

SPS	Special Protection Systems
Study Area	300-foot study area buffer
SWPPP	Stormwater Pollution Prevention Plan
TSS	Temporary Solution Statement
URAM	Utility Related Abatement Measure
U.S.C.	United States Code
USACE-NED	United States Army Corps of Engineers – New England District
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VE	Velocity Zone
VMP	Vegetation Management Plan
WISCP	Wetland Invasive Species Control Plan
WPA	Wetlands Protection Act

1.0 INTRODUCTION

1.1 Brief Description of the Proposed Project

1.1.1 Overview

The New England Power Company (NEP) is proposing to undertake the N12/M13 Double Circuit Tower (DCT) Separation Project (Project) to improve transmission system reliability in the Southeastern Massachusetts and Rhode Island (SEMA-RI) service area. As shown in Appendix A, Page 2, the Project will be located within an existing 115 kilovolt (kV) electric transmission line right-of-way (ROW) that extends from NEP's Pottersville Switching Station in Somerset, Massachusetts (MA) to its Sykes Road Substation in Fall River, MA, a distance of approximately 1.85 miles. This ROW is currently occupied by two 115 kV overhead transmission circuits – the N12 and the M13 – supported on double circuit towers; i.e., the two circuits, each consisting of three individual phase conductors, share the same series of towers within the ROW. The main disadvantage of the DCT configuration is reliability; a contingency affecting a single structure could cause an outage to both lines. Placing the N12 and M13 onto separate sets of structures will improve the reliability of the electric transmission system.

This Expanded Environmental Notification Form (Expanded ENF) is being filed in accordance with 301 Code of Massachusetts Regulations (CMR) 11.05(7) in order to provide more extensive and detailed information as part of a request for approval for submission of a Single Environmental Impact Report (Single EIR) in accordance with 301 CMR 11.06(8). Details regarding the request for a Single EIR are described in Section 1.4.

1.2 Purpose and Need

The Project is being proposed in response to certain transmission system needs identified by ISO-NE in a series of studies assessing the reliability of the transmission system serving Southeastern Massachusetts and Rhode Island. The May 2016 Southeastern Massachusetts and Rhode Island (SEMA-RI) Needs Assessment (2016 Needs Assessment) evaluated the performance of the SEMA-RI transmission system through calendar year 2026 and identified reliability-based transmission needs in the study area while considering:

- Future load growth;
- Reliability over a range of generation patterns and transfer levels;
- Limited short circuit margin in the SEMA-RI area;
- Coordination with plans in Boston, Northeastern Massachusetts and Eastern Connecticut;
- Existing and Forward Capacity Market-cleared supply resources; and
- All applicable North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC) and ISO New England Inc., the Independent System Operator for New England (ISO-NE) transmission planning reliability standards.

ISO-NE's SEMA-RI Area 2026 Solutions Study, Revision 1 (March 2017) (2017 Solutions Study) identified numerous transmission system upgrades required to address the concerns presented in the 2016 Needs Assessment. Relevant to this Project, the 2017 Solutions Study identified contingencies that could have the following results:

- Loss of service (disconnection) to approximately 144,000 customers and approximately 450 megawatts (MW) of load in all or parts of Fall River, Assonet, Freetown, Westport, Dartmouth, New Bedford, Acushnet, Fairhaven, Mattapoisett, Marion, Rochester, and Wareham, Massachusetts, as well as Jamestown, Newport, Middletown, Portsmouth, Tiverton, and Little Compton, Rhode Island; and

- Voltage collapse that could spread beyond the cities and towns listed above to affect approximately 600 MW of load.

To address these contingencies, the 2017 Solutions Study recommended, among other things, eliminating the N12/M13 DCT configuration between the Somerset (now Pottersville) and Sykes Road Substations.

In 2019 and 2020, ISO-NE reassessed transmission system needs in SEMA-RI in light of reduced load forecasts and other transmission system changes. This reassessment is documented in ISO-NE's "Southeastern Massachusetts and Rhode Island (SEMA-RI) Area 2029 Needs Assessment Update" (2029 Needs Update), issued in October 2020 and based on ISO-NE's 2020 Capacity, Energy, Loads and Transmission (CELT) Report forecasts. The 2029 Needs Update confirmed the continuing need for the Project. The previously described contingency scenarios continued to show the potential for large load losses and voltage collapse.

Overall, ISO-NE has determined that the existing DCT configuration of the N12 and M13 Lines between Pottersville and Sykes Road contributes significantly to the potential for widespread voltage collapse and loss of load under the studied contingencies. Separation of the two circuits onto separate transmission structures will eliminate this configuration and, with it, the risks posed to customers serviced by this portion of NEP's transmission system. Construction of the Project will therefore ensure continued compliance with applicable federal and regional transmission reliability standards and criteria and maintain reliable electric service within the SEMA-RI area.

1.3 Massachusetts Environmental Policy Act Thresholds, Project Impacts and Required Permits

1.3.1 Massachusetts Environmental Policy Act Jurisdiction

The Project is subject to review under the Massachusetts Environmental Policy Act (MEPA) and implementing regulations at CMR 11.00 as it requires one or more state permits and exceeds certain review thresholds identified in 301 CMR 11.03 and as listed in Table 1-1, below.

Construction of the Project will result in limited unavoidable impacts to coastal and inland wetland resource areas. Temporary and permanent impacts to bordering vegetated wetlands are necessary for construction access and staging, installation of structure foundations where vegetated wetland could not be avoided, establishment of new pervious access routes, and limited tree clearing for transmission line clearance. Due to siting and real estate limitations on the banks of the Taunton River, new proposed structure M13N6, which will support the aerial span over the river, will be constructed within Federal Emergency Management Agency (FEMA) Velocity Zone (VE) in Land Subject to Coastal Storm Flowage (LSCSF) located on the east (Fall River) side of the Taunton River. The existing N12-6 tower is located within this same environment and landscape position and will remain.

TABLE 1-1 MEPA REVIEW THRESHOLDS

MEPA ENVIRONMENTAL IMPACT REPORT THRESHOLDS
Wetlands: • Alteration of one or more acres of bordering vegetated wetlands (301 CMR 11.03(3)(a)(1)(a))
MEPA ENVIRONMENTAL NOTIFICATION FORM THRESHOLDS
Waterways and Tidelands: • New fill or structure or expansion of existing fill or structure, except a pile supported structure, in a velocity zone or regulated floodway. (301 CMR 11.03(3)(b)(1)(e)) Wetlands: • Alteration of 1,000 or more square feet of salt marsh or outstanding resource waters (301 CMR 11.03(3)(b)(1)(c)) • Alteration of 5,000 or more square feet of bordering or isolated vegetated wetlands (301 CMR 11.03(3)(b)(1)(d))

1.3.2 Cumulative Impacts

Table 1-2 below provides a summary of the estimated cumulative impacts of the Project. As described throughout this document, NEP is committed to avoiding, minimizing, and mitigating resource area impacts to the greatest extent practicable.

TABLE 1-2 CUMULATIVE IMPACT SUMMARY: WETLANDS, WATERWAYS AND TIDELANDS –

RESOURCE AREA	TOTAL SQUARE FEET (SF) OR LINEAR FEET (LF) OF IMPACT	IMPACT TYPE
Coastal Wetlands		
Land Subject to Coastal Storm Flowage (LSCSF)	Approximately 172,379 sf	Temporary – 119,313 sf (2.74 acres) Construction mats for temporary work pads where LSCSF could not be avoided. Temporary grading/earthwork where level area is necessary to create a safe and effective work pad for equipment and crews. Permanent – 53,066 sf (1.22 acres) Structure foundations where LSCSF could not be avoided (1,385 sf) and where clearance requirements dictate spatial distance between adjacent transmission structures. Permanent access road and associated grading where LSCSF could not be avoided (3,790 sf). Permanent gravel work pad for future operations and maintenance of electric facilities where LSCSF could not be avoided. (47,891 sf).
Salt Marsh (SM)	Approximately 6,850 sf	Temporary – 6,850 sf Temporary crossing using low ground pressure equipment or the installation of temporary construction mats to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires
Land Under Ocean (LUO)	Approximately 1,397 sf	Temporary – 1,397 sf Temporary crossing using low ground pressure equipment or the installation of temporary construction mats to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires

RESOURCE AREA	TOTAL SQUARE FEET (SF) OR LINEAR FEET (LF) OF IMPACT	IMPACT TYPE
Coastal Wetlands		
Designated Port Area (DPA)	Approximately 91,675 sf	Temporary Construction mats where work pads for construction overlap with DPA Permanent Structure foundations where DPA could not be avoided.
Inland/Freshwater Wetlands		
Bordering Vegetated Wetland (BVW)	Approximately 133,546 sf	Temporary – 120,996 sf (2.78 acres) Construction mats for access routes where BVW crossings could not be avoided. Construction mats where work pads for construction and pull pads overlap with BVW. Permanent – 388 sf Structure foundations where BVW could not be avoided. Permanent – 12,162 sf (0.28 acres) Conversion of forested wetlands to scrub-shrub wetlands due to tree removal within the existing transmission line ROW.
Inland Bank (IB)	Approximately 208 lf	Temporary – 208 lf Construction mats for access route over the inland banks of Steep Brook and the associated ephemeral tributary of Steep Brook in Fall River *Approximately 391 lf of construction mats for an access route over the banks of intermittent stream SM8. This matting has also been included in the BVW temporary impact calculations above.
Riverfront Area (RFA)	Approximately 75,037 sf, of which approximately 16,099 sf of these impacts are accounted for as LSCSF temporary impacts above 1,018 sf 2,329 sf of which approximately 1,951 sf of these impacts are accounted for as BVW permanent impacts (above)	Temporary Construction mats for access routes where RFA crossings could not be avoided (Fall River). Temporary Construction work pads and pull pads on existing paved surfaces where activities within RFA could not be avoided (Somerset). Permanent Structure foundations where RFA could not be avoided in Somerset.

Notes: Impacts are based on 30% engineering design and represent a conservative estimate of Project-related disturbances.

1.3.3 Required Permits

Table 1-3 below provides a listing of anticipated state agency environmental permits and approvals for the Project.

TABLE 1-3 ANTICIPATED PERMITS, REVIEWS, AND APPROVALS

AGENCY/ REGULATORY AUTHORITY	PERMIT AND/OR PURPOSE OF APPROVAL
Federal Approvals	
U.S. Army Corps of Engineers, New England District (USACE-NED)	Section 404 Permit (Pre-Construction Notification) Section 10 Permit Modification
U.S. Fish & Wildlife Service (USFWS)	Section 7 Endangered Species Act Consultation, Information for Planning and Consultation (IPaC) review
Advisory Council on Historic Preservation (ACHP)	National Historic Preservation Act - Section 106 Consultation
U.S. Environmental Protection Agency (EPA)	National Pollutant Discharge Elimination System (NPDES) – Construction General Permit
State Approvals	
Massachusetts Department of Public Utilities (DPU)	Petition for authority to construct a new transmission line pursuant to G.L. c. 164 § 72
Massachusetts Department of Environmental Protection (MassDEP), Waterways Division	Chapter 91 License (potential)
MassDEP	Individual Section 401 Water Quality Certification
MassDEP	Massachusetts WPA – Superseding Order of Conditions (potential)
Massachusetts Historical Commission (MHC)	Authorization under National Historic Preservation Act (NHPA) of 1966 and Massachusetts General Law [M.G.L.] c. 9 § 27C
Massachusetts Office of Coastal Zone Management	Federal Consistency Review
Massachusetts Natural Heritage & Endangered Species Program	MESA Checklist
Massachusetts Department of Transportation (MassDOT)	State and Interstate Highway Right-of-Way Encroachment Permit and Crossing Permit
Municipal Approvals	
Somerset Conservation Commission	Massachusetts Wetlands Protection Act - Order of Conditions
Fall River Conservation Commission	Massachusetts Wetlands Protection Act - Order of Conditions

1.4 Request for Single Environmental Impact Report

This Expanded ENF is being filed in accordance with 301 CMR 11.05(7) in order to provide more extensive and detailed information as part of a request for approval for submission of a Single EIR, in accordance with 301 CMR 11.06(8). As detailed in Tables 1-1 and 1-2 above, the Project exceeds the review threshold for wetlands provided in 301 CMR 11.03 requiring the filing of an EIR for the alteration of one or more acres of bordering vegetated wetlands (BVW).

NEP respectfully requests approval to prepare and submit a Single EIR addressing the impacts of the Project. Based on the analysis of potential environmental impacts, the Project will use all feasible means to avoid and minimize potential environmental impacts. Mitigation measures will address the remaining environmental impacts, along with stipulations in the applicable state, local and federal permits issued for this scope of work. Allowing a Single EIR is appropriate for the following reasons:

- This Expanded ENF meets all the requirements in 301 CMR 11.06(8) to provide detailed information on the Project, its environmental baseline, all feasible alternatives, and avoidance, minimization, and mitigation measures.
- NEP conducted an extensive alternatives analysis to review and compare environmental and human impacts, cost, and feasibility to determine the preferred Project Route.
- The Project exceeds only one EIR threshold for alteration of one or more acres of BVW where a permit is required.
- Most wetland impacts are the result of the best management practice (BMP) of temporary placement of timber construction mats within the existing transmission line ROW. The construction mats will be removed after the Project is complete, and the BVW will be restored and stabilized.
- Permanent BVW impacts associated with the Project, where they could not be avoided, are limited to approximately 388 square feet and approximately 12,162 square feet of conversion from forested wetlands to scrub-shrub wetlands due to tree removal within the existing transmission line ROW.
- Mitigation will be implemented to address federal, state and local wetlands impacts.
- The Project requires comprehensive federal, state, and local regulatory review by environmental agencies that will issue permit stipulations that require the implementation of appropriate mitigation measures (as described in Section 11.0).
- In addition to the extensive public comment and review necessary for permitting, NEP is also implementing a comprehensive public outreach program to establish and maintain communications with landowners, abutters and other affected stakeholders.

The review period for the Expanded ENF requesting a Single EIR will be extended for 37 days and Notice of the Project will be published in the Environmental Monitor.

2.0 PROJECT DESCRIPTION

The Project is proposed to address reliability concerns identified by the ISO-NE and National Grid Transmission Planners. The existing DCT configuration of the N12 and M13 Lines was determined by the ISO-NE to pose unacceptable reliability risk and contribute significantly to the potential for widespread voltage collapse and loss of load under the studied contingencies. and potentially result in load loss and thermal overloads to customers serviced by this portion of NEP's transmission system. The objective of the Project is to eliminate the DCT configuration by separating the N12 and M13 115 kV transmission lines and relocating one of the lines onto separate sets of transmission structures within the existing right-of-way (ROW). Typical ROW cross-section are included in Appendix A, Page 10.

The Project consists of the following electric reliability upgrades:

- Install and replace 1.85 miles of the M13 Line onto a new series of transmission structures and installing new 115 kV overhead conductors and optical ground wire from the NEP Pottersville Switching Station in Somerset to the NEP Sykes Road Substation in Fall Riverlocated within NEP's existing overhead ROW (with the exception of one structure that will require additional easement) and parallel to the existing N12/M13 DCT structures. The Project will include the following work activities:

    - Installation of sixteen new transmission structures, consisting of twelve single circuit steel monopoles, one single circuit H-Frame structure, one 3-pole steel structure and two single circuit steel monopole "Y-Frame" river crossing structures to accommodate an aerial span of the conductors and wires over the Taunton River (parallel to the existing N12 aerial crossing of the Taunton River).

    - Installation of new "Bittern" Aluminum Composite Core Conductor (ACCC) conductor and Optical Ground Wire (OPGW) onto the new M13N transmission structures.

    - Where the new M13N Line will span the Taunton River, the conductor wire will consist of 1622 "Pecos" Aluminum Conductor Composite Reinforced (ACCR) conductor. This specialized conductor will minimize sag and maintain line clearances over the Taunton River. Special high-strength OPGW cable will be used for the river crossing to minimize sag in relation to the conductors and to provide adequate shielding.

- Bussing together (connect electrically) NEP's existing N12 and M13 115 kV DCT conductors over the Taunton River to provide additional electrical capacity. Work activities include bussing together the existing N12 and M13 conductors which span the Taunton River from Structure N12-M13-5 in Somerset to Structure N12-M13-6 in Fall River and from Structure N12-M13-6 to Structure N12-M13-7. The existing conductors are currently designated N12 and M13; the bussed conductors will retain the N12 Line designation.

- Replace the existing transmission structures that currently support the N12/M13 115 kV Lines from the Fall River side of the Taunton River to the Sykes Road Substation to include:

    - Removal of seven existing steel lattice towers and one steel H-Frame structure, and replacement with seven single circuit steel monopole structures.

    - Installation of four new intermediate single circuit steel monopole structures and one steel H-Frame structure.

  - Retaining the two existing 300-foot high N12 steel lattice towers at the Taunton River crossing.

- Reconductoring with ACCC and replacement of the overhead shield wire on the N12 replacement structures from the Pottersville Substation to the Sykes Road Substation, except for the conductor span over the Taunton River. The replaced overhead conductors will retain the N12 Line designation.

The new N12 and M13N structures will be constructed within NEP's existing ROW parallel to the existing DCT transmission structures. The NEP ROW averages approximately 80-feet in width from the Pottersville Switching Station easterly to State Route 24 and widens to approximately 150 feet east of the State Route 24 crossing extending to the Sykes Road Substation. To accommodate the construction of the new M13N Line within the limits of the existing NEP ROW, the existing DCT structures, consisting of steel lattice towers and one H-frame structure, will be replaced with predominantly single-circuit steel monopoles. The typical above grade height of the existing N12/M13 structures is approximately 105-110 feet. The typical above grade height of the proposed N12 and M13N structures is approximately 110-115 feet (an increase of approximately 5-10 feet).

The two existing 300-foot high steel lattice towers which support the aerial conductor span over the Taunton River will remain in place. New conductor and OPGW will be installed onto the N12 Line replacement structures from Structure N12-7 to Structure N12-19. The proposed transmission structures will be located primarily within NEP's ROW and/or easements. The proposed Y-frame structures will be approximately 300-feet in height.

Upgrades at the existing Sykes Road Substation will be made to accept the reconnections of the N12 and M13N Lines into the station, including the replacement of the following electrical equipment within the footprint of the existing station.

  - N12 Line – Replace line taps, two line disconnect switches, connecting bus and taps to station bus. M13N Line - replace taps.

  - M13N Line - Replace taps.

2.1 Construction Access

The Project is to be constructed within NEP's existing ROW utilizing existing access roads and/or improving access routes and constructing new access routes to the ROW. Existing access roads and any necessary new access routes will be improved and/or constructed in accordance with National Grid's Environmental Guidance (EG-303-NE) on Access, Maintenance and Construction Best Management Practices (Appendix B). In some instances, off-ROW access improvements may be required as detailed below.

Portions of the Project are located within industrial port areas along the Taunton River, which include pre-existing infrastructure including the Mass Coastal Rail freight rail into Fall River and the former Shell Oil Terminal. The MBTA is currently constructing a rail yard, as part of the South Coast Rail Project, adjacent to the NEP ROW abutting the Taunton River. NEP, the MBTA and the MassDOT were in regular communications during the development of the NEP and MBTA projects. The MBTA plans to construct a temporary construction access route off of North Main Street in Fall River to allow for NEP to cross the railroads tracks at a reinforced and secured location. NEP plans to use this access for construction, if still feasible based on the in-service date of the MBTA's South Coast Rail Project.

NEP requires two means of access to its ROW that is confined between the Taunton River to the west and the rail to the east. As an alternative for access to this section of ROW (i.e. Structures N12-6 and M13N-6) New Street has been identified to facilitate construction, provide for emergency vehicle access, and serve as a contingency plan should access across the rail be restricted. Therefore, NEP intends to use New Street, a public road off North Main Street, to access over the existing railroad tracks. NEP engaged a structural engineering firm to conduct an assessment on the conditions of the New Street bridge. The bridge was previously posted with a gross vehicle weight limitation of 20,000 pounds and the results of the bridge survey indicate that the bridge is in poor condition and requires substantial reinforcements to safely allow heavy equipment and construction vehicles to cross over the bridge. In response to the condition of the existing bridge, NEP is evaluating the option of installing a temporary bridge within the footprint of the existing bridge for temporary access during construction. The temporary bridge would be placed within the footprint of the existing bridge but would require some road improvements on either side of the bridge to address roadway geometry and turning radii. As an alternative, NEP is evaluating the feasibility of shoring the structural members of the existing bridge structure to facilitate construction access.

During construction of the NEP Project, wire stringing and wire pulling occurs once the new transmission structures are erected. To install the new overhead conductors and wires between proposed structures M13N-6 to M13N-7 there is a small embayment of the Taunton River that has to be crossed similar to the existing N12 Line crossing. This embayment includes open water and salt marsh, which are depicted on the Project alignment drawings. One option NEP is considering to install the wires is to use a low ground pressure (LGP) equipment such as a *Marsh Master* (or equivalent) to temporarily access across the salt marsh and open water between Structures M13N-6 and 7 to pull the lead line/rope across these physical obstacles and allow for installation of the overhead wires. NEP has several types of low ground pressure vehicles that meet the Massachusetts standard for low ground pressure vehicle of less than 3 pounds per square inch (psi). NEP has used this type of equipment successfully to access through emergent, scrub-shrub habitats, salt marsh and standing water easily and without adversely affecting the soils and hydrology of these habitats. There would be no permanent impacts or displacement to the salt marsh of open water habitat. The vegetation would be temporarily compressed but no rutting or dislodgement of plants is expected.

2.2 Construction Schedule and Estimated Project Cost

The Project has been designed to avoid or minimize adverse environmental impacts to the extent practicable. Mitigation techniques are employed where these impacts are unavoidable. NEP's policies and procedures for construction methods are summarized in Section 11 below (Construction-Period Considerations) of this Expanded ENF.

The conceptual grade (-25% / +50%) cost estimate for the Project, as originally presented to the ISO-NE, is ~$39.0 million.

NEP anticipates starting construction of the Project in the 2nd Quarter of 2023 to facilitate an in-service date of the 4th Quarter 2024.

3.0 ALTERNATIVES ANALYSIS

This section describes alternatives to the proposed Project and identifies why those alternatives were rejected. As described in Section 1.2, ISO-NE determined improvements are required to continue to provide a safe, reliable, and cost-effective electric transmission system, and to address the reliability and voltage issues in the SEMA-RI area. NEP's overriding goal throughout the planning and design phases of the Project has been to select the alternative that best (A) meets the identified Project need and reliability, (B) addresses the various regulatory and permitting objectives, (C) including minimizing environmental impacts, and D) provides a cost-effective solution to customers.

ISO-NE's 2017 Solution Study identified four separate transmission line alternatives to address the reliability concerns presented in its 2016 Needs Assessment. The 2017 Solution Study identified the need for two of the four proposed solutions to address the reliability-based transmission needs in the SEMA-RI study area, and recommended the N12/M13 Double Circuit Tower Separation Project and the Line 114 Extension Project as the preferred solutions. ISO-NE's 2029 Needs Update confirmed the continuing need for both projects. Because the Line 114 Extension Project[1] is one of the two solutions recommended by ISO-NE in its 2017 Solution Study, and is the subject of a separate MEPA filing, it is not considered an "alternative" to the Project.

NEP analyzed a no action alternative and the remaining three potential transmission alternatives identified by ISO-NE to meet the identified need. These alternatives are compared below on the basis of cost, reliability, potential environmental impacts, and engineering and construction feasibility.

- Alternative 1: The No Action Alternative would not resolve the regional electric reliability problems that the ISO-NE identified. This alternative does not achieve the Project goals and benefits. If no action is taken, existing and projected transmission reliability issues will remain unresolved and components of the existing system will remain at risk for failure under certain contingencies studied by ISO-NE. Because it does not meet the identified need and would not satisfy applicable transmission planning reliability criteria, the No Action Alternative was not considered a feasible option and was dismissed.

- Alternative 2: The installation of a new underground cable extending approximately five miles from the Bristol 51 Substation in Bristol, Rhode Island to a new proposed switching station (Old Boyd's Lane Switching Station) in Portsmouth, Rhode Island. This alternative would require the installation of an undersea cable via a horizontal directional drill (HDD) beneath Mount Hope Bay adjacent to the Mount Hope Bridge, as the most feasible water crossing method. There is currently no transmission circuit between these two locations. This alternative would also require reconductoring of 5.1 miles of the existing F-184 Line and replacement of transmission line structures from the Merriman Junction Tap in Swansea, MA to the Warren Substation in Warren RI to the Bristol 51 Substation in Bristol, RI.

- Alternative 3A (Preferred Solution): Separation of the N12 and M13 double circuit transmission lines between the Pottersville Substation and the Sykes Road Substation (approximately 1.85 miles) via construction of a new M13 transmission line. The existing M13 Line crossing over the Taunton River would be replaced with a new overhead crossing adjacent to the existing N12/M13

[1] The Line 114 Extension Project (Acushnet to Fall River Reliability Project) was filed separately with MEPA and did receive a Certificate on the Expanded Environmental Notification Form (EEA No. 15941).

double circuit crossing of the Taunton River beginning at NEP's Pottersville Substation.2 From its landing point on the east side of the Taunton River, the new M13 line would travel overhead within NEP's existing ROW to NEP's Sykes Road Switching Station. Some limited new permanent land rights would be required both for access and for one new transmission structure. Additionally, this alternative would require the reconductoring of the existing N12 and M13 Lines would be reconductored between the Sykes Road and the Bell Rock Substations.

- Alternative 3B: This alternative, which is a variation of Alternative 3A described above, also involves separation of the existing N12/M13 double circuit configuration via construction of a new M13 transmission line between Pottersville and Sykes Road Substations. Alternative 3B retains the new overhead crossing of the Taunton River proposed in Alternative 3A. However, in Alternative 3B, the new M13 line east of the landing point on the east side of the Taunton River would consist of a hybrid configuration of overhead and underground construction, including construction of a segment of the new line within NEP's existing overhead ROW, installation of a new overhead to underground transition station, and construction of the remainder of the line as an underground cable system within state and local roadways. Alternative 3B will also require the reconductoring of 3.6 miles each of the existing N12 and M13 Lines from the Pottersville to the Bell Rock Substations.

- Alternative 4: Install a third new 115 kV line extending approximately 3.5 miles, as an overhead option of underground option) from the Pottersville Substation in Somerset, Massachusetts to the Bell Rock Substation in Fall River, Massachusetts, and reconductor 3.6 miles each of the N12 and M13 circuits from the Pottersville Switching Station to the Bell Rock Substation.

Table 3-1 summarizes the characteristics and potential impacts of the four alternatives. The criteria applied to the four transmission alternatives consisted of the following:

Engineering Feasibility

Selecting an engineering design that minimizes impact to existing facilities and infrastructure is a consideration. The density of existing utilities located along and within a ROW corridor can affect the available space above and below grade to physically construct transmission lines. Overhead and underground electric facilities (both transmission and distribution), underground pipelines, municipal water, sewer, and gas facilities, and features such as manholes and catch basins can significantly constrain available space. Such constraints complicate the construction process, and increase construction duration, traffic disruption, and costs. Avoiding conflicts that may pose risks to meeting current and reliable engineering design standards is of key importance.

Construction Feasibility

Preference was given to routes that would minimize constructability constraints. For example, road crossings or working within other utility corridors can result in access restrictions, congestion with existing utility infrastructure, work-space constraints, safety concerns, traffic disruptions, and restrictive work hours. Additionally, consideration is given to avoiding or minimizing line outages and taking existing facilities out of service.

The number of existing utilities located along and within a ROW corridor can affect the available space

[2] NEP recently constructed a new substation to replace the existing, aging Somerset Substation. The new replacement substation, which is named the "Pottersville Substation," is located across the street from the existing Somerset Substation, in Somerset, Massachusetts.

above and below grade to physically construct transmission lines. Overhead and underground electric facilities (both transmission and distribution), underground pipelines, municipal water, sewer, and gas facilities, and features such as manholes and catch basins can significantly constrain available space. Such constraints complicate the construction process, and increase construction duration, traffic disruption, and costs.

Right-of-way Requirements

Acquiring land or easements for transmission purposes, either by voluntary agreement or through condemnation, is a lengthy and costly process. Identifying alternatives with manageable land acquisition requirements that minimize real estate constraints is a key consideration. In addition to reducing delays associated with property rights acquisition, the use of an existing ROW to accommodate a new transmission line typically minimizes both the environmental impacts and costs of a project.

Environmental (Natural and Social Impacts) and Permitting Considerations

Preference was given to the alternatives that would minimize impacts to the natural and social environment. The potential impact on the surrounding natural environment must be considered, as well as the ability of the solution to meet environmental laws and regulations. The feasibility of avoiding and/or minimizing adverse impacts to environmental resources, such as wetlands, watercourses, wildlife habitats, vernal pools, and other designated resources must be considered.

The potential impact on customers and local community interests must be taken into account by considering the impact of the upgraded/new facilities on the stakeholders and landowners they will serve and the communities where they are located. The feasibility of avoiding and/or minimizing adverse impacts to social resources, such as public lands and conservation areas, schools, daycare facilities, playgrounds and ball fields, and historical and archaeological sites must be considered. The placement of transmission facilities in densely developed areas, such as dense residential areas, typically creates additional complexity during permitting/licensing, the initial construction, and for future maintenance. In addition, both temporary impacts such as construction noise, dust, and traffic and longer-term impacts such as visibility need to be taken into account.

Cost to the Consumer Considerations

As stewards of its customers' and shareholders' investment in the new facilities, NEP must consider costs in the evaluation process, including implementing opportunities for cost reductions, and giving consideration to the full lifetime costs and the anticipated longevity of the electrical solutions.

TABLE 3-1 COMPARISON OF PROJECT ALTERNATIVES

Alternative No.	Alternative Description	Engineering Feasibility	Construction Feasibility	Right-of-Way Requirements	Environmental & Permitting Considerations	Magnitude of Cost
1	No Action – Do not proceed with a solution to the ISO-NE reliability needs	The No Action Alternative would not address the regional reliability problems that ISO-NE has identified on the transmission system. If no action is taken, the existing electric system reliability issues will remain unresolved and components of the existing grid will remain at risk for failure under certain contingencies studied by ISO-NE.				0
2	Construct a new 115 kV line from Bristol 51 Substation (Bristol, RI) to new greenfield switching station (Old Boyd's Lane) in Portsmouth, RI. ~7.2 miles underground duct bank & manhole system, including ~1.0-mile crossing of Mount Hope Bay at the Mount Hope Bridge (HDD), ~2.0 acres for new greenfield substation	-Requires construction easements for HDD entry and exit points. -Requires marine geophysical & geotechnical surveys, HDD contingency plan, frac-out plan. -Length of HDD crossing requires special oversized and overweight cable reel handling.	-Potential restrictions on in-roadway work requiring nighttime work. -In-water crossing of Mount Hope Bay will be complex, require extensive onshore construction spread and will extend the construction schedule. -Siting and construction of new greenfield substation would require local approval. -Underground cable system in state and local roadways will require traffic permit, preparation of traffic management plans and possible construction detours.	-New easement/rights within state and local roadways would be required from the RIDOT and municipalities of Bristol and Portsmouth, RI. -Requires temporary construction easements from the RI Bridge & Turnpike Authority and Roger Williams University. -A submarine crossing of the Mount Hope Bay would require a Submerged Lands License from the RI CRMC. -2+ acres of land would need to be purchased in Portsmouth, RI to construct a new substation/switching station.	-Requires HDD crossing under 80-feet deep navigation channel of Mount Hope Bay. -Requires development of a new substation on currently undeveloped land. -Underground cable system would be installed in medium density residential areas. -Historic Districts present in Bristol & Portsmouth.	$$$ -Increased costs for HDD installation beneath Mount Hope Bay. -Increased costs for underground installation. -Increased costs for acquisition of greenfield site for new substation.
3A (Preferred Solution)	Separate 1.85 miles of the N12/M13 DCT configuration, rebuild the N12 circuit from Pottersville S/S to Sykes	-Install 115 kV line and transmission	-Limited space on Fall River side of the Taunton River to serve as a	-The overwhelming majority of the project would be constructed with exiting NEP ROW, which	-Taunton River crossing. -Medium density multi-family and single-family residences along project route.	$ Cost-effective solution aligning with NEP standard installation practices

Alternative No.	Alternative Description	Engineering Feasibility	Construction Feasibility	Right-of-Way Requirements	Environmental & Permitting Considerations	Magnitude of Cost
	Road S/S, construct new overhead M13N Line	structures within existing ROW. -Reconfigure and rebuild existing transmission line structures. -Cross the Taunton River at the existing overhead transmission line corridor previously permitted.	landing for the transmission structure/line. -Relative narrowness of the existing overhead ROW.	is land owned in-fee by the Company. -New easement is required to facilitate the construction of the proposed Y-frame transmission structure on the Fall River side of the Taunton River. -Some additional aerial easements are required to address contingency blowout conditions of the overhead conductor.		within existing easement.
3B	Separate 1.85 miles of the N12/M13 DCT configuration, rebuild the N12 circuit from Pottersville S/S to Sykes Road S/S, construct new hybrid overhead & underground M13N Line	-Underground duct bank and manhole system would be installed within congested roadways, including CSO, water line, sewer line, drainage conduits, communication line and gas line. - Underground duct bank and manhole system would cross to State highway routes.	-Construction of an underground duct bank and manhole system presented significant constraints including: -Identifying a corridor in the public roads that did not conflict with the City Fall River CSO Separation project and existing subsurface utilities; -Crossing of the Wilson Road bridge over Route 24 in which the bridge is slated by the MassDOT for reconstruction and available real estate to perform a trenchless crossing is severely limiting; and - Underground cable system in state and local roadways will require traffic permit, preparation of traffic management plans and possible construction detours. -Limited space on Fall River side of the Taunton River to serve as a landing for the transmission structure/line.	-New easement would be required to facilitate the construction of the proposed Y-frame transmission structure on the Fall River side of the Taunton River. -New easement would be required from the MBTA to construct an overhead to underground transition structure. -New easement would be required to allow for a trenchless crossing of Route 24. -Need to acquire real estate from the MBTA to construct on property reserved for the South Coast Rail yard.	-Taunton River crossing. -Medium density multi-family and single-family residences along project route.	$$ -Increased costs for river crossing Y-frame structures. - Increased costs for underground installation. -Increased costs for possible relocation of existing underground services.

Alternative No.	Alternative Description	Engineering Feasibility	Construction Feasibility	Right-of-Way Requirements	Environmental & Permitting Considerations	Magnitude of Cost
			-Relative narrowness of the existing overhead ROW.			
4	Construct a new 115 kV line from the Pottersville S/S to the Sykes Road S/S and continue the new line to the Bell Rock S/S (~3.6 miles), and reconductor 3.6 miles each of N12 & M13 circuits from Pottersville S/S to Bell Rock S/S	-Installing a third overhead line within the route corridor would require the two existing circuits (N12 & M13) to be entirely reconfigured. -Additional easement would be required along the majority of the length of existing easement. - Installation of an underground duct bank and manhole system would require construction within congested roadways, including CSO, water line, sewer line, drainage conduits, communication line and gas line.	-Additional substation equipment would need to be installed at the Pottersville, Sykes Road and Bell Rock S/S. -A new access road network would need to be constructed for an overhead route option. Construct new access road spurs to new structure locations.	-New easement would be required for a distance of ~3.6 miles along the existing N12/M13 ROW to install a third 115 kV overhead transmission line. -To reduce the need for new easement, the N12 and M13 circuits would need to be reconfigured and rebuilt along the entire ~3.6 miles to accommodate a new third line.	-For an overhead line, acquisition of new easement from abutters (residential areas) parallel to the existing transmission line corridor would be required. -For an overhead line, acquisition of additional easement would be required from the City of Fall River Water Department and the Mass DCR for properties located within the Watuppa Reservation. -An overhead line would require steel monopoles on concrete caisson foundations or require significant anchoring and guying for new structures. -Potential for greater impact to state-listed species and outstanding resource waters. -Construction of an underground cable would occur within public roadways through medium density residential areas.	$$ Increased costs for material and construction for steel monopoles with caisson foundations. Increased costs of underground utility construction.

Conclusion

After consideration of the alternatives discussed above, NEP determined that the Alternative 3A was the Preferred Solution. This determination was based on consideration of engineering requirements, construction feasibility, minimizing real estate acquisition requirements, minimization of environmental impacts, facility reliability and security, and overall project costs, all while addressing the ISO-NE identified need.

Alternative 1 (the No Action Alternative) was rejected because it would not address the regional reliability problems on the transmission system. Alternative 2 would require acquisition of land to construct a new switching station, would involve a complex marine crossing of Mount Hope Bay and would be considerably more expensive to build than any of the other alternatives; therefore, it was rejected. Alternative 3B introduces numerous physical constraints such as dense utility congestion within local roadways and no feasible option for a trenchless crossing of State Route 24 and therefore was rejected. Alternative 4 was rejected because of the need to reconfigure and rebuild the N12 and M13 Lines in their entirety and the need to obtain additional easement for either an overhead route option or underground route option.

NEP's alternatives analyses demonstrates that Alternative 3A (N12/M13 Double Circuit Tower Separation Project) as proposed will best address the identified need and will improve transmission system reliability. The preferred project route is the best solution when balancing considerations of system reliability, costs to customers, potential environmental impacts, and engineering and construction feasibility. This choice is also consistent with ISO-NE's recommendation of the Project as the preferred solution to meet the identified need.

4.0 LAND USE

This section describes existing land use within the vicinity of the Project and presents potential upgrade related impacts during construction and operation. Existing land use conditions in the area were assessed based on publicly available MassGIS- land use data layers.[3] A 300--foot study area buffer ("Study Area") was established to document dominant land uses in the area. Table 4-1 identifies the land uses within the 300-foot Study Area buffer.

TABLE 4-1 LAND USE WITHIN THE (300-FOOT RADIUS) STUDY AREA

LAND USE DESCRIPTION	PERCENTAGE WITHIN 300-FOOT STUDY AREA
Forest	28
Forested Wetland	1
Non-Forested Wetland	4
Multi-Family Residential	1
Single-Family Residential	4
Unconsolidated Shore (beach, tidal flat)	2
Industrial	6
Water	26
Powerline/Utility	6
Bare Land (undeveloped and denuded land)	3
Developed Open Space	13
Grassland	4

4.1 Existing Conditions

As detailed in Section 2.0, the Project will be located primarily within existing, used NEP rights-of-way and/or easements generally between the Pottersville Switching Station in Somerset and the Sykes Road Substation in Fall River, Massachusetts. NEP is pursing permanent and temporary easements to facilitate construction and create access to proposed structure M13N-6, which straddles NEP fee owned property and private property. Additional aerial easements are required to address contingency blowout conditions of the overhead conductor near structure N12-13. The term "blowout conditions" refers to the magnitude of the horizontal displacement of an overhead conductor, due to wind conditions, meaning how far the conductors may "swing" during severe wind conditions. The Project is otherwise located wholly within NEP's existing ROW, easement, or fee-owned property. The existing ROW is bounded primarily by forest and water. The M13N Line will cross the Taunton River, an active railroad, a MassDOT transportation facility, and Massachusetts Route 24. The existing ROW is routinely managed by NEP to be consistent with mandatory vegetation standards for overhead electric transmission lines. Conditions within the ROW consist of upland and wetland areas with generally shrub and herbaceous vegetation communities.

[3] Sanborn. 2005. MassGIS Data – Land Use. Retrieved May 3, 2018 from http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/lus2005.html.

4.1.1 Planned Development Projects

According to the MassDOT Rail Inventory,[4] one rail corridor is located within the Study Area. The rail corridor is owned by MassDOT and is part of the South Coast Rail Project which will restore commuter rail service between Boston and Southeastern Massachusetts. This rail corridor is part of Phase 1 of the South Coast Rail Project which is scheduled to be operational in late 2023[5]. Within the Study Area, Phase 1 of the South Coast Rail Project includes the construction of a new train layover facility (Weavers Cove) in Fall River which will include six storage tracks, crew quarters, a maintenance shed and parking facilities[6]. In September 2018, the City of Fall River developed the draft Fall River Waterfront Urban Renewal Plan for the purposes of redeveloping and revitalizing the City's waterfront. NEP has maintained on-going communication with the MBTA and City of Fall River to keep them apprised of the Project design and schedule.

4.1.2 Open Space and Recreational Resources

The new Project route is primarily limited to existing, used NEP easements. NEP is pursuing a new easement from a private property owner located immediately adjacent to the exiting ROW, in the vicinity of the former Shell Oil Terminal. The Project area does not traverse any areas identified as public open space and/or recreational areas.

4.2 Potential Impacts

As detailed above in Section 3.0, the preferred Project route was selected to maximize use of NEP's existing ROW and minimize permanent impacts to environmental resources. In total, construction of the Project results in approximately 58,370 square feet (1.34 acres) of new land alteration to serve as a gravel access road and work pad for a new transmission structure.

New land alteration will occur as a result of the following work activities:

- Clearing and/or grading to temporarily accommodate equipment and crews during construction of the structures;
- Creation of a permanent pervious (gravel) access road and work pad to facilitate future access, operation, and maintenance needs of the structures;
- Vegetation trimming to accommodate the M13N Line clearance and wire blowout design;
- Clearing to create new access from public roadways to proposed structures; and
- Grading/earthwork within existing NEP ROW to create new access to the proposed structure.

Proposed new land alteration occur within or immediately adjacent to NEP-owned land or existing used ROW. Construction of the Project will not change current land uses, nor will it adversely affect adjacent land uses within the vicinity of the Project.

[4] Massachusetts Department of Transportation Rail Inventory. 2014. Available at https://geo-massdot.opendata.arcgis.com/datasets/rail-inventory. Accessed on November 21, 2019.
[5] Commonwealth of Massachusetts. South Coast Rail Project Routes & Service Details. 2019. Available at https://www.mass.gov/service-details/route-service-details-south-coast-rail. Accessed on November 21, 2019.
[6] Commonwealth of Massachusetts. 2019.

Structure M13N-6

NEP is proposing the construction of two (2) single circuit steel monopole "Y Frame" river crossing structures to support the M13N Line span over the Taunton River. Due to environmental and engineering constraints, structure M13N-6 on the Fall River side of the Taunton River is sited near the boundary of the existing NEP-fee owned property. NEP is seeking new permanent and temporary easements from the adjacent landowner to accommodate the construction, operation and maintenance of the proposed structure. The purpose of the permanent easements is to accommodate the M13N Line foundation diameter, wire blowout design criteria and to allow for the establishment of a permanent gravel access road to the structure. Temporary easements are necessary to allow equipment and crews safe and adequate workspace to construct the structure. Temporary work areas may be cleared, grubbed, and leveled with temporary fill over geotextile fabric. NEP anticipates approximately 1.34 acres of new land will be altered to accommodate the Project. Table 4-2 details the proposed temporary and permanent land alterations resulting from the Project.

ROW and/or Easement Trimming

Construction of the Project will necessitate permanent removal of trees in select locations within the existing ROW. Vegetation removal within existing ROW will allow for the establishment of new overland access roads to facilitate construction equipment and crews to access proposed structures from public streets. Select widening of the ROW via removal of trees is proposed in select areas along the ROW and within the ROW between Route 24 and the Sykes Road Substation.

Tree removal/clearing includes select removal of tree limbs and trees (danger and hazard trees) within the existing NEP ROW and tree removal within the existing NEP ROW between State Route 24 and Sykes Road (where tree clearing generally ranges from 15-feet to 28-feet wide). Tree clearing is also required to construct proposed Structure M13N-6 and the associated structure work pad.

Access to Replacement Structures M13N-7 and M13N-8

NEP is proposing the installation Structures M13N-7 and M13N-8 within existing NEP ROW between the MBTA rail tracks and existing residential homes. The topography in proximity to structure M13N-7 drops off sharply behind the residential homes and levels out in proximity to the railroad tracks. To facilitate access by equipment and personnel during construction, NEP is proposing the construction of a new access road from structure M13N-7 to M13N-8. The access road will require grading/earthwork of the adjacent steep slope. NEP has obtained the services of a civil engineer to ensure earthwork is completed in a manner which does not compromise the private residential property. The grading plan will be included in the Notice of Intent plans to be submitted to the Fall River Conservation Commission.

The ROW between structure M13N-7 and M13N-8 is currently characterized by low, scrubby growth of opportunistic species, a gravel bed associated with the railroad, and three buried pipelines operated by third parties other than NEP, including a 6-inch line, 20-inch line and 4-inch line. NEP will coordinate with the pipeline owners prior to and during construction of the Project.

TABLE 4-2 PROJECT ANTICIPATED LAND USE IMPACTS

NEW LAND PERMANENTLY ALTERED	
Existing NEP ROW	Proposed New Easement
Approximately 23,414 sf (0.54 acres) including: • ROW trimming to accommodate the M13N Line clearance • ROW clearing to create new access from public roadways to proposed structures • Creation of a permanent pervious (gravel) access road and work pad to facilitate future access, operation, and maintenance needs of Structures N126 and M13N6. • Grading/earthwork within existing NEP ROW to create new access to proposed structure N12-3	Approximately 58,370 sf (1.34 acres) including: • Clearing and grading adjacent to the proposed new access road • Expansion of existing ROW to accommodate blow out design for structure M13N6.
NEW LAND TEMPORARILY ALTERED	
Approximately 509,512 sf (11 acres) including: • Clearing and/or grading with fill over geotextile fabric to create temporary work areas. • Existing transmission ROW	Approximately 208,522 sf (5 acres) including: • Clearing and/or grading with fill over geotextile fabric to create access and work pad for new transmission structure. Fill to be removed after construction.

4.2.1 Vegetation Maintenance

NEP has long followed established plans and procedures for applying an Integrated Vegetation Management (IVM) approach to manage vegetation within existing utility corridors in accordance with transmission line clearance standards. Vegetation is routinely cleared within the ROW and trees along the edges are periodically pruned or cleared. The vegetation maintenance cycle follows a five-year timeline and encourages the growth of low-growing shrubs and other vegetation which provide a degree of natural vegetation control. Vegetation management is necessary to ensure the reliable and safe delivery of electric services to the NEP's customers. This is accomplished by allowing for the proper clearance between vegetation and electrical conductors. Once select tree clearing has been performed in order to expand the cleared width of the existing ROW, vegetation maintenance will continue to occur in this area and along the remainder of the transmission line ROW in accordance with the NEP's Vegetation Management Plan (VMP) (National Grid's 2019-2023 VMP). Vegetation will be maintained as low-growth shrubs and grasses. Minimal and localized tree removal will be required to accommodate the Project; however, it will not interfere with wildlife around the Project. NEP's VMP is prepared in compliance with the Massachusetts Rights-of-Way Management regulations (333 CMR 11.00) administered by the Massachusetts Department of Agricultural Resources.

4.2.2 Potential Land Use Impacts

Land use impacts can be separated into short-term and long-term impacts. Short-term land use impacts lasting little more than a year may occur during the construction phase of the Project. Impacts associated with the construction phase of the Project will be temporary, and a majority of the existing land uses will resume following construction. NEP will provide notification of the intended construction plan and schedule to any affected abutters so that the effect of any temporary disruptions may be minimized.

As detailed in Section 3.0, the Project was cited to minimize impacts to the natural and social/developed environment to the maximum extent practicable. The Project is primarily located within existing used utility corridors and/or easements owned by NEP. Within these areas, the transmission line is consistent with the surrounding utility infrastructure. A combination of existing and proposed upland access roads and/or public roadway will be used to gain access to the work locations. These access roads will be consistent with the existing use of the land.

The Project is proposed within or immediately adjacent to existing ROWs and on easements held by NEP or land owned in fee by NEP, which are primarily occupied by electric facilities. NEP will provide notification of the intended construction plan and schedule to the City of Fall River, MassDOT, and abutters so that the effect of any temporary disruptions may be minimized.

4.3 Consistency with Local Planning

Where the Project is located within existing NEP ROW, the system upgrade is not expected to change or significantly impact land uses or the adjacent lands. The work is consistent with the existing public utility presence within and around the existing N12 and M13 ROW. The extent of new impacts to land uses outside of existing NEP ROW is limited to construction on an industrial waterfront parcel that is privately owned and upgrading some off-ROW access roads.

Community Preservation Plans

In terms of regional and local land use planning, the M13N Line is anticipated to remain consistent with the Community Preservation Plans or guidelines for the affected jurisdictions (see the Table 4-3 below for the list of plans reviewed). Consistent with the Community Needs Assessment Act, the goals of these plans and guidelines are to provide affordable housing and recreational facilities and preserve historic and open space resources. These plans do not specifically address energy or electrical transmission lines. The Project is consistent with these goals because it minimizes impacts to existing resources and uses in the area.

TABLE 4-3 PROJECT COMMUNITY PRESERVATION PLANS

COMMUNITY	PLAN OR GUIDELINE REFERENCE
Town of Somerset	Town of Somerset Community Preservation Plan (2019)
City of Fall River	City of Fall River Draft Community Preservation Plan (2014)

The Project is consistent with community preservation activities, as there will be little to no change to open space, recreation, and historic resources.

Master Plans

Within the effected municipalities, the Project is proposed to be constructed primarily on existing transmission line ROWs and is not expected to have any impact on existing and future land uses described in the Master Plans.

The purpose of local Master Plans generally is to summarize the vision and goals developed for the future and then outline steps, responsible parties, and/or recommended timing in order to achieve it (see Table 4-4 below for the list of plans reviewed). The Master Plans for the affected municipalities do address utilities and infrastructure in that the focus of the plans center on land use and infrastructure-type or development projects, however they do not explicitly address transmission line utilities.

TABLE 4-4 MASTER PLANS

COMMUNITY	PLAN OR GUIDELINE REFERENCE
Town of Somerset	Somerset Draft Master Plan (2019)
City of Fall River	City of Fall River Master Plan 2009 – 2030

Open Space and Recreation Plans

The existing N12 and M13 transmission corridor from Pottersville switching yard to Sykes substation does not traverse any areas identified as public open space or recreational areas. The undeveloped land east of the Taunton River and west of North Main Street is slated for development by MassDOT for the purposes of public commuter rail transportation. Therefore, the proposed system upgrades are not expected to have any impact on existing and future land uses.

Local Open Space and Recreation Plans help jurisdictions to protect, preserve and increase open space and recreation assets and resources, and to provide citizens with a plan regarding future policies and actions necessary to meet the needs of the town's changing physical, cultural, and social needs. The Plans reviewed are listed in the Table 4-5 below.

TABLE 4-5 PROJECT OPEN SPACE AND RECREATION PLANS

COMMUNITY	PLAN OR GUIDELINE REFERENCE
Town of Somerset	Somerset Conservation, Recreation, and Open Space Plan (2017)
City of Fall River	Fall River Open Space and Recreation Plan (2010)
City of Fall River	Fall River Waterfront Urban Renewal Plan (2018)

4.4 Mitigation Measures

As described in Section 3.0, NEP has sited the N12 and M12 DCT Separation Project within existing ROW to the greatest extent practicable. Where the Project necessitates alteration to land outside of NEP ROW, impacts are limited to immediately adjacent undeveloped private land. The proposed Project consists predominantly of existing utility infrastructure. New pole structures are proposed to be located adjacent to existing structures, where feasible, to minimize the potential for visual impact. Vegetation removal will be limited so that the maximum practical visual buffer between residences and the proposed system upgrades are maintained.

Construction-generated noise will be limited by the use of mufflers, as feasible, on construction vehicles and equipment. Dust will be controlled by wetting and stabilizing access road surfaces, as necessary, and by maintaining crushed stone aprons at the intersections of access roads with paved public roadways.

A Stakeholder Outreach communication plan will be developed for the Project that will provide periodic project updates during construction and will provide a consistent point of contact for the public. Recognizing the varying needs of its stakeholders, NEP is developing various communication methods to inform stakeholders throughout construction, including as needed: work area signage; advance notification of scheduled construction; personal contact with residents, community groups and businesses; and regular e-mail updates to residents (upon request) and local officials that will include information on upcoming construction activity.

Traffic control and/or management plans will also be prepared, where required, which will minimize impacts associated with increased construction traffic on local roadways.

4.4.1 COMMUNITY/STAKEHOLDER OUTREACH

NEP has established a community and public outreach program for the Project to initiate and maintain communications with stakeholders (e.g., abutting property owners, residents, community groups and local and state officials). This program includes opportunities for public education and input regarding the need for the Project, the permitting process, the dissemination of construction updates and outreach during construction, and follow-up outreach after Project completion. The program is designed to engage the communities, facilitate transparency throughout the Project, foster public participation, and solicit feedback from stakeholders.

A Stakeholder Outreach communication plan will be developed for the Project that will provide periodic Project updates during construction and will provide a consistent point of contact for the public. Recognizing the varying needs of its stakeholders, NEP is developing various communication methods to inform stakeholders throughout construction, including as needed: work area signage; advance notification of scheduled construction; personal contact with residents, community groups and businesses; and regular e-mail updates to residents (upon request) and local officials that will include information on upcoming construction activity.

ENVIRONMENTAL JUSTICE COMMUNITIES

As part of the stakeholder outreach plan, NEP will promote public involvement by the Environmental Justice Communities (EJC) located within 1 mile of the Project through the use and dissemination of multi-lingual Project fact sheets, website content, meeting invitations and translation services for future presentations in English, Spanish and Portuguese (both in writing and in-person). Based on review of the Massachusetts Environmental Justice Populations Mapping Tool, there are three (3) EJCs located within 1 mile of Project. The EJ criteria for these communities are listed as income and/or minority as indicated on the attached map (see Page 9, Appendix A) generated by the Massachusetts Environmental Justice Populations Mapping Tool.

This Project is not reasonably likely to negatively affect EJCs. The Project does not exceed MEPA thresholds for Air (301 CMR 11.03(4) and meets the greenhouse gas de minimis exemption. There are no facilities proposed that would result in long-term air emissions. The Project does not exceed MEPA thresholds for Water (301 CMR 11.03(8) and there are no long-term water withdrawals or discharges proposed. NEP will be applying to the MA DEP to obtain a Section 401 Water Quality Certificate for the Project. The Project does not exceed MEPA thresholds for Land (301 CMR 11.03(1) and there will be no

reduction in or conversion of public open space since the Project will be located within NEP's existing ROW and on adjacent private property.

During the construction-phase of the Project there may be intermittent and localized increases in noise, dust and emissions from construction vehicles and related equipment. NEP will be implementing measures to minimize and mitigate these temporary impacts as discussed in the mitigation section herein. Solid waste will be generated during the construction of the Project. The transmission assets to be removed will be recycled. Those components not salvaged and any debris that cannot be recycled will be removed from the ROW to an approved off-site facility.

5.0 WETLANDS AND WILDLIFE

This section describes wetlands and wildlife resources within the Project areas and presents potential project-related impacts during construction and operation. Field investigations were conducted for the Project by POWER Engineers Consulting, PC ("POWER") wetland scientists, and detailed results of these investigations are provided in the following Appendices:

- Appendix C –Wetland and Stream Delineation Report
- Appendix D –Wildlife Habitat Evaluation
- Appendix E –Wetland Invasive Species Control Plan

5.1 Analysis of Existing Data

Prior to the commencement of the wetland field investigations/delineations, existing information was reviewed to determine the potential extent of wetlands within the limit of work activities associated with the Project Survey Area. These source materials included:

- USGS 7.5-minute Topographic Quadrangle Map - Fall River, Massachusetts[7]
- MassDEP Wetland Data[8]
- NHESP Certified Vernal Pool Maps[9]
- NHESP Potential Vernal Pool Maps[10]
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2015 - 2020 Web Soil Survey[11]
- USDA NRCS Hydrologic Unit Code (HUC) Basins (8,10,12) [12]
- USGS Color Ortho Imagery[13]
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetlands Mapper[14]
- USGS National Hydrography Dataset (NHD) Viewer[15]

[7] United States Geologic Survey (USGS). 1985. 7.5-minute Topographic Quadrangle Map, Fall River, MA.
[8] Massachusetts Department of Environmental Protection (MassDEP). 2005. MADEP Wetland Data. Retrieved April 20, 2015– July 09, 2021 from https://www.mass.gov/info-details/massgis-data-massdep-wetlands-2005.
[9] Natural Heritage and Endangered Species Program (NHESP). 2015-2021. MassGIS Data – Certified Vernal Pools. Retrieved April 20, 2015- July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nhesp-certified-vernal-pools.
[10] Natural Heritage and Endangered Species Program (NHESP). 2013. MassGIS Data – Potential Vernal Pools. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nhesp-potential-vernal-pools.
[11] United States Department of Agriculture, Natural Resources Conservation Service (USDA NRCS). 2015-2020. Web Soil Survey. Retrieved April 20, 2015-July 09, 2021 from http://websoilsurvey.nrcs.usda.gov/.
[12] United States Department of Agriculture, Natural Resources Conservation Service (USDA NRCS). 2005. NRCS Hydrologic Unit Code (HUC) Basins (8,10,12). Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nrcs-huc-basins-81012.
[13] United States Geological Survey (USGS). 2013-2014, 2019. MassGIS Data: USGS Color Ortho Imagery . Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-2019-aerial-imagery.
[14] United States Fish and Wildlife Service (USFWS). 1977 and 2008. National Wetland Inventory (NWI) Wetlands Mapper. Retrieved April 20, 2015-July 09, 2021 from http://www.fws.gov/wetlands/data/mapper.HTML.
[15] United States Geologic Survey (USGS). 2019. MassGIS Data: USGS Color Ortho Imagery. Retrieved April 20, 2015- July 09, 2021 from https://www.mass.gov/info-details/massgis-data-2019-aerial-imagery.

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Bristol County, Massachusetts Map No. 25005C_1296[16]
- MassDEP ORW[17]
- Massachusetts Office of Coastal Zone Management's Designated Port Area (DPA) Boundary Maps[18]
- Massachusetts Division of Marine Fisheries Shellfish Sanitation and Management Maps.[19]

The information was compiled and synthesized into a geographic information system (GIS) geo-referenced database and used in the field to assist wetland scientists in the location and identification of wetland systems in the Project Survey Area.

5.2 Wetland Delineation Methodology

During the field surveys, wetlands were identified and delineated in accordance with requirements of the following jurisdictions:

- Massachusetts Wetland Protection Act (WPA) (M.G.L. c. 131, § 40) and associated Regulations (310 CMR 10.00)
- Clean Water Act ("CWA") (33 United States Code [U.S.C.] §§ 1251 et seq., Section 404 and Section 401)

The field teams also used established delineation procedures as outlined in MassDEP's *Handbook on Delineating Bordering Vegetated Wetlands.*[20] Resource Areas subject to the WPA were identified and delineated in the field. Over half of these Resource Areas are coastal wetlands including: Designated Port Areas (DPA), Coastal Beach (BE), Coastal Bank (CB), Coastal Dune (CD), Salt Marsh (SM), Land Containing Shellfish (SF), Land Subject to Coastal Storm Flowage (LSCSF), and Land Under the Ocean (LUO). The other five wetlands are inland including: Inland Bank (IB), Bordering Vegetated Wetlands (BVW), Land Under Water Bodies and Waterways (LUWW), and Riverfront Area (RFA). Each type of wetland has an associated set of regulatory performance standards and the Project's approach to meeting these standards is addressed in Section 10.0, Regulatory Compliance. The Resource Areas subject to the WPA that will either be impacted by the Project or that have buffer zones within Project impact areas are further defined below.

[16] Federal Emergency Management Agency (FEMA). 2017. Flood Insurance Rate Map Bristol County, Massachusetts Map No. 25005C_1296. MassGIS Data: FEMA National Flood Hazard Layer. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-fema-national-flood-hazard-layer.
[17] Massachusetts Department of Environmental Protection (MassDEP). 2010. MassGIS Data – Outstanding Resource Waters. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-outstanding-resource-waters.
[18] Massachusetts Office of Coastal Zone Management. 2011. Designated Port Area Boundary Maps. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/service-details/designated-port-area-boundary-maps.
[19] Massachusetts Division of Marine Fisheries. 2015. Shellfish Sanitation and Management. Retrieved April 20, 2015-July 09, 2021 from http://www.massmarinefisheries.net/shellfish/dsga/MHB2.pdf.
[20] Jackson, S. 1995. Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act. Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways.

Coastal Wetlands

- **Coastal Bank (CB)** is defined as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland (310 CMR 10.30(2)). A 100-foot wide buffer zone extends landward from the top of a CB.

- **Salt Marsh (SM)** is defined as a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils (310 CMR 10.32(2)). Dominant plants within salt marshes typically include salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*), but may also include, without limitation, spike grass (*Distichlis spicata*), high-tide bush (*Iva frutescens*), black grass (*Juncus gerardii*), and common reed (*Phragmites australis*). A 100-foot-wide buffer zone is associated with SM.

- **Land Subject to Coastal Storm Flowage (LSCSF)** is defined as land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

- **Land under the Ocean (LUO)** is defined as land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries (310 CMR 10.25(2)). The tidal Taunton River includes **LUO**.

Inland Wetlands

- **Inland Bank (IB)** is defined as the portion of the land surface which normally abuts and confines a water body (310 CMR 10.54(2)(a)(c)). IB occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, the IB occurs between a water body and upland. An IB may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone. The upper boundary of an IB is the first observable break in the slope or the mean annual flood level, whichever is lower. The lower boundary of an IB is the mean annual low flow level. A 100-foot-wide buffer zone extends from the upper boundary of an IB and therefore is typically encompassed within RFA as described below.
- **Bordering Vegetated Wetlands (BVW)** are defined as freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes (310 CMR 10.55(2)(a)). BVWs are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetation community which occur in each type of freshwater wetland (wet meadows, marshes, swamps and bogs) area are specified in the WPA. A 100-foot wide buffer zone is associated with BVW.
- **Riverfront Area (RFA)** is defined as the area of land between a river's mean annual high-water line and a parallel line measured horizontally (310 CMR 10.58(2)). "Rivers" are any natural flowing body of water that empty to any ocean, lake, pond, or other river and which flows throughout the year (310 CMR 10.58(1)). Rivers include streams that are perennial because surface water flows within them throughout the year. Intermittent streams are therefore not rivers because surface water does not flow throughout the year. The RFA may include or overlap other resource areas or their buffer zones. The RFA does not have a buffer zone. The RFA in Somerset is 200 feet measured from MHW line of the Taunton River, and in Fall River the RFA is 25 feet in accordance 310 CMR 10.58(2)(a)(3).

Each wetland was numbered and classified by USFWS NWI codes[21] that make use of the *Classification of Wetlands and Deepwater Habitats of the United States* to differentiate wetland cover types.[22] Six wetland community types were identified in the Survey Area: Palustrine Scrub-Shrub ("PSS"), Palustrine Emergent (PEM), Palustrine Forested ("PFO"), Estuarine Subtidal Unconsolidated Bottom ("E1UB"), Estuarine Intertidal Emergent ("E2EM"), and Estuarine Intertidal Unconsolidated Shore ("E2US"). The PFO, PSS and PEM codes are freshwater wetland systems. The remaining three Estuarine codes are tidal habitats that are areas usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and are areas where ocean water is at least occasionally diluted by freshwater runoff from the land. The wetland cover types are further described below.

- **Palustrine Scrub-Shrub (PSS)** wetlands are dominated by woody deciduous vegetation (shrubs and small trees) less than six meters (20 feet) tall. Wetland vegetation common to the PSS wetlands includes highbush blueberry (*Vaccinium corymbosum*), smooth arrowwood (*Viburnum dentatum*), and sweet pepperbush (*Clethra alnifolia*).
- **Palustrine Emergent, Persistent (PEM)** wetlands are dominated by non-woody herbaceous vegetation. Common emergent vegetation includes spotted joe-pye weed (*Eutrochium maculatum*), common reed (*Phragmites australis*), and soft rush (*Juncus effusus*).
- **Palustrine Forested, Broad-leaved Deciduous (PFO)** wetlands are forested wetlands dominated by broad-leaved deciduous trees. Red maple (*Acer rubrum*) was the dominant tree species encountered. The red maple forests had an understory commonly comprised of highbush blueberry (*Vaccinium corymbosum*) and sweet pepperbush (*Clethra alnifolia*).
- **Estuarine Subtidal Unconsolidated Bottom (E1UB)** areas are deepwater tidal habitats that are continuously covered with tidal water. There is less than 30 percent plant cover and at least 25 percent of the substrate is covered with particles smaller than stones (6-7 cm).
- **Estuarine Intertidal Unconsolidated Shore (E2US)** areas are tidal habitats where the substrate is flooded and exposed by the tides. The substrate is comprised of less than 75 percent areal cover of stones, boulders, or bedrock, and there is less than 30 percent areal cover of vegetation. Beaches, bars, and flats are considered in the Unconsolidated Shore class.
- **Estuarine Intertidal Emergent (E2EM)** areas are tidal habitats where the substrate is flooded and exposed by the tides. The dominant vegetation is non-woody and usually perennial that normally remains standing until the beginning of the next growing season. Common vegetation includes salt marsh cord grass (*Spartina alterniflora*), salt meadow cord grass (*Spartina patens*), and common reed.

The specific municipal conservation commission(s) that the Project area lies within regulate activities in and adjacent to wetlands under the provisions of the WPA. Both the Town of Somerset and the City of Fall River have not adopted local wetland protection bylaws and therefore local jurisdiction of activities in or adjacent to wetlands in these municipalities is limited to the WPA.

Photographs were taken of each wetland, with other additional observations and descriptive information recorded from representative wetlands including location, wetland classification, vegetative community, wetland functions and values, and general wildlife use. Detailed information was collected at paired data plots in the wetland and upland along each side of the boundary from representative wetlands to document the vegetation, soils and hydrology criteria used to establish wetland boundaries. This

[21] https://www.fws.gov/wetlands/data/wetland-codes.html
[22] Cowardin, L M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service. Biological Services Program. Washington, D.C. FWS/OBS-79/31.

information appears on USACE Wetland data sheets and MassDEP Bordering Vegetated Wetlands field data forms completed for delineated wetlands and watercourses. Consecutively numbered pink flagging hung on vegetation at approximately 15- to 30-foot intervals was used to mark the wetland boundaries.

Streams and drainage ways were examined for the presence/absence of an Ordinary High Water Mark (OHWM) and defined bed (i.e., LUWW) and bank (refer to IB above). Generally, if these characteristics were observed along a waterway, it was determined to be a regulated stream but if absent, or atypical circumstances existed, these areas were determined to be a drainage way, swale, ditch, or other erosional feature, and likely not a CWA-regulated feature (i.e., not a "water of the United States"). Any streams encountered were classified based on the observed flow and channel characteristics at the time of the field review. Watercourses were delineated with blue flagging.

Tables 5-1 and 5-2 document the wetlands and watercourses identified during the field investigations, respectively.

5.2.1 Vernal Pool Survey

The WPA defines vernal pool habitat as confined basin depressions that typically hold water for two continuous months during the spring and are free of adult fish populations. These areas provide essential breeding habitat for a variety of amphibian species such as wood frogs (*Lithobates sylvatica*) and spotted salamanders (*Ambystoma maculatum*). Certified vernal pools (CVPs) are those that have been certified by NHESP according to the Guidelines for Certification of Vernal Pool Habitat[23] and are protected if they fall under the jurisdiction of the WPA. CVPs are also afforded protection under Section 401 of the federal CWA, the Massachusetts Surface Water Quality Standards that relate to Section 401, and the Massachusetts Forest Cutting Practices Act. Potential vernal pools (PVPs) have also been mapped by NHESP but do not receive protection under the WPA or under any other state or federal wetlands protection laws.[24] The identification of PVPs by the NHESP is to be used as a tool to guide the field investigations in determining the presence of a vernal pool.

Vernal pool habitat is defined in 310 CMR 10.04 as confined basin depressions that, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and that are free of adult fish populations. These areas provide essential breeding habitat for a variety of amphibian species such as wood frogs and spotted salamanders. The USACE, New England District, Vernal Pool Assessment Draft (2013)[25] defines vernal pools as the following:

> "Vernal pools are depressional aquatic resource basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). Pools usually support one or more indicator species, including: wood frog, spotted salamander, blue-spotted salamander (*Ambystoma laterale*), marbled salamander, Jefferson salamander (*Ambystoma jeffersonianum*), and species of fairy shrimp (*Eubranchipus* spp.*)*; however, they should preclude sustainable populations of predatory fish."

[23] MassGIS Data – Certified Vernal Pools. 2015-2021. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nhesp-certified-vernal-pools.
[24] Massachusetts Natural History and Endangered Species Program. 2013. MassGIS Data – NHESP Potential Vernal Pools. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nhesp-potential-vernal-pools.
[25] US Army Corps of Engineers (USACE). 2013. US Army Corps of Engineers – New England District Vernal Pool Assessment Draft. Retrieved July 09, 2021 from http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/VPAssessmentDRAFT.pdf.

Vernal pool surveys were conducted during the breeding season from spring 2015 to spring 2019 within the limit of the existing easements associated with the Project. No vernal pools were found within the Survey Area.

TABLE 5-1 WETLANDS WITHIN THE PROJECT AREA

WETLAND ID	WETLAND CLASS		JURISDICTIONAL STATUS[3]	WETLAND BUFFER AREA
	NWI[1]	STATE[2]		
M10	E2US, E2EM	CB, BE, SM	Federal and State	100 feet
M9B	PFO	BVW	Federal and State	100 feet
M9A	PEM/PSS	IVW	Federal	Not Applicable
M9	PSS/PFO	BVW	Federal and State	100 feet
M8	PSS/PEM/PFO	BVW	Federal and State	100 feet

[1]Wetlands were classified according to Cowardin et al. (1979). E2US = estuarine unconsolidated shore; E2EM = estuarine emergent; PSS = palustrine scrub-shrub wetland; PEM = palustrine emergent; PFO = palustrine forested wetland. https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-Deepwater-Habitats-of-the-United-States.pdf

[2] Wetlands were classified according to MassDEP, Division of Wetlands and Waterways (1995). CB = coastal bank; BE = coastal beach; SM = salt marsh; BVW = bordering vegetated wetland, IVW=isolated vegetated wetland

[3] Please note that the determination of each wetland's isolated or connected status represents the professional opinion of POWER. Final determination of jurisdictional status is under the purview of the USACE

TABLE 5-2 WATERCOURSES WITHIN PROJECT AREA

STREAM ID	MA SURFACE WATER QUALITY STANDARD CLASS	FREQUENCY	RIVERFRONT AREA	100-YR FLOODPLAIN
SM 10 (Taunton River)	Class B ("other waters")	Tidal	200 feet in Somerset 25 feet in Fall River	Yes
SM 9	Class B ("other waters")	Perennial	25 feet in Fall River	No
SM 9A (Steep Brook)	Class B ("other waters")	Perennial	25 feet in Fall River	No
SM9B	Class B ("other waters")	Ephemeral	NA	No
SM 8	Class B ("other waters")	Intermittent	NA	No

5.3 Existing Conditions

The existing N12 and M13 transmission line ROW is located within the major basin of the Taunton River.[26] Watersheds within the Taunton River basin are further delineated into smaller watersheds identified by a unique, twelve level HUC. The M13N Line ROW is located within the sub watershed of the Taunton River-Mill River to mouth (HUC #010900040804).

Within the Town of Somerset and the City of Fall River, the Project traverses watercourses and wetlands that are designated as Class B, which serve as habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact

[26] United States Department of Agriculture, Natural Resources Conservation Service (USDA NRCS). 2005. NRCS Hydrologic Unit Code (HUC) Basins (8,10,12). Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/info-details/massgis-data-nrcs-huc-basins-81012.

recreation.[27] The Taunton River is also classified as SF since American oysters, quahogs, and soft-shell clams have been mapped.[28] However, the shellfish area has been classified as restricted.

As summarized in previous tables, five wetlands (Table 5-1) and five watercourses (Table 5-2) were identified in the Project ROW (refer to Appendix A, USGS Locus Map Page 2). There are a variety of wetland habitats in the ROW that include both coastal and freshwater wetlands. SM is the predominant coastal wetland habitat. The predominant freshwater wetland habitat in the area is scrub-shrub wetland ("PSS") within the existing transmission line ROW and deciduous wetland forest ("PFO") adjacent to the line. The watercourses identified in the ROW include the tidal Taunton River (SM10), two perennial streams (SM9 and SM9A, Steep Brook), one intermittent stream (SM8), and one ephemeral stream (SM9B) that is a tributary of Steep Brook (SM9A).

5.3.1 Navigable Waterway

The Taunton River is the only navigable waterway that is crossed by the Project. The Taunton River is also a federally listed Wild and Scenic River and is the longest undammed coastal river in New England.[29] NEP will be filing with the USACE, New England District seeking to modify the existing Section 10 Permit for the aerial transmission line crossing of the Taunton River. The river contains quahogs, oysters, and soft-shell clams and is therefore designated as a SF. On the Somerset side of the river, the Mount Hope Bay DPA includes a section of the Taunton River and extends landward to Riverside Avenue but does not encompass the area crossed by the transmission line corridor in Fall River. Due to the perennial classification of the Taunton River, the Resource Area, RFA occurs on both sides of the river. In Fall River, the RFA extends for a distance of 25 feet outward from the stream banks (IB), whereas in Somerset, the designated distance is 200 feet. Therefore, the Taunton River has a RFA of 200 feet from the stream banks (IB) on the west side of the Taunton River in Somerset and a RFA of 25 feet from the stream banks (IB) on the east side of the river in Fall River.

The ROW crosses over the Taunton River. Where the transmission line crosses the Taunton River, the FIRM (Panel Number 25005C_1296, effective date November 14, 2017) prepared by FEMA[30] indicates 17 feet (North American Vertical Datum of 1988) is the 100-year event VE Zone (High Risk Coastal Area) elevation. On each side of the river this elevation corresponds to the boundary of LSCSF. Also, on both sides of the river the top or landward edge of the Resource Area, CB occurs above elevation 17 feet (North American Vertical Datum of 1988) at the location where the slope becomes less steep than 4:1 (Wetland Program Policy 92-1).[31]

The perennial streams (SM9 and SM9A, Steep Brook), are not considered navigable by canoe, kayak, or other watercraft, due to the shallow and narrow channels and dense vegetation along the channels. While the ROW does cross over the Taunton River, no portion of the work activities will occur within the

[27] Massachusetts Department of Environmental Protection. 2013. 314CMR 4.00 Massachusetts Surface Water Quality Standards. Retrieved July 09, 2021 from https://www.mass.gov/files/documents/2017/10/18/314cmr4.pdf.
[28] Massachusetts Division of Marine Fisheries. 2015. Shellfish Sanitation and Management. Retrieved April 20, 2015-July 09, 2021 from http://www.massmarinefisheries.net/shellfish/dsga/MHB2.pdf.
[29] National Wild and Scenic Rivers System. 2018. Taunton River, Massachusetts. Retrieved July 09, 2021 from https://www.rivers.gov/rivers/taunton.php.
[30] Federal Emergency Management Agency (FEMA). 2017. Flood Insurance Rate Map Bristol County, Massachusetts Map No. 25005C_1296. MassGIS Data: FEMA National Flood Hazard Layer. Retrieved July 09, 2021 from https://www.mass.gov/info-details/massgis-data-fema-national-flood-hazard-layer.
[31] Massachusetts Department of Environmental Protection. 1992. Wetlands Program Policy 92-1: Coastal Banks. Retrieved April 20, 2015-July 09, 2021 from https://www.mass.gov/guides/wetlands-program-policy-92-1-coastal-banks.

Taunton River, other than the potential to use a boat for wire stringing activities across the Taunton River. However, no impacts to the Taunton River are anticipated.

5.3.2 Waterways and Tidelands

Existing Conditions

The existing N12 and M13 transmission lines span the Taunton River in an overhead configuration. The Taunton River is a perennial tidal river that also serves as the municipal boundary between Somerset and Fall River. The proposed transmission line is proposed to cross the Taunton River in an overhead configuration adjacent (south) to the existing river crossing. Portions of the existing and proposed transmission facilities are located partially within historically filled tidelands subject to jurisdiction under the Massachusetts Public Waterfront Act (Chapter 91) as shown on the Expanded Environmental Notification Form Figures Pages 3-8 in Appendix A. NEP met with representatives of the MA DEP on February 12, 2021 to introduce the Project and to preliminarily discuss Chapter 91 jurisdictional activities. NEP will coordinate with MA DEP regarding any required review under c. 91.

5.3.3 Wildlife

A variety of suburban wetland wildlife species (both freshwater and coastal) use the habitats in the Project ROW including an assemblage of large and small mammals, songbirds, reptiles, amphibians, and invertebrates. These wetland habitats provide feeding, nesting, breeding, and cover opportunities for wildlife which otherwise are surrounded by highly residential areas with sections of commercial and industrial zones. Characteristics of the forest, shrub, and emergent wetlands which provide wildlife necessary resources include: berry-producing shrubs for food sources, dense shrubs and emergent plants for cover, and localized areas of surface water in the form of depressions. Characteristics of the coastal wetlands which provide wildlife necessary resources include the presence of invertebrates for food sources and salt marsh emergent plants for cover and potential nesting opportunities for shorebirds.

Table 5-3 provides a general list of suburban freshwater and coastal wildlife species expected to occur in wetlands identified in the Project ROW. This information is based on geographical distribution and habitat preferences as described in *New England Wildlife: Habitat, Natural History and Distribution*.[32] The wildlife assemblages present within the ROW vary according to habitat characteristics.

The waters of the Taunton River provide shellfish habitat since American oysters, quahogs, and soft-shell clams have been mapped.[33] In addition to shellfish, the Taunton River provides habitat for numerous fish species including the Massachusetts state-listed Atlantic sturgeon (*Acipenser oxyrinchus*)[34] and common fish species include winter flounder (*Pseudopleuronectes americanus*), bay anchovy (*Anchoa mitchilli*),

[32] DeGraaf, R.M. and M. Yamasaki. 2001. New England Wildlife: Habitat, Natural History, and Distribution. 2nd Edition. Hanover, NH: University Press of New England. 482 p.
[33] Massachusetts Division of Marine Fisheries. 2015. Shellfish Sanitation and Management. Retrieved April 20, 2015-July 09, 2021 from http://www.massmarinefisheries.net/shellfish/dsga/MHB2.pdf.
[34] Natural Heritage and Endangered Species Program. 2015. Atlantic sturgeon. *Acipenser oxyrinchus*. Retrieved July 09, 2021 from https://www.mass.gov/doc/atlantic-sturgeon/download.

American butterfish (*Peprilus triacanthus*), alewife (*Alosa pseudoharengus*), scup (*Stenotomus chrysops*), and windowpane flounder (*Scopthalmus aquosus*).[35],[36]

Due to anticipated impacts to BVW being greater than 5,000 square feet due to temporary impacts associated with construction mats, permanent impacts associated with the installation of new structures, and secondary impacts associated with tree clearing, a Wildlife Habitat Evaluation has been completed. Site specific information on wildlife and habitat within the ROW are contained in the Wildlife Habitat Evaluation in Appendix D.

TABLE 5-3 GENERAL LIST OF SUBURBAN WILDLIFE SPECIES WITHIN THE PROJECT ROW[37]

WETLAND TYPE	COMMON BIRDS	SMALL MAMMALS	LARGER MAMMALS	AMPHIBIANS
PSS Wetlands	Yellow Warbler *(Dendroica petechia)* Common Yellowthroat *(Dendroica dominica)* American Goldfinch *(Carduelis tristis)* Song Sparrow *(Melospiza melodia)* Common Grackle *(Quiscalus quiscula)*	Meadow Vole *(Microtus pennsylvanicus)* White-Footed Mouse *(Peromyscus leucopus)* Eastern Cottontail *(Sylvilagus floridanus)*	Raccoon *(Procyon lotor)* Virginia Opossum *(Didelphis virginiana)* Eastern Skunk *(Mephitis mephitis)* White-Tailed Deer *(Odocoileus virginianus)* Eastern Coyote *(Canis latrans)*	–
PFO Wetlands	Red-Tailed Hawk *(Buteo jamaicensis)* Downy Woodpecker *(Dryobates pubescens)* Hairy Woodpecker *(Picoides villosus*) Eastern Towhee *(Pipilo erythrophthalmus)*	–	White-Tailed Deer Virginia Opossum Raccoon	–
PEM Wetlands	Marsh Wren *(Cistothorus palustris)* Red-Winged Blackbird *(Agelaius phoeniceus)* Tree Swallow *(Tachycineta bicolor)*	Meadow vole	–	Wood Frog *(Lithobates sylvatica)* American Toad *(Anaxyrus americanus)* Northern Spring Peeper *(Pseudacris crucifer)*

[35] Taunton Wild and Scenic River Study Committee, Southeast Regional Planning and Economic Development District, and National Park Service, Northeast Region. 2004. Taunton River Stewardship Plan Taunton Wild and Scenic River Study. Retrieved July 09, 2021 from http://www.tauntonriver.org/TRiverStewardshipPlan1_wmaps_browser.pdf.
[36] Federal Energy Regulatory Commission. 2004. Final Environmental Impact Statement Volume 1. Weaver's Cover LNG Project. FERC/EIS-0169. Docket Nos.: CP04-36-000 and CP04-41-000.
[37] DeGraaf, R.M. and M. Yamasaki. 2001. New England Wildlife: Habitat, Natural History, and Distribution. 2nd Edition. Hanover, NH: University Press of New England. 482 p.

WETLAND TYPE	COMMON BIRDS	SMALL MAMMALS	LARGER MAMMALS	AMPHIBIANS
E1UB Wetlands	Double-Crested Cormorant (*Phalacrocorax auritus*) Bufflehead (*Bucephala albeola*) Common goldeneye (*Bucephala clangula*) Red-breasted Merganser (*Mergus serrator*) Osprey (*Pandion haliaetus*) Ring-billed gull (*Larus delawarensis*) Herring gull (*Larus argentatus*) Great Black-backed gull (*Larus marinus*) Mute swan (*Cygnus olor*)	–	Muskrat (*Ondatra zibethicus*) River otter (*Lontra canadensis*)	–
E2US Wetlands	Killdeer (*Charadrius vociferous*) Ring-billed gull Herring gull Great Black-backed gull	–	–	–
E2EM Wetlands	Great Blue Heron Great Egret (*Ardea alba*) Snowy Egret (*Egretta thula*) Northern Harrier (*Circus cyaneus*) Killdeer Willet (*Tringa semipalmata*)	Meadow vole	Muskrat	–

5.4 Potential Impacts

Throughout Project planning and design, wetland impacts have been minimized to the greatest extent practicable by utilizing existing transmission line corridors. However, given the scale and landscape setting of the Project, certain wetland impacts cannot be avoided. Construction will result in temporary, permanent, and secondary impacts to wetland resources and watercourses. Secondary impacts generally involve the conversion of forested wetland habitat to scrub-shrub or emergent wetland habitat, whereby the cover type changes but results in a no net-loss of wetlands.

The following section describes the impacts associated with construction of the Project including vegetation removal, excavation for pole structures, temporary fill, and work pads and access road construction. Table 5-4 summarizes the potential impacts of the Project on wetland resource areas based upon preliminary design data. Impacts have been calculated in either linear feet (lf) or square feet (sf) and acres and have been broken down into coastal wetland and freshwater wetland impact areas. The Project will span over the tidal Taunton River (SM10), the perennial Steep Brook (SM9A) and its associated ephemeral tributary (SM9B), and the intermittent stream (SM8).

TABLE 5-4 PROJECT SUMMARY OF ANTICIPATED WETLAND AND WATERCOURSE IMPACTS

RESOURCE AREA	TEMPORARY IMPACTS	PERMANENT IMPACTS
Coastal Wetlands		
Land Subject to Coastal Storm Flowage (LSCSF) in	Approximately 119,313 sf (2.74 acres) Construction mats for temporary work pads where LSCSF could not be avoided. Temporary grading/earthwork where level area is necessary to create a safe and effective work pad for equipment and crews.	Approximately 53,066 sf (1.22 acres) Structure foundations where LSCSF could not be avoided. Permanent access road and associated grading where LSCSF could not be avoided. Permanent gravel work pad for future operations and maintenance of electric facilities where LSCSF could not be avoided.
Salt Marsh (SM)	Approximately 6,850 sf (0.16 acres) Temporary crossing with LGP equipment to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires	No anticipated permanent impacts
Land Under the Ocean	Approximately 1,397 sf Temporary crossing with LGP equipment to pull the lead line to facilitate wire pulling and installation of the overhead conductors and wires	No anticipated permanent impacts
Freshwater Wetlands		
Bordering Vegetated Wetland (BVW)	Approximately 120,996 sf (2.78 acres) Construction mats for access routes where BVW crossings could not be avoided. Construction mats where work pads for construction and pull pads overlap with BVW.	Approximately 388 sf permanent Structure foundations where BVW could not be avoided Approximately 12,162 sf (0.28 acres) Secondary Conversion of forested wetlands to scrub-shrub wetlands due to tree removal.
Inland Bank (IB)	Approximately 208 linear feet (lf) Approximately 208 lf of construction mats for an access route over the banks (IB) of the perennial Steep Brook (SM9A) and the associated ephemeral tributary (SM9B) of Steep Brook.	Approximately 47 lf secondary Conversion of forested wetland to scrub shrub wetland due to the removal of tree canopy over the banks (IB) of SM9.

RESOURCE AREA	TEMPORARY IMPACTS	PERMANENT IMPACTS
Riverfront Area (RFA)	Approximately 75,037 sf (1.72 acres) Of which approximately 1,951 sf of these impacts are accounted for as BVW secondary impacts above and 16,099 sf of these impacts are accounted for as LSCSF temporary impacts above. Construction mats for access routes where RFA crossings could not be avoided. Construction work pads and pull pads on paved surfaces where activities within RFA could not be avoided (Somerset).	Approximately 1,018 sf permanent Structure foundations where RFA could not be avoided in Somerset. Approximately 2,329 sf secondary Conversion of forested wetlands to scrub-shrub wetlands due to tree removal for the RFA of perennial stream SM9.

5.4.1 Temporary Wetland and Watercourse Impacts

Temporary impacts are anticipated for the placement of construction mats used for equipment access and staging during construction. Construction mats will be used in areas where permanent access is not required and access is only needed for such activities as tree clearing, vegetation removal, and for structure installation and wire pulling. After work has been completed, the mats will be removed and the temporarily impacted areas will be restored to their pre-existing conditions, where necessary, and allowed to revegetate and/or supplemental seeding with an approved "WetMix" seed mixture will be applied. Refer to Appendix A for construction map details.

Access Roads

Existing access roads will be improved to allow for construction vehicle access. Access roads were designed to avoid BVWs, where feasible. Where access routes traverse wetland resource areas, temporary construction matting will be installed. The disturbance area for the temporary matting has been conservatively estimated to be 20 feet wide, with the actual mat travel surface having a 16-foot width. As shown on the Expanded Environmental Notification Form Figures Pages 3-8 in Appendix A, one BVW (M8) will be temporarily impacted for construction access. Additionally, construction mats will be used to bridge over IB associated with Steep Brook (SM9A) and its associated ephemeral tributary (SM9B). A description and photo of BVW M8, SM9A, and SM9B are provided in Appendix C. All mats will be removed after construction and impacted areas will be restored to pre-existing conditions.

Coastal salt marsh wetland M10 and a portion of Land Under the Ocean (Taunton River) may be traversed by an amphibious low-ground pressure vehicle to facilitate wire pulling and installation of overhead conductors and wires. A photo and description of wetland M10 is provided in Appendix C.

Construction Work Areas

Temporary construction mats will be used to create temporary work areas to safely accommodate equipment and crews during work activities including structure replacement and wire pulling. Construction mats typically consist of timber members that are bolted together. These wooden mats are a temporary best management practice to alleviate the loading of heavy equipment working on wet or soft soils, where low ground pressure equipment may not be feasible. Work pad dimensions vary by structure type and location. Proposed monopole and H-frame structure work pads will generally have a footprint of

100 feet by 100 feet. Pull pad areas, used for wire installation, generally have a footprint of 150 feet by 50 feet. The actual area required will be determined by the type of equipment and site-specific activities as well as depending on any NEP safety requirements. All mats will be removed after construction and impacted areas will be restored to pre-existing conditions.

Wetlands

As shown on the Expanded Environmental Notification Form Figures Pages 3-8 in Appendix A, two BVWs (BVW M9B and BVW M8) will be temporarily impacted by construction work pads and pull pad areas. Descriptions and photos of BVW M9B and BVW M8 are provided in Appendix C.

In addition, IVW M9A will be temporarily impacted by construction work pads (5,365 sf; 0.12 acres). A description and photo of IVW M9A is provided in Appendix C.

Stream

Temporary construction mats will span the IB of intermittent stream SM8, perennial stream SM9A (Steep Brook), and the ephemeral tributary (SM9B) of Steep Brook. No in-stream impacts are anticipated since construction mats will span bank to bank across the stream.

Land Subject to Coastal Storm Flowage

Construction mats will be temporarily placed in LSCSF to allow for construction equipment and crews to safely construct structure M13N-6. NEP will anchor temporary construction matting within LSCSF at the time of construction. The temporary removal and replacement of construction mats will be determined based on considerations of the field conditions, weather conditions, forecasted water levels, coastal storm events, crew safety and the size of the matting footprint. Please refer to Section 10.0 of this Expanded ENF for additional discussion on the Project's anticipated impacts within the Massachusetts Public Waterfront Act (Chapter 91).

Where LSCSF is located outside of areas subject to jurisdiction under the Massachusetts Public Waterfront Act, NEP is proposing temporary grading and/or fill areas. Earthwork is necessary to accommodate the construction of the steel monopole "Y-Frame" river crossing structure in Fall River (M13N6). The structure will be supported on an approximately 42-foot wide concrete pile foundation. Physical constraints on NEP's peninsula-shaped fee-owned property necessitate the creation of a level work pad to enable equipment access and successful maneuvering and assembly of prefabricated parts. Temporary fill will be placed over geotextile fabric. Any exposed or loose sediment will be secured with straw mulch and/or seed mix, as appropriate.

5.4.2 Permanent Wetland and Watercourse Impacts

Permanent impacts are anticipated for the installation of new permanent access roads, proposed new transmission line structures, and one new permanent work pad in both freshwater and coastal resources.

Access roads

Where feasible and available, existing access roads will be used for access to the proposed structure locations. Where existing access roads are not available, new access roads will be installed. NEP is proposing the construction of a new access road within its existing, undeveloped easement within LSCSF

to the Taunton River. The new access road is required to perform installation of structure M13N-6 and for future reliable maintenance of the transmission line facilitates. NEP's facilities in this area are currently landlocked by private property and MBTA rail tracks. Permanent grading/earthwork will be necessary as shown on Project plans (Appendix A, Expanded Environmental Notification Form Figures Pages 3-8) to accommodate the access roadway. The permanent access road will be constructed with trap rock underlain by geotextile fabric. The width of the travelled way on the access roads will be approximately 14 feet to accommodate the size of construction vehicles and equipment deliveries including pole deliveries.

Structures

Wetlands

Proposed structures have been sited outside wetlands and other sensitive areas to the maximum extent practicable. However, unavoidable, permanent fill in BVW M8 will be required for the installation of four new structures. Depending on the structure type, the pole diameter can range from 5.5 feet per pole (direct embed H-frame structure) to a 10-foot-diameter (monopole with concrete caisson foundation) with a total of 48 to 150 square foot impact area. Refer to Table 5-4 for permanent impacts in BVW M8.

Land Subject to Coastal Storm Flowage

Installation of structure M13N-2 will result in permanent fill in LSCSF associated with the Taunton River in Fall River. Structure M13N-2 is a single circuit steel monopole "Y" Frame structure which will be situated on an approximately 42-foot diameter pile supported foundation. The foundation will include perimeter bollards to prevent damage to the structure from floating debris in the event of a storm which exceeds the Base Flood Elevation. Refer to Table 5-4 for permanent impacts in LSCSF.

As detailed in Section 3.0, NEP vetted a number of alternatives in identifying the preferred Project route and structure siting. Additionally, NEP is seeking new easements from an adjacent private property owner to accommodate wire design blowout and minimize impact to sensitive coastal resources associated with the Taunton River to the extent reasonably practicable. The proposed structure is coastally dependent, as it serves to transport energy from a transfer point located in the coastal zone (Pottersville Switching Yard in Somerset).

Work Pad

NEP is proposing to construct a permanent work pad on NEP-fee owned property within LSCSF to maintain access to and workspace around the structure. The work pad is necessary to accommodate on-going future maintenance of structures N12-6 and M13N-6. The work pad will be constructed with trap rock underlain by geotextile fabric. The permanent work pad is shown on the Expanded Environmental Notification Form Figures Pages 3-8 in Appendix A.

5.4.3 Secondary Wetland Impacts

Secondary impacts are anticipated for the removal of trees to accommodate the M13N Line.

Tree Removal

The majority of the existing N12 and M13 transmission corridor has been cleared of trees and maintained historically as active ROW. However, selective tree clearing within BVW M9 and BVW M8 in Fall River will be required for safe installation and operation of the M13N line. Tree removal will result in the conversion of some forested wetlands to either scrub-shrub or emergent BVW in these locations. Once the trees are removed, these once forested sections will be maintained as scrub-shrub or emergent wetlands. The areas of selective tree removal in BVW M8 and BVW M9 are indicated on the Expanded Environmental Notification Form Figures Pages 3-8 in Appendix A. A section of tree canopy over the banks of perennial stream (SM9) will be removed. Tree trimming and "danger" tree removal will be performed, as necessary, as well as mowing of low-growth vegetation along the ROW.

5.4.4 Wildlife Impacts

The Project ROW is surrounded by residential and industrial development as well as heavily used arterial streets.

Temporary impacts to wildlife are anticipated in association with the clearing of forested areas for the M13N Line. Larger, more mobile species such as large mammals (white-tailed deer (*Odocoileus virginianus*)) are expected to temporarily relocate from the construction area but are unlikely to be permanently impacted by the displacement. Small mammals such as gray squirrels (*Sciurus carolinensis*), woodchucks (*Marmota monax*), and possibly a few furbearers (skunks (*Mephitis mephitis*) and raccoons (*Procyon lotor*)), as well as herpetofauna are also likely to be temporarily displaced however, upon the recovery of the habitat the increased availability of maintained, early seral stage habitat will enhance habitat diversity for herptiles and other cold-blooded fauna (insects and other invertebrates). Depending upon the time of year, some avifauna may also be temporarily displaced, possibly impacting breeding and nesting activities, but are otherwise likely to return after construction and in subsequent years. The selective removal of mature trees in forested areas as a result of construction of the M13N Line is unlikely to impact local wildlife populations utilizing these mature trees due to the availability and abundant extent of forest habitats in the area.

The Project was designed to first avoid and then minimize permanent impacts to wetlands to the extent practicable, however, unavoidable permanent fill in BVW M8 will be required for structure installation. With respect to the surrounding available wetland wildlife habitat resources associated with the transmission line ROW, it is not expected that this small area of permanent fill will result in a long-term negative impact on the ability of the area to provide valuable wildlife habitat for the existing assemblage of wetland-dependent species. In BVW M8 which will also have temporary work pads and temporary construction access, the disturbed areas will be restored to pre-existing grade where necessary and allowed to revegetate and/or supplemental seeding with an approved "WetMix" seed mixture will be applied.

5.5 Wetland and Watercourses Mitigation Measures

To reduce the impacts associated with the construction and operation of the M13N Line, NEP incorporated design measures to minimize impacts. These measures, which include using an existing ROW, utilizing existing access roads, and avoiding the placement and construction of structures and access roads in wetlands and watercourses wherever possible, have resulted in the avoidance and minimization of impacts to wetlands and wildlife to the greatest extent practicable.

For those wetlands having permanent impacts, NEP will provide appropriate mitigation. While mitigation plans are currently in the preliminary phases of development, NEP is committed to working with the USACE, MassDEP, and the Somerset and Fall River Conservation Commissions to develop an appropriate mitigation package so there is no net loss of wetland functions and values as a result of the M13N Line. Examples of possible wetland mitigation strategies include wetland restoration, targeted property acquisition for land preservation and participation in the USACE Massachusetts in-lieu fee program. To offset environmental impacts associated with the M13N Line, appropriate compensatory mitigation (in collaborative consultation with local, state, and federal resource agencies and other stakeholders) will be provided, as a component of the final M13N Line design.

5.5.1 Best Management Practices

Throughout all phases of construction on the Project, NEP and their contractors will follow the policies and procedures as outlined in National Grid's EG-303NE to identify, avoid, minimize and mitigate environmental impacts. For additional information refer to Appendix B for this document.

The boundaries of the wetlands and watercourses along the ROW will be clearly demarcated by a qualified wetland scientist prior to the commencement of work. In addition, boundaries of other sensitive environmental resources such as historical and archaeological resources sites will also be flagged, or fenced-off, as necessary. NEP will implement a Wetland Invasive Species Control Plan (WISCP) during the construction of the new Project to minimize the spread of invasive plant species in wetland resource areas (Appendix E).

NEP will comply with all applicable wetland regulatory permit requirements and conditions, as well as the associated Project plans and specifications submitted in support of these permit applications.

Typical Best Management Practices ("BMPs") during construction include:

- Installation of sediment control barriers in all work areas adjacent to wetlands which will be routinely inspected to insure they are functioning properly.
- Grading in wetlands will be limited for structure foundations and access roads. Temporary construction mats will be used for access and works pads in areas where wetlands cannot be avoided.
- Upon removal of construction mats wetlands will be allowed to revegetate naturally or will be seeded as needed.
- Equipment refueling and equipment/material storage will not be permitted within 100 feet of any wetland or waterbody, with the exception of equipment that cannot be feasibly moved from its working location (e.g., drilling equipment, dewatering pumps). Secondary containment will be used at these refueling locations.
- Contractor staging areas and contractor yards typically will be located at existing developed areas (parking lots, existing yards).
- Dewatering discharge water will be pumped into an approved basin or filter bag which will be located in approved areas outside of biological wetland resource areas.
- Excavated soil which will not be reused on site will be properly contained until it can be transported to an approved disposal location or spread into an approved upland area.

- Along the ROW, woody species with a mature height greater than 10 feet will be cleared; low-growing tree species, shrubs, and grasses will only be removed/mowed along access roads and at pole locations.
- An Environmental Field Issue ("EFI") will be developed for the project. At a minimum, the EFI will include the location of sensitive areas to be avoided, a summary of all permit requirements, detailed erosion and sediment control plans, and training requirements/documentation. All contractors and environmental monitors will be required to participate in EFI training before beginning work on site. Regular construction progress meetings will provide the opportunity to reinforce the contractor's awareness of these matters.
- Throughout the entire construction process, NEP will retain the services of an environmental monitor. The primary responsibility of the monitor will be to oversee construction activities including the installation and maintenance of soil erosion and sediment controls on a routine basis to ensure compliance with all federal, state, and local permit commitments.

5.6 Wildlife Habitat Assessment and Wildlife Mitigation Measures

5.6.1 Rare Species

Federal and state agency data were evaluated to determine whether any Federally listed species or Massachusetts state-listed, and/or endangered, or threatened species or critical habitats are known to occur within the vicinity of the Project.

The USFWS Endangered Species Consultation Procedure that makes use of the online Information for Planning and Conservation ("IPaC") Form (https://ecos.fws.gov/ipac/). One Federally listed species, the northern long-eared bat (*Myotis septentrionalis*) was identified as listed within the Project area. Sections 5.6.2 and 5.6.3 further address the northern long-eared bat.

Based on the information provided by NHESP, the Project is not located within Priority Habitat or Estimated Habitat as indicated in the *Massachusetts Natural Heritage Atlas (15th Edition).*[38] However, one species is likely to occur within a portion of the Project limits. An anadromous fish species, the Atlantic sturgeon (*Acipenser oxyrinchus*) is found seasonally within the Taunton River.[39]

The Federally listed and State-listed species identified in the vicinity of the Project are listed in Table 5-5 below.

TABLE 5-5 FEDERALLY LISTED AND STATE-LISTED SPECIES IN THE VICINITY OF THE PROJECT

JURISDICTION	SCIENTIFIC NAME	COMMON NAME	TAXONOMIC GROUP	STATUS
Federal	*Myotis septentrionalis*	Northern Long-Eared Bat	Mammal	Threatened
State	*Acipenser oxyrinchus*	Atlantic Sturgeon	Fish	Endangered

[38] Natural Heritage and Endangered Species Program. 2021. MassGIS Data -- Regulatory Maps: Priority and Estimated Habitats. Retrieved September 26, 2021 from https://www.mass.gov/service-details/regulatory-maps-priority-estimated-habitats.
[39] Natural Heritage and Endangered Species Program. 2015. Atlantic sturgeon. *Acipenser oxyrinchus.* Retrieved July 09, 2021 from https://www.mass.gov/doc/atlantic-sturgeon/download.

5.6.2 Federally Listed Species

POWER completed and submitted the IPaC Form on July 13, 2021, and results indicated that one Federal-listed species, the northern long-eared bat may occur within the Project area. No federally designated Critical Habitat occurs in the Project area. Refer to Appendix F, Agency Correspondence.

Based upon a pre-application meeting held on March 27, 2018 with the Massachusetts NHESP, the current holder of northern long-eared bat data for Massachusetts, there are no known roost trees or hibernaculum for the northern long-eared bat located within the Project area. Review of the most recent online mapping[40] for the northern long-eared bat (updated June 12, 2019) indicates there are no known winter hibernacula or maternity roost trees for the northern long-eared bat occurring throughout Bristol County, where the Project is located. The Project components are currently more than 25 miles from the nearest mapped maternity roost tree and more than 35 miles away from the nearest mapped hibernacula.

A description of the northern long-eared bat and habitat requirements are further described below.

5.6.3 Northern Long-eared Bat

The northern long-eared bat is a medium-sized bat in the Family *Vespertilionidae* with distinguishing long ears.[41] Their body lengths range from 3.0 to 3.7 inches with a wingspan of 9.0 to 10 inches. Fur color ranges from medium to dark brown on the back and tawny to pale brown on the underside. The northern long-eared bat has both a winter and summer habitat.[42] During winter, these bats hibernate in natural caves and abandoned mines (known as hibernacula) which have high humidity, constant temperatures, and no air currents. Northern long-eared bats will share caves and mines with other wildlife species but hibernate singly or in small groups within deep crevices or cracks of the caves and mines. During the summer, northern long-eared bats prefer forests where the bats roost in colonies or singly in cavities of both live and dead trees, as well as underneath tree bark. Females give birth to a single pup each season. The estimated maximum lifespan of the northern long-eared bat is up to 18.5 years. These bats feed at dusk and eat a variety of insects such as flies, leafhoppers, caddisflies, beetles, and moths. The greatest threat to the northern long-eared bat is white-nose syndrome, which is spreading from the Northeast to the Midwest and Southeast United States.

5.6.4 State-Listed Species

According to the NHESP database, the only state-listed species known to occur within the Project area is the Atlantic sturgeon (*Acipenser oxyrinchus*), which is documented to occur seasonally within the Taunton River. No other state-listed rare species are known to occur within the Project area.

5.6.5 Atlantic Sturgeon

The Atlantic sturgeon is a large prehistoric-looking fish that averages six to nine feet in length.[43] Physical characteristics of Atlantic sturgeon include five rows of well-developed, overlapping scutes, a long,

[40] Massachusetts Division of Fisheries and Wildlife. Natural Heritage Endangered Species Program. 2019. Northern Long-eared Bat Locations. Retrieved July 15, 2021 from https://www.mass.gov/service-details/the-northern-long-eared-bat.
[41] United States Fish and Wildlife Service. 2015. Northern Long-eared Bat. *Myotis septentrionalis*. Retrieved July 09, 2021 from http:// https://www.fws.gov/midwest/endangered/mammals/nleb/nlebFactSheet.html
[42] United States Fish and Wildlife Service. 2015. Northern Long-eared Bat. *Myotis septentrionalis*. Retrieved July 09, 2021 from http:// https://www.fws.gov/midwest/endangered/mammals/nleb/nlebFactSheet.html
[43] Natural Heritage and Endangered Species Program. 2015. Atlantic sturgeon. *Acipenser oxyrinchus*.Retrieved July 09, 2021 from https://www.mass.gov/doc/atlantic-sturgeon/download.

pointed snout, and a narrow subterminal mouth. The Atlantic sturgeon is anadromous meaning they spawn in freshwater, preferably in fast-flowing rivers with rocky bottoms, and spend much of their adult lives in estuarine or coastal habitats. They are found in the Merrimack and the Taunton River. Migration into the freshwater rivers occur in May and June to spawn. After spawning the females migrate back to the ocean but males may remain in the freshwater rivers until colder weather arrives in autumn. Juvenile Atlantic sturgeon are active swimmers and gradually migrate to saltwater between their second and sixth years when they reach a length of 760 millimeters. Females do not spawn until they are at least ten years old, while males begin spawning at a younger age when they reach 70 pounds. The largest threats to Atlantic sturgeon are water pollution, dams, and historic overfishing. In addition, Atlantic sturgeon spawn at a later age and require freshwater, estuarine, and coastal waters to complete their life cycle which also threaten Atlantic sturgeon populations.[44] The Atlantic sturgeon is a state listed Endangered species under the Massachusetts Endangered Species Act.

5.6.6 Conclusions

There are no anticipated impacts to the Taunton River from activities pertaining to the design, construction, and operation of the Project. However, wire stringing will need to be done over the Taunton River for the proposed new M13N Line. Therefore, construction of temporary wire stringing and pulling sites on each side of the Taunton River will be required to provide a level workspace for equipment and personnel. The ideal means for stringing the lead ropes across the Taunton River to facilitate wire stringing is via helicopter which would avoid physically crossing the Taunton River and would avoid any impacts to the Atlantic Sturgeon. However, the final decision regarding helicopter use will be made based on site logistics and safety considerations during the construction phase when more detailed information is known and when in consultation with the selected contractor.

The alternative to using a helicopter to facilitate wire stringing is the use of a boat that would physically pull the lead wire across the Taunton River. With this method the Taunton River would be physically traversed. If a boat is used, the following measures will be implemented to avoid impacts to the Atlantic sturgeon:

- Avoid disturbance to the riverbed to maintain water quality;
- Avoid in-water activities during the spawning migration May and June to prevent interruption of the fish-run;
- Implement construction best management practices (dewatering containment, soils handling and management, and soil erosion controls) to prevent degradation to water quality within the river.

Project consultation meetings were held with NHESP, NEP, and POWER on March 27, 2018 and March 24, 2021. NHESP has requested a MESA Review Checklist for the Project. The MESA Review Checklist is under development and will be submitted to the NHESP for review in conjunction with the filing of this Expanded ENF.

NEP believes that the planned Project activities occurring across the Taunton River can be completed and/or conditioned to avoid direct or indirect impacts to the Atlantic sturgeon (*Acipenser oxyrinchus*) . This will thereby avoid a “take’ or an “incidental take” of individuals or their habitats.

[44] Natural Heritage and Endangered Species Program. 2015. Atlantic sturgeon. *Acipenser oxyrinchus.*Retrieved July 09, 2021 from https://www.mass.gov/doc/atlantic-sturgeon/download.

6.0 HISTORICAL AND ARCHAEOLOGICAL RESOURCES

The Project is subject to review under Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations [C.F.R.] Part 800) (Section 106) as proposed improvements require review from the USACE. The Project is also subject to review by the MHC under G.L. c. 9 §§ 26–27C and the MHC's implementing regulations at 950 CMR 71.00 et seq. NEP will continue coordination efforts with the USACE and MHC to avoid adverse effects to historic and archaeological resources eligible for listing in the NRHP, to the extent required by law. As part of the consultation with the MHC, NEP has also proactively communicated with Federally Recognized Tribes during the archaeological resource review of the Project; NEP will continue to communicate with Federally Recognized Tribes that express an interest in the historic resources that may be affected by portions of the Project.

6.1 Communications with MHC and Federally Recognized Tribes

NEP has begun the process of evaluating potential impacts to historic and archaeological resources in consultation with the MHC and relevant Tribal Historic Preservation Officers (THPOs). On behalf of the NEP, PAL submitted a Project information package to the MHC on August 17, 2018, consisting of an initial outreach letter, Project Notification Form, a due diligence report, and an application for a permit to conduct an intensive (locational) archaeological survey for the proposed structure replacement locations along the ROW.

Between September 2018 and June 2021, PAL, on behalf of NEP, has communicated with the MHC regarding various intensive (locational) archaeological survey and site examination investigations conducted along the NEP Project corridor (see Appendix F, Agency Correspondence).

NEP will continue to communicate with the MHC and Federally Recognized Tribes during the Section 106 and MHC review processes to identify potentially significant historic and archaeological resources and avoid, minimize, or mitigate any potential Project impacts on those resources.

6.2 Due Diligence and Archaeological Investigations

PAL conducted a due diligence and archaeological sensitivity assessment of the existing N12/M13 transmission corridor in April 2018. The archaeological resources due diligence included a file review of previously recorded archaeological resources in the Project vicinity, a walkover survey, and an archaeological sensitivity assessment of the ROW to provide information about archaeological resources that could be affected by the Project. The file review identified previous archaeological surveys conducted within a half-mile of the existing NEP ROW and proposed easements. The previous surveys identified two archaeological sites recorded near the existing N1/M13 transmission lines. Portions of the existing and proposed N12/M13 ROW were assessed with high, moderate, and low archaeological sensitivity.

PAL has conducted a series of intensive (locational) archaeological survey and archaeological site examination investigations throughout the entire NEP ROW corresponding with the proposed Project, in consultation with the MHC and Federally Recognized Tribes. PAL has submitted multiple reports to the MHC and Federally Recognized Tribes, as referenced above, and will submit the results of an additional archaeological site examination, along with recommendations for further investigations, if any, to the MHC and Federally Recognized Tribes in the 4th quarter of 2021. NEP will continue to coordinate with the MHC and other potentially affected stakeholders to avoid, minimize, or mitigate any adverse effects to significant historic and archaeological resources that may be affected by the proposed Project.

7.0 CLIMATE CHANGE ADAPTATION AND RESILIENCY

NEP has taken steps to promote climate change adaptation and resiliency in the design of the Project. The Project will result in a more climate-ready and resilient transmission system that can (1) withstand more extreme weather events; (2) address existing system capacity shortages and increased demand; and (3) support future interconnections from renewable energy projects and offshore wind. In addition, NEP's preferred solution uses substantial portions of existing ROW, thereby minimizing alteration of new land resources to construct the Project.

Climate Change Data and Protection Against Extreme Weather Events

The Executive Office of Energy and Environmental Affairs' (EEA) Climate Change and Adaptation Report[45] documents that with increasing temperatures as a result of climate change, electricity demand in the Commonwealth could increase by 40 percent in 2030. The Report identifies that without reliable energy service, the basic needs of residents, visitors, businesses, and governments cannot be met. The energy sector's three primary climate change concerns are flooding, extreme weather events, and increased temperature. NEP considered each of these factors in designing the Project.

With respect to flooding, NEP reviewed the Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards Tool for climate projections, including coastal vulnerability, sea level rise and coastal flooding from the National Oceanic and Atmospheric Administration (NOAA) and temperature rise. NEP also reviewed the Massachusetts Sea Level Rise and Coastal Flooding Viewer for the Project. The map viewer displays NOAA's January 2013 sea level rise data.

At the Taunton River crossing, ROW, real estate constraints and design restrictions severely limited the siting of one new 300-foot tall Y-frame structure (structure M13N-6) parallel to the existing N12/M13 crossing of the Taunton River. Due to these limitations, one structure will be located within LSCSF and within a regulatory floodway. However, NEP has incorporated design measures to minimize impacts to these areas while providing protection for the proposed transmission assets.

On the Fall River side of the Taunton River, data indicates that this area could encounter potential Mean Higher High Water (MHHW) with sea level rise-up to 4-5 feet above the current MHHW mark. The Project is located outside of the extent of inundation projected from a 0 to 6-foot rise in sea level above the current mean high water mark. Existing structure N12-6 and proposed structure M13N-6 on the east bank of the Taunton River are located in areas subject to inundation with a sea level rise of 4 to 5 feet and FEMA Velocity Zone, with a determined base flood elevation of 17-feet. These structure locations are also mapped within a category 1 hurricane surge inundation area. On the Somerset side of the Taunton River, the area surrounding existing structure N12-5 and proposed structure M13N-5 is mapped within a category 4 hurricane surge inundation area. This one structure is located inland of the seawall along the west bank of the Taunton River in Somerset, which provides a level of protection during projected sea level rise and flooding.

The proposed new structures will be located above the existing 10-year storm level and include a 4-foot reveal on the new foundation. This will result in an approximate 2.5 feet of buffer between the projected MHW mark and the bottom of the steel structure, and the proposed structure foundation reveal will sit above the forecasted new sea level in this reach of the Taunton River. The proposed 12.5-feet diameter steel monopole structure will be centered on a 42-feet diameter concrete pile cap supported by a total of 36 micro-piles to secure the structure's position with LSCSF. The base of the transmission structure will be encircled by 5-6-feet tall concrete bollards to protect the structure from the potential impact of floating

debris during extreme flooding and wave action. In these ways, the new structures will be adequately protected from the anticipated effects of climate change.

The Project is also designed to account for more frequent extreme weather events. The Project's engineering design used structure loading criteria required by the National Electric Safety Code (NESC) and National Grid Design Loads for Overhead Transmission Structures. The NESC load criteria require consideration of combined ice and wind district loading, extreme wind conditions, and extreme ice with concurrent wind conditions. NEP's standards also include consideration and contingency for heavy load imbalances and heavy ice conditions. All of these considerations result in a design that is better equipped to withstand extreme weather. The design also incorporates materials (including steel structures and state of the art conductors) that have long useful lives and respond well to corrosive environments. The Project is also equipped to respond to increases in temperature. The RMAT temperature forecasts project a minimum change in temperature of 3.5^0 F and a maximum change in temperature of 3.9^0F in the Project area. The new transmission line conductors are designed to operate at higher maximum operating temperatures at a higher carrying capacity and under fluctuations in air temperature.

Existing Capacity Shortages and Increased Power Demand

As described above, EEA's Climate Change and Adaptation Report[46] documents that with increasing temperatures as a result of climate change, electricity demand in the Commonwealth could increase by 40 percent in 2030. The Report documents the vulnerability of existing aging infrastructure and identifies key strategies to alleviate these vulnerabilities, including repair and upgrades and reuse and timely maintenance. The Project addresses the issues identified in the Report and ISO studies by reconfiguring double-circuit towers to improve reliability, avoiding the potential for widespread voltage collapse and loss of load, and supporting future growth and forecasted demand within the SEMA-RI area. The Project will result in a stronger electrical transmission system that is vital to the area's safety, security and economic prosperity.

8.0 GREENHOUSE GAS ANALYSIS, AIR QUALITY AND NOISE

8.1 Greenhouse Gas Analysis

NEP believes that the May 5, 2010 MEPA Greenhouse Gas Emission Policy and Protocol does not apply to the Project as the components will have little or no greenhouse gas emissions and thus falls within the Policy's *de minimis* exemption. There are no significant direct or indirect emissions associated with the Project. The MEPA regulations define *Damage to the Environment* as: "Any destruction or impairment (*not including insignificant damage or impairment*), actual or probable, to any of the natural resources of the Commonwealth including, but not limited to, air pollution…. "It is NEP's opinion that the Project will not be considered a damage to the environment with regards to air pollution, including greenhouse gas emissions. NEP's mitigation practices to protect and maintain air quality are described in subsection 8.2 below.

8.2 Air Quality

NEP will take measures to limit vehicle idling times and to reduce air emissions during construction. NEP will also implement construction best management practices to suppress dust generation and fugitive dust emissions. Due to the transitory nature of construction activities, air quality in the Fall River and Somerset area will not be significantly affected by construction along the ROW.

Typical construction equipment will be used for construction of the Project. During all upgrade components, NEP will comply with the use of ultra-low sulfur diesel-powered equipment and restricted vehicle idling times during construction. NEP will also take measures to limit vehicle idling times and to reduce air emissions, including the following:

- In Massachusetts, any diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of construction will either be United States Environmental Protection Agency ("USEPA") Tier 4-compliant or will be retrofitted with USEPA-verified (or equivalent) emission control devices such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine.
- The NEP requires the use of ultra-low sulfur diesel fuel in its diesel-powered construction equipment and limits idling time to five minutes except when engine power is necessary for the delivery of materials or to operate accessories to the vehicle such as power lifts.
- Vehicle idling is to be minimized during construction activities, in compliance with the following:
    - Massachusetts Anti-idling Law, G.L. c. 90 § 16A, c. 111 §§ 142A – 142M, and 310 CMR 7.11.
- Exposed soils on access roads will be wetted and stabilized as necessary to suppress dust generation during construction.

There are no anticipated long-term impacts on air quality associated with the operation of the transmission line.

8.3 Noise

NEP anticipates the Project will not result in noise levels of concern to area residents, town officials, or other regulatory entities, either during construction or during operation. Construction of the Project will take place along existing transmission line ROWs, adjacent easements, and within MassDOT owned lands currently planned for construction of a layover facility. NEP expects transmission line construction to occur over a period of approximately 12 months, depending upon the availability of outage windows. Noise generated by construction equipment, such as generators or air compressors, will be temporary and generally intermittent. All construction equipment will be kept in good working condition with appropriate mufflers to minimize noise impacts. Appreciable noise will not be generated by the new transmission line during normal operations.

9.0 CONSTRUCTION-PERIOD CONSIDERATIONS

9.1 Construction Environmental Standards

NEP has long established policies and procedures for minimizing construction related disturbances throughout all phases of construction. NEP and their respective contractors will follow these procedures for the proposed system upgrades. These policies and procedures are described below.

- National Grid's ROW Access, Maintenance and Construction Best Management Practices (EG303NE), Appendix B.
- National Grid's Excess Soil Management from Construction Projects on Rights-of-Way (EG-1707), Appendix G.
- National Grid's Projects at Existing Substations (EG-1701), Appendix H.
- National Grid's Spill Release Notification Procedures (EG-501MA and EG-502MA), Appendix I.

9.1.1 Construction Environmental Compliance Monitors

Throughout the duration of construction, NEP will retain the services of environmental compliance monitors. The primary responsibility of the monitors will be to oversee construction activities including the installation and maintenance of soil erosion and sediment controls on a routine basis to ensure compliance with all federal, state, and local permit commitments. The environmental compliance monitors will be trained environmental scientists responsible for supervising construction activities relative to environmental issues. The environmental monitors will be experienced in soil erosion control techniques and will have an understanding of wetland resources to be protected.

During periods of prolonged precipitation, the monitors will inspect all locations to confirm that the environmental controls are functioning properly. In addition, NEP will require the contractors to designate an individual to be responsible for the daily inspection and upkeep of environmental controls. This person will be responsible for providing direction to the other members of the construction crew regarding matters such as wetland access, appropriate work methods, and good house-keeping practices in the area. These construction supervisors also have "stop work" authority if there is an environmental or safety non-compliance issue. Additionally, all construction personnel will be briefed on environmental compliance issues and obligations prior to the start of construction. Regular construction progress/environmental training meetings will provide the opportunity to reinforce the contractor's awareness of these environmental issues.

In addition, all personnel will be required to participate in environmental and safety training prior to the start of construction. Training topics will include environmental, stormwater management, historical and archaeological resources, and safety considerations. Refresher training will be conducted as necessary or as new crew members join the work force. NEP will conduct regular construction progress meetings to reinforce contractors' awareness of these issues. Pre-construction meetings will take place in the field with appropriate personnel. NEP's environmental monitors will attend these meetings to provide feedback on environmental compliance to construction personnel.

9.2 Safety and Public Health Considerations

The Project will be designed, built, and maintained so that the health and safety of the public are protected. This will be accomplished through adherence to all federal, state and local regulations, and industry standards and guidelines established for protection of the public. Specifically, the Project will be designed, built, and maintained in accordance with the National Electrical Safety Code and other applicable electrical safety codes. The facilities will be designed in accordance with sound engineering practices using established design codes and guides published by, among others, the Institute of Electrical and Electronic Engineers, the American Society of Civil Engineers, the American Concrete Institute, and the American National Standards Institute.

Practices that will be used to protect the public during construction will include, but not be limited to, contractor safety training, establishing traffic control plans for construction traffic to maintain safe driving conditions, restricting public access to potentially hazardous work areas, and using temporary guard structures at road and electric line crossings to prevent accidental contact with the conductor during installation.

Following construction, all transmission structures will be clearly marked with warning signs to alert the public to potential hazards. Trespassing on the ROWs will be inhibited by the installation of gates, barriers and signage installed at entrances from public roads where approved by owners of properties upon which ROW and/or easements are located.

9.3 Construction Sequencing

The proposed Project involves bussing and/or reconductoring of NEP's existing N12 and M13 Lines and construction of a new 115 kV Transmission Line (M13N) in Somerset and Fall River, Massachusetts. Work activities will resolve the current DCT configuration reliability concern and provide additional electrical capacity in the SEMA-RI service area. The construction of the Project will occur in stages over an approximately 12-month work period. The work will generally follow the order listed below.

- Removal of vegetation, ROW mowing in advance of construction and removal of hazard and danger trees
- Staking of proposed transmission structures
- Installation of soil erosion and sedimentation controls and construction-related BMPs
- Construction, repair and/or improvement of access routes to existing and proposed structures
- Installation of work pads and staging areas
- Removal and disposal of select transmission line components (to include recycling of used materials and assets)
- Installation of foundation and construction of new and replacement transmission structures
- Installation of conductor, optical ground wire, and shield wire
- Restoration and stabilization of the ROW

Removal of Vegetation and ROW Mowing in Advance of Construction

Mowing and maintenance of the ROW will take place prior to construction by using BMPs outlined in NEP's VMPs. Tree removal and limited tree clearing will be required within NEP's existing ROW in order to expand the cleared width of the ROW and accommodate the new transmission line. Tree removal/clearing will also be required within the NEP ROW to accommodate the installation of the river crossing Structure M13N-6.

Prior to tree removal and mowing, the boundaries of wetlands will be clearly marked to prevent unauthorized vehicular encroachment into wetland areas. Appropriate forestry techniques will be implemented within wetlands to minimize ground disturbance. Other sensitive resources, such as historical and archaeological resource features will be flagged and encompassed with protective fencing prior to removal of vegetation on the ROW. Construction mats may be used to gain access to and across forested wetlands, to minimize wetland disturbance, and to provide stable platforms for safe equipment operation.

Tree removal operations, where required, will include the removal of all tall-growing woody species within the targeted areas of the ROW. A danger tree is a tree located either on or off the ROW, which may contact electric lines if it failed or were cut. Hazard trees are danger trees that are structurally weak, broken, damaged, decaying or infested and that could contact the structures or conductors (or violate the conductor clearance zones) if they were to fail and fall towards the ROW. Tall growing trees just outside the maintained ROW edges will be assessed for their potential to damage the transmission lines. To ensure reliability, these "danger and hazard trees" may have to be pruned or removed.

Generally, trees to be removed will be cut close to the ground, leaving the stumps and roots in place, which will reduce soil disturbance and erosion. In locations where grading is required for access road improvements and at structure sites, stumps will be removed. Small trees and shrubs within the ROW will be mowed as necessary with the intent of preserving root systems and low-growing vegetation to the extent practical. Where the ROW crosses streams and brooks, vegetation along the stream bank will be selectively cut to minimize the disturbance of bank soils and the potential for construction-related erosion. Wood chips may be applied to the ground in certain upland areas to serve as a means for soil erosion and sediment control.

Brush, limbs, and cleared trees will be chipped and removed from the site or applied to upland areas as an erosion control measure, with prior approval. Temporary "landing areas" will be established along the ROW to serve as locations to load timber, temporarily stage a wood-chipper, and to park tree clearing vehicles and equipment.

In certain environmentally sensitive areas such as wetlands, it may be necessary and desirable to leave felled trees and snags and allow them to decompose in place rather than to disturb soft organic substrates while removing them. Where appropriate, enhancements will be proposed as mitigation for important wildlife features that may be lost as a result of tree removal and construction activities. Potential enhancement activities may include seeding, planting of native shrub species, and provision of snags, woody debris, and stone piles to create wildlife cover.

Installation of Soil Erosion and Sedimentation Controls

Once the vegetation removal is complete, soil erosion and sediment controls will be installed along the proposed limit of disturbance. Soil erosion control and other engineered stabilization measures will be provided along the down-gradient side of stockpiles created during grading operations to prevent sediment migration. The soil erosion and sediment control program for the Project will follow the

procedures identified in the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials* (2003), and *EG-303NE*.

The installation of sediment control devices will be supervised by NEP's environmental monitor. During construction, these devices will be periodically inspected and monitored by the environmental monitor, and the findings will be reported regularly to NEP's Construction Supervisor. The soil erosion and sediment controls will be installed between the work site and environmentally sensitive areas such as wetlands, streams, drainage courses, roads and adjacent properties when work activities will disturb soils and result in the potential for soil erosion and sedimentation. The devices will function to mitigate construction-related soil erosion and sedimentation and will also serve as a physical boundary to delineate resource areas and to contain construction activities within approved areas.

In accordance with BMPs, construction mats, soil erosion and sediment controls, and other measures will be implemented, as appropriate, in resource areas temporarily disturbed by construction. Herbaceous vegetation in disturbed areas will be restored using a native wetland or conservation seed mix. Access roads are required to provide the ability to construct, inspect, and maintain the proposed and existing transmission line facilities. NEP will establish a new access roadway which will cross the MBTA layover facility to facilitate maintenance of Structures N12-6 and M13-6 post construction. Access road construction, improvements, and/or maintenance will be carried out in coordination with the MBTA.

Construction, Repair and/or Improvement of Access Roads

Access roads are required along the ROWs to provide the ability to construct, inspect, and maintain the existing transmission line facilities. NEP is planning to use the existing network of access roads to the greatest extent practicable. In some areas, new access roads are necessary. These roads will be located to avoid or minimize disturbance to water resources to the extent feasible, to follow the existing contours of the land as closely as possible, and where practicable, avoid severe slopes. In addition, access roads will be constructed to avoid significantly altering existing drainage patterns.

Along the ROW, the existing access roads may require some improvements in certain locations to facilitate construction. For example, clean gravel or trap rock may be necessary to stabilize and level the roads for construction vehicles; and stabilized construction entrances may need to be refreshed where the ROW crosses public roadways. Any access road improvements and/or maintenance will be carried out in compliance with the conditions and approvals of the appropriate federal and state regulatory agencies. Exposed soils on access roads will be wetted and stabilized as necessary to suppress dust generation during construction. Crushed stone aprons/tracking pads will be used at all access road entrances to public roadways to clean the tires of construction vehicles and minimize the migration of soils off-site.

To the extent possible, new access roads have been carefully sited outside wetlands and other sensitive areas. However, in certain locations along the existing and proposed transmission corridor, permanent access across wetland resource areas will be required to perform the necessary structure installations and for future reliable maintenance of the transmission line facilities. New access roads will be established over native soils if practicable; unstable soils may be removed and replaced with imported clean fill material. The permanent access roads will be constructed with gravel or stone underlain by geotextile fabric.

Typical access roads vary in width from 20 to 16 feet with a travel lane approximately 16 to 12 feet wide to accommodate the vehicles and equipment needed for construction on the transmission lines. New access roads that are proposed within wetland areas will be reduced in width to 14-feet wide to minimize permanent fill.

Installation of Work Pads and Staging Areas

Work pads will be constructed to provide a safe and level work area for construction equipment to undertake foundation work and structure assembly. Removal of lower growing shrubs and minor grading may be necessary to create a work pad of up to approximately 100 feet by 100 feet to 100 feet by 150 feet at each proposed structure location. The work pads may be slightly smaller or larger depending on terrain, equipment, and overall site conditions at each structure location. Upland work pads will be constructed by grading or adding gravel or crushed stone. Once construction is complete, upland work pads (except those located in floodplain and RFA) will remain in place and will be stabilized with topsoil and mulched to allow vegetation to re-establish. In wetlands, these work pads will be constructed with temporary construction mats and will be removed after the completion of construction activities.

Removal and Disposal of Transmission Line Components

As part of this Project, NEP will need to remove and or replace existing structures on the ROW. NEP proposes to recycle as much of the removed material as possible. Those components that are not salvageable and any debris that cannot be recycled will be removed from the ROWs to an approved off-site facility. Such materials will be handled in compliance with applicable laws and regulations and in accordance with NEP's' policy and procedures.

Installation of Foundation and Structures

The proposed transmission line structures include a combination of steel structure types including monopole, H-Frame, and "Y" Frame. Excavation for direct embedment structures will be performed using a soil auger or standard excavation equipment depending on field conditions. Excavations will range from approximately 10 to 20 feet in depth, with diameters typically between three and five feet. A steel casing will be placed vertically into the hole and backfilled. The poles will be field assembled and inserted by cranes into the embedded steel casings. The annular space between the pole and the steel casing will then be backfilled with crushed stone.

Some structures will require drilled concrete caisson foundations, typically 15 to 30 feet deep, with diameters of between 6 and 10 feet. These structures may include 3-pole structures and monopoles. Caissons will be constructed by drilling a vertical shaft, installing a steel reinforcing cage, placing steel anchor bolts, pouring concrete, and backfilling as needed. Structures will be lifted by a crane and placed onto the anchor bolts.

Two (2) single circuit galvanized steel monopole "Y-Frame" dead end structures will be installed on pile-supported concrete caisson foundations. Proposed structure M13N-1 will be approximately 300 tall and supported by a series of micro-piles stabilized with a 42-foot wide concrete foundation cap. The transmission structures will have 4-feet of reveal above the surface of the ground.

Excavated material will be temporarily stockpiled next to the excavation; however, this material will not be placed directly into resource areas. If the stockpile is in close proximity to wetlands, the excavated material will be enclosed by staked straw bales or other sediment controls. Additional controls, such as watertight mud boxes, will be used for saturated stockpile management in work areas in wetlands (i.e., swamp mat platforms) where sediment-laden runoff would pose an issue for the surrounding wetland. Following the backfilling operations, excess soil will be spread over unregulated upland areas or removed from the site in accordance with NEP's policies and procedures.

Dewatering may be necessary during excavations or pouring concrete for foundations. At all times, dewatering will be performed in compliance with National Grid's *ROW Access, Maintenance and Construction Best Management Practices* (EG-303NE) (Appendix B). Handling and management of wetland soils will be performed in accordance with a wetland soils management plan to be prepared by the contractor and accepted by NEP. Rock that is encountered during foundation excavation will generally be removed by means of drilling with rock coring augers rather than a standard soil auger. This method allows the same drill rig to be used and maintains a constant diameter hole. However, in some cases, rock hammering and excavation may be used to break up the rock.

Staging areas and equipment storage, where feasible, will be situated outside environmentally sensitive areas. Equipment refueling (except for fixed equipment such as drill rigs) will occur outside of environmentally sensitive areas (such as waterways, wetlands, and drinking water sources). Where transmission structures requiring concrete foundations are located in or near wetlands, proper soil erosion and sediment controls will be installed to prevent impacts to these areas.

Installation of Conductor, Optical Ground Wire, and Shield Wire

Following the construction of transmission line structures, insulators will be installed on the structures. The insulators isolate the energized power conductors from the structure. OPGW, shield wire, and power conductors will then be installed using stringing blocks and wire stringing equipment. The wire stringing equipment is used to pull the conductors from a wire reel on the ground through stringing blocks attached to the structures to achieve the desired sag and tension condition. During the stringing operation, temporary guard structures or boom trucks will be placed at road, highway and railroads crossings and at crossings of existing utility lines. These guard structures are used to ensure public safety and uninterrupted operation of other utility equipment by keeping the wire away from other utility wires and clear of the traveled way at these crossing locations.

Construction of temporary wire stringing and pulling sites will be required to provide a level workspace for equipment and personnel or to establish remote wire stringing set-up sites at angle points in the transmission line and at dead-end structures.

In instances where there is a long river crossing, expansive wetland, etc., alternate means will be assessed for stringing the lead ropes and wire to avoid and/or minimize crossing of these water resources. Alternative means for stringing wire/conductor could include the following:

- Using aerial installation via a helicopter;
- Using a boat to gain access across the Taunton River;
- Using low-ground pressure equipment such as an all-terrain amphibious vehicle, to temporarily cross over the salt marsh bordering the east bank of the Taunton River; and
- Implementing methods for casting the lead rope/wire to pull the conductor over the resource that is to be avoided.

Helicopters may be used for line stringing or other activities. The final decision regarding helicopter use for any Project activity will be made based on site logistics and safety considerations during the construction phase when more detailed information is known and in consultation with the selected contractor.

Restoration and Stabilization of the ROW

Restoration efforts, including removal of construction debris, final grading, stabilization of disturbed soil, and installation of permanent sediment control devices (water bar/diversion channel/rock ford), will be completed following construction. All disturbed areas around structures and other graded locations will be seeded with an appropriate conservation seed mixture and/or mulched to stabilize the soils in accordance with applicable regulations. Temporary sediment control devices will be removed following the stabilization of disturbed areas. Existing walls and fences will be restored. Where authorized by property owners, permanent gates and access roadblocks will be installed at key locations to restrict access onto the ROWs by unauthorized persons or vehicles. Regulated environmental resource areas that are temporarily disturbed by construction will be restored in accordance with applicable permit conditions to pre-construction conditions.

9.4 Construction Details

The following sections describe logistics and protocols which NEP will require their contractors to adhere to during construction of the Project.

9.4.1 Construction Traffic

Intermittent traffic associated with the Project will occur over the entire construction period. Construction equipment typically will gain access to the ROWs from public roadways crossing the ROWs in various locations along the route. Because each of the construction tasks will occur at different times and locations over the course of construction, traffic will be intermittent at these entry roadways. Traffic will consist of vehicles ranging from pick-up trucks to heavy construction equipment.

The work over Route 79 and Route 24 will require a MassDOT access permit to work within the state highway roadways for the crossing of the state highway with utility lines. NEP and its contractors will coordinate closely with MassDOT to develop acceptable traffic management plans for work within the state highway layout. The Project could temporarily affect traffic flow of the roadway but does not involve physical modifications to the roadway or roadway ROW. Traffic Management Plans will be developed and submitted to MassDOT for review and approval prior to the start of construction. NEP will comply with all required measures to ensure a safe environment for traffic flow and construction crews in and around the roadways.

NEP will also coordinate with local authorities in the City of Fall River for work on local streets and roads and will file with the towns to the extent necessary for required grant of location applications for wire crossings across the town-owned roads. At locations where construction equipment must be staged in a public way, the contractors will follow a pre-approved work zone traffic control plan with appropriate police details.

9.4.2 Typical Construction Equipment

Typical construction equipment that will be used for the Project are identified in Table 9-1 by construction phase. NEP will coordinate with local authorities in Somerset and Fall River for work on local streets and roads.

TABLE 9-1 TYPICAL CONSTRUCTION EQUIPMENT

CONSTRUCTION PHASE	TYPICAL EQUIPMENT REQUIRED	
Vegetation Removal and ROW Mowing	• Grapple trucks • Track-mounted mowers • Chippers • Log forwarders • Brush hogs, skidders • Bucket trucks	• Motorized tree shears • Chain saws • Box trailers • Low-bed trailers, flatbed trucks • Bulldozers, excavators • Pickup trucks
Soil Erosion/Sediment Controls	• Stake body trucks • Pickup and other small trucks	• Small excavators • Trencher
Access Roads Improvement and Maintenance	• Dump trucks • Bulldozers • Excavators • Backhoes • Front end loaders • Graders	• 10-wheel trucks with grapples • Cranes • Pick-up trucks • Low-bed trailers • Stake body trucks
Removal and Disposal of Existing Components	• Cranes • Flatbed trucks • Pullers with take-up reels • Excavators • Vacuum trucks	• Backhoes • Trucks with welding equipment • Dump truck • Storage containers
Installation of Structures and Foundations	• Backhoes • Bulldozers • Front-end loaders • ATVs • Tracked carriers or skidders • Concrete trucks • Excavators • Rock drills mounted on excavators or tracked equipment • Cranes	• Cluster drills with truck mounted compressors • Aerial lift equipment • Tractor trailers • Bucket trucks • Large-bore foundation drill rigs • Hand-held equipment such as shovels, pumps, and vibratory tampers • Dump trucks • Generators, air compressors
Conductor and Shield Wire Installation and Bussing and Insulator Assembly	• Bucket trucks • Puller-tensioners • Conductor reel stands	• Cranes • Flatbed trucks • Pickup trucks • Tracked carriers or skidders
Restoration	• Pickup and other small trucks • Excavators • Backhoes • Bulldozers	• Dump trucks • Tractor-mounted York rakes • Straw blowers • Hydro-seeders

9.4.3 Construction Work Hours

NEP will coordinate with local authorities on approved work hours in advance of construction however construction will generally take place Monday to Saturday during daylight hours (7:00 a.m. to 5:00 p.m.). Certain work activities, including work requiring scheduled transmission line outages, may need to be performed on a limited basis outside of normal working hours, including night shift, Sundays and holidays.

The nature of the Project construction requires line outages for certain procedures such as transmission line connections, equipment cutovers, or stringing under or over other transmission lines. These outages are dictated by the ISO-NE and can be very limited based on regional system load and weather conditions. Work requiring scheduled outages and crossings of certain transportation and utility corridors may need to be performed on a limited basis outside of normal work hours, including Sundays and holidays.

Prior to the start of construction, NEP will notify (via updates to the project website and emails), municipal officials, the Somerset Town Public Works, the Fall River City Public Works, the Somerset Police and Fire Chiefs, and the Fall River Police and Fire Chiefs of the details of planned construction including the normal work hours and extended work hours and will obtain written approval from relevant municipal officials for extended work hours, if needed.

10.0 REGULATORY COMPLIANCE

10.1 Introduction

Sections 10.0 and 11.0 describe the measures that have been incorporated into the Project design to avoid and minimize environmental impacts to the greatest extent practicable. Where impacts cannot be avoided, appropriate mitigation measures will be implemented. This section provides an overview of the approach to complying with the jurisdictional regulations of state regulatory review agencies. Specific impacts and mitigation measures are presented in previous Sections 4.0 through 9.0.

10.2 State Regulations

10.2.1 Department of Public Utilities Section 72 Filing

The Massachusetts Department of Public Utilities (DPU) is responsible for oversight of electric power, natural gas, and water utilities in Massachusetts. Establishment of the M13N Line will require approval from the DPU. NEP will file a Section 72 Petition with the DPU for Determination of Public Necessity and Convenience pursuant to Chapter 164, §72 of the Massachusetts General Laws to approve the altered construction of the existing N12 and M13 DCT configuration.

10.2.2 Section 401 Water Quality Certification

In accordance with the provisions stated in the federal CWA (33 U.S.C. §1341) and the Massachusetts Clean Water Act (M.G.L. c. 21, §26-53) and its implementing regulations (314 CMR 9.00), the Project will require an Individual Section 401 Water Quality Certification due to impacts to wetland resource areas totaling over 5,000 square feet. Temporary impacts consist of temporary placement of construction mats for work equipment access. Permanent impacts include installation of structure foundations and conversion of forested wetland to scrub shrub wetland.

An application will be filed with MassDEP for Water Quality Certification review under 314 CMR 9.00. MassDEP evaluation criteria for applications are the incorporation of all practicable measures for avoiding and minimizing impacts to wetland resource areas. The design of the Project avoids or minimizes adverse impacts, as described in this section and Section 5.5. The compensatory mitigation package for the Project will comply with the mitigation requirements in the Massachusetts CWA.

10.2.3 Chapter 91 Waterways

NEP will consult with the DEP Waterways Program as the transmission line design is finalized and anticipates meeting with the Waterways Program to determine the type of authorization required under the Chapter 91 regulations. There are two existing Chapter 91 Licenses for the existing N12 and M13 aerial crossings of the Taunton River, including (License Plan No. 4353) and (License Plan No. 4781).

10.2.4 Massachusetts Office of Coastal Zone Management

The “federal consistency” requirement of the Coastal Zone Management Act holds that federal actions that have reasonably foreseeable effects on any land or water use or natural resources of a state coastal zone must be consistent with the enforceable policies of the federally approved coastal management

program for that state. Portions of the Project are located within the South Coastal Massachusetts Coastal Zone. Project areas that generally abuts the tidal Taunton River, including existing Structures N12/M13-5, N12/M13-6 and proposed structures N12- and M13N-6 are included within the Coastal Zone. NEP will coordinate with the CZM to facilitate their review, as necessary.

10.2.5 Massachusetts Wetlands Protection Act

The Project will require approvals under the WPA and the implementing regulations at 310 CMR 10.00 which assert jurisdiction over state-wetland resource areas that have been identified in the Project area, including BE, CD, CB, SM, SF, LSCSF, IB, BVW, LUWW, BLSF, and RFA. Project-related impacts to these resource areas require the issuance of an Order of Conditions approving the reliability system upgrades by the Somerset and Fall River Conservation Commissions.

Notices of Intent will be filed with each Conservation Commission detailing the proposed work, the short-term and long-term impacts, and the proposed mitigation for those impacts. The wetlands review process is focused on how the Project and proposed mitigation conform to the performance standards for each affected resource area. The Project qualifies for limited project status under the WPA as specified at 310 CMR 10.24(7)(b) and 310 CMR 10.53(3)(d), which extends such status to projects which consist of "construction, reconstruction, operation and maintenance of underground overhead public utilities . . .", as outlined below. Neither Somerset nor Fall River have adopted local wetland bylaws.

Limited Project Provisions

Under the Limited Project provisions of the MA WPA regulations, the permit issuing authority may approve a project that exceeds the performance standards for the affected resource areas. The applicable Limited Project provisions for 310 CMR 10.24(7)(b) and 310 CMR 10.53(3)(d) are described below:

310 CMR 10.24(7)(b):

- *For local distribution or connecting lines not reviewed by the Energy Facilities Siting Council, the Issuing Authority determines that alternative routes with fewer adverse effects are not physically or legally feasible*;

  The Project will be reviewed by the Massachusetts Department of Public Utilities under a separate Section 72 Petition to be filed by the end of 2021, including a review of feasible alternatives to the Project.

- *Adverse effects during construction are minimized using the best available measures, which may include such equipment as Bailey bridges and helicopters*;

  The Project construction means and methods incorporate best management practices (BMP) to avoid and minimize impacts to coastal wetlands including LSCSF. A temporary crossing of a salt marsh associated with the Taunton River may occur in order to string new overhead conductor and overhead wires. Should the conductor stringing involve crossing of the salt marsh a low ground pressure piece of equipment will be used as a BMP to minimize disturbance to the salt marsh.

- *The surface vegetation and contours of the area are substantially restored*;

Should the use of the *Marsh Master* result in unexpected impacts to the salt marsh o the underlying organic soils, NEP is prepared to fully restore the affected area(s).

- *When a trench is made in a Salt Marsh, all spoil is removed from the Salt Marsh upon excavation. Clean sand or other appropriate material shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh. The surface vegetation shall be restored substantially to its original condition by immediately transplanting appropriate marsh plant nursery stock once construction is completed. Baffles of concrete, clay or other non-porous material shall be placed in the trench, if necessary, to prevent groundwater excursion. During the first growing season, periodic maintenance of the marsh restoration area shall be required and shall include at least the replacement of non-surviving transplants and the removal of all deposits of debris and organic litter. During construction, equipment such as Bailey bridges and helicopters shall be used to minimize, using best available measures, the adverse effects of construction on the Salt Marsh. All vehicles shall be used only on swamp mats or in such a way as to prevent tire marks, trenches, or ruts*;

  There is no proposed trenching or earth disturbing activities proposed within salt marsh.

- *No utility shall traverse a Salt Marsh unless the applicant has shown that any thermal influence on the Salt Marsh of such line subsequent to the project being completed will not alter the natural freezing and thawing patterns of the top 24 inches of the Salt Marsh surface. Thermal sand, concrete or other suitable material may be used to backfill the trench to a point no less than 24 inches below grade. Above this level, clean sand shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh*;

  There is no permanent utility proposed within salt marsh.

- *No permanent access roads shall be permitted except in Designated Port Areas*;

  Existing access roads are to be utilized within the Mount Hope Bay Designated Port Areas in Fall River. No other permanent access roads are proposed within salt marsh.

- *All sewer lines shall be constructed so as to be watertight so as to prevent inflow and Leakage*;

  The Project does not involve the construction or relocation of sewer lines.

- *All fuel lines shall be double cased and watertight so as to prevent inflow and leakage*;

  There are no fuel lines proposed as part of the Project. Should any of the existing abandoned, buried pipelines be removed, the remaining sections of pipeline will be sealed, capped and reburied.

- *The conduits or structures shall be designed to minimize, using the best available measures, adverse effects on the relevant interests of M.G.L. c. 131, § 40 due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches, coastal dunes, salt marshes or barrier beaches*.

Proposed transmission structure number M13N-6 to be located on the Fall River side of the Taunton River will be engineered and constructed using best available measures to include the following:

- The 12.5-foot diameter steel monopole structure will be centered on a pile cap supported by a total of 36 micro-piles and each micro-pile will be socketed at least 15 feet into bedrock
- The circular pile cap is 42 feet in diameter and ranges from 8 to 10 feet in thickness with a 4-foot-tall pedestal at the center of the pile cap for the tower connection
- Each micro-pile will be socketed at least 15 feet into bedrock
- Ground improvement to consist of an approximately 52-foot diameter ring of jet grout columns with vibro-compaction within the interior of the ring around the base of the structure
- The jet grout ring is to consist of a single row of approximately 4-foot diameter overlapping jet grout columns. to confine the vibrations and ground settlement that will occur from the vibro-compaction
- The proposed structure was designed to be located above the existing 10-year storm level plus a 4-foot reveal on the new foundation. We anticipate an approximate 2.5 feet of buffer between the project MHW mark and the bottom of the steel structure.
- There will be 5-6-foot tall bollards installed around the base of the structure to mitigate the potential impact of floating debris.

310 CMR 10.53(3)(d):

- *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;*

  The Project is not being reviewed by the Energy Facilities Siting Board (EFSB) because it does not exceed any of the EFSB review thresholds. The Project is however to be reviewed by the Massachusetts Department of Public Utilities which will review the alternatives analyzed by NEP. NEP conducted a comprehensive alternatives analysis in response to ISO-NE identifying large load losses and voltage collapse issues. The Project Alternatives Analysis is included in Section 3.0 of this Expanded ENF.

  The Project was determined to be the preferred alternative based on consideration of engineering requirements, construction feasibility, minimizing real estate acquisition requirements, minimization of environmental impacts facility reliability and security, and overall project costs, all while addressing the ISO-NE identified need.

- *Best available measures shall be used to minimize adverse effects during construction;*

  NEP will implement construction BMPs as detailed in National Grid's Environmental Guidance document EG-303NE (Appendix G), including soil and erosion control measures and storm water management practices. Section 6.0 of this document addresses minimization and avoidance

measures NEP will use to reduce overall impacts. NEP is committed to working with federal, state and local regulatory agencies and providing an appropriate range of mitigation measures.

- *The surface vegetation and contours of the area shall be substantially restored; and*

  Where access across BVW within the Project ROW is required construction mats will be temporarily placed to facilitate safe access. Should a stream channel need to be crossed, a temporary air-bridge consisting of construction mats will be installed to avoid impacts to the stream banks and stream channel. Some structure work pads extend into adjacent BVW and will include the installation of temporary construction mats to gain access to the structures. At the conclusion of construction, all of the construction matting will be removed from the Project ROW. The affected areas of VW will be inspected and monitored. Should the Environmental Compliance Monitor(s) report the need for corrective actions, such as surface grading, removal of stone or replanting, NEP is prepared to implement the appropriate mitigation measures, including restoring the surface vegetation and contours of the areas to pre-existing conditions to the extent practicable following the Project activities.

  Wetlands that are temporarily impacted by the placement of temporary swamp mats will be restored *in-situ*. This will involve the removal of the swamp mats, light grading of any ruts that may have been created and applying straw mulch to allow natural revegetation. Supplemental seeding of these temporarily impacted wetlands may occur if natural revegetation is in any way hindered. Where tree removal is required along transmission line ROW, routine vegetation maintenance will continue within the transmission line corridor, as is the current practice. Vegetation will be maintained as low-growth shrubs or grasses and herbs.

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

  This stipulation is not applicable to the Project as no sewer lines are proposed. The City of Fall River does maintain a sewer main that is partially located within the NEP ROW. The Project has been designed to avoid impacts to the city sewer main.

In accordance with the Limited Project provisions of the WPA, as described above, the alternatives to the Project are described in Section 3.0; Sections 4.0 through 12.0 address minimization and avoidance measures NEP will use to reduce overall impacts. NEP is committed to working with federal, state and local regulatory agencies and providing an appropriate range of mitigation measures, as discussed further in Section 14.0.

The sections below summarize compliance with the WPA's general performance standards for resource areas impacted by the Project.

Land Subject to Coastal Storm Flowage

The proposed system upgrades are located within LSCSF on the east bank of the Taunton River, in proximity to proposed structure M13N-6. The WPA defines LSCSF as "*land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater*". Although the WPA does not establish performance standards for LSCSF, NEP has designed the Project to minimize impact to LSCSF to the maximum extent practicable.

Impacts to LSCSF are limited to construction of a new transmission structure (Structure M13N-6), establishment of a permanent pervious access route, and creation of permanent pervious work area to support future maintenance and operation of the proposed electric facilities.

The proposed new structure will support the M13N Line crossing of the Taunton River and is characterized as a single circuit steel monopole "Y-Frame" structure on concrete caisson foundations. Structure foundation reveals will be raised four feet to account for the flood elevation of a 10year storm. The foundation will also be designed with bollards around the structure base to mitigate the impact of floating debris for a 100-year storm. As detailed in Section 3.0, NEP vetted a number of alternatives in identifying the preferred Project route. Additionally, the proposed structure is coastally dependent, as it serves to transport energy from a transfer point located in the coastal zone (Pottersville Switching Yard in Somerset).

The approximately 460-foot long access road has been sited outside wetlands and other sensitive areas to the extent possible. The permanent access road will be constructed with gravel or stone underlain by geotextile fabric. Typical access roads vary in width from 20 to 16 feet wide with a travel lane approximately 16 to 12 feet wide to accommodate the vehicles and equipment needed for construction on the transmission lines. The road will follow the existing contours of the land as closely as possible, and where practicable, will be constructed to avoid significantly altering existing drainage patterns.

Inland Bank (310 CMR 10.54)

Where IB is encountered within the Project area, the following applicable WPA general performance standards apply:

- *Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on an IB shall not impair the following:*
  - *the physical stability of the IB;*
  - *the water carrying capacity of the existing channel within the IB;*
  - *groundwater and surface water quality;*
  - *the capacity of the IB to provide breeding habitat, escape cover and food for fisheries; and*
  - *the capacity of the IB to provide important wildlife habitat functions.*

Project activities necessitate the placement of construction mats across stream banks in construction work areas. Using construction mats for this purpose is intended to minimize stream bank impacts by avoiding compaction, bank erosion, and loss of vegetation and will not result in permanent impact to the physical ability of the banks or the water carrying capacity of the existing channels. The use of construction mats will not impact groundwater or surface water or the capacity of the IBs to provide long-term breeding habitat, escape cover, and food for fisheries following construction. Construction mat use will not reduce the capacity of the IBs to provide important wildlife habitat functions, as these areas will be restored after construction is complete.

Bordering Vegetated Wetland (310 CMR 10.55)

As described in Section 5.3 and 5.4, BVW is found within the Project route generally east of Massachusetts state route 24. Where BVW occurs, the following WPA general performance standards apply:

- *Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a BVW shall not destroy or otherwise impair any portion of said area.*
- *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 up to 5,000 square feet/ [0.11 acres] of BVW when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:*
    - *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");*
    - *the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*
    - *the overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*
    - *the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;*
    - *the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*
    - *at least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and*
    - *the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00.*

The Project was designed to avoid or minimize adverse impacts as much as possible. However, temporary, secondary, and permanent impacts to BVW will occur. Unavoidable temporary impacts to BVW will occur in work areas and along access routes during construction. These impacts are primarily associated with the use of stabilization techniques (e.g., construction mats, stabilizing material) which minimize impacts while allowing necessary work within resource areas to occur. Secondary impacts consisting of woody tree removal will occur along the existing ROW. Removal of mature woody vegetation is necessary to safely accommodate the overhead M13N transmission Line. Where tree removal occurs within BVW, BVW will be converted from a forested vegetated wetland community (PFO) to a scrub-shrub ("PSS") or palustrine emergent ("PEM") wetland community. Once the trees are removed, these once forested sections will be maintained as scrub-shrub or emergent wetlands. Permanent impacts to BVW are unavoidable and are limited to the footprint of foundations for four (4) new structures. Minimal impacts will be offset through compensatory mitigation determined in consultation with the City of Fall River Conservation Commission, MassDEP and the USACE.

Riverfront Area (310 CMR 10.58)

Pursuant to 310 CMR 10.58, the Taunton River has a 200-foot RFA in Somerset and a 25-foot RFA in Fall River. The perennial streams have a 25-foot RFA and flow only through Fall River. Where RFA occurs within the Project area, the following WPA general performance standards apply:

- *Protection of Other Resource Area: The work shall meet the performance standards for all other resource areas within the riverfront area as identified in 310 CMR 10.30 (coastal bank), 10.32 (salt marsh), 10.55 (BVW), and 10.57 (Land Subject to Flooding).*
- *When work in riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of G.L. c. 131, s. 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within riverfront area (310 CMR 10.58(4)(a)).*
- *Protection of Rare Species: No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37, or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent (310 CMR 10.58(4)(b)).*
- *Practicable and Substantially Equivalent Economic Alternatives: There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in G.L. c. 131, s. 40. 310 CMR 10.58(4)(c)).*

The Project will result in temporary and permanent impacts to RFA. Permanent impacts in RFA is limited to construction of new Structure M13N-5 and its associated foundation located on the Fall River side of the Taunton River. Temporary disturbance in RFA will result from the placement of construction mats to establish stable work and access areas. Temporary placement of work pads within RFA will be limited to existing impervious area, therefore, reestablishing natural vegetation within the RFA is not necessary.

The NEP has considered the RFA performance standards in the following ways:

Protection of Other Resource Areas within RFA: The Project has been designed to minimize impacts to all resource areas on the ROW. Temporary construction mats will be used for access and work space within wetland resource areas. These areas will be restored by removing the construction mats and allowing the area to revegetate.

Protection of Rare Species: The Project is located outside of NHESP mapped habitats. However, as described in Section 6.2.1, above, the Taunton River is a known habitat for the state-listed Atlantic sturgeon. As the proposed M13N Line will cross the Taunton River overhead, no impacts to Atlantic sturgeon habitat are anticipated.

Practicable and Substantially Equivalent Economic Alternatives: As discussed in Section 3.0, NEP considered multiple alternatives for the Project, and developed the preferred alternative, which has been designed to avoid and minimize impacts to sensitive resource areas. Unavoidable impacts to the RFA from the construction of the Project will be offset through compensatory mitigation determined in consultation with the municipal Conservation Commissions and other applicable regulatory agencies.

No Significant Adverse Impact: Impacts to RFA are limited to the west side of the Taunton River, where NEP is proposing the installation of a Y-Frame single circuit monopole structure. Within the areas of temporary and permanent impact, existing site conditions consist of pervious areas and debris associated with the adjacent abandoned power plant and factory building. As such, the proposed system upgrades do not result in any adverse impact to the existing degraded RFA. Additionally, no net change in impervious surface is proposed, therefore the project results in no impact to stormwater runoff volumes or peak flows.

In accordance with 301 CMR 10.58(4)(d)1.b, stormwater will be managed according to standards established by MassDEP in its Stormwater Policy. All dewatering and stormwater management will be conducted in accordance with the NEP's dewatering and stormwater policies regarding protected waters

as well as site inspections and monitoring reports. Discharge and/or disposal of groundwater encountered during installation of structure supports will be in accordance with applicable local and state requirements, as necessary, and the USEPA Dewatering General Permit, as applicable. NEP will submit SWPPPs for the Project for compliance with USEPA's NPDES program under the Stormwater Construction General Permit. The SWPPPs will establish construction contact lists, descriptions of the proposed work, and will identify stormwater controls, spill prevention, and inspection practices to be implemented for the management of construction-related stormwater discharges from the Project.

Wildlife Habitat Evaluation (310 CMR 10.60)

Wildlife habitat evaluation was completed pursuant to 310 CMR 10.60 and the procedures and methods detailed in MassDEP's *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* for the Project. Pursuant to the requirements for completing wildlife habitat evaluations depending on the type of wetland resource area impacted and the magnitude of impact, Attachment B evaluations were conducted for the Project due to the nature of the Project and the cumulative impacts to jurisdictional resource areas. The wildlife habitat evaluation is presented in Appendix D. Some habitat functions associated with forested wetlands will be permanently altered as a result of limited tree clearing associated with the Project; however, they will be replaced by the increasingly scarce scrub-shrub habitat. Consequently, the proposed Project will not result in a significant adverse impact or impairment or reduce the capacity of the RFA to provide important wildlife habitat functions.

Massachusetts Department of Transportation

NEP will need to acquire an access Permit from MassDOT for the crossing over Route 24 with utility lines. The Project impacts relative to MassDOT are associated with the installation of overhead wires across state roadways by a non-municipal utility. The installation could temporarily affect traffic flow of the roadway but does not involve physical modifications to the roadway or state highway layout. NEP will work with MassDOT and develop a Traffic Management Plan with complete details of scope of work prior to the start of the M13N Line construction. NEP will comply with all required measures to ensure a safe environment for traffic flow and construction crews in and around the roadways.

Massachusetts Historical Commission

Any projects that require funding, licenses, or permits from any state agency must be reviewed by MHC in compliance with G.L. c. 9, §26-27C. This law provides for MHC review of state projects, State Archaeologist's Permits, the protection of archaeological sites on public land from unauthorized digging, and the protection of unmarked burials. The regulations that guide MHC review of state funded, licensed or permitted projects are contained at 950 CMR 70-71. As noted in 950 CMR 71.04, project review under Section 106 shall ordinarily fulfill the requirements of compliance with the Massachusetts project review requirements.

NEP has provided Project notification and consulted with the MHC related to potential adverse effects to historic resources, as outlined in M.G.L. c. 9, §26-27C. PAL obtained a State Archaeologist's permit prior to conducting field surveys and have, or will, notify the MHC and State Archaeologist of the results of those investigations. MHC's scope included the entire Project APE as described in M.G.L Chapter 9 Section 27C.

11.0 MITIGATION OVERVIEW

In accordance with G.L. c. 30, Section 61 and 301 CMR 11.12(5), any State Agency that takes Action on a project for which the Secretary requires an EIR shall determine whether the project is likely, directly or indirectly, to cause damage to the environment and shall make a finding describing these effects and confirming that all feasible measures have been taken to avoid or minimize the adverse effects of human activity on the environment.

The development of mitigation measures has become an integral part of the regulatory process and of conservation planning efforts. In general, most state regulations that require mitigation measures do not prescribe the specific mitigation activity that must take place, and mitigation can take many forms. Table 11-1, below describes NEP's proposed mitigation measures.

TABLE 11-1 SUMMARY OF NATIONAL GRID'S PROPOSED PROJECT MITIGATION MEASURES

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
General	NEP will hire qualified professionals as Environmental Compliance Monitors and require that the contractor designate Construction Supervisors. The Construction Supervisor(s) will supervise construction and operations and will be responsible for site compliance with permit conditions; monitoring on-site conditions; and maintenance of mitigation measures. The Environmental Monitor(s) will observe work within wetlands, rare species habitat and conduct restoration/replication monitoring. Per existing NEP Policy, Environmental Field Issue (EFI) guidelines are developed for all complex construction and maintenance projects. At a minimum, the EFI will include the locations of sensitive areas to be avoided, a summary of all permit requirements, detailed erosion and sediment control plans, and training requirements/documentation. All contractors and environmental monitors are required to participate in EFI training before beginning work on the Project. In accordance with a schedule specified in the EFI, regular construction progress meetings will provide the opportunity to reinforce the contractor's awareness of these matters.	Construction, Long-term	NEP
Vegetation Removal	NEP will implement standard industry forestry practices during select tree clearing and vegetation removal. Site-specific forestry means and methods will be implemented where needed to minimize environmental impact. NEP will follow its approved Five-Year Vegetation Management Plan (2019-2023), and its policies for ROW access, maintenance and construction BMPs outlined in *EG-303NE* (Appendix B).	Construction, Long-term	NEP
	Creation of additional scrub-shrub wetland habitat along the maintained ROW will represent a long-term positive effect for an assemblage of native wildlife.	Long-Term	NEP
Grading, Excavation and Soil Erosion Control	Ground disturbance and site grading will occur in accordance with *Massachusetts Erosion Sediment Control Guidelines for Urban and Suburban Areas.*[1]	Construction	NEP / Contractor
	Prior to construction, a detailed erosion and sediment control plan will be developed and implemented in the field based on site-specific conditions with input from NEP, the designated contractor(s), and environmental consultants. Appropriate erosion and sediment controls will be installed according to the mutually agreed upon plan. All controls will be installed in accordance with *EG-303NE,* which contains guidance policies regarding ROW access, maintenance and construction best management practices. Examples of erosion and sediment controls commonly used for utility work include silt fence, straw bales, straw wattles, filter socks, mulch, water bars, temporary and/or permanent reseeding. Refer to *Appendix B.*	Construction	NEP / Contractor / POWER Engineers
Access Road Improvements	Contractors to comply with *EG-303NE,* Appendix B.	Construction	Contractor
	Install erosion controls, as identified in the erosion and sediment control plan and specified in *EG-303NE*.	Construction	Contractor

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
	Install stabilized construction entrances on the ROW at public road crossings. Place suitable crushed stone aprons/ramps on geotextile fabric at road entrances to minimize tracking soil onto public streets.	Construction	Contractor
	Use construction mats for access through BVW, across intermittent or small streams (if bridge spans are not viable) and other sensitive areas to minimize compression of soils, rutting, and disturbance of vegetation. Remove construction mats and restore areas, as appropriate, upon work completion.	Construction	Contractor
	Maintain adequate drainage patterns, if required, by installing temporary culverts and riprap lined drainage swales to accommodate equipment crossings of wetlands and watercourses. Remove and restore to previous conditions upon work completion.	Construction	Contractor
Soils Handling/ Management	If necessary, preparation of a plan for handling potentially contaminated soils in accordance with National Grid's *Environmental Guidance Documents (EG-1707* (Appendix G) *and 1701* (Appendix H) regarding excess soil management from construction projects on ROWs.	Construction	NEP
Dewatering/ Stormwater	Discharge and/or dispose of groundwater encountered during construction in accordance with EG303NE, applicable local and state requirements, as necessary, and the USEPA Dewatering General Permit, as applicable.	Construction	Contractor
	NEP will submit a Stormwater Pollution Prevention Plan (SWPPP) in compliance with USEPA's NPDES program under the Stormwater Construction General Permit. The SWPPP establishes a construction contact list, presents a description of the proposed work, and identifies stormwater controls, spill prevention, and inspection practices to be implemented for the management of construction-related stormwater discharges from the Project.	Construction	NEP/ POWER Engineers
Spill Prevention	If a spill occurs, control and minimize the potential effects in accordance with National Grid Environmental Guidance Documents (EG-501MA and EG-502MA) regarding release notification requirements and spill response procedures and notifications. Refer to Appendix I.	Construction	Contractor
Air Quality	Deploy dust mitigation measures as described in National Grid's *Environmental Guidance Document EG-303NE* (see Appendix B*),* (e.g., track pads at access points and controls during dry periods).	Construction	Contractor
	NEP requires the use of ultra-low sulfur diesel fuel exclusively in its diesel-powered construction equipment. Any diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of Project construction will either be USEPA Tier 4-compliant or will be retrofitted with USEPA-verified (or equivalent) emission control devices such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine. The Project will comply with MassDEP's Solid Waste and Air Pollution control regulations, pursuant to M.G.L. c.40, s.54.	Construction	Contractor

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
Streams and Rivers	Use of washed stone where existing access roads crossing stream beds must be improved, (e.g., clean rip-rap or equivalent, rock fords).	Construction	Contractor
	Bridge/span watercourses with temporary construction mats, as necessary, to allow equipment to cross without constraining water flow.	Construction	Contractor
	Maintain adequate separation from watercourses while mixing concrete for structure foundations to avoid impacts to waterbodies.	Construction	Contractor
Wetland Resource Areas	Contractors to comply with National Grid's *Environmental Guidance Document EG-303NE* (Appendix B) for all work in or adjacent to wetland resource areas.	Construction	Contractor
	Install temporary construction mats on top of existing vegetation within BVW to establish safe and stable construction work areas/crane pads where necessary.	Construction	Contractor
	Restore temporarily impacted wetland resource areas to pre-construction configurations and contours to the extent practicable.	Construction	Contractor
	Compensatory mitigation for permanent BVW fill associated with the Project Final plans to be developed in consultation with local conservation commissions and MADEP.	Construction, Long-Term	NEP
	Compensatory mitigation which will be determined in consultation with agencies to offset conversion of forested wetlands associated with tree removal.	Long-Term	NEP
Rare Species	Mitigation measures and BMPs to protect identified rare species will be implemented and maintained throughout the Project duration, as warranted per the NHESP.	Construction	NEP
	Vegetation maintenance will be undertaken in accordance with the provisions of NEP's NHESP- approved Operation and Maintenance Plan and National Grid's *Environmental Guidance Document EG-303NE* (Appendix B).	Construction/Long-Term	NEP
Historical & Archaeological Resources	Mitigation to be determined in consultation with MHC and USACE, as appropriate.	Pre-Construction	NEP
Traffic	Consult with MassDOT to review proposed plans for overhead crossings (including the use of guard structures). Develop a Transportation Management Plan that addresses impacts and MassDOT concerns to ensure a safe working environment as well as safe passage for highway traffic.	Construction	NEP/POWER Engineers
Public Outreach	Continue to update Project website, submit news releases to local media and local public access channel, as available; establish a toll-free Project hotline; email construction updates; establish email inquiry process; direct mail and "leave behinds" (e.g., fliers, brochures, CDs).	Design & Construction	NEP/ POWER Engineers

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
	Municipal briefings, project website, toll-free project hotline and dedicated project email.	Design & Construction	NEP/ POWER Engineers
	Implement Construction Communication Plan.	Construction	NEP/ POWER Engineers

Note:
[1] MassDEP. 2003. Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials. Retrieved August 2, 2018 from http://www.mass.gov/eea/docs/dep/water/essec1

New England Power Company

N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Expanded Environmental Notification Form Figures

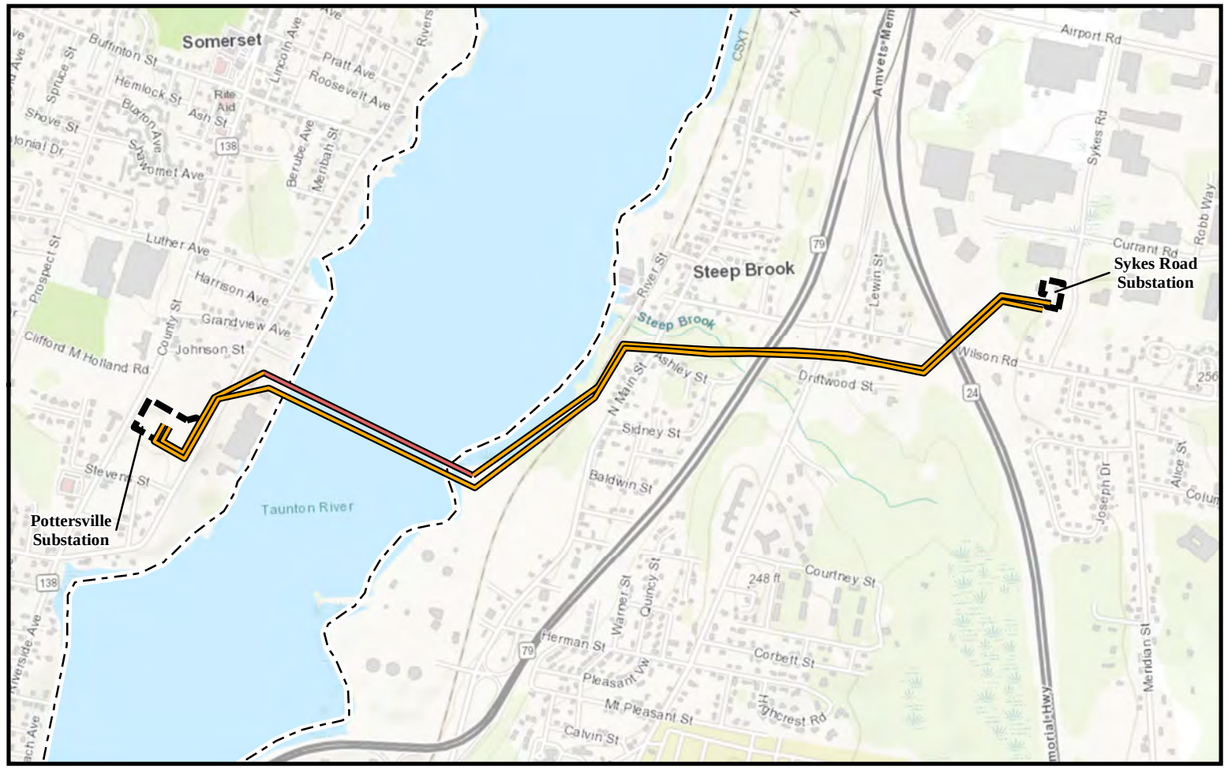
POWER Engineers, Inc
2 Hampshire Street Suite 301
Foxborough, MA 02035

Owner/Applicant:
New England Power Company
40 Sylvan Road
Waltham, MA 02451-1120
Phone: (781) 907-2558 (Waltham)

Plans

Date Issued: September 30, 2021
Latest Issue: September 30, 2021

Index



1 " = 1,500 Feet

This document has been reviewed for Critical Energy Infrastructure Information (CEII). [July 2021]

nationalgrid POWER ENGINEERS

Plan Set

Notes

1. Planimetric Base Mapping - Planimetric base mapping obtained from a variety of sources. Street centerlines obtained from ESRI StreetMap 2016. River, streams, lakes, and ponds from the National Hydrologic Dataset (NHD). Floodplains from the Federal Emergency Management Agency (FEMA). National Wetland Inventory (NWI) and MassGIS State Wetland Boundaries were identified prior to field wetland collection. Existing Utility transmission pole locations, substation locations, and transmission line locations were provided by New England Power Company and verified against aerial photography.

2. Contour Data - Contour data was acquired from MassGis (Massachusetts GIS System) website (https://docs.digital.mass.gov/dataset/massgis-data-lidar-terrain-data). 2011 LiDAR for the Northeast covered the project area, and contours were derived from the LiDAR data at a 1' interval.

3. Aerial Mapping - Aerial imagery shown is from Google Earth, and was obtained on September 19, 2019.

4. Wetland field assessments occurred in November 2015, September 2017, May 2018, and May 2019. Vernal pool surveys were conducted during spring 2015 to spring 2019.

5. Wetland flags were located in the field with a Trimble GeoXT or Geo XH GPS receivers. Field data was postprocessed, differentially corrected, and back-checked on a series of 1:2000 scale aerial photo base maps.

6. Existing pole structure numbers and right-of-way boundary location is based on the following transmission line sheets (T-sheets) provided by New England Power Company: T5660 Rev.6 issued July 3, 2013, T5661 Rev. 9 issued September 25, 2009.

7. Limits of ROW shown are approximate.

8. Proposed transmission structure locations are approximate.

N12/M13 DOUBLE CIRCUIT TOWER SEPARATION PROJECT NEW ENGLAND POWER CO.			PLAN SET TITLE SHEET AND NOTES SOMERSET AND FALL RIVER, MASSACHUSETTS	
DATE: 9/30/2021	DRAWN: TDH	146782	REV 2	Page 1 of 9

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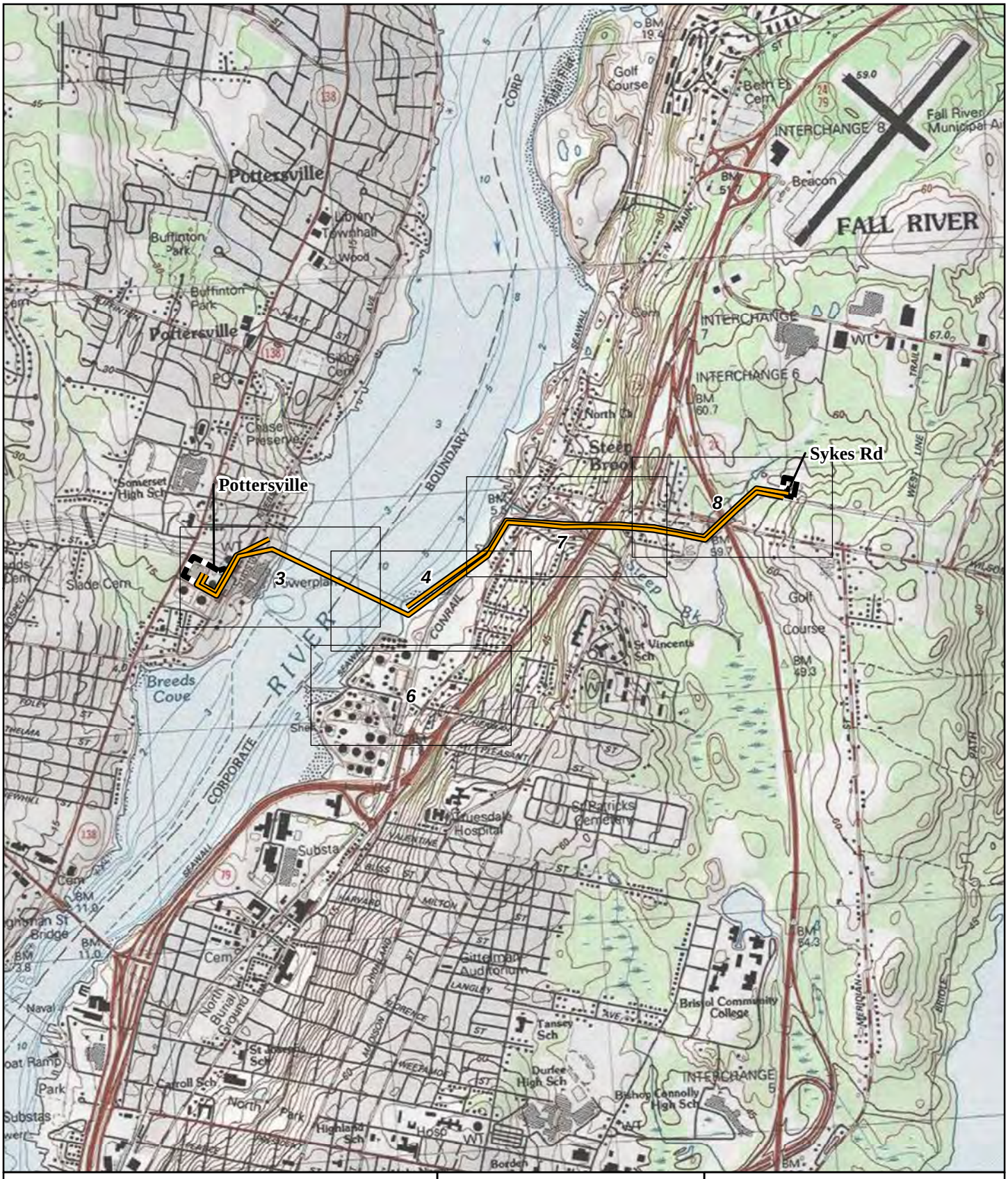

Legend

- Project Alignment Page Index
- Proposed Overhead Line
- Existing Substation Site

The State of Massachusetts

Bristol County
Town of Somerset
and City of Fall River

N12/M13 Double Circuit Tower Separation Project

Project USGS Locus Map

Page 2 of 10

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

0 1,000 2,000 3,000

Feet

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POWER ENGINEERS

nationalgrid

Date: 9/30/2021

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1 " = 200 '

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Feet

Structure Maintenance & Improvements

- Existing Structure
- Proposed or Replacement Structure
- To Be Reconductored

Transmission Line Improvements

- Proposed Overhead Line

Work Envelopes

- Work Envelope (Mow Only)
- Pull Pad Work Envelope (Mow Only)

Existing Conditions

- Existing Transmission Line
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary

Field GPS Survey Point

- Man Hole

Field GPS Survey Line

- Mean Annual High Water Line
- Riverfront Area
- Jurisdiction (Tidelands Jurisdiction - Ch 91)
- Historic High Water (Tidelands Jurisdiction - Ch 91)
- FEMA Flood Hazard (DFIRM 100yr)
- State Highway
- Local Road

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures

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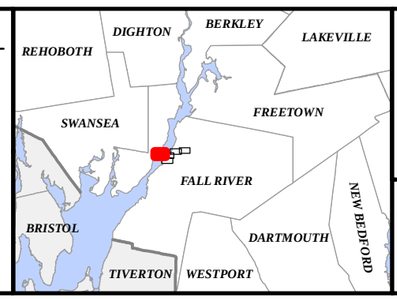
New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town of Somerset

NAD 1983 UTM Zone 18N USFt

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POWER ENGINEERS

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Taunton River
N12
M13N
Taunton River
Taunton River
Match Line Page 3
Match Line Page 4
M10
M10
6 (2)
CD
6
Wire Pulling Station (Span Towards Transition Structure)
(3)
Pad for Construction Support
Match Line Page 7
Match Line Page 4
N Main St
Sidney St
Waring St
Berlin St
Baldwin St
Holland St
79
Wire Pulling Station (River Crossing Span)
Match Line Page 4
Match Line Page 6
Haskell St
Quincy St

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1 " = 200 '

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Feet

Structure Maintenance & Improvements
- Proposed or Replacement Structure
- To Be Reconductored
- Structure to Be Removed

Transmission Line Improvements
- Proposed Overhead Line

Road Maintenance & Improvements
- Improve Existing Access, Widen and Refresh with Stone
- Install New Access Road
- New Overland Access (Drive and Crush)
- Proposed Structure Footprint
- Access Road and Permanent Work Area
- Grading Area

Work Envelopes
- Work Envelope (Mow Only)
- Work Envelope with Minor Grading
- Pull Pad Work Envelope (Mow Only)
- Temporary Staging Area
- Marshmaster Access

Existing Conditions
- Existing Transmission Line
- Existing Access - No Improvements
- Approximate Pipeline Location
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary

Field GPS Survey Point
- Man Hole
- Pipeline Marker

Field GPS Survey Line
- Stone Wall
- Wetland Border
- Mean Annual High Water Line
- Field Delineated Wetland
- Riverfront Area
- 100 ft Buffer Wetland
- Jurisdiction (Tidelands Jurisdiction - Ch 91)
- Historic High Water (Tidelands Jurisdiction - Ch 91)
- Contemporary High Water (Tidelands Jurisdiction - Ch 91)
- Inferred Historic High Water (Tidelands Jurisdiction - Ch 91)
- Recovery Well (RTN Report 12/27/16)
- FEMA Flood Hazard (DFIRM 100yr)
- State Highway
- Local Road
- Railroad
- Proposed MassDOT Rail Station

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures

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New England Power Company

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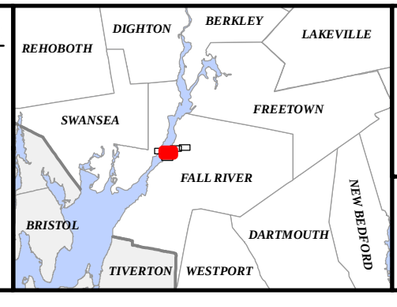


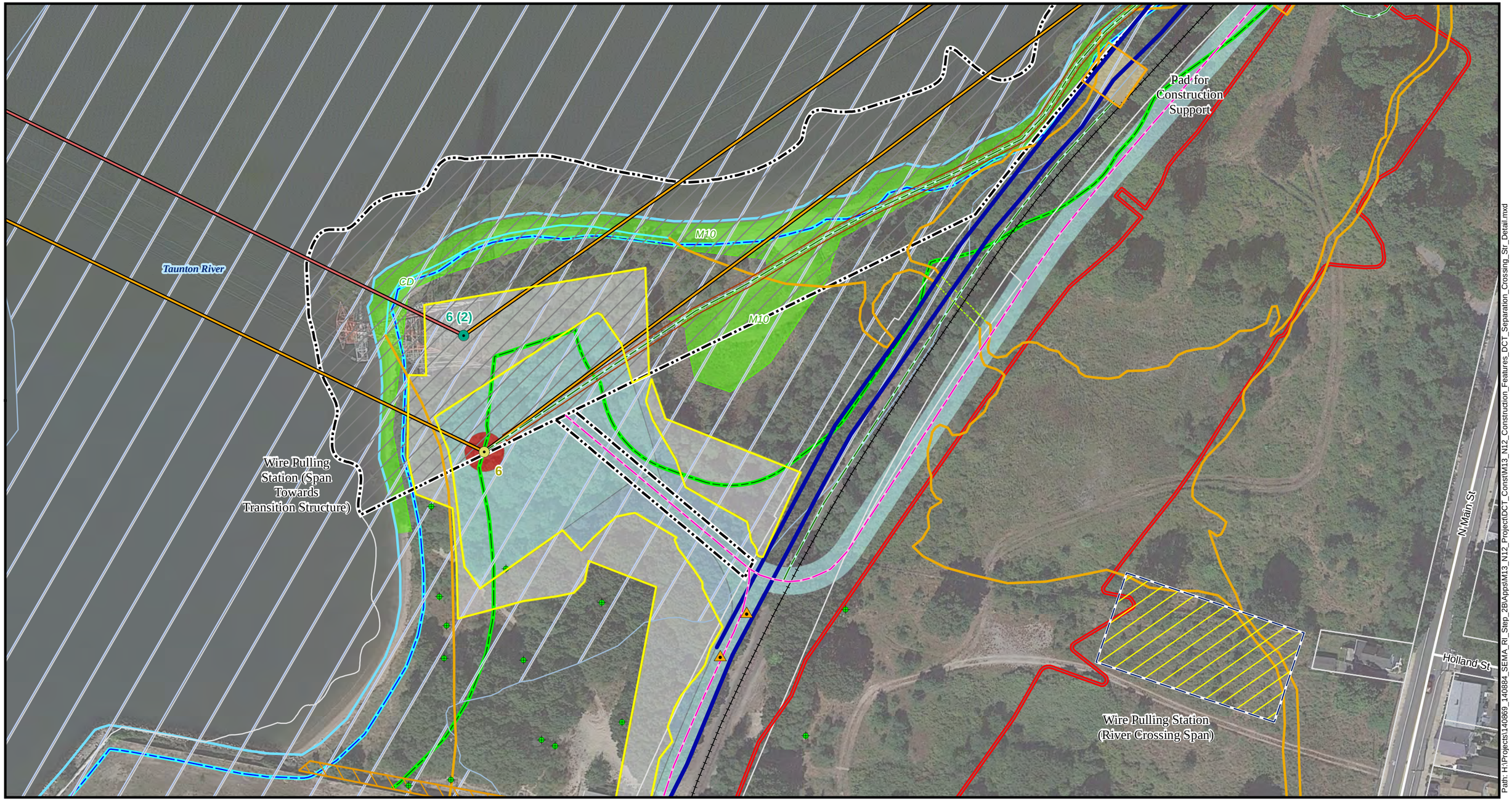
Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS



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Feet

Structure Maintenance & Improvements
- Proposed or Replacement Structure
- To Be Reconductored

Transmission Line Improvements
- Proposed Overhead Line

Road Maintenance & Improvements
- Install New Access Road
- New Overland Access (Drive and Crush)
- Proposed Structure Footprint
- Access Road and Permanent Work Area
- Grading Area

Work Envelopes
- Work Envelope (Mow Only)
- Work Envelope with Minor Grading
- Pull Pad Work Envelope (Mow Only)
- Temporary Staging Area
- Marshmaster Access

Existing Conditions
- Existing Transmission Line
- Approximate Pipeline Location
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary

Field GPS Survey Point
- Pipeline Marker

Field GPS Survey Line
- Wetland Border
- Mean Annual High Water Line
- Field Delineated Wetland
- Riverfront Area
- 100 ft Buffer Wetland
- Jurisdiction (Tidelands Jurisdiction - Ch 91)
- Historic High Water (Tidelands Jurisdiction - Ch 91)
- Contemporary High Water (Tidelands Jurisdiction - Ch 91)
- Inferred Historic High Water (Tidelands Jurisdiction - Ch 91)
- Recovery Well (RTN Report 12/27/16)
- FEMA Flood Hazard (DFIRM 100yr)
- Local Road
- Railroad
- Proposed MassDOT Rail Station

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures (Structure 6 Detail)

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New England Power Company

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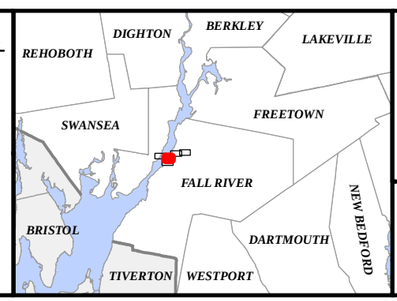

Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

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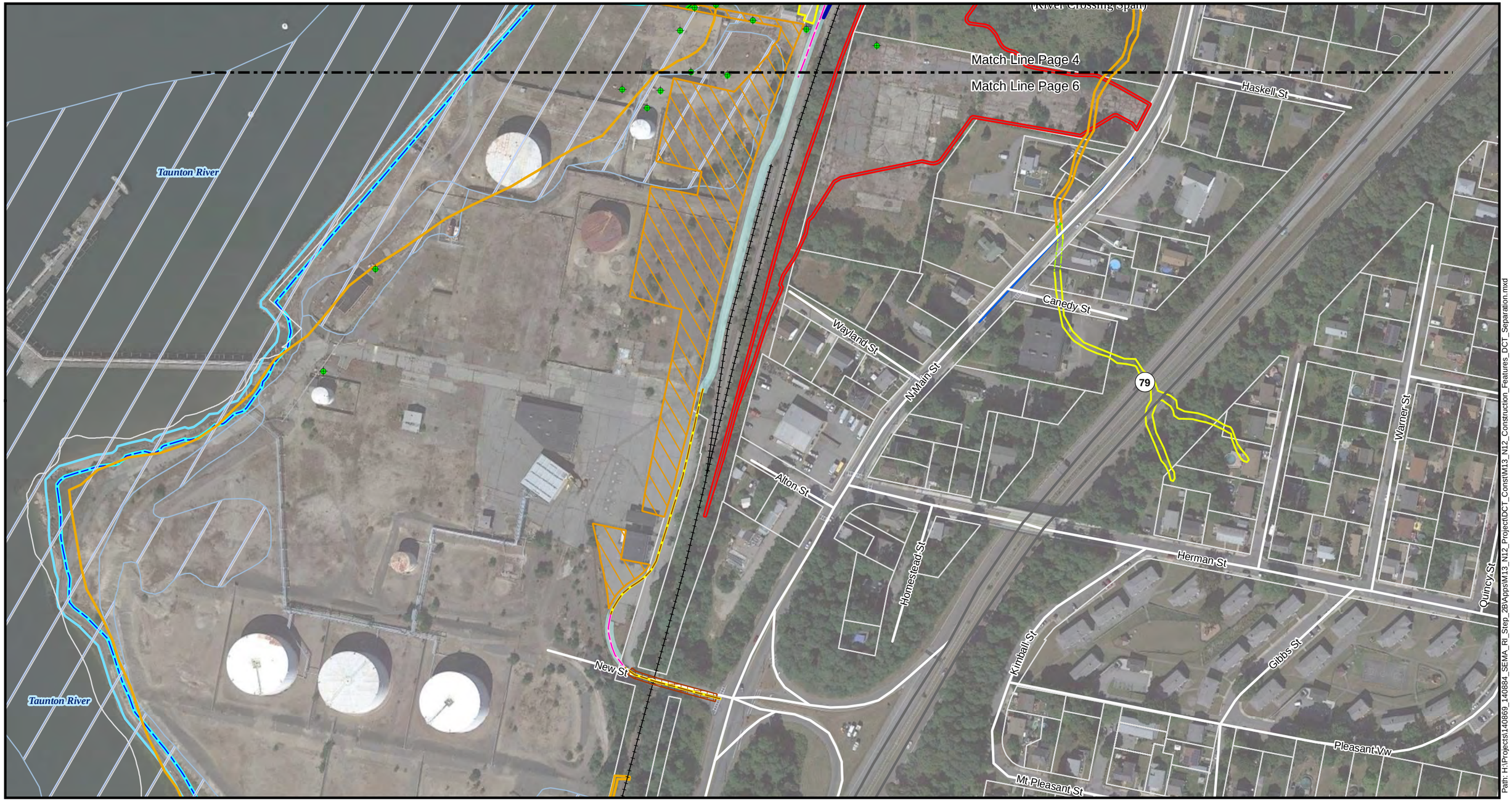

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1 " = 200 '

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Feet

Road Maintenance & Improvements

- Install New Access Road
- Access Road and Permanent Work Area
- Grading Area

Work Envelopes

- Work Envelope with Minor Grading
- Temporary Staging Area
- Construction Mat
- Existing Access - No Improvements

- Approximate Pipeline Location
- Parcel Boundary

Field GPS Survey Line

- Mean Annual High Water Line
- Riverfront Area
- 100 ft Buffer Wetland
- Public Way (Tidelands Jurisdiction - Ch 91)
- Landlocked Tidelands (Tidelands Jurisdiction - Ch 91)
- Jurisdiction (Tidelands Jurisdiction - Ch 91)
- Historic High Water (Tidelands Jurisdiction - Ch 91)
- Inferred Historic High Water (Tidelands Jurisdiction - Ch 91)
- Recovery Well (RTN Report 12/27/16)
- FEMA Flood Hazard (DFIRM 100yr)
- State Highway
- Local Road
- Railroad
- Proposed MassDOT Rail Station

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures

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New England Power Company

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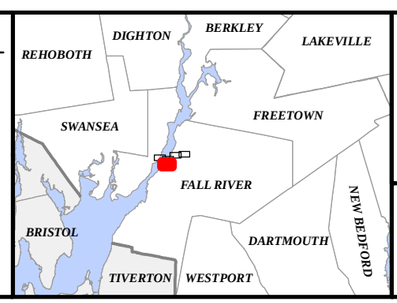

Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS

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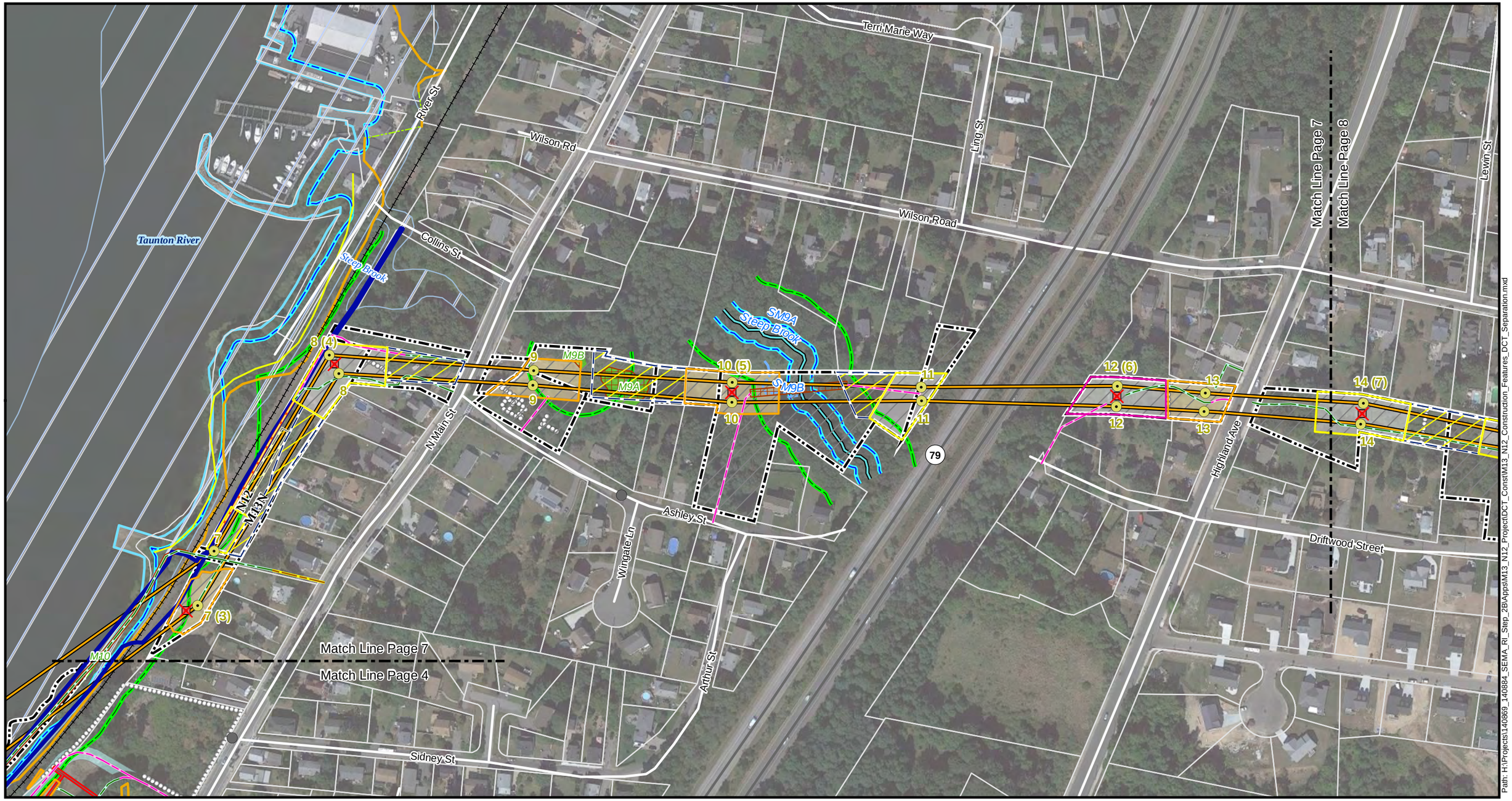

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1 " = 200 '

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Feet

Structure Maintenance & Improvements
- Proposed or Replacement Structure
- Structure to Be Removed

Transmission Line Improvements
- Proposed Overhead Line

Road Maintenance & Improvements
- Improve Existing Access, Widen and Refresh with Stone
- Install New Access Road
- New Overland Access (Drive and Crush)
- Access Road and Permanent Work Area

Work Envelopes
- Work Envelope (Mow Only)
- Work Envelope with Minor Grading
- Work Envelope with Major Grading
- Pull Pad Work Envelope (Mow Only)
- Pull Pad Work Envelope (Grading)
- Construction Mat
- Marshmaster Access
- Existing Access - No Improvements
- Approximate Pipeline Location
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- Field GPS Survey Point
- Man Hole
- Field GPS Survey Line
- Stone Wall
- Wetland Border
- Perennial Stream or River
- Mean Annual High Water Line
- Ephemeral Stream
- Field Delineated Wetland
- Riverfront Area
- 100 ft Buffer Wetland
- Jurisdiction (Tidelands Jurisdiction - Ch 91)
- Historic High Water (Tidelands Jurisdiction - Ch 91)
- Inferred Historic High Water (Tidelands Jurisdiction - Ch 91)
- FEMA Flood Hazard (DFIRM 100yr)
- State Highway
- Local Road
- Railroad
- Proposed MassDOT Rail Station

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures

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New England Power Company

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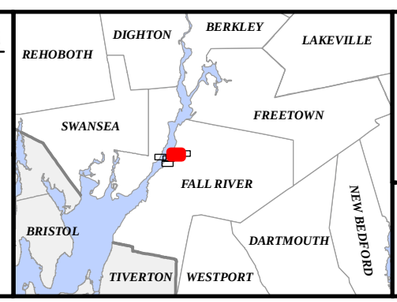

Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

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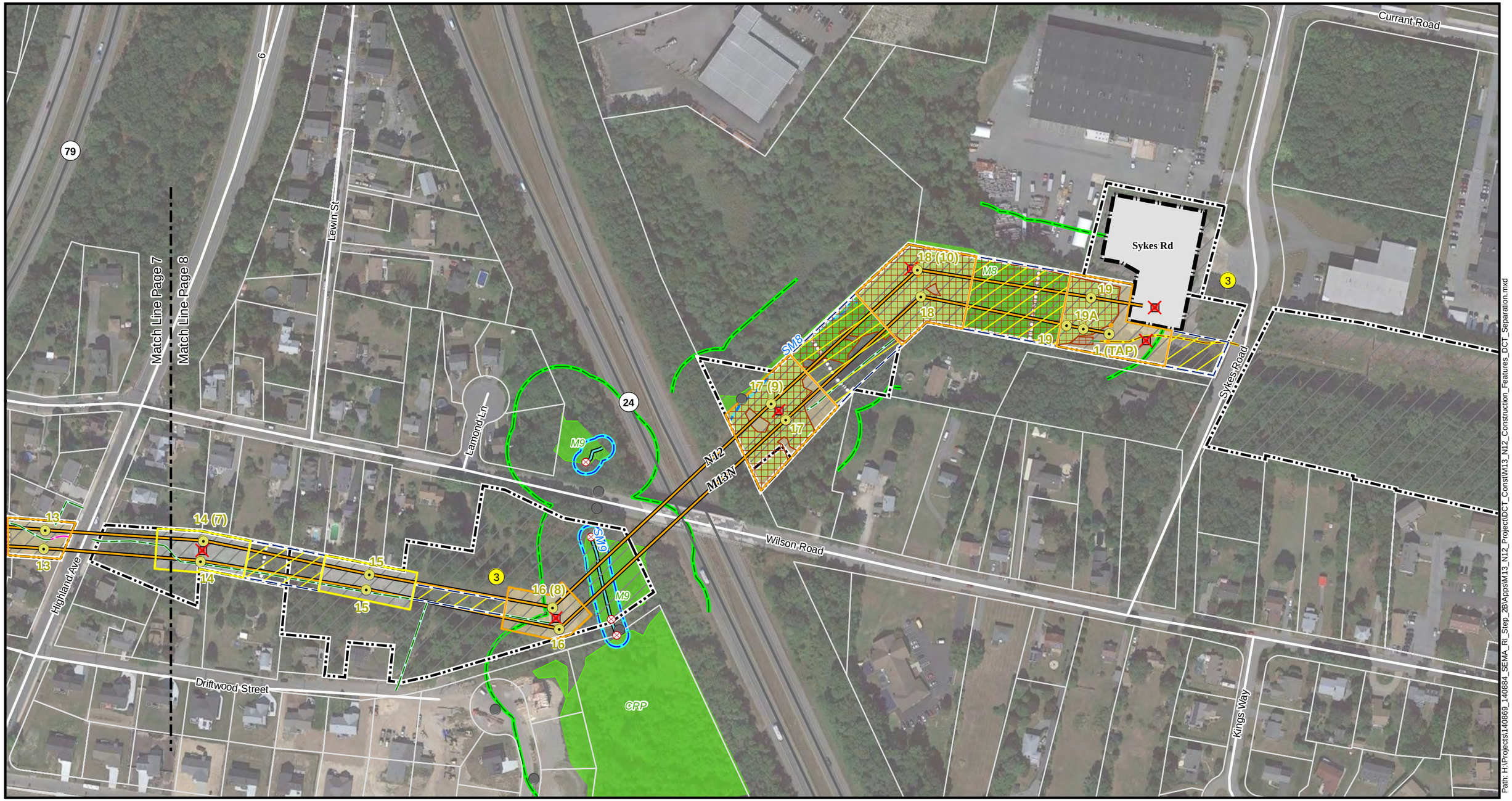

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Feet

Structure Maintenance & Improvements

- Proposed or Replacement Structure
- Structure to Be Removed

Transmission Line Improvements

- Proposed Overhead Line

Road Maintenance & Improvements

- Install New Access Road
- New Overland Access (Drive and Crush)

Work Envelopes

- Work Envelope (Mow Only)
- Work Envelope with Minor Grading
- Work Envelope with Major Grading
- Pull Pad Work Envelope (Mow Only)
- 3 Potential Laydown or landing area
- Construction Mat

- Existing Access - No Improvements
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary

Field GPS Survey Point

- Culvert
- Man Hole

Field GPS Survey Line

- Stone Wall
- Wetland Border
- Perennial Stream or River
- Intermittent Stream
- Field Delineated Wetland
- Riverfront Area
- 100 ft Buffer Wetland
- State Highway
- Local Road

N12/M13 Double Circuit Tower Separation Project

Expanded Environmental Notification Form Figures

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New England Power Company

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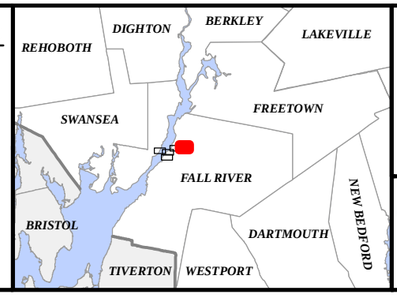

Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

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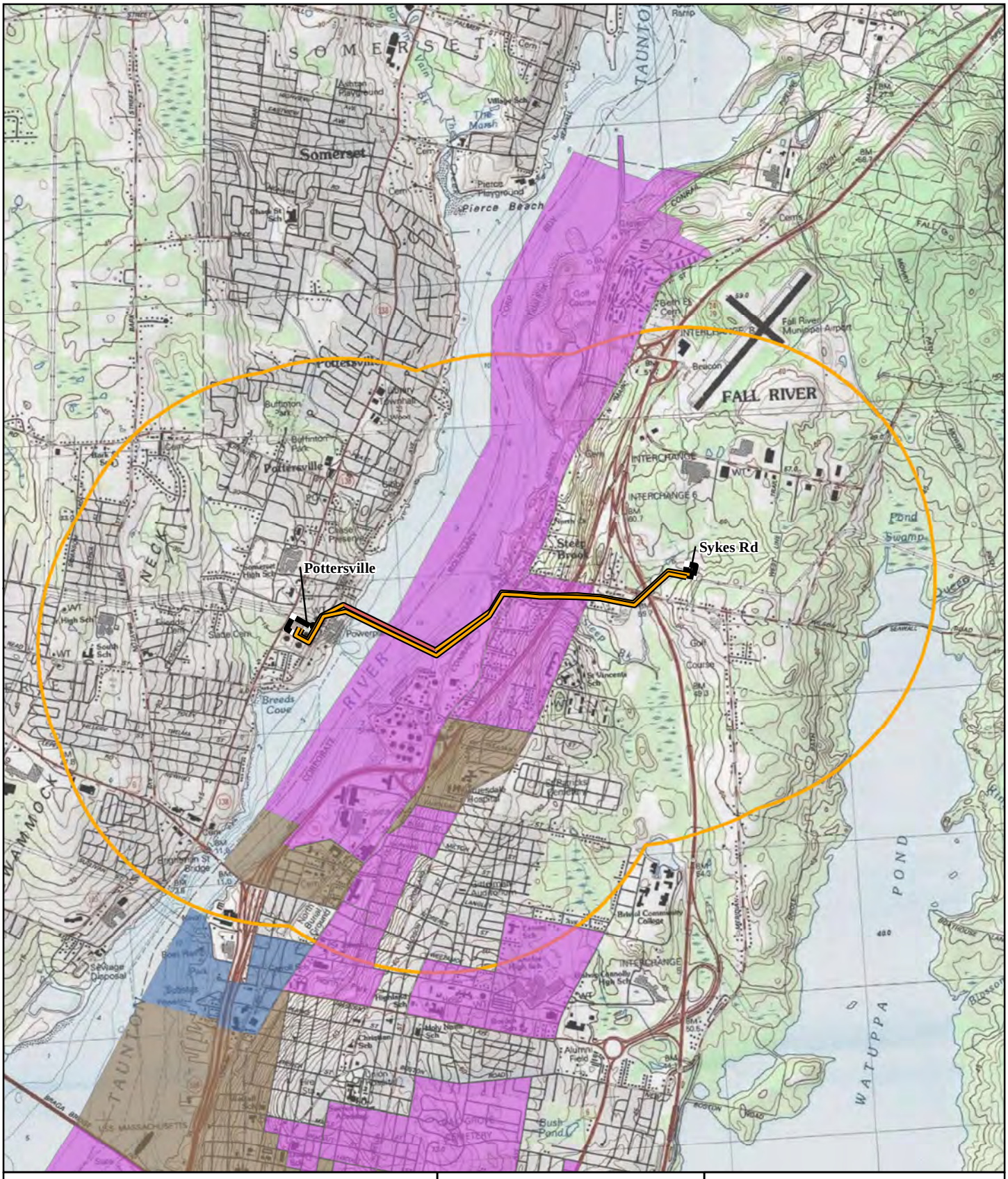

Legend

- Proposed Overhead Line
- Existing Transmission Line
- Existing Substation Site
- Minority and income
- 1 Mile Project Buffer

Environmental Justice Criteria

- Income
- Minority

The State of Massachusetts

Bristol County
Town of Somerset
and City of Fall River

N12/M13 Double Circuit Tower Separation Project

Environmental Justice Map

Page 9 of 10

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

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POWER ENGINEERS

nationalgrid

Date: 9/30/2021

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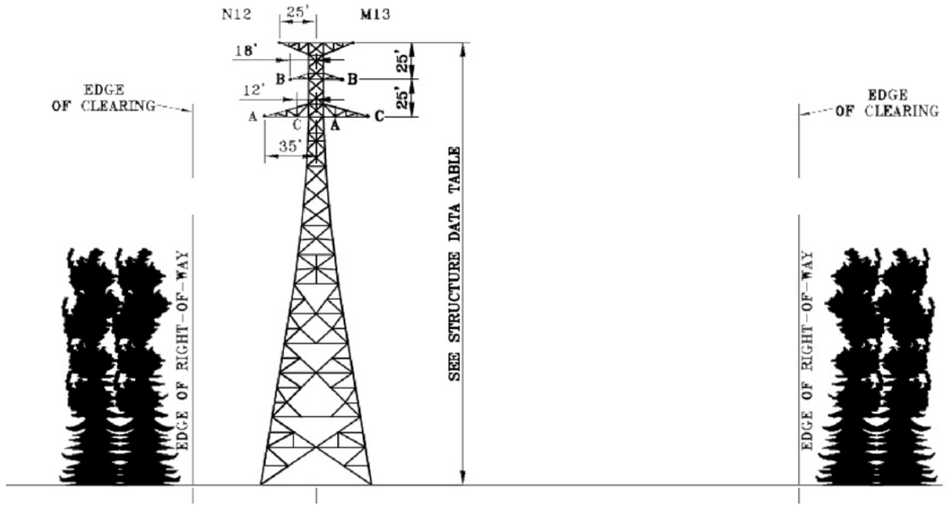
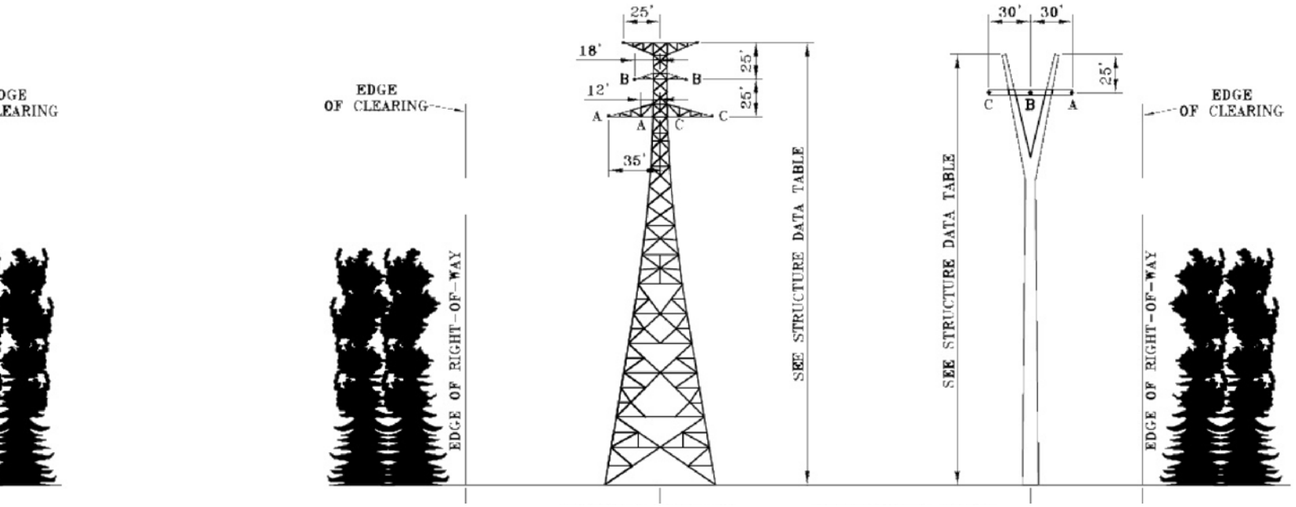
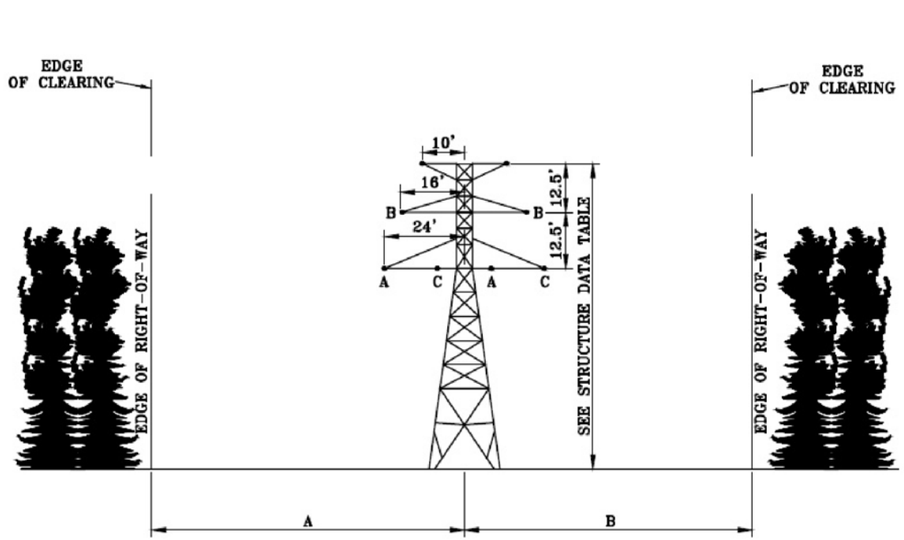


Existing Conditions View

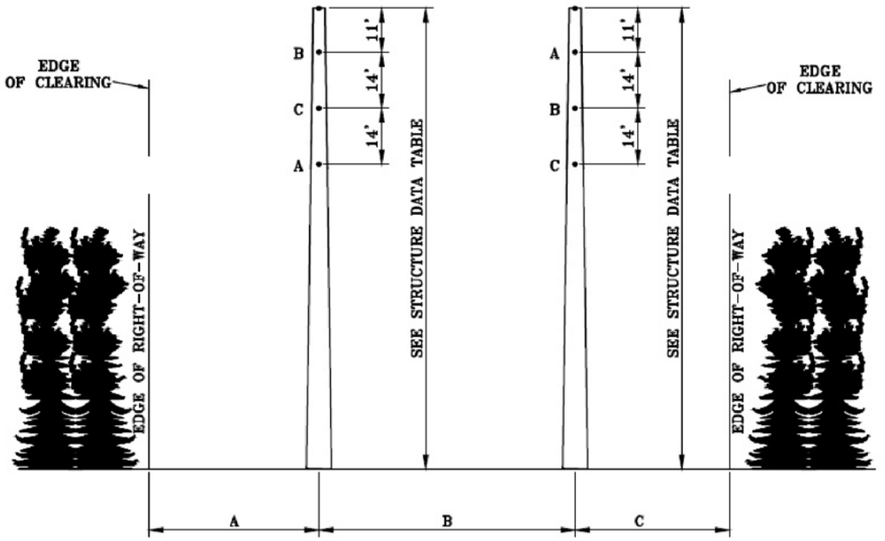


River Crossing Structures, View to the East

Proposed Conditions View



Existing Conditions View



Tangent Transmission Structures, View to the East

Proposed Conditions View

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N12/M13 Double Circuit Tower Separation Project

Typical ROW
Cross Sections

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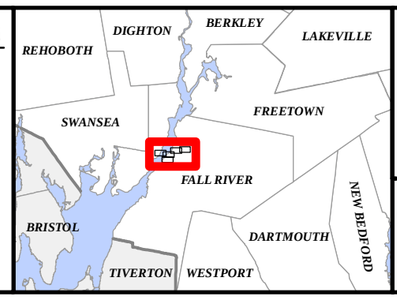
New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

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PURPOSE/OBJECTIVE:

This document provides National Grid personnel, consultants and contractors with Best Management Practices (BMPs) for conducting work on electric and natural gas transmission and distribution rights-of-ways (ROWs) and substations in New England.

WHO:

These BMPs are to be followed by all personnel conducting work on Company electric and gas ROWs and substations in New England. These BMPs do not apply to Company employees and contractors performing routine vegetation management activities that are not a part of construction or re-construction projects. Employees and contractors maintaining vegetation on Company ROWs and substations must follow the National Grid ROW Vegetation and Substation Vegetation Management Plans.

DEFINITIONS:

Refer to **Glossary** in **Appendix 1** and **Acronyms** in **Appendix 2**.

WHAT TO DO:

1.0 Project Planning

Prior to the start of any project (proposed new facilities or maintenance of existing facilities), the Project Engineer or other project planner shall determine whether any environmental permits or approvals are required, per the state-specific EG-301 environmental checklists. Any questions regarding which activities may be conducted in regulated areas or within environmentally sensitive areas shall be referred to the National Grid Environmental Scientist or Project Environmental Consultant.

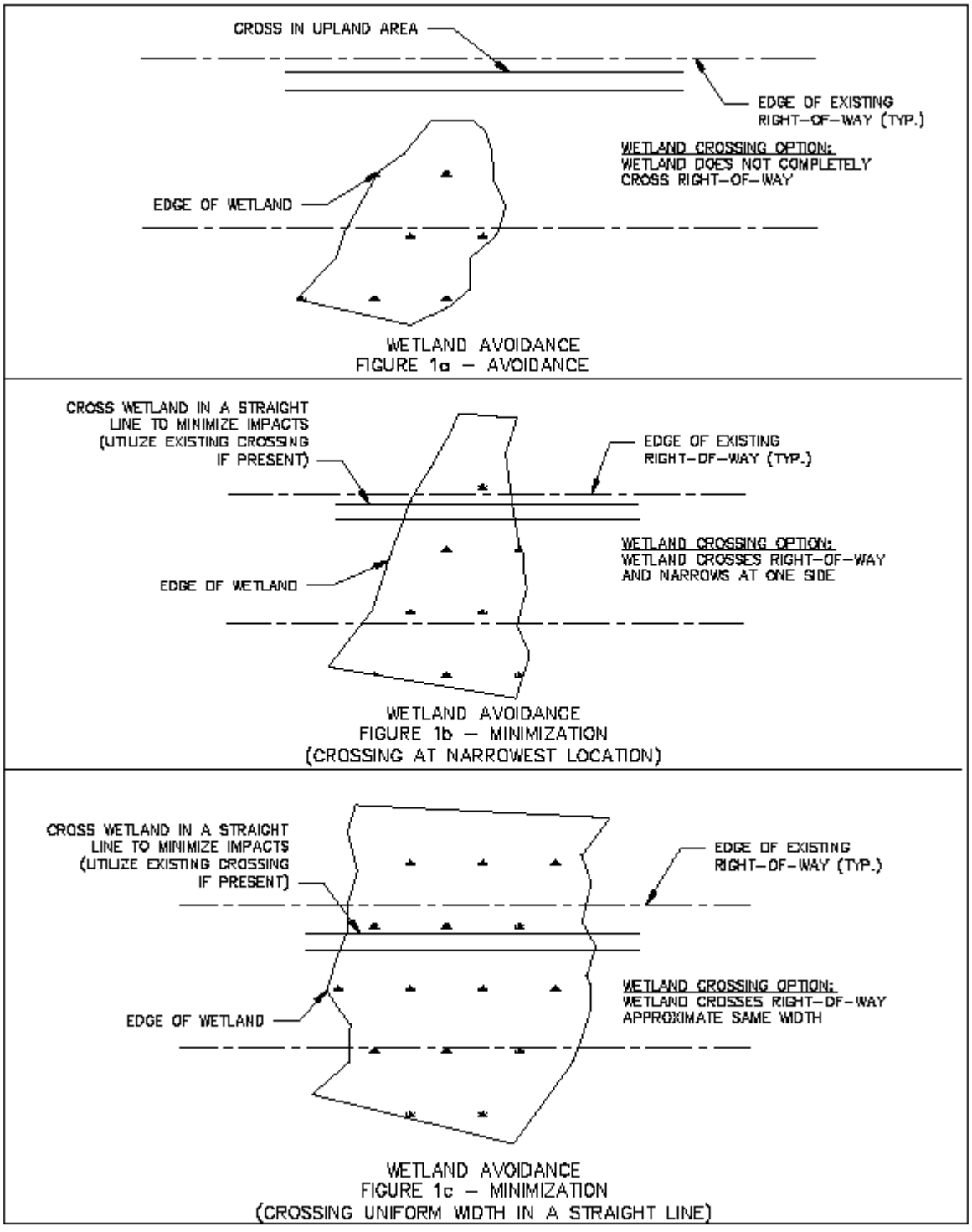
All new construction and maintenance projects shall follow clear and enforceable environmental performance standards, which is the purpose for which these BMPs have been compiled.

1.1 Avoidance and Minimization

Measures shall always be taken to avoid impacts to wetlands, waterways, rare species habitats, known below and above ground historical/archeological resources and other environmentally sensitive areas. If avoidance is not possible, then measures shall be taken to minimize the extent of impacts. Alternate access routes or staging areas shall always be considered. Below is a list of methods that shall be considered where impacts are unavoidable:

- Use existing ROW access where available. Keep to approved routes and roads without deviating from them or making them wider.
- Off-ROW access shall never be assumed and shall be coordinated through National Grid Real Estate before being implemented.
- Where no existing ROW access is present, avoid wetlands and if a wetland crossing is necessary, cross wetlands at the most narrow point possible or at the location of a previously used crossing (if evident). Figure 1 below illustrates this minimization technique.

- Avoid and minimize stream crossings.
- Minimize the width of typical access roads through wetlands to a maximum width of 16 feet.
- Conduct work manually (without using motorized equipment) in wetlands, wherever possible.
- Use construction mats in wetlands to minimize soil disturbance and rutting when crossing or working within wetlands. When not using mats for access, standard vehicles shall not be allowed to drive across wetlands without the prior approval of the National Grid Environmental Scientist. Use of a low ground pressure (LGP) vehicle may be a feasible alternative to mats provided that such LGP vehicle use has been reviewed and approved by the National Grid Environmental Scientist. See Section 7.0.
- Coordinate the timing of work to cause the least impacts during the regulatory low-flow period under normal conditions, when water/ground is frozen, after the spring songbird nesting season, and, outside of the anticipated amphibian migration window (mid-February to mid-June). Refer to the United States Army Corps of Engineers (USACE) state-specific General Permit for the definition of the low-flow period in each state at: http://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/. A summary table is provided in Section 7.0.
- Seek alternative routes or work methods to minimize impact.



WETLAND AVOIDANCE
FIGURE 1a – AVOIDANCE

WETLAND AVOIDANCE
FIGURE 1b – MINIMIZATION
(CROSSING AT NARROWEST LOCATION)

WETLAND AVOIDANCE
FIGURE 1c – MINIMIZATION
(CROSSING UNIFORM WIDTH IN A STRAIGHT LINE)

Appı

1.2 Historically Significant Areas

Areas that have been identified as historically and/or culturally significant shall be avoided in accordance with site-specific avoidance plans, as applicable. Refer to the project-specific Environmental Field Issue (EFI) for any applicable avoidance plans or consult with the National Grid Environmental Scientist. Demarcation of these areas to be avoided shall use staked orange snow fencing or an equivalent physical barrier (not just ribbon flagging) and signage. Refer to Section 14.0 for signage guidance.

1.3 Rare Species Habitat

Work within areas that have been identified as mapped rare species habitat shall follow site-specific requirements, as applicable. In Massachusetts, maintenance activities within mapped habitat (known as Priority Habitat of Rare Species) shall follow the BMPs outlined in the Natural Heritage Endangered Species Program (NHESP)-approved National Grid Operation and Maintenance Plan. Work in mapped rare species habitat may require, at a minimum, turtle training for crews and sweeps of work areas for turtles, botanist identification of rare plant locations and avoidance of these locations, and protection of vernal pools, all prior to the start of work. Demarcation of these areas to be avoided (e.g., rare plant populations, overwintering turtles, nests) shall use staked orange snow fencing or an equivalent physical barrier (not just ribbon flagging) and signage. Refer to Section 14.0 for signage guidance.

Where new substations are being constructed or existing substations are undergoing a rebuild or expansion, and the substations are located in mapped rare turtle habitat, project team members should consider fenceline improvements or measures needed to prevent/eliminate turtle entrance into the substation or allow multiple points for easy egress such that turtles are not trapped within the substation fenceline.

Other requirements may apply in NH, VT and RI. Refer to the project-specific EFI for any applicable measures or consult with the National Grid Environmental Scientist.

1.4 Meetings

Pre-permitting meetings shall take place early in the project development process to determine what permits are triggered by the proposed work and the timeline required for permitting. During these meetings, the team shall develop access plans and BMPs to be used during construction of the project.

Field / Constructability review meetings shall take place on-site to evaluate construction site access and job site set-up, to ensure that the project can proceed as permitted. It is at this point in time where work areas, pulling locations, laydown areas, parking areas, and equipment storage areas are evaluated and located. Off-ROW areas under consideration should be included in this discussion.

Prior to submitting permit plans to regulatory authorities, the construction group (contractor or National Grid) shall review the plans for final sign off.

Pre-construction meetings are typically held prior to the commencement of all work to appoint responsible parties, discuss timing of work, and further consider options to avoid and/or minimize impacts to sensitive areas. These meetings can occur on- or off-site and shall include all the willing and available stakeholders (i.e., utility employees, contractors, consultants, inspectors, and/or monitors, and regulatory personnel). Training of crews and supervisors of the EFI, Stormwater Pollution Prevention Plan (SWPPP), rare species, and other permit requirements shall be conducted at a pre-construction meeting.

Pre-job briefings shall be conducted daily or otherwise routinely scheduled meetings shall be conducted on-site with the work crew throughout the duration of the work. These meetings are a way of keeping everyone up to date, confirming there is consensus on work methods and responsibilities, and ensuring that tasks are being fulfilled with as little impact to the environment as possible.

The Project Environmental Scientist/Monitor and Construction Project Manager shall communicate regularly (e.g. weekly or bi-weekly meetings or phone conversations) to discuss the work completed since last communication (i.e. work locations, wetland impacts, equipment used, and unexpected delays or work conditions). These meetings or calls shall include the expected schedule of construction for the upcoming week, the long term construction plans, and planned methods for working near/in wetlands. Both the Project Environmental Scientist/Monitor and Construction Project Manager shall work together so the Project complies with all environmental permits and regulations. When changes to the Project scope or agreed work plan are proposed they shall be done so with the final approval of the National Grid Environmental Scientist.

1.5 Communication of Project Specific Environmental Requirements

Project specific environmental concerns, to include sensitive resources, permits, approved access and time-of-year or other restrictions, shall be communicated to the project team and be included as part of the Pre-Bid and Pre-Construction Meetings. Project specific requirements shall be communicated to the project manager/construction manager/engineering group using the following guidelines:

Environmental Field Issue – The EFI will be a full document consisting of narrative, project permits, access and matting plans. A table summarizing pertinent (but not all) permit conditions and the responsible party for those conditions shall be included in the EFI. Copies of all permits should be included as attachments. This will be prepared for most projects with multiple permits or large, complex projects (siting board, Section 404, 401 WQC, SWPPP). There shall be EFI training at the pre-construction meeting. The National Grid EFI template is located in **EI-303NE**.

Simplified Environmental Field Issue – The Simplified EFI is a memorandum containing environmental resources present, project permit(s), access and matting plans and a table summarizing relevant permit conditions and responsible party for those conditions. Copies of all permits should be included as attachments. The Simplified EFI will be prepared for most projects with 1 or 2 permits (Order of Conditions, S404 Cat 1). The Simplified EFI should also be provided for projects that have environmental resources present, but the scope of the project does not trigger environmental permitting (e.g., the scope of work qualifies for maintenance exemption(s)). The resources present

shall be discussed at the Pre-Bid and Pre-Construction meetings and any changes in scope will require additional review by the National Grid project team.

E-mail delivery of Permit and any Sediment/Erosion control or BMP plan – For those projects with only one permit (eg., MA Order of Conditions, RI DEM permit, RI CRMC permit, NH Utility Notification) or projects with a sediment & erosion control plan (local town requirement or for exempt maintenance work), a copy of the permit and any applicable plan will be emailed to the Project Manager (and the project team where deemed necessary) to be incorporated into the Construction Field Issue.

STORMS work management system input – For STORMS work, no EFI is prepared unless multiple permits are required for the project (see guidance above). If only a MA Order of Conditions, MA Determination of Applicability, RI DEM permit, RI CRMC permit, RI SESC Approval, or NH Utility Notification is required, then the permit is attached in the Documents tab and conditions noted in Remarks/Comments section. Standard STORMS boilerplate language is located in **EI-303NE**.

1.6 Timing of Work

Regulatory authorities may place seasonal or time-of-year restrictions on project construction elements. These time-of-year restrictions may be state or permit-specific, and shall be adhered to.

Work during frozen conditions. Activities conducted once wetland areas are frozen sufficient to minimize rutting and other impacts to the surrounding environment may be authorized by the National Grid Environmental Scientist. Work during this time also generally reduces disturbance of aquatic and terrestrial wildlife movement by avoiding sensitive breeding and nesting seasons. When not using mats for access, vehicles shall not be allowed to drive across wetlands without the prior approval of the National Grid Environmental Scientist.

Work during the regulatory low-flow period. Conducting work during the low-flow period can reduce impacts to surface water and generally avoids spawning and breeding seasons of aquatic organisms. If the water is above normal seasonal levels, adjustments to work activities and methods are required.

1.7 Alternate Access

1.7.1 Manual Access

In some cases such as for smaller projects, work areas can be accessed manually. This includes access on foot through upland and shallow wetland areas, access by boat through open water or ponded areas, and climbing of structures where possible. Smaller projects, such as repair of individual structures, or parts of structures, that do not categorically require the use of heavy machinery, shall be accessed manually to the greatest extent practicable.

1.7.2 Use of Overhead/Aerial Access

Using helicopters can be expensive and is not always feasible, but it may be appropriate in some situations in order to get workers and equipment to a site that otherwise may be very difficult to access. The use of overhead and/or aerial equipment may be beneficial for work in areas where larger water bodies, deep crevices, or mountainous areas hinder ground access. The landing area for

helicopters shall be reviewed for environmentally sensitive resources. Use of helicopters requires Project Manager and Senior Management approval.

2.0 Inspection, Monitoring and Maintenance

All construction practices and controls shall be inspected on a regular basis and in accordance with all applicable permits and local, state, and federal regulations to avoid and correct ANY damage to sensitive areas.

The construction crews shall be responsible for completing daily inspections, and IMMEDIATELY bring any **damage or observed erosion, or failed erosion controls** to the attention of the Person-In-Charge and the National Grid Environmental Scientist. Where applicable and/or as directed by environmental permits issued for the project, the Project Environmental Consultant shall conduct weekly (at a minimum) inspections of the project work areas and shall document their inspection using the Stormwater, Wetlands & Priority Habitat Environmental Compliance Site Inspection / Monitoring Report form found in **Appendix 3** and issue the report within 24 hours. The Person-in-Charge shall work with the National Grid Environmental Scientist and the Project Environmental Consultant to determine when and how the repairs shall be made.

Project-specific Action Logs and Long-Term Restoration Logs are prepared as needed by the National Grid Environmental Scientist or the Project Environmental Consultant to track issues and/or repairs and assign responsible parties.

3.0 Best Management Practices

The BMP sections presented in this EG address access, construction, snow and ice management, structures in wetlands, access road maintenance and repair, clean-up and restoration standards, ROW gates, field refueling and maintenance operations, management of spills/releases, and a summary of key construction BMPs.

Note that BMPs shown on any permit drawings for a specific project may need to be revised and or supplemented during the execution of a project based on unforeseen or unexpected factors such as extreme weather or unknown subsurface conditions. It is the responsibility of the Contractor to work with the National Grid Environmental Scientist and/or the Project Environmental Consultant to identify necessary changes and to ensure that construction-related impacts to wetlands, water bodies and other environmentally sensitive areas are avoided.

Any deviation from the approved BMPs shown in the EFI and/or SWPPP plans shall be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting or could result in a permit violation.

3.1 Wetland Boundary Demarcation

Prior to the start of any activity conducted under an environmental permit, wetland boundaries shall be reviewed. Flagging for wetland boundaries, stream banks and other resource areas shall be

refreshed as needed. This may become particularly important when the original flagging was placed in previous seasons and now may have become obscured.

3.2 Sedimentation and Erosion Controls

Appropriate sedimentation and erosion control devices shall be installed at work sites, in accordance with permit conditions and/or regulatory approvals, and as needed to prevent adverse impacts to water resources and adjacent properties.

The overall purpose of such controls is to prevent and control the movement of disturbed soil and sediment from work sites to adjacent, undisturbed areas, and particularly to water resources, public roads and adjacent properties. All proprietary controls shall be installed per manufacturer's recommendations and specifications.

Appropriate sedimentation and erosion control devices include but are not limited to: silt fencing, straw bales, wood chip bags, straw wattles, compost socks, erosion control blankets, mulch, slope interruption practices, flocculent powder/blocks and storm drain/catch basin inlet protection. Such controls shall be installed between the work area and environmentally sensitive areas such as wetlands, streams, drainage courses, roads and adjacent property when work activities shall disturb soils and result in a potential for causing sedimentation and erosion.

In Massachusetts, use of monofilament-encased wattles shall be avoided in mapped Priority Habitat for snakes and amphibians. For projects with work within mapped Priority Habitat for snakes and amphibians, wattles that are encased in a sock, hemp, fiber, or movable jute netting are required to prevent entrapment. Also, "wildlife gaps" should occur every 50 feet, if possible, given wetland permit conditions. This spacing of the wattles allows snakes and amphibians to move across the ROW. Refer to the Amphibian and Reptile BMPs in **Appendix 4**.

Staked straw bales often serve as the demarcation of the limits of work and/or sensitive areas to be avoided. Work shall never be conducted outside the limit of erosion controls without prior approval from the National Grid Environmental Scientist.

Project plans depict proposed erosion controls, however field conditions may warrant additional practices be implemented (e.g., wet conditions, frozen conditions, poorly drained soils, steep slopes, materials used for work pads, transition areas to construction mats, number of trips across work areas, etc.).

Any deviation from the approved erosion controls shown in the EFI and/or SWPPP plans needs to be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting or result in a permit violation.

Appendix 4 provides typical sketches of common sedimentation and erosion controls. If a SWPPP is required for the project, maintenance and inspection of erosion controls shall follow the SWPPP requirements. Sedimentation and erosion controls shall be properly maintained and inspected on a

periodic basis, until work sites are properly stabilized and restored. Inspections shall be documented using the Inspection Form "Storm Water, Wetlands & Priority Habitat Environmental Compliance Site Inspection/Monitoring Report" (**Appendix 3**).

The sequence and timing of the installation of sedimentation and erosion control measures is critical to their success. Sedimentation and erosion controls shall be installed prior to commencing construction activities that may result in any soil disturbance or cause otherwise polluted site runoff. Inspection of these devices may be required by the National Grid Environmental Scientist or by regulators prior to the start of work. The installation of water bars and other erosion control measures shall be installed shortly thereafter.

3.3 Concrete Wash Outs

Concrete wash outs shall be used for management of concrete waste. Concrete and concrete washout water shall not be deposited or discharged directly on the ground, in wetlands or waterbodies, or in catch basins or other drainage structures. Where possible, concrete washouts shall be located away from wetlands or other sensitive areas. Consult the National Grid Environmental Scientist on proposed concrete wash out locations prior to their use. Following the completion of concrete pouring operations, the wash outs shall be disposed of off-site with other construction debris. Refer to BMPs in **Appendix 4**.

3.4 Construction Activities in Standing Water

The use of silt curtains or turbidity barriers may be required when working in or adjacent to standing water such as ponds, reservoirs, low flowing rivers/streams, or coastal areas. Silt curtains and turbidity barriers prevent sediment from migrating beyond the immediate work area into the resource areas.

Coffer dams constructed using sheet piling or large sandbags (Trade names such as "the Big Bag" or "DamItDams") may be used to temporarily isolate and contain a work area in standing water.

When working in standing water, an oil absorbent boom, in addition to a silt curtain or other temporary barrier, shall be placed around the work area for spill prevention.

Work in drinking water reservoirs or other waters may require extensive regulatory agency review, even for maintenance work, which could result in additional time required for permitting, review and material procurement prior to the start of work.

3.5 Dewatering

Where excavations require the need for dewatering of groundwater or accumulated stormwater, the water shall be treated before discharge. Appropriate controls include dewatering basins, flocculent blocks, filter bags, filter socks, or weir tanks. Schematics of these BMPs are included in **Appendix 4**. Water trucks or fractionation tanks may be utilized if watertight containers are desired for controlled on-site discharge or for off-site discharge into an approved dewatering area when site restrictions make it difficult to utilize other dewatering methods on-site. Dewatering discharge water shall never be directed into wetlands, streams/rivers, other sensitive resource areas, catch basins, other

stormwater devices, or substation Trenwa trenches. Dewatering flow shall be controlled so that it does not cause scouring or erosion through the use of a dewatering basin, filter sock, or equivalent. If it is determined that the chosen controls are not appropriately filtering the fine sediment from the dewatering pumpate then the National Grid Environmental Scientist shall be notified immediately and the controls shall be revised or supplemented.

When establishing a dewatering basin, consideration should be given to the anticipated volume of water and rate of pumping in determining the size of the dewatering basin. Dewatering basins shall be constructed on level ground. Once pumping commences, the basin shall be monitored frequently to assure that the rate of water delivery to the structure is low enough to prevent water from flowing, unfiltered, over the top of the basin walls. The basin shall be monitored throughout the dewatering process because the rate of filtration shall decrease as sediment clogs the filter fabric. If the basin is not appropriately filtering the fine sediment from the dewatering pumpate then the basin may need to be supplemented with a flocculent block. Field conditions shall dictate how often the basin should be inspected.

Distance to sensitive areas, direction of flow (toward or away from protected, or sensitive areas, such as wetlands, ponds, or streams), amount of vegetative ground cover between the basin and nearby sensitive areas, ground conditions (ledge, frozen, etc.), volume of water being pumped, and pump-rate, are some of the factors to be considered when determining an inspection frequency. Clogged filter fabric shall be replaced and accumulated sediment shall be removed as necessary from the basins to maintain efficacy.

Any new dewatering location (not previously reviewed and approved by the National Grid Environmental Scientist during project planning or permitting) shall be reviewed and the discharge location approved by the National Grid Environmental Scientist before use.

Complex projects that require large scale dewatering shall require individual review by the National Grid Environmental Scientist and may trigger additional permitting.

Dewatering in areas of known chemical contamination may require a separate NPDES permit, or other approval, and treatment or containment system. Consult with the National Grid Environmental Scientist.

3.5.1 Overnight Dewatering

Some projects may necessitate 24-hour dewatering for on-site construction activities. Overnight dewatering will be evaluated on a case-by-case basis by the National Grid Environmental Department.

If it is necessary to conduct overnight dewatering on a project, a dewatering plan must be submitted to the Environmental Department for review and approval **5 business days prior to beginning dewatering activities**. Sufficient knowledge of flow, discharge, and re-infiltration rate of water must be obtained and submitted for review. The Environmental Department

may require monitored dewatering for a period of time in order to provide this data in support of a request for 24-hour dewatering. The dewatering plan must include at a minimum:

1. Location of dewatering system, system components (basin, frac tank, etc), and materials.
2. Location of discharge and distance from closest wetland.
3. Location of erosion controls. A secondary perimeter of erosion controls will be required around the dewatering system for overnight dewatering.
4. Peak flow, discharge rate and re-infiltration rates.
5. Visual monitoring plan for discharge. Expected duration of dewatering.
6. Emergency provisions if overnight, unattended dewatering is proposed.

3.5.2 Dewatering Clean Up/Restoration

Basins shall be cleaned and removed as soon as dewatering is complete. Sediment removed from the dewatering basin shall be allowed to dry before being disposed of by evenly spreading it over unvegetated upland areas where erosion is not a concern if clean or removing it from the site for proper disposal. Off-site trucking of wet soils is prohibited. The sediment disposal area shall be approved by the National Grid Environmental Scientist or the Project Environmental Consultant prior to use. Stabilization measures shall also need to implemented and approved by the National Grid Environmental Scientist or the Project Environmental Consultant. Soils/sediments shall be dewatered and dried to the point practicable for either on-Site reuse or off-Site transport.

3.6 Check Dams

Check dams are a porous physical barrier installed perpendicular to concentrated storm water flow. They are used to reduce erosion in a swale by reducing runoff energy (velocity), while filtering storm water, thereby aiding in the removal of suspended solids.

Check dams should only be used in small drainage swales that shall not be overtopped by flow once the dams are constructed. These dams should not be placed in streams. Check dams are typically installed in ROWs or on other construction sites prior to the start of soil disturbing work. Per the Rhode Island Soil Erosion and Sediment Control Handbook, no formal design is required for a check dam if the contributing drainage area is 2 acres or less and its intended use is shorter than 6 months; however, the following criteria should be adhered to when specifying check dams.

- The drainage area of the ditch or swale being protected should not exceed 10 acres.
- The maximum height of the check dam should be 2 feet.
- The center of the check dam must be at least 6 inches lower than the outer edges.
- The maximum spacing between the dams should be such that the toe at the upstream dam is at the same elevation as the top of the downstream dam.

Per the NHDES stormwater manual, the use of check dams should be limited to swales with longitudinal slopes that range between 2 to 5 percent that convey drainage from an area less than 1 acre. Existing conditions that exceed these limitations should be assessed in the field and discussed

with the National Grid Environmental Scientist to determine the viability of this BMP for the specific application. Check dams are often comprised of stone, straw bales, sand bags, or compost/silt socks. Use of check dams should be coordinated with the National Grid Environmental Scientist to ensure that the material selection, spacing and construction method are appropriate for the site. Check dams composed of biodegradable materials (e.g. straw bales or wattles, wood chip bags) may require periodic replacement for continued proper functioning[1]. Refer to BMPs in **Appendix 4**.

3.7 Water Bars

Water bars should be used on sloping ROWs to divert storm water runoff from unstabilized or active access roads when needed to prevent erosion. Surface disturbance and tire compaction promote gully formation by increasing the concentration and velocity of runoff. Water bars are constructed by forming a ridge or ridge and channel diagonally across the sloping ROW. Each outlet should be stable. The height and side slopes of the ridge and channel are designed to divert water and to allow vehicles to cross. When siting water bars, consideration shall be given to the sensitivity of the area receiving the diverted runoff. For example, runoff should not be directed into a wetland, waterbody, other environmentally sensitive areas, or to private property or public roadways. Refer to BMPs in **Appendix 4**.

3.8 Retaining Walls

In some situations, retaining walls comprised of concrete blocks, gabions, boulders or other comparable materials may be required to stabilize the shoulder of existing access roads and/or supplement required erosion controls. Installation of such measures shall not be allowed as a maintenance activity. Should these controls be considered for a project, it shall be reviewed by the National Grid Environmental Scientist, as design and additional permitting may be required.

3.9 Slope Stabilization

Temporary slope stabilization practices help to keep exposed, erodible soils stabilized while vegetation is becoming established. Acceptable temporary slope stabilization practices may include the use of erosion control blankets, or hydraulic erosion control. Erosion control blankets, often comprised of natural fibers (e.g., jute, straw, coconut, or other degradable materials) are a useful slope stabilization, erosion control and vegetation establishment practice for ditches or steep slopes. Blankets are typically installed after final grading and seeding for temporary or permanent seeding applications. Hydraulic erosion control practices, including Bonded Fiber Matrix or hydroseed with a soil stabilizer (e.g., tackifier and/or mulch) may be an acceptable or desirable alternative form of temporary slope stabilization. For all practices, manufacturer's specifications should be followed for installation depending on slope and other field conditions. Consult the National Grid Environmental Scientist prior to selecting and installing any slope stabilization practices. Refer to BMPs in **Appendix 4**.

[1] Grass growth on a biodegradable type check dam is evidence that the material is decomposing. While this doesn't mean it is no longer functioning, it means it may be in a weakened condition and could potentially fail under high flow velocity. It is acceptable for grass to be growing on a stone check dam.

3.10 Maintenance of Sedimentation and Erosion Controls

Sedimentation and erosion controls shall be maintained in good operational condition during the course of the work. This includes, but is not limited to, replacing straw bales that are no longer in good condition, re-staking straw bales, replacing or re-staking silt fence, and removing accumulated sediment. Remove sediment before it has accumulated to one half the height of any exposed silt fence fabric, straw bales, other filter berm, check dams or water bars. Accumulated sediment shall be removed from sedimentation basins to maintain their efficacy. Manage the removed sediment by evenly spreading it over unvegetated upland areas where erosion is not a concern, by stockpiling and stabilizing, or by disposing of off-site. Stabilization measures shall also need to be implemented and approved by the National Grid Environmental Scientist or the Project Environmental Consultant. Where a SWPPP has been prepared for a specific site, the guidelines documented therein shall govern the management of sediment.

4.0 Right-of-Way (ROW) Access

Whenever possible, access shall be gained along existing access routes or roads within the ROW. However, in some cases there is no existing access. In many cases, temporary access can be utilized. The following practices provide general guidance on accessing a ROW. Check with a National Grid Environmental Scientist to determine if any environmental permitting is required before utilizing a temporary access.

Note that the building of new roads or enlargement of existing roads is **prohibited** unless this activity is allowed by a project-specific permit, and the new roads appear on the Site Plans that were authorized in the regulatory approvals.

4.1 Off-ROW Access

Off-ROW access shall be evaluated for wetlands, rare species, cultural resources and other potential sensitive receptors, as applicable. National Grid Real Estate and Stakeholder Relations shall also be contacted as soon as possible once off-ROW access is determined to be needed.

4.2 Stabilized Construction Entrance/Exit for Access to ROWs from Public or Private Roads

A suitable (minimum 15-foot wide by 50-foot long) construction entrance/exit shall be installed at the intersection of the ROW access road/route with public/private paved roads, or other such locations where equipment could track mud or soil onto paved roads. The construction entrance/exit should be comprised of clean stone installed over a geotextile fabric. Geotextile fabric may be omitted for permanent construction entrances/exits on a case-by-case basis with the approval of the National Grid Environmental Scientist. Refer to BMPs in **Appendix 4**.

Construction entrance areas shall be monitored and maintained to ensure that stone or other material is not deposited onto the roadway, causing a safety concern. Where track-out of sediment has occurred onto a roadway, it shall be swept off the road by the end of that same work day.

If a construction entrance/exit is clogged with sediment and no longer functions, the sediment and stone may require removal and replacement with additional clean stone (clean stone refreshment) to ensure this tracking pad is performing its intended function adequately. Heavier traffic use may require this clean stone refreshment multiple times throughout a project. Reinforcement of these stabilized construction entrance/exits with asphalt binder or asphalt millings is not likely to be considered "maintenance" and may trigger additional permitting requirements[2]. In some cases, heavily used construction entrances/exits may benefit from the installation of a 5-15 foot strip of asphalt binder or asphalt millings closest to the paved roadway to capture any stone that is tracked from the stone apron. Such cases shall be evaluated on an individual basis with the National Grid Environmental Scientist.

Once work is complete, the construction entrance/exit shall either be removed or retained, depending upon future maintenance-related access needs, property ownership, and/or project-specific approvals. If removed, the area shall be graded, seeded (if adequate root and seed stock are absent) and mulched. Proper approvals for leaving access roads in place shall be obtained; contact the National Grid Environmental Scientist and Property Legal.

4.3 Maintenance of Existing Access Roads

In many cases, the existing access road may need to be maintained to allow passage of the heavy equipment required for scheduled maintenance work. Access roads cannot deviate from the approved and permitted access plans. Maintenance of these roads may include adding clean gravel or clean crushed stone to fill depressions and eroded areas. This activity shall be conducted only within the width of the existing access road footprint and does not include widening existing access roads

If gravel begins to migrate onto the existing vegetated road shoulder, this gravel shall be removed during the project and/or after the completion of use of the road to ensure the road fill is not spreading into adjacent resource areas, or resulting in the road becoming much wider than its pre-existing or permitted condition. In some areas of mapped rare species habitat or other sensitive areas where project-specific permit conditions require the prevention of the migration of sediments into adjacent resources, an engineered stabilization system (e.g., GeoWeb or similar) may be suitable to prevent sedimentation while allowing for unrestricted wildlife migration.

In Massachusetts, any proposed widening of access roads in turtle Priority Habitat would require individual consultation with NHESP and, depending on the level of impact proposed, may require a Project Review filing. The limited filling of ruts or potholes is compatible with the National Grid Operation and Maintenance Plan approved by NHESP under the Massachusetts Endangered Species Act, however, severely rutted access roads in turtle Priority Habitat that require extensive linear feet of stone for safe passage will require individual consultation with NHESP.

[2] Depending on the road, use of an asphalt binder or asphalt millings as a construction entrance/exit may trigger state or local permit requirements.

Major reconstruction projects may require multiple permits. In all cases, the fill to be used for existing access roads shall be clean and free of construction debris, trash or woody debris. Use of processed gravel may be approved by the Person-In-Charge and the National Grid Environmental Scientist, on a case-by-case basis. If clean stone is used then addition of more erosion controls may not be necessary.

4.5 Maintenance of Existing Culverts

Damaged culverts may not be repaired or replaced without consulting with the National Grid Environmental Scientist to determine if a permit is required. For functioning culverts, care shall be taken to protect adjacent wetlands and watercourses by installing appropriate sedimentation and erosion controls around the downstream end of the culvert. Culverts shall be repaired/replaced in kind and shall not be changed in size unless approval has been obtained from the National Grid Environmental Scientist. In-kind replacement is replacement using the same material, functional inverts, diameter and length as the existing culvert. Changes to any of these characteristics shall require permitting. Installation of any **new** culvert is not allowed without obtaining all necessary permits first. Refer to BMPs in **Appendix 4**.

If, at the time of anticipated replacement, there is heavy flow through the culvert, the Person-In-Charge shall consult with the National Grid Environmental Scientist, to verify whether the culvert shall be replaced at that time. Water may need to be temporarily diverted during culvert repair/replacement. There typically are seasonal restrictions limiting both the replacement of existing culverts as well as installation of new culverts to the low-flow period. The low-flow period can vary from state to state. If any unexpected conditions are encountered during culvert replacement, the National Grid Environmental Scientist shall be contacted immediately prior to the work being completed for additional consultation.

4.6 Temporary Construction Access over Drainage Ditch or Swale

In some situations, construction access from paved roads onto ROWs may require the crossing of drainage ditches or swales along the road shoulder. In these situations, the installation of construction mats, mat bridges or temporary culverts may facilitate construction access over the ditches or swales. These culverts shall be temporary only, sized for peak flow, and shall be removed after construction is complete. Consult with the National Grid Environmental Scientist prior to installation. In addition, if access over existing culverts may require extending the culvert, consult with the National Grid Environmental Scientist. Refer to BMPs in **Appendix 4**.

4.7 Construction Material along ROW

After preparing a site by clearing and/or installing any necessary erosion and sediment controls and prior to the start of construction, material such as poles, cross-arms, cable, insulators, stone and other engineered backfill materials may be placed along the ROW, as part of the project. The stockpiling of stone and other unconsolidated material on construction mats shall be avoided, if determined necessary due to access and work pad constraints, the material must be placed on a geotextile fabric and be properly contained with a sedimentation barrier such as straw wattle. No construction material shall be placed in wetlands or other sensitive resource areas unless authorized by the National Grid Environmental Scientist or Project Environmental Consultant.

5.0 Winter Conditions

5.1 Snow Management

Refer to **Appendix 6** for the current Snow Disposal Guidelines.

5.2 De-Icing

Where allowed, calcium chloride is preferred as a de-icing agent when applied according to manufacturer's guidelines in upland areas. Sand shall be used on construction mats through wetland areas.

Consult with the National Grid Environmental Scientist on de-icing agents when working in a facility or substation close to resource areas. Many municipalities have specific requirements for de-icing agents allowed within 100 feet of wetland resources and other sensitive areas.

5.3 Snow and Ice Management on Construction Mats

Proper snow removal on construction mats shall avoid the formation of ice. To avoid the formation of ice, snow shall be removed from construction mats before applying sand. Prior to their removal from wetlands, sand shall be collected from the construction mats and disposed of in an upland area. A round street sweeping brush mounted on the front of a truck may be an effective way to remove snow from construction mats. Propane heaters may also be suitable solutions for snow removal and/or de-icing of construction mats.

Once construction mats are removed, wetlands shall be inspected for build up of sand that may have fallen through construction mats. Care shall be taken to inspect wetland crossings as each mat is removed to ensure sand is properly removed and disposed of off-site.

6.0 Construction Mats

The use of construction mats allows for heavy equipment access within wetland areas. The use of construction mats minimizes the need to remove vegetation beneath the access way and helps to reduce the degree of soil disturbance and rutting in soft wetland soils. Construction mats most often used by National Grid are wooden timbers bolted together typically into 4-ft by 16-ft sections, wooden lattice mats, or composite mats. In some cases, construction mats or other mats are used for staging or access in upland areas based on site conditions (e.g., agricultural field access). Refer to BMPs in **Appendix 4**.

Typically construction mats may be installed on top of the existing vegetation, however in some instances cutting large woody vegetation may be required. Check with National Grid Environmental Scientist prior to cutting or clearing vegetation for construction mat placement.

Where an extended period of time has lapsed since wetland delineation and start of construction, and new vegetative growth has concealed wetland flagging or flagging is simply no longer obviously visible, wetland boundaries should be re-flagged where necessary prior to the installation of matting.

Follow the approved plans in the EFI for construction mat installation and do not deviate from the plans. **Any deviation from the approved plans needs to be communicated immediately to the National Grid Environmental Scientist as it may require additional permitting, require stopping the project or result in a permit violation or revocation.**

6.1 Construction Mats and Mowing

Close coordination with the mowing contractor shall be required to ensure that access plans are followed, and construction mats are utilized when necessary. Sometimes mowing contractors may have to work off the leading edge of a construction mat to mow in order to lay the next construction mat and continue further into the wetland. Under no circumstances shall trees or shrubs be allowed to be pulled out of the wetland by the root ball. The root ball of trees and shrubs shall remain intact. Chipping debris and excessive amounts of slash shall not be placed in wetlands or other resource areas. In some instances, it may be beneficial to pile a reasonable amount of slash within a nearby upland area to create habitat for wildlife. This activity shall be approved by the National Grid Environmental Scientist.

6.2 Stream Crossings and Stream Bank Stabilization

Stream crossings shall be bridged with construction mats or other temporary minimally-intrusive measures unless fording is acceptable for the site and is authorized by the National Grid Environmental Scientist. Care shall be taken when installing a construction mat bridge to insure that the stream bed and banks are not damaged during installation and removal and that stream flow is not unduly restricted. Where stream width allows, construction mats shall be installed to span the watercourse in its entirety without stringer placement in the water or any restriction of stream flow. Environmental permits may be required to cross or disturb protected waters, depending upon state-specific regulatory requirements. Refer to BMPs in **Appendix 4**. Immediately following construction mat removal, all stream banks shall be stabilized and restored to prevent sedimentation and erosion.

6.3 Cleaning of Construction Mats

Mats shall be certified clean by the vendor prior to installation. The vendor shall use the certification form provided as **Appendix 5** to document compliance. Clean is defined as being free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site. Any equipment or timber mats that have been placed or used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project site to prevent the spread of invasive species from one area to another[3]. **Mats shall be cleaned prior to being removed at the completion of the project: exceptions to this requirement**

[3] On ROW projects where multiple wetlands may be dominated by the same invasive species, cleaning may not be required for movement along the ROW. Check with the National Grid Environmental scientist for guidance.

may be made on a case-by-case basis. Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of construction mats.

6.4 Stone Removal for Construction Mat Placement

For situations where the matting contractor determines that stones or boulders must be removed or relocated within wetland areas in order to install safe and level structure work pads or access roads the boulders shall be moved in a manner which does not result in significant soil disturbance (i.e., pushing with a bull dozer is not allowed). The boulders shall not be placed on any existing vegetated areas within wetlands or within vernal pools. When numerous boulders shall be removed from a wetland area, they shall be deposited in an upland area outside of the flagged wetland limits, outside of any cultural resource areas and outside of any RTE species populations. Any boulders that shall be placed within buffers (In MA, the 100-foot buffer zone, and in RI, the 50-foot Perimeter Wetland, 100-foot or 200-foot Riverbank Wetlands) shall be placed to avoid causing soil disturbance and they shall be within an approved limit of work. When there is a significant number of boulders that need to be removed, the National Grid Environmental Scientist shall be consulted for guidance.

6.5 Transition onto Mats

Erosion controls and stone or wood chip ramps shall be installed to promote a smooth transition to and minimize sediment tracking onto construction mats. Geotextile may be added beneath stone or wood chip transitions to facilitate removal, as necessitated by site or permit conditions. Mat transitions shall be removed once construction mats have been removed and during restoration. Refer to BMPs in **Appendix 4**.

6.6 Construction Material on Mats

The stockpiling of stone, drill spoils and other unconsolidated material on construction mats shall be avoided unless determined necessary due to access and work pad constraints. Additional controls, such as watertight mud boxes and geotextile/filter fabric over or between construction mats shall be considered for stockpile management. If material is placed on construction mats and falls through into wetlands, the material must be removed by hand. Saturated soils shall be allowed to dewater prior to off-site transport for sufficient time to ensure that water/sediment is not deposited onto construction mats or public roads during transport. Heavy machinery shall not be left overnight on mats located within floodplain unless approved by the National Grid Environmental Scientist, the machinery is still in use, and removal of the equipment requires the use of additional equipment to move it and would increase vehicle trips in/ou of wetlands. In these situations and when approved by the National Grid Environmental Scientist, the equipment shall be secured against vandalism and secondary containment measures shall be employed where feasible. Mat anchoring shall be evaluated, see below.

6.7 Mat Anchoring

The National Grid Environmental Scientist and Project environmental consultant shall indicate to the project team when mat anchoring may or shall be necessary. The matting contractor will propose the method of mat anchoring, which will be approved by the National Grid Environmental Scientist and the

National Grid Construction Supervisor. The need for anchoring should be noted in the project EFI, on the project access and matting plans, and in the scope of the bid document (if externally sourced).

Anchoring of construction mats should be considered when any of the following conditions are presented at a project work location:

Location	Considerations
Stream crossings Shorelines of Ponds/Lakes Wetlands Floodplains	When located in a mapped flood area (A). When mapped 100-year flood elevations (AE) are greater than 2 ft above existing grades. Where past flash flood events have occurred. Where steep terrain is present or surrounds the project location. When mats will be in place during hurricane season for greater than 2 weeks.
Tidal areas	When located in a Velocity (V or VE) Zone. When mats will be in place during a moon tide cycle. When mats will be in place during hurricane season for greater than 2 weeks.

Examples of mat anchoring are provided below, but the implementation methods for anchoring mats are not limited to these examples. Where anchoring is determined to be necessary, the matting contractor should propose a method suitable based on field conditions and that takes crew safety, slip/trip/fall hazards, size of matting footprint, and other project and site-specific factors into consideration. Refer to BMPs in **Appendix 4**.

Limited sets of mats

- Cable or rope in chain pockets and run linearly, or
- Linear ropes anchored using helical screws, manta ray anchors, or posts.

Larger sets of mats or those without chain pockets

- Chain link fence posts or other posts driven in along mat edge every 3-4 feet and ropes then laced across mats between opposing posts before storm event, or
- Anchor bolts added to mats, then cable is laced between bolts and tied to helical or manta ray anchor.

6.8 Corduroy Roads

Corduroy roads are a wetland crossing method where logs are cut from the immediate area and used as a road bed to prevent rutting from equipment crossing. This technique is designed to be used in areas of wetland crossings where there is no defined channel or stream flow and should never be used in streams. Corduroy logs shall be placed in the narrowest area practicable for crossing with the logs

placed perpendicular to the direction of travel across wet area. The use of corduroy logs shall only be in emergencies when approved by the National Grid Environmental Scientist or when they have been specifically permitted as part of a project. Refer to BMPs in **Appendix 4**.

6.9 Construction Mat Removal

Once construction mats are removed, wetlands shall be inspected for build up of sand or other materials that may have fallen through construction mats. Care shall be taken to inspect wetland crossings as each mat is removed to ensure any materials are properly removed and disposed of off-site.

6.10 Utility Air Bridging

In ROWs where other utility facilities (including but not limited to gas, oil, fiber optic, electric, water, and sewer) are co-located within the transmission ROW, bridging may be required to cross those facilities. The project team shall coordinate with the respective utility company prior to determining if bridging or permanent crossings are required.

7.0 LGP Equipment Use

Only when approved by the National Grid Environmental Scientist on a case-by-case basis shall equipment with a LGP **psi that meets the state-specific USACE General Permit requirement when loaded** be allowed to access through wetlands. Refer to the state-specific General Permit for the definition of LGP in each state at: http://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/, or to the summary table provided below. The National Grid Environmental Scientist's approval of the use of LGP equipment through wetlands depends on several criteria including:

- Time of year. LGP equipment use may be allowed if weather and field conditions at the time of construction are suitable to eliminate/minimize the concern of rutting or other impacts. Frozen, frozen snow pack, low flow, drought conditions, or unsaturated surface soil conditions are typically acceptable conditions. Spring and fall construction, due to the typical higher precipitation, are not suitable times of year for LGP equipment use.
- Number of trips. Multiple trips through a wetland have shown to increase the potential for damage and require matting. LGP equipment use shall likely only be approved if trips are limited to one trip in and one trip out.
- Type of wetland system. Some wetlands have harder soils/substrate, and may be passable without causing significant damage. Some of the wetlands along National Grid ROWs have existing hard bottom roads that have been vegetated over time and may be traversed with LGP equipment without construction mats.
- Emergencies. LGP equipment use may be allowed during emergency or storm conditions for outage restoration.
- State-specific USACE General Permit Performance Standards. The standard is for no impact to the wetland, which may be obtained by using LGP equipment **when loaded**). "*Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground*

pressure (as specified in the USACE GP), or shall not be located directly on wetland soils and vegetation; it shall be placed on construction mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation."

- Local bylaws. Municipal wetland bylaws, where applicable, shall be reviewed for prohibitive conditions or applicable performance standards.

LGP equipment is prohibited in the following resources areas:

- Stream crossings
- State listed-species habitat
- Outstanding Resource Waters (ORWs)
- Vernal pools
- Archaeological sensitive areas

Where LGP equipment use is desired in lieu of construction mats, the construction supervisor should identify these areas on marked-up access plans. A site visit with the Project Environmental Monitor should be scheduled to assess if the proposed locations are potential candidates. The Project Environmental Monitor will document potentially suitable locations and dismiss others as unsuitable.

ACOE New England District General Permit Requirements

State	Restrictions	Maximum PSI (when loaded) for Use without Mats	Reference
MA	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Equipment must be operated on adequately dry or frozen conditions such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands.	3 psi	MA General Permit, General Condition 13
NH	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands.	4 psi	NH General Permit, General Condition 17
VT	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Note: Written authorization from the Corps required to waive the use of mats during frozen or dry conditions.	3 psi	Vermont General Permit, General Condition 14
RI	*One of the following must apply:* Equipment operated within wetlands shall: a) Have low ground pressure; b) Be placed on timber mats that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) Be operated on frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands.	6 psi	Rhode Island General Permit, General Condition 15

State	Restrictions	Maximum PSI (when loaded) for Use without Mats	Reference
	Note: Written authorization from the Corps required to waive the use of mats during frozen or dry conditions.		

Due to the fact that ground conditions may change between the time of the evaluation and construction, LGP equipment approval is required **at the time of construction for each wetland crossing** and shall be dependent upon the above conditions. In addition, LGP equipment use and approval shall be assessed by the National Grid Environmental Scientist or Project Environmental Monitor during construction on a continuing basis

Once a location is approved for the use of LGP equipment:

- The Construction Supervisor must check-in with the Project Environmental Monitor at least two weeks before construction begins to ensure conditions remain suitable for LGP equipment use, and weather conditions are favorable.
- The Project Environmental Monitor must observe the equipment when in use.
- LGP equipment use shall cease immediately if field conditions are found to be unsuitable (i.e. soil rutting greater than six inches or the destruction of vegetation root systems beyond the capacity of natural revegetation).
- **If wetlands damage occurs, the use of the LGP equipment shall be suspended, and the wetlands be restored.**
- Any LGP equipment used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project site to prevent the spread of invasive species from one area to another.

8.0 Soil Disturbing Activities

8.1 Dust Control

Cutting activities shall be conducted to minimize the impacts of dust on the surrounding areas. Dust suppression is an important consideration. Water or other National Grid approved equivalent in accordance with the manufacturer's guidelines may be used for dust control along ROWs in upland areas. During application of water for dust control, care shall be taken to ensure that water does not create run-off or erosion issues. Refer to BMPs in **Appendix 4.**

8.2 Clearing

Clearing is not allowed without specific permission as it constitutes soil disturbance under several regulatory programs and may trigger permitting by increasing the project's footprint of disturbance. If clearing is required for a project, the limit of clearing shall be established with flagging or construction

fencing and/or erosion controls. Clearing shall be done in accordance with project specific permits. Following the completion of clearing, the limits of work shall be re-established. Refer to BMPs in **Appendix 4**.

8.3 Grubbing

Grubbing is not allowed without specific permission as it constitutes soil disturbance under several regulatory programs and likely triggers permitting by increasing the project's footprint of disturbance. If grubbing is required for a project, the limit of grubbing shall be re-established after clearing has been completed. The area of grubbing shall be identified with flagging or construction fencing and/or erosion controls. Grubbing shall be conducted in accordance with project-specific permits.

8.4 Blasting, Noise and Vibration Control

If blasting is anticipated, the project team, including the National Grid Environmental Scientist, shall be consulted. If possible, plan work in residential areas to avoid noisy activities at night, weekends or during evenings. Emergency work in residential areas should be carried out in such a way as to keep noise to a minimum at night and weekends. Equipment should be maintained as per the manufacturer's guidance to minimize noise and vibration.

Work plans must consider local noise ordinances and provide specific controls to ensure noise levels are maintained within specified limitations.

8.5 Site Grading

The work site shall not be graded other than in accordance with project permits. Any proposed grading shall be reviewed by the National Grid Environmental Scientist for wetlands, rare species habitat, areas of cultural and historical significance, and other environmentally sensitive areas prior to start of work. In some cases, additional testing for cultural or historical resources may be triggered by proposed grading; alternatives to grading may be sought due to protracted time frame of obtaining the permit associated with testing and performing the testing. Grading outside of a regulated area shall be kept to the minimum extent necessary for safe and efficient operations and shall comply with the project permit plans.

Grading shall be performed in a manner which does not increase the erosion potential at the Site (e.g., terraces or slope interruptions shall be utilized). Graded sites shall be promptly stabilized by applying a National Grid approved seed mix (if adequate root and seed stock are absent), and mulching with hay, straw or cellulose (use straw or cellulose hydromulch where the potential introduction of invasive plant species is of concern) to reduce erosion and visual impact, as soon as possible following completion of work at the site. Grading within a regulated area shall be subject to the review and approval of the National Grid Environmental Scientist.

In some municipalities, site grading activities require the prior approval of the Town Engineer, Building and Zoning Official, or Public Works Director. Local ordinances or bylaws should be reviewed for applicable restrictions and permitting thresholds

8.6 Grounding Wells

The installation of grounding wells shall require erosion controls and proper soil management. Due to the typical depth required for grounding wells (typically 50 to 200 feet or more), erosion controls shall be installed around the proposed well location when working in buffer zone, in proximity to sensitive resources or near slopes. Also, dewatering basins may be required for the proper management of groundwater. The National Grid Environmental Scientist shall be consulted for the disposal of any excess soil.

8.7 Counterpoise and Cathodic Protection

The installation of counterpoise or cathodic protection shall require erosion controls and proper soil management. The National Grid Environmental Scientist shall be consulted for the disposal of any excess soil.

8.8 Work Pads

When work pads are being constructed, only clean material shall be used in their construction. Work pads shall only be constructed in areas approved by the National Grid Environmental Scientist and shown on the approved permit access plans.

8.9 Site Staging and Parking

During the project planning and permitting process, locations shall be identified for designated crew parking areas, material storage, and staging areas. Where possible, these areas should be located outside of buffer zones, watershed protection areas, and other environmentally sensitive areas. Any proposed locations shall be evaluated for all sensitive receptors and for new projects requiring permitting, shall be incorporated onto permitting and access plans.

8.10 Soil Stockpiling

Soil stockpiles shall be located in upland areas and, if in close proximity to wetlands and wetland buffers, shall be enclosed by staked straw bales or another erosion control barrier. The stockpiling of stone, drill spoils and other unconsolidated material on construction mats shall be avoided unless determined necessary due to access and work pad constraints. Additional controls, such as watertight mud boxes and geotextile/filter fabric over or between construction mats shall be considered for stockpile management. If material is placed on construction mats and falls through into wetlands, the material must be removed by hand. Saturated soils shall be allowed to dewater prior to off-site transport for sufficient time to ensure that water/sediment is not deposited onto construction mats or public roads during transport.

8.11 Top Soil/High Organic Content Soil

When the work site requires excavation and grading, the top soil shall be stockpiled separately from the material excavated. This top soil shall be spread as a top dressing over the disturbed area during restoration of the site.

In some instances where work is occurring within wetlands, high organic content soil may be displaced. Such high organic content soil shall be segregated from other excavated materials and stockpiled for

use in wetland restoration areas. Care shall be taken to minimize the handling of high organic content soil. Preferably, the soil shall be stockpiled in one location until it is moved to the restoration area.

9.0 Stone Wall Dismantling and Re-building

Removal or alteration of stonewalls shall be avoided, whenever possible. As appropriate, some stonewalls removed or breached by construction activities shall be repaired or rebuilt. Rebuilt stone walls shall be placed on the same alignment that existed prior to temporary removal, to the extent that it shall not interfere with operations. The removal and rebuilding of stone walls requires approval from the National Grid Environmental Scientist and Property Legal, and may require several weeks lead time for coordination. Note that not all states allow this technique and that dismantling may not be allowed at all due to quality or significance of the wall. Once a stone wall has been identified as requiring dismantling, the following procedures shall be followed:

- Identify stone wall that is required to be temporarily dismantled and notify project team that a site visit is warranted to review the stone wall.
- The National Grid Environmental Scientist, with support from Property Legal and/or cultural/historical consultant, shall determine if permitting or additional permissions are required prior to dismantling stone wall.
- Once permit or permissions have been received, full documentation of wall dimensions (measurements and photographs) shall be submitted to the National Grid Environmental Scientist. Documentation of the wall dimensions shall be marked onto a copy of the applicable EFI access plan (or equivalent plan) with a useful reference for future locating such as GPS coordinates and/or measurement from a permanent reference point (closest structure location or closest cross street, etc.). The wall shall be photographed from all sides with a written description of the photograph (i.e. southern side of wall looking north). In addition, documentation of the length of wall to be dismantled shall be recorded. Take special care to note if granite property bounds (or other marker) are located within the wall so additional survey can be accomplished prior to dismantling in cases where the stone wall represents a property boundary. Site visits by project team (which shall include the National Grid Environmental Scientist) are a mandatory requirement prior to dismantling.
- No dismantling shall take place until documentation has been submitted to the National Grid Environmental Scientist and approved as sufficient documentation.
- Stones from the wall shall be removed from the work area and temporarily stored in nearby location, away from wetlands; buffer zones; rare species habitat and other historical/archeological concerns.
- Avoid dismantling via the “bulldozer” method when possible as this method makes it nearly impossible to rebuild the wall in the same alignment due to its uncontrolled nature. Dismantling shall be conducted either by hand, with stones stacked as they are removed, or on less “sensitive” walls to use an excavator with a thumb to grab each stone and build a stockpile. Significant ground disturbance below the wall shall be avoided.

- Once construction and access in the area has been completed, the wall shall be rebuilt to pre-dismantled conditions or better. If rebuilding a stone wall can not be placed on the same alignment that existed prior to temporary removal, approval from the National Grid Environmental Scientist and Property Legal is required. **Note that if the wall represents a legal property boundary or is historically or culturally significant (or was previously determined to be in a very high quality condition), a professional stone masonry company may be required to document wall alignment, and conduct the dismantling and rebuilding.**

10.0 Avian Nest Removal

Avian nest removal shall be done in accordance with EG-304. Consult the National Grid Environmental Scientist prior to removing any nests. There are seasonal restrictions of the removal of avian nests and federal or state permits may be necessary prior to removal.

11.0 Drilling Fluids and Additives

When installing subsurface structures, there may be a need to utilize drilling aids such as slurries, borehole sealants, and other additives. All necessary steps shall be taken by National Grid personnel and contractors to prevent potential adverse effects on drinking water aquifers, groundwater quality, and wetlands when utilizing drilling aids. Efforts should be made to utilize natural bentonite clay-type materials, in place of polymer-based drilling aids. Regardless of the specific product type, the following requirements shall be met:

- Drilling aids must be NSF certified and manufactured to NSF-ANSI 60 standards. https://www.nsf.org/newsroom_pdf/NSF-ANSI_60_watemarked.pdf
- Product use must be in accordance with manufacturer's specifications and instructions.
- National Grid personnel or their contractor shall provide all the necessary information regarding the proposed product to be used to National Grid's Environmental Sustainability, Compliance and Licensing & Permitting Department as early as possible in the project planning phase. If the work is being performed by a contractor, this information must be included as part of their initial bid package.
- If polymer-based products are proposed for use, product information shall be included in all related environmental regulatory filings and frac-out plans, if possible.
- A qualified individual shall be designated who will confirm/verify and document the specific use of a drilling aid at each location. This will include add-mix ratios, surface area treated, volume of water within excavation, volumes/weight of additives used, and any other measurements specified by the manufacturer. No mixing will be allowed in the drilled shaft excavation.
- The Contractor or National Grid crew performing the work is responsible for neutralizing all drilling products, as applicable, in accordance with the manufacturer's specifications. This shall be performed following removal from the excavation and while held in holding tanks. A

qualified person shall be designated by the Contractor who will confirm/verify and document the appropriate neutralization activity at each location, as necessary.

- Waste drilling aids (neutralized or not) or soils that may have come into contact with drilling aids will not be disposed of on National Grid properties, discharged to any ground surface or subsurface, waterbodies, wetlands or placed on 3rd party properties.
- All product use must be completed in strict adherence with the management, storage, mixing, transporting, disposing and any other requirements of state and federal regulatory approvals and permits, as applicable.
- Relevant documentation shall be maintained by the Contractor or National Grid crew performing the work, and shall include volume of material treated and disposed and the location/facility at which it was disposed.
- National Grid will not be identified as the disposal generator for any polymer based slurry waste or additives generated by Contractor activities.
- The Contractor or National Grid crew performing the work assumes full responsibility for the safe storage of all polymers and additives during use and also assumes full responsibility for improper use and application of said polymers and additives that are deemed to have contravened aquifer and/or groundwater quality.
- National Grid reserves the right to refuse and terminate the use of any specific drilling aid at any time.

Regardless of the type of drilling aid utilized, the Contractor or National Grid crew performing the work is responsible for properly treating, containerizing, testing, transporting and disposing of any/all fluids and solids generated during their activities. All wastes must be disposed of in accordance with federal and state regulations. Relevant documentation shall be maintained and shall include volume of material treated and disposed and the location/facility at which it was disposed.

12.0 Water Withdrawal for Geotechnical Investigations

The use of water during geotechnical drilling operations may be required, and is most common during the “drive and wash” drilling technique, where 4- or 6-inch diameter casing is driven into the ground, and the soil inside the casing is washed out using a pump and hollow rods. Soil samples are generally collected at periodic intervals using a split spoon sampler (e.g., every 5 vertical feet).

The National Grid Environmental Scientist and/or Project Environmental Monitor may approve withdrawals from wetlands and waterways on a case-by-case basis should the geotechnical team advise no other options are available. Generally, the amount of water required for withdrawal is between 100 and 200 gallons, and the water is then recycled continuously in the drilling process. Certain scenarios may require additional water usage if water is lost down the boring (e.g., lost due to bedrock fractures during rock coring). The following general guidance should be adhered to when determining whether water withdrawals may be allowed during geotechnical investigations on the ROW. Approval from the National Grid Environmental Scientist and/or Project Environmental Monitor is required prior to initiating water withdrawals during geotechnical investigations.

- Withdrawals from perennial streams, ponds, lakes and large wetlands systems are preferred over small isolated wetlands to ensure the water level, water table, and hydroperiod are not affected. Prior to start of work, the Contractor shall identify which water source they prefer to withdraw from. The National Grid Environmental Scientist and/or the Project Environmental Monitor will confirm whether these sources are appropriate.
- Care should be taken to avoid alteration of wetlands or the beds and banks of surface waters. Examples of alterations include, but are not limited to, the following:

  (a) the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns and flood retention areas;

  (b) the lowering of the water level or water table;

  (c) the destruction of vegetation; and

  (d) the changing of water temperature, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of receiving waters.
- Wetlands and waterways providing habitat for rare species should be avoided unless all other options are exhausted. Under no circumstances should water be withdrawn from a Vernal Pool.
- Withdrawal pipes or stingers should be elevated off the bottom of wetlands and streams during the duration of pumping. Additionally, fabric or screening should be covering the withdrawal pipes to eliminate inadvertent harm to wildlife.
- Withdrawals should be performed in a manner that does not damage vegetation, disturb sediment, or result in the release of temporary or permanent fill material (e.g., sediment, spoils, or turbid water) into the wetland/waterway. Additional detail from geotechnical experts may be required to solidify BMP recommendations.
- Any water used for geotechnical drilling operations (including water withdrawn from surface water, brought on-site, or from other sources) shall be discharged into the open borehole or to an upland area such that the water infiltrates to the ground and is not discharged to a wetland or surface water resource area. Consultation with the National Grid Environmental Scientist and/or the Project Environmental Monitor is required if this is not feasible. At no time should water withdrawals result in a temporary or permanent fill/discharge of material (e.g. sediment, spoils, or turbid water) into the wetland or waterway.
- If water sourcing options is not determined prior to mobilization, necessary water shall be brought in by tank truck. Should withdrawal from surface water sources become necessary during soil boring work, the National Grid Environmental Scientist and/or the Project Environmental Monitor shall be notified prior to beginning withdrawal. If initial withdrawal from surface water is approved by the National Grid Environmental Scientist and/or the Project Environmental Monitor, the driller may withdraw from the surface water, as long as the above criteria are met.
- If excessive water withdrawal is necessary, the National Grid Environmental Scientist and/or the Project Environmental Monitor shall be consulted to determine whether the water source is appropriate for withdrawal.
- In New Hampshire, withdrawals made from state-owned property require written permission from

the agency with primary responsibility for monitoring and/or maintaining the site.

13.0 Gates

When not in use, gates shall be locked with a company-approved lock or double locked with the property owner's lock. New gates may be installed during a project, however, installation of a gate requires permission from the property owner, and may require environmental permitting. Consult with National Grid Real Estate and the National Grid Environmental Scientist prior to installing a new gate, as well as with the appropriate engineering department for the current company gate specifications. Refer to BMPs in **Appendix 4**. Installation of ROW access restrictions (e.g., stone, bollards, other) at road crossings also require consultation with the National Grid Environmental Scientist and Property Legal.

14.0 Signage

Specific signage may be required by permits or be specified in the EFI to limit access in certain sensitive areas. Signs shall be used to clarify allowed access and sensitive areas, such as:

- "No snow stockpiling beyond this point";
- "Approved access (to structures A-F)";
- "Do not cross this area until construction mats are in place";
- "No vehicle crossing";
- "Areas to avoid"; and
- "Environmentally Sensitive Area – Keep Out."

Signs shall be used in conjunction with snow fencing or other physical barriers as demarcation for sensitive areas (e.g., rare species areas, sensitive archeological locations, etc.) that need to be protected and avoided by construction activities. In addition, permit signs required by the regulatory agencies shall be present (i.e. MADEP, RIDEM, EPA (SWPPP), ACOE, etc) at construction sites and/or ROW access points. Construction signage shall be installed and maintained by the contractor performing the work during the project. Absence of signage does not eliminate the need to comply with access plans, permit conditions, and other regulatory requirements. Refer to BMPs in **Appendix 4**.

15.0 Refueling and Maintenance Operations

15.1 Spill Prevention and Response Plan

Spill controls shall be provided on every field vehicle. Bulk storage of fuels (55 gallons or greater) shall be approved by the National Grid Environmental Scientist prior to being brought on site. The need for a field spill plan shall be evaluated specific to the project for regulatory requirements under SPCC regulations or local ordinances. A field spill plan would include information on fuels and oils being used, approximate amounts in each container or type of equipment, location, fueling location, secondary containment, response and notification procedures, including contact phone numbers, etc. All

personnel shall be briefed on spill prevention and response prior to the commencement of construction. The state-specific EI-501 and EG-502 shall be followed in the event of a spill.

Typical construction activities do not require the use or storage of large quantities of oil or hazardous materials (i.e., greater than 55 gallons). However, oil and/or hazardous materials (OHM) may be required in limited quantities to support construction or vehicle operations. Best practices shall be followed in the use and storage of OHM which include but are not limited to: storage and refueling greater than 100 feet from resource areas; maintenance of spill response equipment at work locations sufficient to handle incidental releases from operating equipment; general training for on-site personnel for spill clean up response for incidental releases of OHM; and contracting with an on-call spill response contractor that is capable of managing incidental and significant releases of OHM. There may situations that additional precautions shall be required for the storage or use of OHM (i.e., within wellhead protection areas, GA/GAA areas, Zone IIs). Storage of OHM shall be done in accordance with any applicable regulatory requirements.

15.2 Field Refueling

Small equipment such as pumps and generators shall be placed in small swimming pools or on absorbent blankets/pads, to contain any accidental fuel spills. Small swimming pools with absorbent blankets/pads, and/or other secondary containment, shall be used for refueling of fixed equipment in wetlands and should be maintained to prevent accumulation of precipitation.

15.3 Grease, Oil, and Filter Changes

Routine vehicle maintenance shall not be conducted on project sites.

15.4 Other Field Maintenance Operations

When other vehicle or equipment maintenance operations (such as emergency repairs) occur, company personnel or contractors at field locations shall bring vehicles or equipment to an access location a minimum of 100 feet away from environmentally sensitive areas (e.g., wetlands or drinking water sources). A paved area, such as a parking lot or roadway, is a preferred field maintenance location to minimize the possibility of spills or releases to the environment.

Crews shall take all usual and reasonable environmental precautions during repair or maintenance operations. Occasionally, it is infeasible to move the affected vehicle or equipment from an environmentally sensitive area to a suitable access area. When this situation occurs, precautions shall be taken to prevent oil or hazardous material release to the environment. These precautions include (but are not limited to) deployment of portable basins or similar secondary containment devices, use of ground covers, such as plastic tarpaulins, and precautionary placement of floating booms on nearby surface water bodies.

15.5 Tools and Equipment

Cleaning of tools and equipment shall be conducted away from environmentally sensitive areas (such as wetlands, buffer zones or drinking water sources) to the maximum extent possible. A paved area such

as a parking lot or roadway is preferred, to minimize the possibility of spill or release to the environment. Crews shall wipe up all minor drips or spills of grease and oil at field locations.

16.0 Stabilization Deadlines for Projects Subject to EPA Construction General Permit

16.1 Deadlines to Initiate Stabilization Activities (Permanent and Temporary)

Soil stabilization measures shall be implemented immediately whenever earth-disturbing activities have permanently or temporarily ceased on any portion of the project. The following are some examples of activities that constitute initiation of stabilization:

- Preparing the soil for vegetative or non-vegetative stabilization;
- Applying mulch or other non-vegetative product to the exposed area;
- Seeding or planting the exposed area;
- Finalizing the arrangements to have stabilization product fully installed in compliance with the deadlines to complete stabilization in Section 15.2 below.

16.2 Deadlines to Complete Stabilization Activities (Permanent and Temporary)

As soon as practicable, but no later than 14 calendar days or 7 calendar days (for areas discharging to a sensitive water) after the initiation of soil stabilization measures commence the following should be completed:

- For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and
- For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

16.3 Vegetative Stabilization (all except for arid, semi-arid, or on agricultural lands)

- Provide established uniform vegetation (e.g., evenly distributed without large bare areas), which provides 70% or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. Avoid the use of invasive species as cover.
- For final stabilization, vegetative cover must be perennial; and
- Immediately after seeding or planting a disturbed area to be vegetatively stabilized, a non-vegetative erosion control must be implemented to the area while the vegetation is becoming established. Examples include; mulch and rolled erosion control products.

16.4 Vegetative Stabilization (Agricultural Lands)

- Disturbed areas on land used for agricultural purposes that are restored to their pre-construction agricultural use are not subject to vegetative stabilization standards.

16.5 Non-Vegetative Stabilization

If using non-vegetative controls to stabilize exposed portions of your site, or if you are using such controls to temporarily protect areas that are being vegetatively stabilized, you must provide effective

non-vegetative cover to stabilize any such exposed portions of the site. Examples of non-vegetative stabilization techniques include, but are not limited to, rip-rap, gabions, and geotextiles.

17.0 Clean-up and Restoration Standards

The following steps shall be taken once construction has been completed at each location along the ROW or within the project site. The following are minimum guidelines for clean-up and stabilization standards. Please refer to permit conditions for project-specific related standards. Refer to the EFI for applicable permit requirements and to determine if the site needs to be reviewed and approved by the permitting authorities prior to removal of erosion controls.

17.1 Removal of Sedimentation and Erosion Controls

After all work has been satisfactorily completed and vegetation has been re-established to a minimum of 75% cover, and upon approval by the National Grid Environmental Scientist, all non-biodegradable materials (e.g., siltation fencing, straw bale strings, stakes, straw wattle mesh casing, etc.) shall be disposed of properly off-site.

Dependent on permit requirements, sedimentation and erosion controls may not be allowed to be removed until after inspection and approval by one or more permitting authority. In most cases, removed straw bales may be used to mulch disturbed areas. Remaining straw bales that do not block the flow of water may be left in place unless they are required to be removed pursuant to permit conditions. Straw bales that block the flow of water shall be removed.

Prior to project construction being completed, the project team will develop post-construction inspection intervals to ensure timely removal of temporary BMPs. BMPs will be removed when the area is stabilized, which typically occurs when the area has either naturally stabilized (75% cover), or seed and mulch that was installed has achieved 75% cover.

17.2 In-Situ Restoration

Unless otherwise specified in permits or prescribed by the National Grid Environmental Scientist or the Project Environmental Consultant, all disturbed areas, including stream banks, wetlands and access routes, shall be restored following the completion of work. When the work is completed and construction mats have been removed, the National Grid Environmental Scientist or Project Environmental Consultant shall conduct an inspection. Wetlands shall be inspected for build up of sand or other materials that may have fallen through construction mats. Care shall be taken to inspect wetland crossings carefully after construction mat removal to ensure any materials are properly removed and disposed of off-site.

Restoration of Soil Compaction. If rutting or soil compaction following construction mat removal is observed, the area shall be returned to pre-existing conditions, and comparable to the surrounding area, by light hand raking or by back-blading with machinery. Restoration shall be overseen by the Project Environmental Consultant or National Grid Environmental Scientist. Deep ruts (>12”) shall be filled in using available, loose soil from the work area.

Seeding and Mulching. If adequate root and seed stock are absent and have been stripped from the area, graded sites shall be promptly stabilized by applying an approved seed mix and mulching with straw to reduce erosion and visual impact. Seeding and mulching shall be completed as soon as possible following completion of work at the site. For some wetland areas, natural re-vegetation may be more appropriate than seeding disturbed sites. Wetland areas where adequate root and seed stock are absent will be seeded using an approved wetland native seed mix. For some wetland areas, natural re-vegetation may be more appropriate than seeding disturbed sites. Refer to BMPs in **Appendix 4** for seed mix tables and mulch ratio tables.

If needed, the import of quality topsoil onto the ROW will be required. Topsoil should be tested, and approved by the Project Environmental Consultant or National Grid Environmental Scientist to determine its suitability for site conditions. Fertilizers will be approved on a case-by-case basis.

For upland areas, the disturbed vegetation and soil shall be restored and stabilized[4] by regrading the area to pre-existing conditions, if needed, seeding (if adequate root and seed stock are absent) and mulching the exposed soil, and removing strings and stakes from straw bales and using broken up straw bales for the mulch. Siltation fencing, strings and stakes shall be removed for disposal as ordinary waste. Refer to BMPs in **Appendix 4** for seed mix tables and mulch ratio tables.

For sites with excess boulders, additional boulders could be used at proposed and existing gate locations to use on either side of the gates as a deterrent for unauthorized vehicle access or be placed along the edges of work pads where steep slopes are present for safety purposes. The final placement of boulders should be reviewed prior to installation with Real Estate and the National Grid Environmental Scientist or Project Environmental Consultant.

Unless otherwise specified in Project-specific permit conditions, the National Grid Environmental Scientist or Project Environmental Consultant shall develop an inspection frequency to monitor restored areas for stabilization, germination and successful revegetation.

17.3 Invasive Species

All equipment shall be certified clean[5] utilizing the attached form (**Appendix 5**) or equivalent as approved by the vendor prior to mobilization to the work site. The vendor shall use the certification from provided as **Appendix 5** to document compliance with invasive species management BMPs. Clean is defined as being free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site. Any equipment that has been placed or used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project

[4] For projects subject to the 2012 CGP, stabilization is required within 14 days, or within 7 days for sensitive areas.

[5] The **Appendix 5** certification form (or equivalent as approved by National Grid Environmental Scientist) shall be used to document the clean certification

site to prevent the spread of invasive species from one area to another[6]. **Equipment shall be cleaned prior to being removed at the completion of the project: exceptions to this requirement shall be determined on a case-by-case basis.** Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of equipment.

17.4 Cleaning of Equipment

At the completion of the project, equipment shall be cleaned prior to being de-mobilized to prevent tracking of material onto roads and causing safety issues. Consult with the National Grid Environmental Scientist prior to discharging or disposing of any waste water or waste material from the cleaning of equipment.

17.5 Access Roads

Constructed gravel roads shall be left in place following project completion unless permit conditions require their removal. Refer to the specific permit conditions for these provisions. If the road is to be removed, the crushed stone and geotextile fabric shall be removed from the work site. Seeding and/or mulching of gravel roads is generally not required, unless necessary to prevent erosion. Pre-existing sandy soils within mapped rare turtle habitat shall not be seeded unless directed by the National Grid Environmental Scientist so as to not alter nesting habitat.

17.6 Stone Work Pads

Unless permit conditions or property owner's require the removal of constructed stone work pads following project completion, constructed work pads shall be left in place. Refer to the specific permit conditions for these provisions.

17.7 Construction Materials on ROWs

As soon as the structure work has been completed, all used parts and trash are to be picked up and removed from the project site. Retired poles shall be removed in accordance with National Grid Engineering Standard SP.06.01.301. In some cases, the used material from structure work may be temporarily stored at the work area by placing it out of the wetlands or other sensitive resource area until work in the adjacent areas has been completed. However, treated wood poles shall never be stored in standing water or in wetlands. If the project is cancelled, all material shall be removed from the project site. Excess material brought to the project site shall be removed upon project completion. Consult with the National Grid Environmental Scientist on whether the work site shall be restored in addition to the measures outlined above

17.8 Improved Areas

Yards, lawns, agricultural areas, and other improved areas shall be returned to a condition at least equal to that which existed at the start of the project. Off-ROW access shall never be assumed and shall be coordinated through Real Estate before being implemented. Depending on the access point, construction matting or other BMPs may be required to prevent ruts, lawn damage, or other property damage.

[6] On ROW projects where multiple wetlands may be dominated by the same invasive species, cleaning may not be required for movement along the ROW. Check with the National Grid Environmental Scientist for guidance.

Restoration following the completion of work and any use of improved areas shall be conducted in accordance with the measures outlined above.

17.9 Property Damage

All damage to property occurring as a result of a project shall be immediately repaired or replaced. In some locations, it may be desirable to document pre-existing damage prior to work commencing in that area in order to demonstrate afterwards that the damage did not result from the project. Work crews, the Project Environmental Consultant or the National Grid Environmental Scientist shall document repairs that were performed in response to damage from unauthorized vehicle use.

17.10 Overall Work Site

Upon satisfactory completion of work, the construction personnel shall remove all work-related trailers, buildings, rubbish, waste soil, temporary structures, and unused materials belonging to them or used under their direction during construction, or waste materials from previous construction and maintenance operations. All areas shall 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 as near as possible to its original condition, where feasible. Debris and spent equipment shall be returned to the operating facility or contractor staging area for disposal or recycling (cardboard) as appropriate in accordance with EI-111.

17.11 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.

18.0 Notification of Emergency Work

Because it is sometimes difficult to identify wetlands and other sensitive environmental areas, the National Grid Environmental Scientist shall be notified within 24 hours or by the next working day whenever emergency off-road repair work takes place. Although the routine maintenance and emergency repair work is generally allowed, due to site conditions or the scope of the project, notification to the regulating agencies may be required.

19.0 Appendices

APPENDIX 1: Glossary
APPENDIX 2: Acronyms

APPENDIX 3:	Storm Water, Wetlands & Priority Habitat Environmental Compliance Site Inspection / Monitoring Report Form
APPENDIX 4:	BMP Drawings and Guidelines
APPENDIX 5:	Certification Sheet for Invasive Species Control
APPENDIX 6:	Snow Disposal Guidelines

Appendix 1 – Glossary

Access Road – An existing, periodically maintained road often consisting of gravel and/or exposed soils or vegetated with grasses but devoid of woody vegetation, that is visible on aerial photography and shown on ROW T-sheets. May include newly permitted permanent roads (i.e., roads to be constructed in accordance with a project-specific permit).

Access Route - A pathway previously used or proposed to be used by crews for access along the ROW. Routes may be shown on ROW T-sheets or previous project access plans but are not improved as maintained gravel/exposed soil roads. Access routes may be mown and can consist of trails utilized by recreational vehicles.

Action Logs – Project-specific log used to document action items required for permit compliance. The log identifies timeframes for completion and responsible parties. The log is typically updated by the Project Environmental Consultant or the National Grid Environment Scientist and circulated to the project team on a weekly, or more frequent, basis.

Bank – The transitional slope immediately adjacent to the edge of a surface water body, the upper limit of which is usually defined by a break in slope, or, for a wetland, where a line delineated in accordance with applicable state and federal regulations that indicates a change from wetland to upland.

BMP – Best Management Practice. Individual engineered constructions or operating procedures intended to minimize and mitigate soil disturbance, erosion, sedimentation, turbid discharges, and/or impacts to sensitive receptors.

Clean - Free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site.

Clean Gravel – Gravel is a type of coarse-grained soil that consists of small stones and other mineral particles. Clean Gravel shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001) Clean Gravel will not have fine materials that could lead to a turbid discharge.

Clean Stone (Crushed Stone) – Clean Stone (Crushed Stone) shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001). Clean Stone will not have fine materials that could lead to a turbid discharge.

Clearing – The cutting of trees and large bushes by hand and/or mechanical means.

Compost Socks – Tubular devices comprised of non-degradable, photodegradable, or biodegradable mesh tubing containing organic compost matrix. Compost socks are effective for intercepting site runoff, trapping

sediment, and treating for soluble pollutants by filtering stormwater runoff. . Compost socks are a useful sedimentation control device along construction site perimeters, as check dams in drainage channels, as a slope interruption practice on long and/or steep slopes, and around drain or street curb inlets.

Construction Mats - **C**onstruction, swamp, and timber mats ("construction mats") are generic terms used to describe structures that distribute equipment weight to minimize disturbance to wetland soil and vegetation while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes.

Corduroy Road – Corduroy roads are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another.

Dewatering Basin – An established containment area for saturated materials and pumped discharges. This measure is used for the purpose of de-watering soils prior to transport off site or for use in another location on site, and for allowing suspended sediment to settle out of pumped discharges.

Detention/Retention Basin – A detention/retention basin is designed for the purpose of detaining or retaining water. A dewatering basin is a form of detention basin

Dewatering – Use of a system of pumps, pipes and temporary holding dams to drain or divert waterways or wetlands, or lower the groundwater table before and during excavation activities.

Drainage Ditch or Swale – A clearly noticeable channel that is typically dry, except after precipitation events. Intermittent and perennial streams and rivers are not included in this definition.

Dredge – To dig, excavate, or otherwise disturb the contour or integrity of sediments in the bank or bed of a wetland, a surface water body, or other area within the regulating bodies' jurisdiction.

Dredge Spoils – Material removed as the result of dredging.

Embankment – A protective bank constructed of mounded earth or fill materials located between a roadway (or rail bed) and a seasonal stream or other wetland.

Environmental Field Issue – Document that contains copies of all project-specific environmental permits and summarizes all environmental permit conditions. The EFI is prepared by the Project Environmental Consultant or the National Grid Environment Scientist and copies are provided to the Project Manager, Construction Supervisor(s), and other team members as appropriate.

Environmental Monitoring Records – Examples of checklists and/or monitoring reports suggested for use by the Company Environmental Engineer to document conformance of the project with this Environmental Guidance and or project specific permit/license conditions.

Environmental Scientist – Formerly Environmental Engineer. The National Grid Environmental Department representative for the project or the territory where the work is located. For a map of Environmental Department staff territories, refer to the Environmental page of the National Grid infonet.

Environmentally Sensitive Areas – Examples of environmentally sensitive areas that may be found on National Grid properties are rivers, streams, ponds, lakes, wetlands, bogs, swamps, salt marshes, rare species habitat, wellhead protection areas, cultural sites, parks, preserves, schools and as otherwise defined by Federal, State or local regulations. Refer to EG-301.

Erosion Controls – The utilization of methods to prevent soil detachment and minimize displacement or washing down slopes by rainfall or run-off. Common practices include, but are not limited to:

(a) Temporary and Permanent Seeding.

(b) Mulching, Soil Binders, Tackifiers.

(c) Erosion Control Blankets.

(d) Hydraulic Erosion Control.

Excavate/Excavation – To dig, remove, or form a cavity or a hole in an area within the department's jurisdiction.

Fill (n.) – Any rock, soil, gravel, sand or other such material that has been deposited or caused to be deposited by human activity.

Fill (v.) – To place or deposit materials in or on a wetland, surface water body, bank or otherwise in or on an area within the jurisdiction of the department.

Flats – Relatively level landforms composed of unconsolidated mineral and organic sediments usually mud or sand, that are alternately flooded and exposed by the tides and that usually are continuous with the shore.

Frozen Condition – Field conditions when the upper portion of the ground surface freezes or when areas of standing water freeze solid such that vehicle passage over these areas is supported without any resulting soil disturbance. The frozen conditions must have been affected by severe cold (maximum daily temperatures less than 32 degrees F) for a continuous 2-week period.

GAA – Rhode Island groundwater classification, groundwater resources that are known, or presumed to be suitable for drinking water use without treatment, and are located in one of the three areas described below.

a) The state's major stratified drift aquifers that are capable of serving as a significant source for a public water supply ("groundwater reservoirs") and the critical portion of their recharge area as delineated by DEM;

b) The wellhead protection area for each public water system community water supply well. Community water supply wells are those that serve resident populations and have at least 15 service

connections or serve at least 25 individuals, e. g. municipal wells and wells serving nursing homes, condominiums, mobile home parks, etc.; and

c) Groundwater dependent areas that are physically isolated from reasonable alternative water supplies and where existing groundwater warrants the highest level of protection. At present only Block Island has been designated as meeting this criterion.

GA – Rhode Island groundwater classification, groundwater resources that are known, or presumed to be suitable for drinking water use without treatment. However, groundwater classified by GA does not fall within any of the three priority areas described under the GAA classification.

Grade/Grading – The movement of soil and fill material to change the elevation of the land. The term refers to the combined actions of excavating and filling to change elevation or shape.

Grubbing – The removal of stumps/roots by mechanical means during site preparation activities.

Immediately - As soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

In-kind Replacement - Replacement using the same material, functional inverts, diameter and length as the existing item. In-kind replacement includes the substitution of a structure with a similar structure in approximately the same location as is practicable, and is approximately the same in design. The design may be altered to meet applicable utility standards, and may include alternate materials designed to prolong the life of that service.

Intermittent Stream – A stream that flows for sufficient time to develop and maintain a defined channel, but which might not flow during dry portions of the year.

In the Dry – Work done either during periods of low water or behind temporary diversions, such as Earth Dike / Drainage Swale and Lined Ditches designed and installed in accordance with best management practices.

Limit of Work/Disturbance – The approved project limits within regulated areas. All project related activities in regulated areas must be conducted within the approved limit of work/disturbance. The limit of work/disturbance shall be depicted on the approved permit site plans and in the EFI plans. Where it is warranted National Grid may require that these limits be identified in the field by flagging, construction fencing, and/or perimeter erosion controls.

Long-Term Restoration Logs - Project-specific log used to document restoration required following the completion of construction or as areas of the project have been completed (i.e., segments of ROW for a multi-mile project). The log is typically updated by the Project Environmental Consultant or the National Grid Environment Scientist and circulated to the project team on a weekly basis.

Low Flow Conditions – Low water flow that generally occurs during the summer, as a result of decreased precipitation and the removal of water by increased evaporation and evapotranspiration by vegetation. Work done under low-flow conditions minimizes the potential for environmental damage. The USACE defines the calendar dates for low flow conditions in its New England state-specific Programmatic General Permits.

Low Ground Pressure – Equipment that meets the USACE GP state-specific defined Pounds per Square Inch (PSI) ground pressure when loaded. Use of LGP equipment ***requires approval*** from the National Grid Environmental Scientist.

Marsh – A wetland:

a) That is distinguished by the absence of trees and shrubs;

b) Dominated by soft-stemmed herbaceous plants such as grasses, reeds, and sedges; and

c) Where the water table is at or above the surface throughout the year, but can fluctuate seasonally.

Methods – Are the construction practices and procedures that take place through choosing the proper equipment, trucks and labor to execute the earth moving activities based on the existing conditions and implementing creative and sensitive scheduling for the daily activities.

NHESP - Natural Heritage Endangered Species Program; a department within the Massachusetts Division of Fisheries and Wildlife that is responsible for protecting the 176 species of vertebrate and invertebrate animals and 259 species of native plants that are officially listed as Endangered, Threatened or of Special Concern in Massachusetts.

Perennial – A stream that contains water at all times except during extreme drought.

Permanently Ceased – Is applicable to earth disturbance activities when clearing and excavation within any area of the Project that will not include permanent structures has been completed.

Person-in-Charge – A National Grid Project Engineer, Manager, Supervisor, Field Construction Coordinator or equivalent Contractor personnel assigned to oversee and coordinate work activities.

Processed Gravel – Processed Gravel shall meet the requirements in accordance with National Grid Standard Construction Specification for Electric Stations (Engineering Standard SP.08.00.001). Processed Gravel will not have fine materials that could lead to a turbid discharge. Gravel consisting of inert material that is hard, durable stone and is free from loam and clay, surface coatings and deleterious materials.

Regulating Body – Federal, State, or local authority that has jurisdiction over resource areas that may be impacted by company operations

Regulated Wetland Area – Those areas that are subject to federal, state or local wetland regulation, including certain buffer or adjacent areas.

Repair – The restoring of an existing legal structure by partial replacement of work, or broken, or unsound parts (Env-Wt 101.73).

Replacement – The substitution of a new structure for an existing legal structure with no change in size, dimensions, location, configuration, construction, or which conforms in all material aspects to the original structure

Right-of-Way – A corridor of land where National Grid has legal rights (either fee ownership, lease or easement) to construct, operate, and maintain an electric power line and/or natural gas pipeline and may include work on customer owned properties.

River – A watercourse that is larger than a perennial stream and flows all year long.

Routine Utility Rights-of-Way Maintenance Activity – Includes but is not limited to vegetation management and repair or replacement of existing utility structures.

Sedimentation Controls – Silt fences, straw bales, compost socks/berms and other barrier devices strategically placed to intercept and treat sediment-laden site runoff.

Sensitive Water - Includes any sediment or nutrient impaired water or a water that is identified by the state, tribe or EPA as Tier 2, 2.5 or Tier 3 for antidegradation purposes.

Siltation Curtain – An impervious barrier erected to prevent silt and sand and/or fines from being washed into a wetland, surface water body or other area of concern.

Surface Water Body or Surface Waters – Those portions of waters which have standing or flowing water at or on the surface of the ground.

Spill Prevention, Control and Countermeasure Plans – Required for site operations that involve the storage of 1,320 gallons or greater of fuel and oils, both in storage containers and stored in equipment. Response actions to spills and releases are specified in these plans.

Stormwater Pollution Prevention Plan – A site-specific, written document that, among other things: (1) identifies potential sources of stormwater pollution at a construction site; (2) describes stormwater control measures to reduce or eliminate pollutants in stormwater discharge from a construction site; and (3) identifies procedures the operator will implement to comply with the terms and conditions of EPA NPDES Construction General Permit (CGP). SWPPPs must be prepared, maintained on-site, and amended as necessary in order to obtain NPDES permit coverage for specific construction site stormwater discharges under the EPA NPDES CGP.

Temporarily Ceased - Is applicable when there are earth disturbance activities such as clearing, grading, and/or excavation that are not complete, but will be idle in one area for a period of up to 14 or more calendar days, and which will resume in the future. The 14 calendar day timeframe begins as soon as you now that construction work on a portion of the Project will be left incomplete and idle. In circumstances where there are unanticipated delays and you do not know at first how long the work stoppage will continue, the requirement to immediately initiate stabilization is triggered as soon as you know with reasonable certainty that work will be stopped for 14 or more additional calendar days.

Tidal Wetlands – A wetland whose vegetation, hydrology or soils are influenced by periodic inundation or tidal waters.

Topsoil – The uppermost part of the soil, ordinarily moved in tillage, or its equivalent in uncultivated soils and ranging in depth from 2 to 10 inches.

Turbidity – The condition in which solid particles suspended in water make the water cloudy or even opaque in extreme cases.

United States Geological Survey Topographic Map – A map that uses contour lines to represent the three-dimensional features of a landscape on a two-dimensional surface. These maps use a line and symbol representation of natural and artificially created features in an area.

Wetland – An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation (more than 50 percent) typically adapted for life in saturated soil conditions (hydric soils). Wetlands include but are not limited to swamps, marshes, bogs, and similar areas.

Work Site – An area where work is performed.

Worker – Company employee, contractor, consultant working on site.

Zone II - Massachusetts - That area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation). It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone IIs shall extend up gradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock , or a recharge boundary).

Appendix 2 – Acronyms

ASTM	American Society for Testing and Materials
BMP	Best Management Practices
EFI	Environmental Field Issue
EG	Environmental Guidance
EPA	Environmental Protection Agency
GA/GAA	Rhode Island Groundwater Classifications – see glossary
LGP	Low Ground Pressure
MA	Massachusetts
MA DEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
NE	New England
NH	New Hampshire
NH DES	New Hampshire Department of Environmental Services
NHESP	Natural Heritage Endangered Species Program
NPDES	National Pollutant Discharge Elimination System
OHM	Oil and/or Hazardous Materials
PSI	Pounds per square inch
RI	Rhode Island
RI DEM	Rhode Island Department of Environmental Management
RI CRMC	Rhode Island Coastal Resources Management Council
RI SESC	Rhode Island soil erosion and sediment control
ROW	Right-of-Way
RTE	Rare, Threatened or Endangered
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Storm Water Pollution Prevention Plan
TOY	Time-of-Year
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
VT	Vermont

VT DEC	Vermont Department of Environmental Conservation
Zone II	Massachusetts Groundwater Protection district – see glossary

Appendix 3

See EG303NE_Appendix3_Reporting Form published separately

National Grid
Storm Water, Wetlands & Priority Habitat Environmental Compliance
Site Inspection / Monitoring Report

Project Name:		**Date:**	
City / Town:		**Time:**	
WO / WR #			

IHC or Contractor? (Company Name):

Current Weather Conditions:

Precipitation Since Last Inspection (Date, Est. Duration and Est. Amount from Each Storm):

Activities / Structures / Locations Inspected:

Identify Locations / Activities / Structures within Designated Priority Habitat (Identify Rare species Observations, if any) and Mitigation / Restoration Measures Implemented:

Any Significant Discharges of Sediment to Water Bodies or Wetlands? (If "yes", state locations):

National Grid
Storm Water, Wetlands & Priority Habitat Environmental Compliance
Site Inspection / Monitoring Report

Compliance with SWPPP Storm Water Controls, O&M Plan, Order of Conditions or Other Applicable Environmental Requirements? (Explain if "no" for any feature inspected):

Additional BMPs or Other Corrective Action Needed and, if so, Where?

Compliance with Previous Observations?

National Grid
Storm Water, Wetlands & Priority Habitat Environmental Compliance
Site Inspection / Monitoring Report

Are Spill Control Supplies Available	**Yes**	**No**
Are Oil and / or Hazardous Materials Stored On Site?	**Yes**	**No**
If So, Are they Properly Labeled and Managed?	**Yes**	**No**
Are Wastes Stored On Site?	**Yes**	**No**
If So, Are they Properly Managed?	**Yes**	**No**

Miscellaneous (e.g., dumping?):

Comments:

Inspection Completed by (Name, Title, Company):

Inspector's Signature for Certification:

National Grid Environmental Dept. Representative - Signature for Certification:

Date:

Appendix 4 – BMPs

See EG303NE_Form1 for a list of BMPS

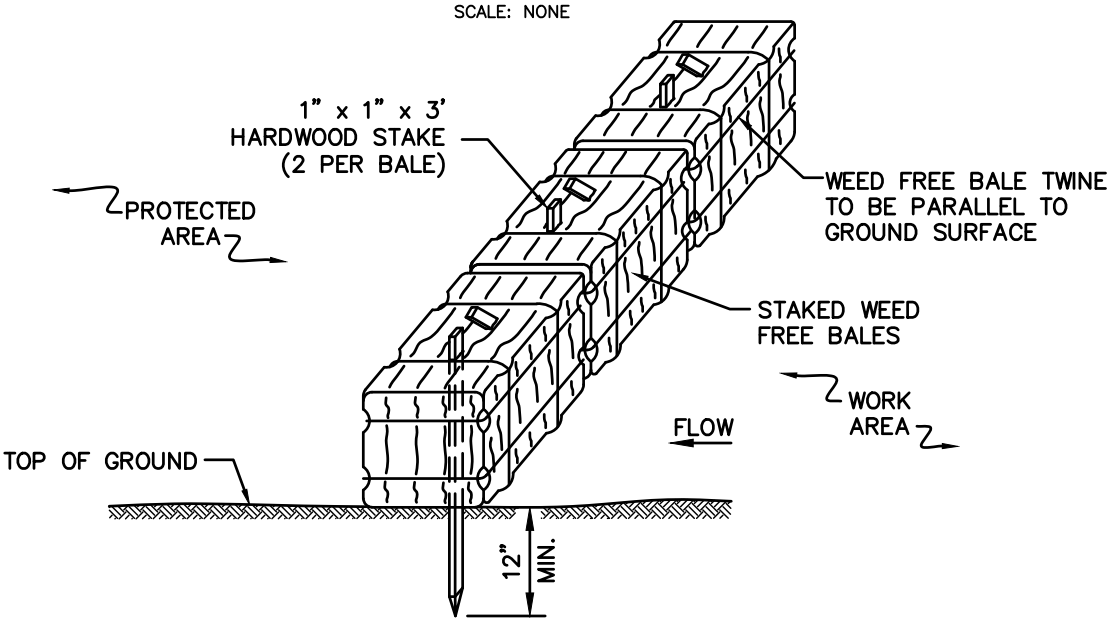
See EG303NE_Form2 for BMP details

	BMP #	Measure
Sediment & Erosion Controls	SEC-1	Weed free bale barrier
	SEC-2	Sediment control fence
	SEC-3	Silt fence / weed free barrier
	SEC-4	Silt Soxx
	SEC-5	Straw Wattle
	SEC-6	Erosion Control Blanket - Ditch
	SEC-7	Erosion Control Blanket - Slope
	SEC-8	Hydroseeding with Tackifier (slope stabilization)
	SEC-9	Mulch materials, rates and uses (from NY)
	SEC-10	Seeding options - Upland Seed Mixes
	SEC-11	Seeding options - Wetland Seed Mix
	SEC-12	Distribution Pole Erosion Control
Crossing Measures	CM-1	Prefabricated mats
	CM-2	Construction mat bridge
	CM-3	Construction mat layout (with transition)
	CM-4	Construction mat layout (with transition & BMPs)
	CM-5	Construction mat - Air Bridge
	CM-6	Corduroy road
	CM-7	Rock Ford
	CM-8	Temporary construction entrance / exit
	CM-9	Temporary construction culvert
	CM-10	Access way stabilization
	CM-11	Construction signage
	CM-12	Construction Mat Anchoring
Advanced Applications	AA-1	Reinforced silt fence
	AA-2	Sediment filter
	AA-3	Stone check dams
	AA-4	Straw / haybale check dam
	AA-5	Waterbar
	AA-6	Sandbag check dam
	AA-7	Earth dike
	AA-8	Drainage swale and lined ditch
	AA-9	Sedimentation basin
	AA-10	Dewatering basin - Small scale
	AA-11	Dewatering basin - Large scale
	AA-12	Dirtbag
	AA-13	Concrete waste sump

	AA-14	Outpak concrete washout
Advanced Applications	AA-15	Barrier fence (construction fence)
	AA-16	ROW gates / fences
	AA-17	Bollard
	AA-18	Dust control
	AA-19	Catch Basin Inlet Protection
	AA-20	Silt Sack
	AA-21	Turbidity Curtain
	AA-22	Siltsoxx Amphibian & Reptile Crossing #1
	AA-23	Siltsoxx Amphibian & Reptile Crossing #2
	AA-24	Siltsoxx Amphibian & Reptile Crossing #3
	AA-25	Cultural Avoidance

BMP DETAIL

SCALE: NONE



NOTES:

1. THE GROUND SHALL BE PREPARED TO PROVIDE COMPLETE CONTACT WITH THE BALES.

BMP PICTURE

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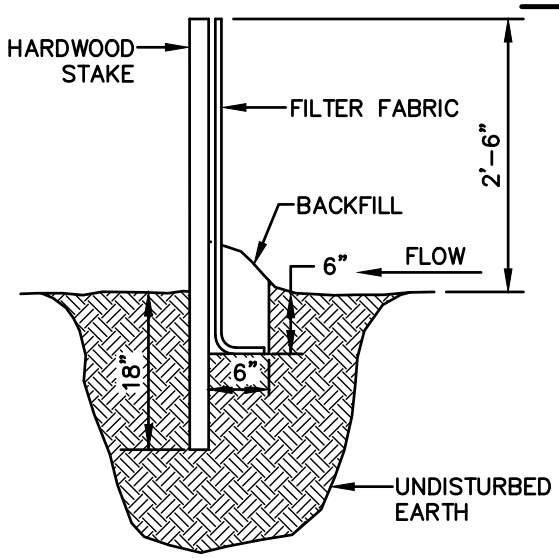
SEC-1
WEED FREE BALE BARRIER

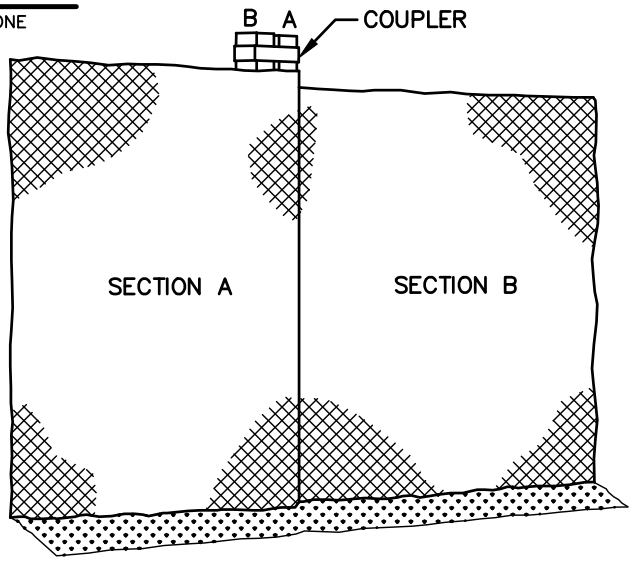
File: BALE_BARRIER.DWG

BMP DETAIL

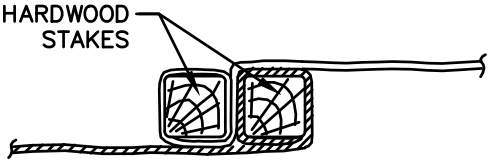
SCALE: NONE



PROFILE



SECTION



PLAN

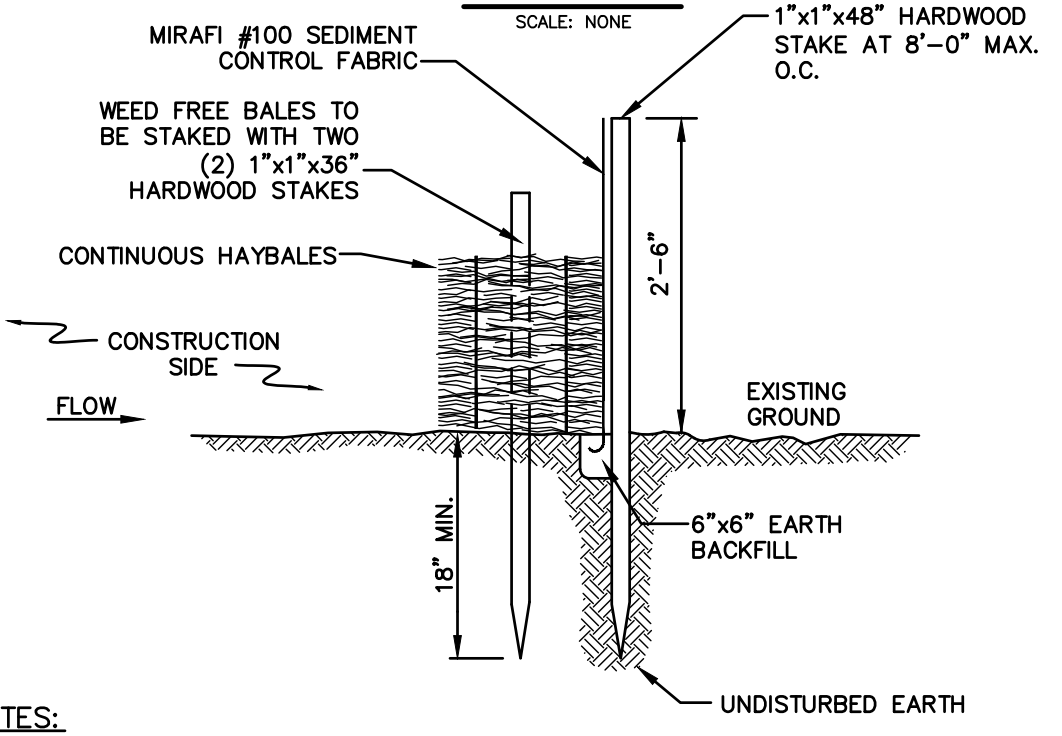
BMP PICTURE

SEC-2
SEDIMENT CONTROL FENCE

File: Sediment_Fence.dwg

BMP DETAIL

SCALE: NONE



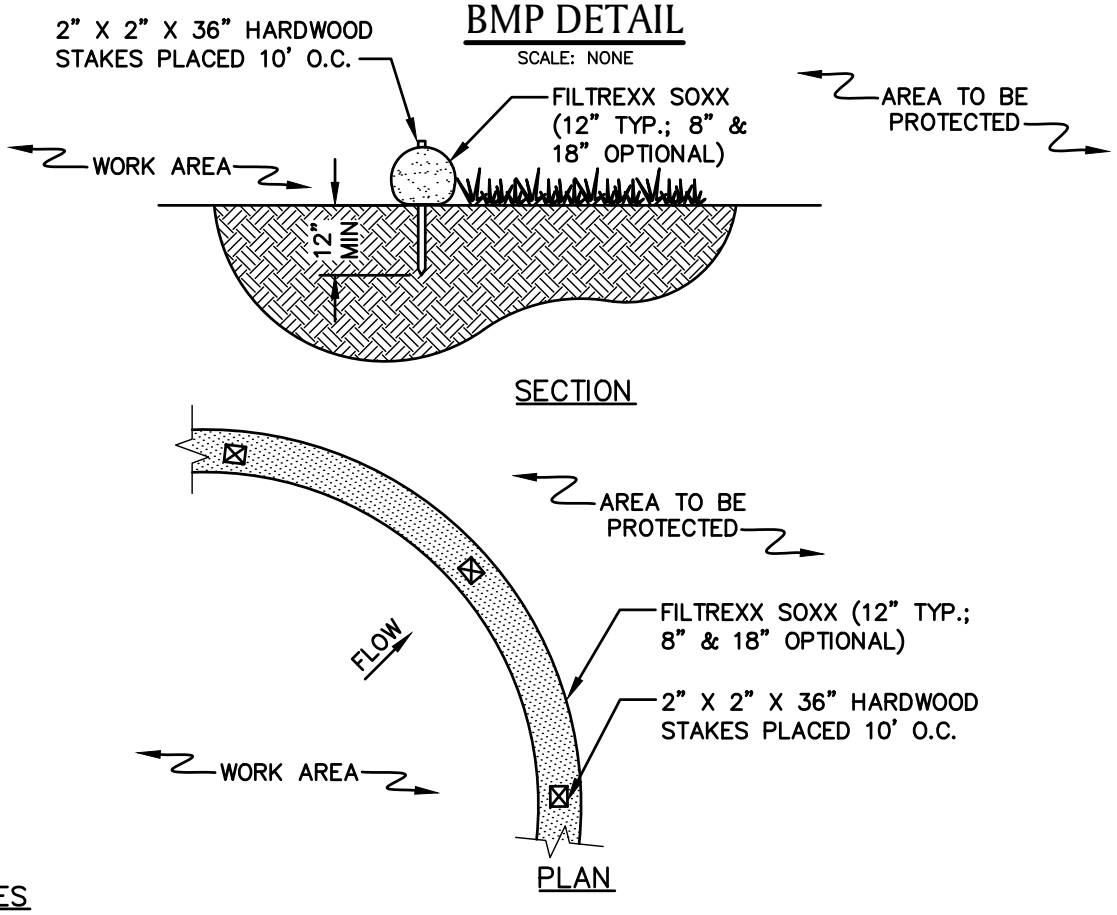
NOTES:

1. BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY TWO (2) 1"X1"X36" HARDWOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. BALES SHALL BE REMOVED AND REPLACED WHEN THEY BECOME FILLED WITH SEDIMENT AND BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. BALES SHALL BE REMOVED WHEN THE EMBANKMENTS STABILIZE.
6. BALES TO BE TWINE BOUND.

BMP PICTURE

BMP DETAIL

SCALE: NONE



NOTES

1. PRODUCT TO BE FILTREXX SILT SOXX OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
4. MESH CONTAINMENT MATERIAL SHOULD BE KNITTED PHOTODEGRADABLE OR BIODEGRADABLE MATERIAL, WITH OPENING SIZES BETWEEN 1/8" – 3/8".
5. COMPOST MEDIA SHOULD HAVE PARTICLE SIZE WHERE 99% < 2", 50% > 1/2".
6. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

*** PICTURE AND DETAIL PROVIDED BY FILTREXX LAND IMPROVEMENT SYSTEMS**
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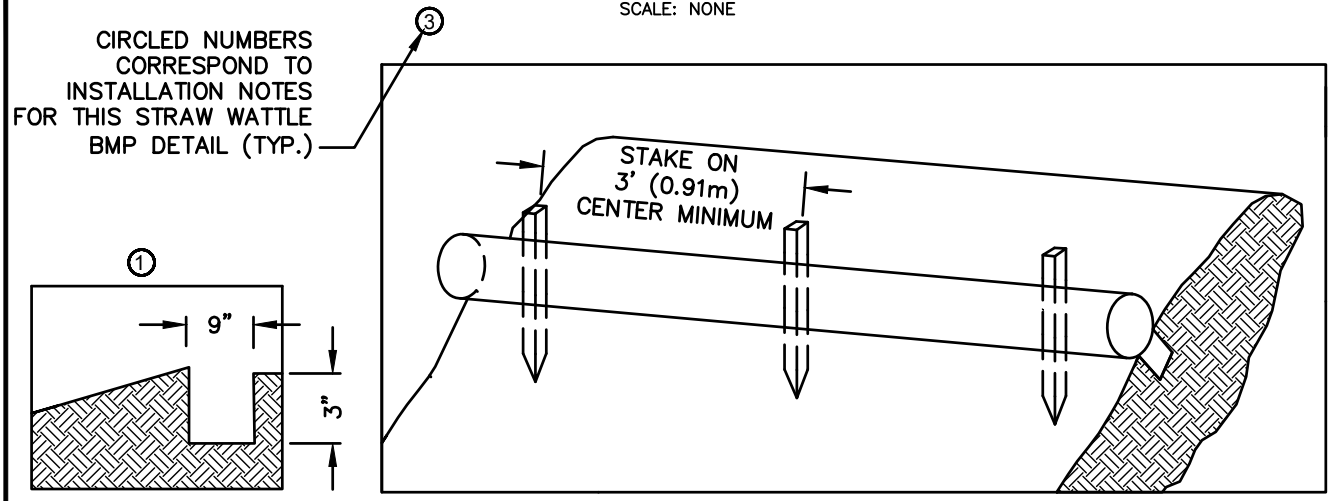
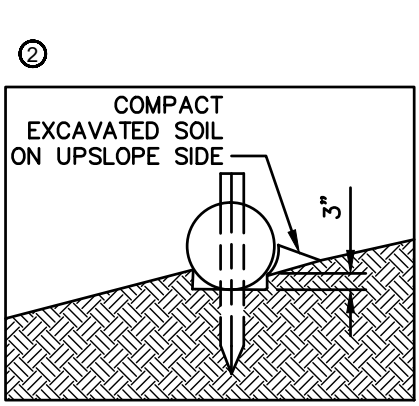
SEC-4
SILT SOXX *

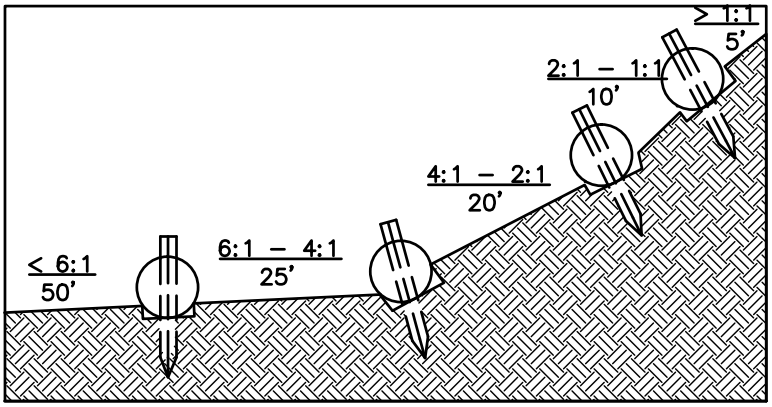
File: SiltSOXX.dwg

BMP DETAIL

SCALE: NONE







TYPICAL WATTLE SPACING DETAIL

NOTES:

1. PRODUCT TO BE TENSAR NORTH AMERICAN GREEN STRAW WATTLE OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. TYPICAL WATTLE SPACING BASED ON SLOPE GRADIENT. COORDINATE SPACING AND LOCATION WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
3. MINIMUM 12" DIAMETER WATTLES SHOULD BE USED FOR HIGHLY DISTURBED AREAS (I.E., HEAVILY USED ACCESS ROAD WITH ADJACENT WETLAND) AND MINIMUM 9–10" WATTLES SHOULD BE USED FOR LESS DISTURBED SOILS.

INSTALLATION NOTES:

1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2–3" DEEP X 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
3. SECURE THE WATTLE WITH 18–24" HARDWOOD STAKES EVERY 3–4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2–3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

*** DETAIL AND PICTURE PROVIDED BY TENSAR NORTH AMERICAN GREEN**

SEC-5
STRAW WATTLE * (1 OF 2)

File: Straw_Wattle.dwg

BMP PICTURE

STRAW WATTLE – SHALLOW SLOPE (≤4:1)
(ALTERNATE STAKING)

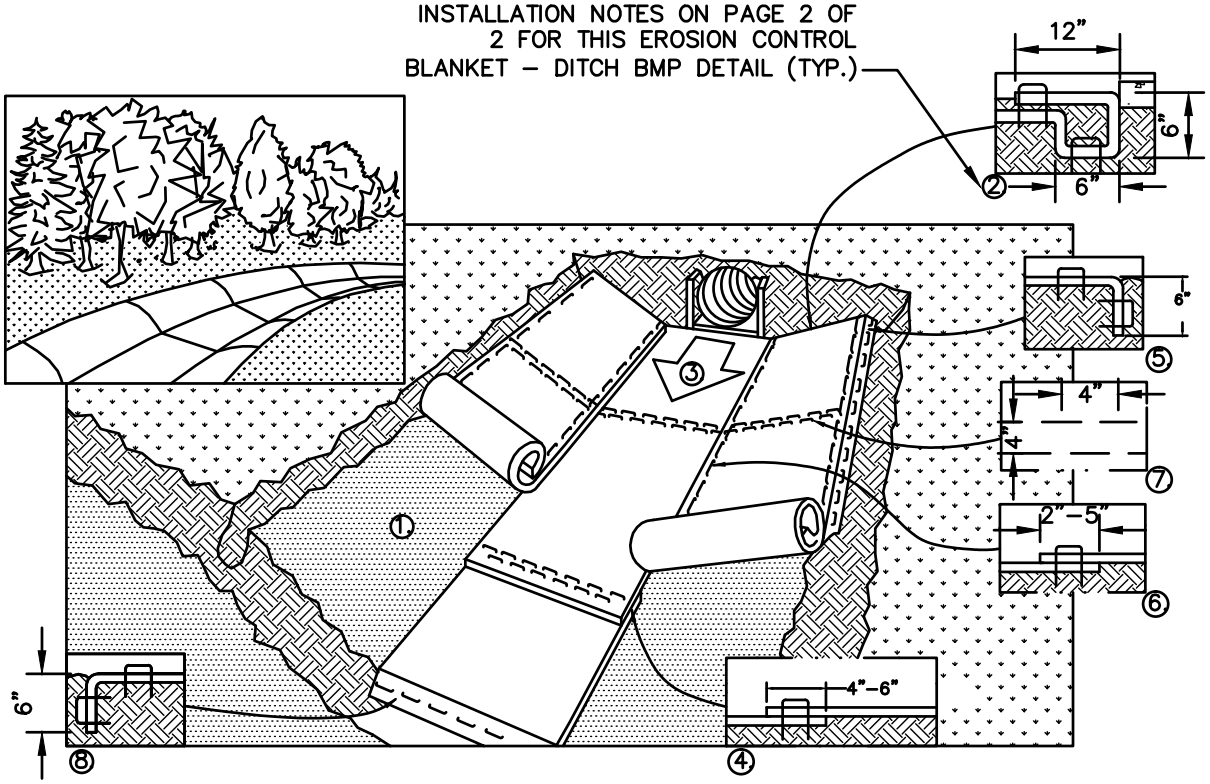
ALTERNATE STAKING INSTALLATION NOTES:

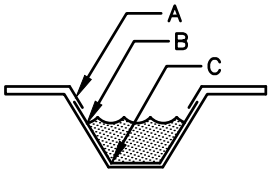
1. ON SHALLOW SLOPES (≤4:1), STRAW WATTLE MAY BE SECURED WITH 18–24" HARDWOOD STAKES DRIVEN AGAINST THE SIDES OF THE WATTLE INSTEAD OF THROUGH. STAKES SHALL ALTERNATE SIDES, AND BE SPACED 3–4' MAX.
2. TWINE SHALL BE TIED FROM STAKE TO STAKE, CRISS–CROSSING THE STRAW WATTLE. TIE TWINE TO STAKES BELOW THE HEIGHT OF THE WATTLE.

BMP DETAIL

SCALE: NONE

CIRCLED NUMBERS CORRESPOND TO INSTALLATION NOTES ON PAGE 2 OF 2 FOR THIS EROSION CONTROL BLANKET – DITCH BMP DETAIL (TYP.)





CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTES:

1. PRODUCT TO BE NORTH AMERICAN GREEN EROSION CONTROL BLANKET OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
3. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE ROLLED EROSION CONTROL PRODUCTS (RECP's).

BMP DETAIL

INSTALLATION NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMAPCT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. ™ WHEN USING THE DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" (10 CM –15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (5 CM –12.5 CM) (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M – 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

BMP PICTURE

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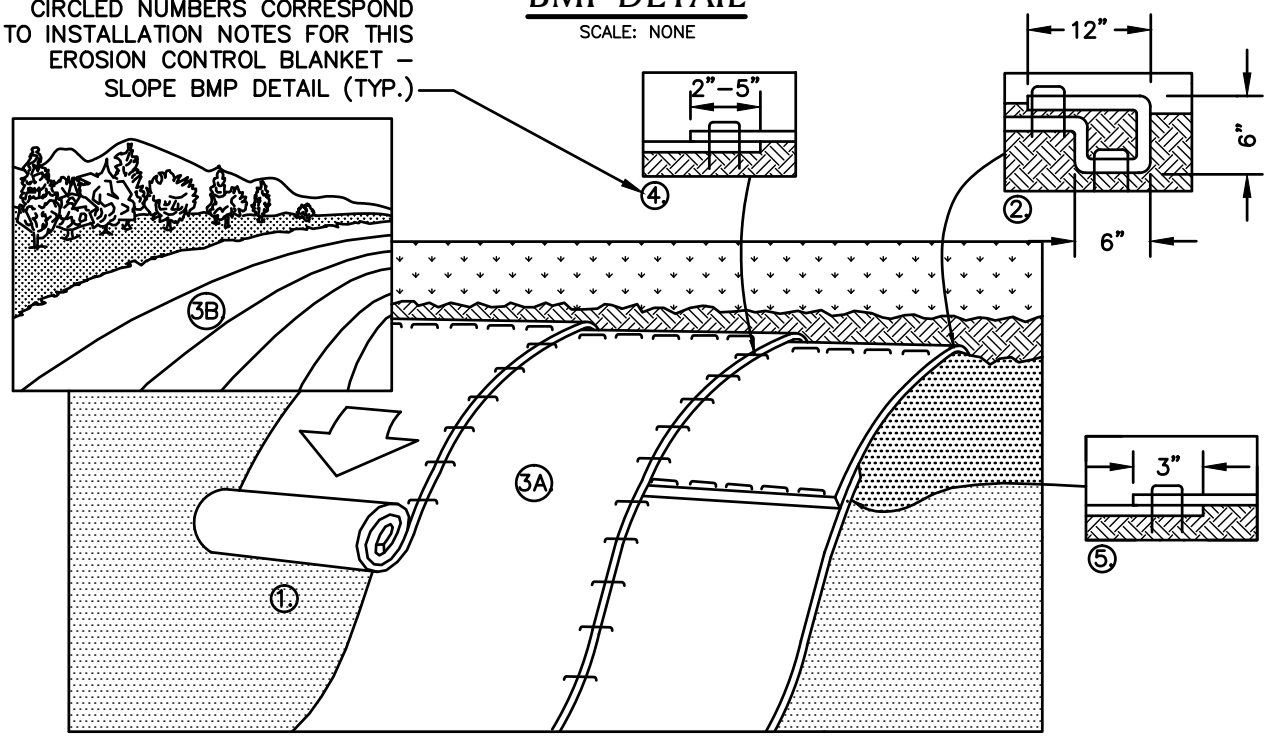
SEC-6
EROSION CONTROL BLANKET - DITCH * (2 OF 2)

File: Erosion_Blanket_Ditch.dwg

BMP DETAIL

SCALE: NONE



NOTES:

1. PRODUCT TO BE NORTH AMERICAN GREEN EROSION CONTROL BLANKET OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLES OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

INSTALLATION NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.

*** PICTURE AND DETAIL PROVIDED BY TENSAR NORTH AMERICAN GREEN**

APPROVED BY: VICE PRESIDENT, ENVIRONMENTAL SERVICES

SEC-7

EROSION CONTROL BLANKET - SLOPE * (1 OF 2)

File: Erosion_Blanket_Slope.dwg

BMP PICTURE

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SEC-7
EROSION CONTROL BLANKET - SLOPE * (2 OF 2)

BMP PICTURE

NOTES:

1. COORDINATE MIXTURE TYPE AND APPLICATION AREAS WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST PRIOR TO CONSTRUCTION.
2. A MINIMUM OF 1500 LBS. PER ACRE OF A PAPER/CORN FIBER OR EQUIVALENT WITH NATURAL TACKIFIERS WILL BE USED ON SLOPES LESS THAN 3:1.
3. A BFM (BONDED FIBER MATRIX) WILL BE USED ON SLOPES GREATER THAN 2:1.
4. A FGM (FLEXIBLE GROWTH MATRIX) OR ESM (EXTREME SLOPE MATRIX) WILL BE USED ON SLOPES GREATER THAN 1:1.
5. REFER TO BMP #10 FOR SEED MIXTURE OPTIONS.

* PICTURE PROVIDED BY TENSAR NORTH AMERICAN GREEN
* TACKIFIER INFORMATION PROVIDED BY FILTREXX LAND IMPROVEMENT SYSTEMS AND TENSAR NORTH AMERICAN GREEN

SEC-8
HYDROSEEDING WITH TACKIFIER
(SLOPE STABILIZATION) *

File: Hydroseeding.dwg

BMP

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

NOTE:

1. PICTURE DEPICTS STRAW MULCH APPLICATION (FROM MULCH SPREADER) ON STEEP SLOPE WITH AN IMPROVED DRAINAGE SWALE.
2. COORDINATE MULCH MATERIALS AND RATES WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

UPLAND ROW RESTORATION MIX – GENERAL

Species Composition Options:

- Andropogon gerardii; Niagra Big Bluestem
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Elymus virginicus; Virginia Wildrye
- Lolium multiflorum; Annual Ryegrass
- Sorghastrum nutans; Indiangrass
- Chamaecrista fasciculate; Partridge Pea
- Desmodium canadense; Showy Tick Trefoil
- Helioposis helianthoides; Ox–Eye Sunflower
- Panicum virgatum; Switchgrass
- Rudbeckia hirta; Black Eyed Susan
- Poa palustris; Fowl Bluegrass
- Agrostis perennans; Upland Bentgrass
- Agrostis alba; Redtop
- Festuca rubra; Red Fescue
- Lotus corniculatus; Birds–Foot Trefoil
- Chrysanthemum leucanthem; Ox–Eye Daisy
- Aster novae–angliae; New England Aster

Example Seed Mixes:

1. Native Upland wildlife forage and Cover Meadow Mix – Ernst Conservation Seeds (ERNMX–123)
2. Eastern Ecotype Native Grass Mix– Ernst Conservation Seeds (ERNMX–177)
3. New England Native Warm Season Grass Mix – New England Wetland Plants, Inc.
4. New England Logging Road Mix – New England Wetland Plants, Inc.
5. Northeast Upland Wildflower/Restoration Erosion Mix – Southern Tier Consulting (STCMX–2)

UPLAND ROW RESTORATION MIX – DRY/ROCKY SITES

Species Composition Options:

- Festuca rubra; Red Fescue
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Bouteloua gracillis; Blue Grama
- Lolium multiflorum; Annual Ryegrass
- Lolium perenne; Perennial Ryegrass
- Agrostics scabra; Rough Bentgrass
- Agrostis perennans; Upland Bentgrass
- Sorghastrum nutans; Indiangrass

Example Seed Mixes:

1. New England Erosion Control/ Restoration Mix for Dry Sites – New England Wetland Plants, Inc.
2. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

WETLAND ROW RESTORATION MIX

Species Composition Options:

- Agrostis stolonifera; Creeping Bentgrass
- Poa trivialis; Rough Bluegrass
- Alopecurus arundinaceus; Creeping Meadow Foxtail
- Lolium multiflorum; Annual Ryegrass
- Festuca rubra; Creeping Red Fescue
- Elymus virginicus; Virginia Wildrye
- Schizachyrium scoparium; Little Bluestem
- Andropogon gerardii; Niagra Big Bluestem
- Carex vulpinoidea; Fox sedge
- Panicum virgatum; Switchgrass
- Agrostis scabra; Rough Bentgrass
- Aster novae–angliae; New England Aster
- Eupatorium perfoliatum; Boneset
- Euthamia graminifolia; Grass Leaved Goldenrod
- Scirpus atrovirens; Green Bulrush
- Verbene hastate; Blue Vervain
- Juncus effusus; Soft Rush
- Scirpus cyperinus; Wool Grass
- Panicum clandestinum; Deertongue

Example Seed Mixes

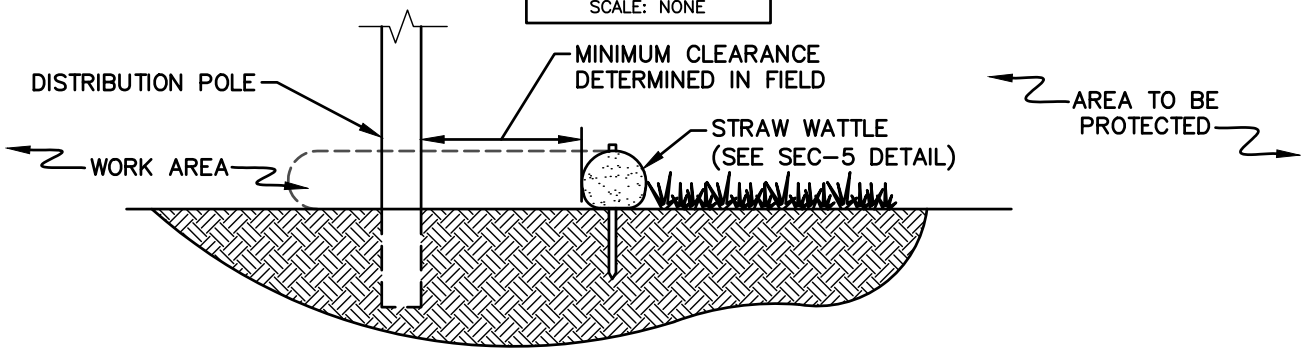
1. New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites – New England Wetland Plants, Inc.
2. Northeast Wetland Grass Seed Mix – Southern Tier Consulting (STCMX–7)
3. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

GERNERAL NOTES:

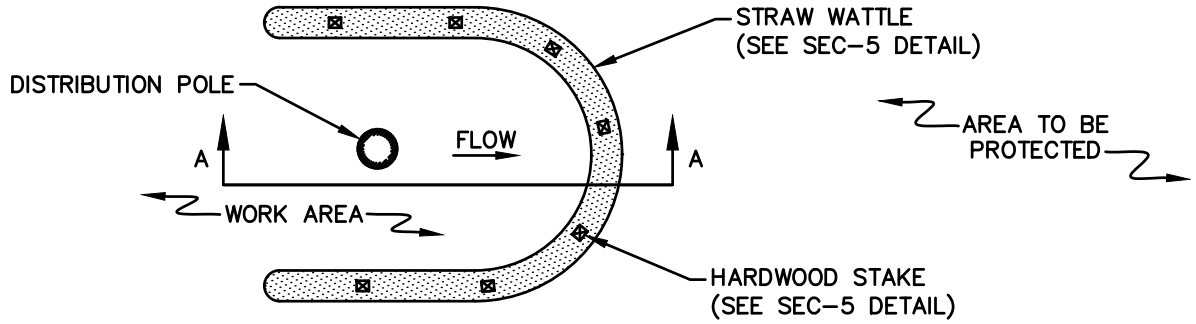
1. Seed mixes described herein are intended to cover a variety of typical new england landscapes. However, site specific seed mixes will need to be evaluated in coastal or mountainous regions.
2. Seed mixes described herein are intended for general ROW restoration. Site specific wetland seed mixes may be required by local, state and/or federal regulators for certain impacts to wetlands.
3. All seed mixes are to be approved by National Grid Environmental Scientist prior to construction and must conform with all project permits.
4. Seedbed preparation and maintenance as well as temporary erosion and sediment controls are crucial to the establishment of newly seeded areas. Coordinate with National Grid Environmental Scientist on seed bed preparation and maintenance as well as temporary erosion and sediment controls prior to construction.

BMP DETAIL

SCALE: NONE



SECTION A–A



PLAN

NOTES

1. PRODUCT TO BE STRAW WATTLE OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST (SEE SEC–5 BMP DETAIL).
2. STRAW BALE BARRIER PER SEC–1 BMP DETAIL TO BE AN AVAILABLE ALTERNATE DEPENDING ON SITE CONDITIONS AT THE DIRECTION OF NATIONAL GRID ENVIRONMENTAL SCIENTIST (SEE FIGURE 2).
3. MINIMUM CLEARANCE BETWEEN POLE AND EROSION CONTROL TO BE DETERMINED BY CONDITIONS OF POLE INSTALLATION/REPLACEMENT WORK AND ASSOCIATED DISTURBANCE.

BMP PICTURE

FIGURE 1: TYP. STRAW WATTLE APPLICATION

FIGURE 2: ALT. STRAW BALE APPLICATION

BMP PICTURE

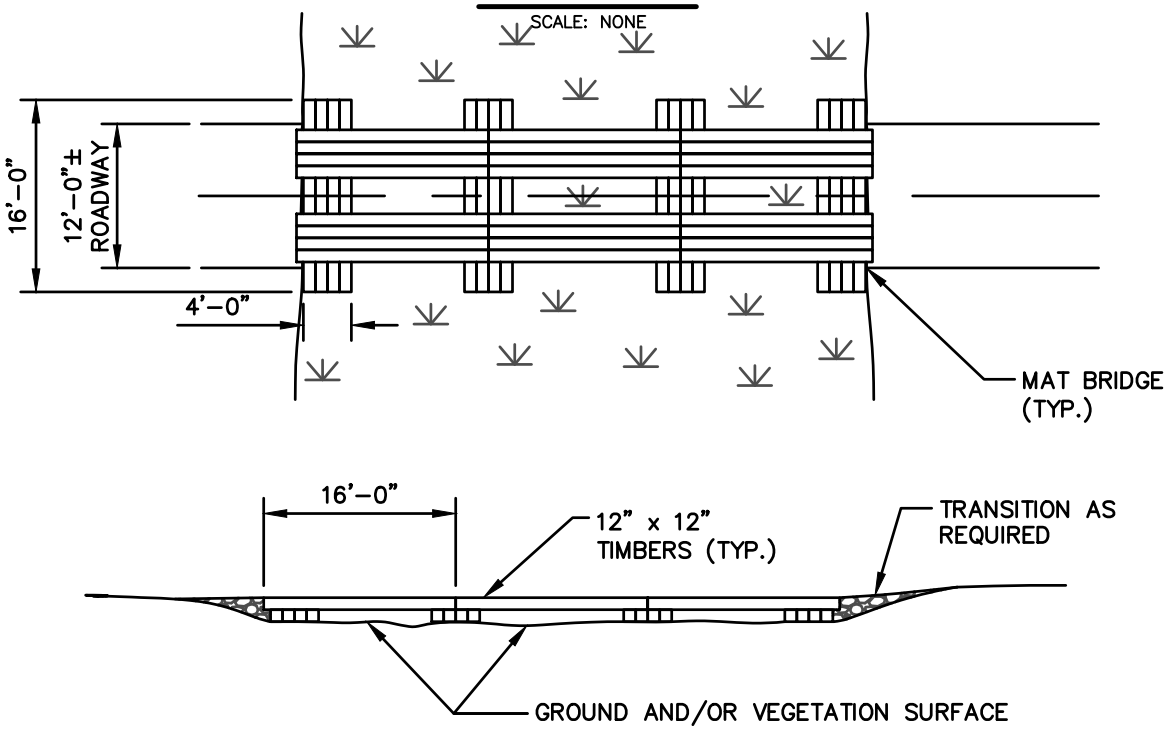
SCALE: NONE

NOTES:

1. PRODUCT TO BE ALTURNAMATS' PREFABRICATED MATS OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. PRODUCT AVAILABLE IN 4X8' UNITS.
3. IF MATS ARE INSTALLED IN A WETLAND AREA, INSTALL EROSION CONTROLS TO CONTAIN MATERIAL UTILIZED IN THE MAT TRANSITIONS.

BMP DETAIL

SCALE: NONE



NOTES:

1. IF MATS ARE INSTALLED IN A WETLAND AREA, INSTALL EROSION CONTROLS TO CONTAIN MATERIAL UTILIZED IN THE MAT TRANSITIONS.

BMP PICTURE

BMP PICTURE - SINGLE SPAN

SCALE: NONE

NOTES:

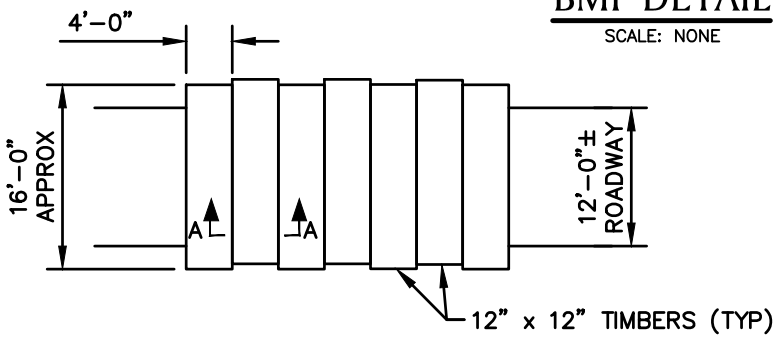
1. WHERE STREAM WIDTH ALLOWS, INSTALL CONSTRUCTION MATS TO SPAN THE WATERCOURSE IN ITS ENTIRETY WITHOUT STRINGER PLACEMENT IN THE WATER OR ANY RESTRICTION OF STREAM FLOW.

2. INSTALLATION OF THE CONSTRUCTION MAT BRIDGE SHALL NOT DAMAGE THE STREAM BED AND BANKS. WHERE POSSIBLE, FOOTERS SHALL BE PLACED PARALLEL TO THE TOP OF THE STREAM BANKS, WITH ACCESS MATTING PLACED ACROSS THE TOP OF THE STRINGERS DISTRIBUTING THE WEIGHT OF THE CONSTRUCTION EQUIPMENT.

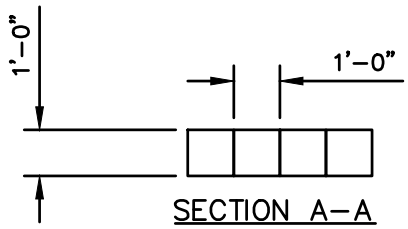
3. AT STREAM CROSSINGS THAT CANNOT BE SPANNED BY A SINGLE SECTION OF CONSTRUCTION MATTING, AND WHERE PERMITS ALLOW, STRINGERS SHALL BE PLACED ATOP THE STREAM BED PARALLEL TO THE FLOW OF WATER.

BMP DETAIL

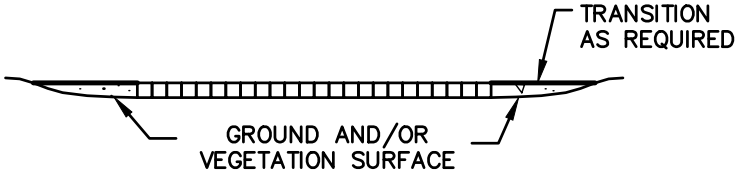
SCALE: NONE



TYPICAL PLAN VIEW



SECTION A–A
TYPICAL MAT SECTION
BOLTED TOGETHER



TYPICAL SECTION VIEW

NOTES:

1. TO BE INSTALLED IF NECESSARY TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTOR'S CONSTRUCTION MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF CONSTRUCTION MATS MAY BE INSTALLED.

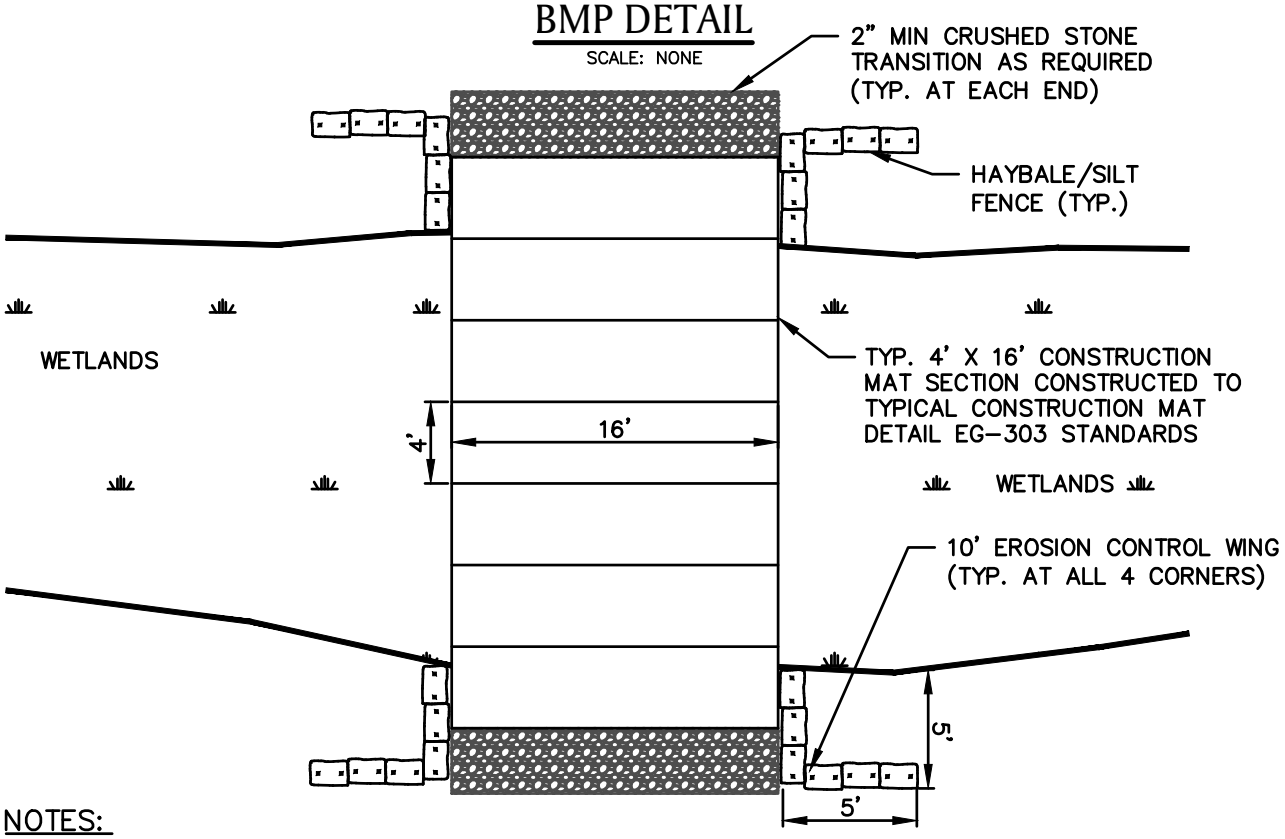
BMP PICTURE

CM-3
CONSTRUCTION MAT LAYOUT
(WITH TRANSITION)

File: Swamp_Mat_Layout.dwg

BMP DETAIL

SCALE: NONE



NOTES:

1. ADD FILTER FABRIC AS NEEDED UNDER STONE TRANSITION RAMPS.
2. ALL MEASUREMENTS AND LOCATIONS ARE APPROXIMATE.

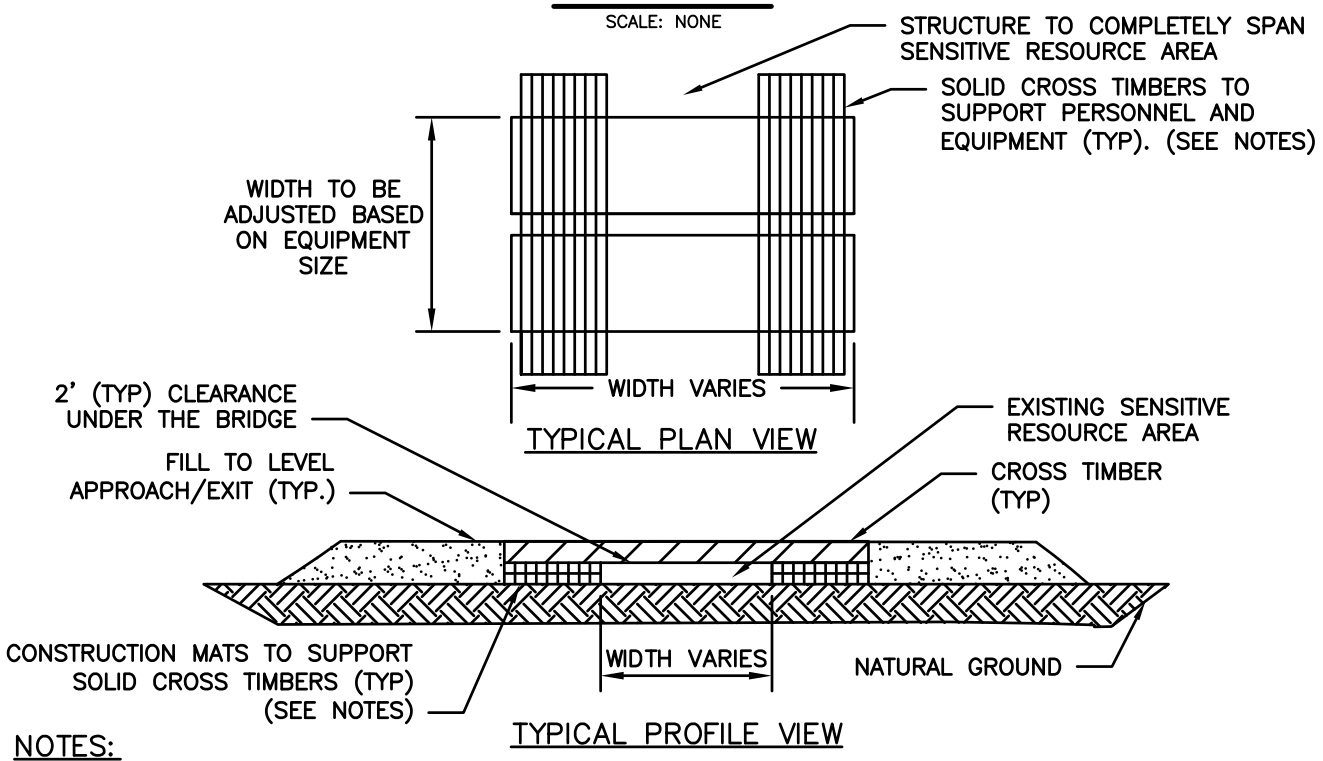
BMP PICTURE

CM-4
CONSTRUCTION MAT LAYOUT
(WITH TRANSITION AND BMPs)

File: Swamp_Mat_Transition and BMPs.dwg

BMP DETAIL

SCALE: NONE



NOTES:

1. THE DETAIL SHOWN IS CONCEPTUAL. CONSTRUCTION MATS AND CROSS TIMBERS SHALL BE SIZED AND SELECTED BASED ON SPAN WIDTH, CROSSING EQUIPMENT AND FIELD CONDITIONS.
2. THE NUMBER OF CONSTRUCTION MATS MAY VARY DEPENDING ON THE CLEARANCE HEIGHT.
3. EQUIPMENT AND PERSONNEL LOAD SHALL BE DISTRIBUTED ON ALL TIMBERS.
4. EACH EQUIPMENT OPERATOR AND USER OF THE FIELD BRIDGE SHALL BE FAMILIAR WITH THE DESIGN AND THE MAXIMUM EQUIPMENT AND PERSONNEL LOADS.
5. THIS DETAIL MAY NOT BE APPLICABLE IN ALL FIELD CONDITIONS.
6. INSTALL EROSION CONTROLS ADJACENT TO THE CULVERT ENDS TO PROTECT THE WATERWAY FROM ROADWAY DEBRIS.

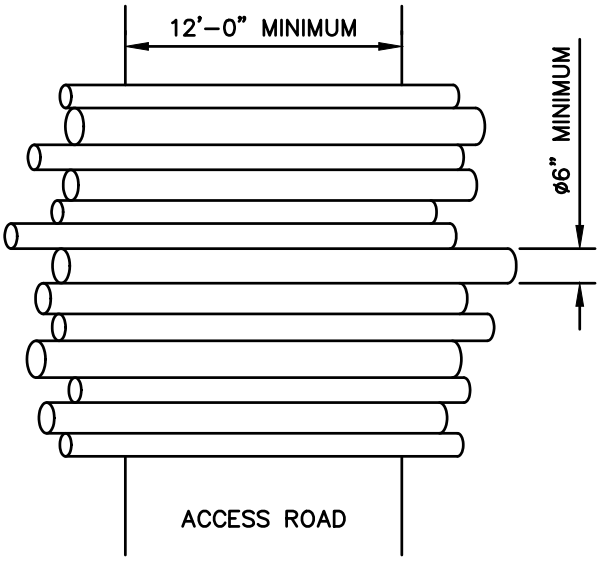
BMP PICTURE

CM-5
CONSTRUCTION MAT - AIR BRIDGE

File: Swamp_Mat_AIR BRIDGE.dwg

BMP DETAIL

SCALE: NONE



RANDOM LENGTH AND DIAMETER LOGS PLACED ACROSS AN ACCESS ROAD

NOTE:

1. A SIMILAR BRUSH MAT INSTALLATION CONSISTING OF SMALLER DIAMETER STEMS AND LOGS CAN BE USED.
2. CORDUROY ROADS SHALL ONLY BE USED IN EMERGENCIES OR AFTER APPROVAL FROM THE PROJECT ENVIRONMENTAL CONSULTANT OR NATIONAL GRID ENVIRONMENTAL SCIENTIST.

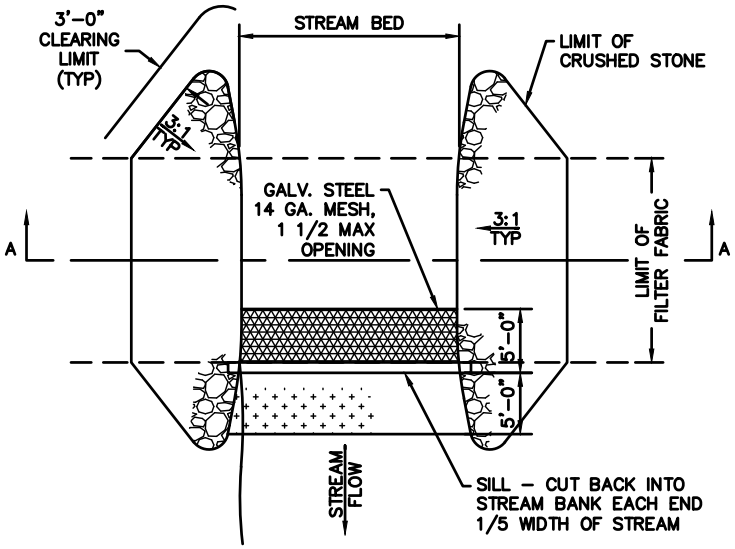
BMP PICTURE

CM-6
CORDUROY ROAD

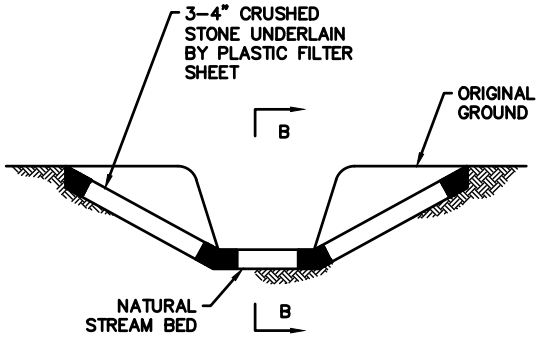
File: Corduroy_Road.dwg

BMP DETAIL

SCALE: NONE



PLAN VIEW



SECTION 'A-A'

BMP PICTURE

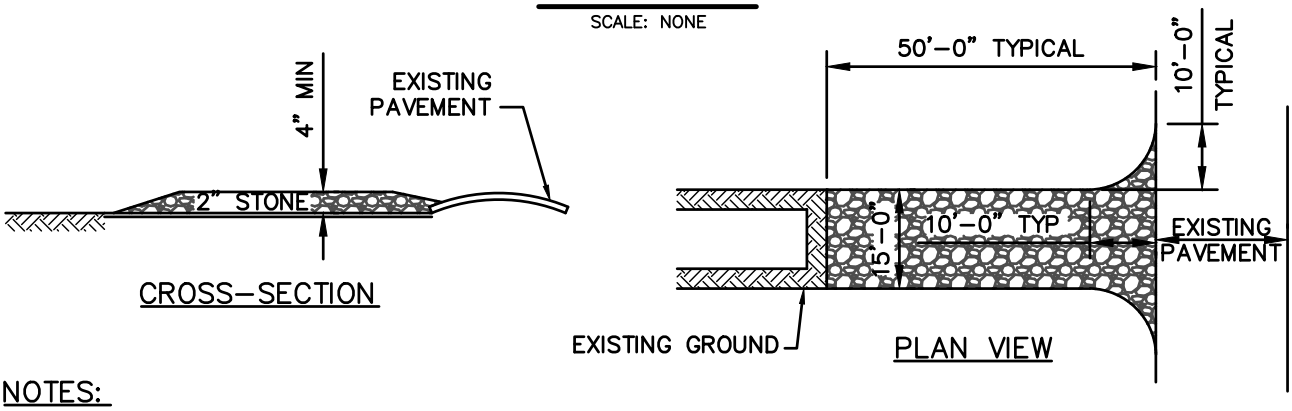
APPROVED BY: VICE PRESIDENT, ENVIRONMENTAL SERVICES
PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR LATEST AUTHORIZED VERSION PLEASE REFER TO THE NATIONAL GRID ENVIRONMENTAL INFONET SITE.

CM-7
ROCK FORD

File: Rock_Ford.dwg

BMP DETAIL

SCALE: NONE



NOTES:

1. STONE SIZE – USE 2" STONE (MINIMUM) TO 6" STONE (MAXIMUM)
2. LENGTH – GREATER THAN OR EQUAL TO 50 FEET
3. THICKNESS – 4"
4. WIDTH – FIFTEEN (15) FOOT TYP., BUT NOT LESS THAN FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS ENTRANCE. IF PIPING IS IMPRACTICAL, MOUNTABLE BERM SHALL BE PERMITTED.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.
8. THE CLEAN STONE SHOULD BE INSTALLED OVER A GEOTEXTILE FABRIC. GEOTEXTILE FABRIC MAY BE OMITTED FOR PERMANENT CONSTRUCTION ENTRANCES/EXITS ON A CASE–BY–CASE BASIS WITH THE APPROVAL OF THE NATIONAL GRID ENVIRONMENTAL SCIENTIST.
9. FOLLOWING CONSTRUCTION, THE CONSTRUCTION ENTRANCE/EXIT SHALL BE REMOVED AND THE AREA GRADED, SEEDED, AND MULCHED AS NEEDED. ENTRANCE/EXITS MAY REMAIN DEPENDING UPON FUTURE ACCESS NEEDS AND/OR PROJECT–SPECIFIC APPROVALS BUT REQUIRES APPROVALS FROM THE NATIONAL GRID ENVIRONMENTAL SCIENTIST AND PROPERTY LEGAL.

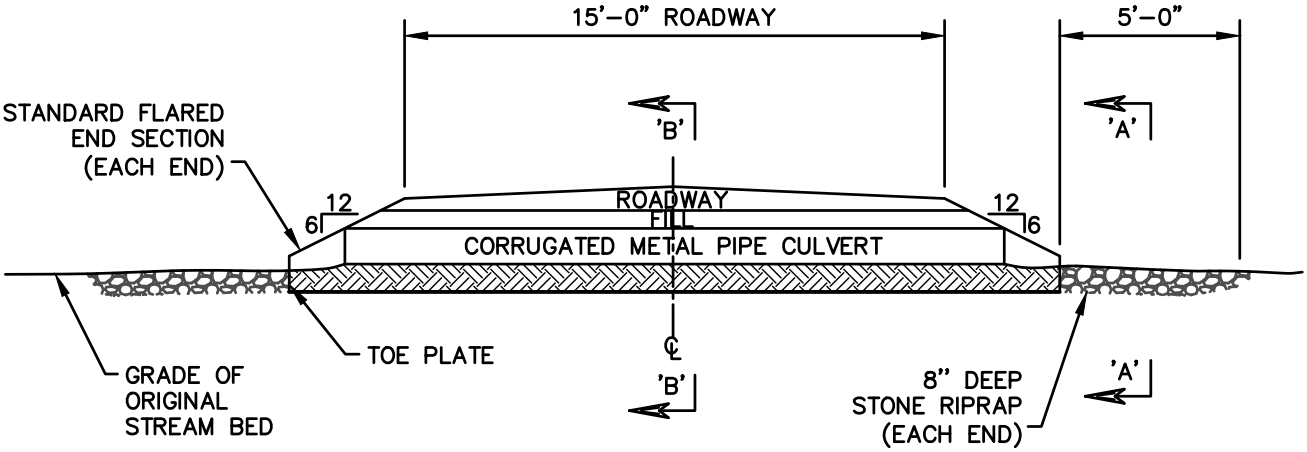
BMP PICTURE

CM-8
TEMPORARY CONSTRUCTION ENTRANCE/ EXIT

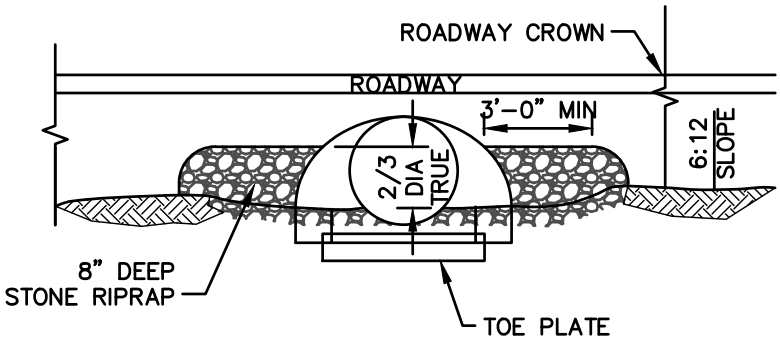
File: Temp_Construction_Ent.dwg

BMP DETAIL

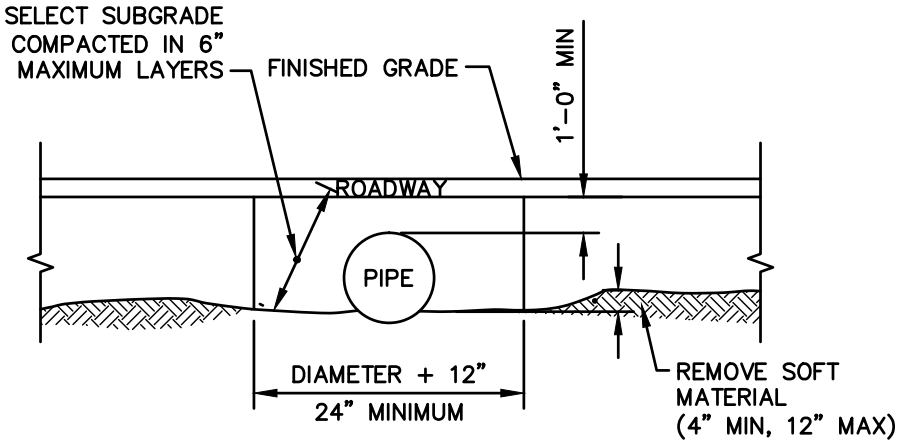
SCALE: NONE



CROSS SECTION



SECTION 'A–A'
(SAME BOTH ENDS)



SECTION 'B–B'

CM-9
TEMPORARY CONSTRUCTION
CULVERT (1 OF 2)

File: Temp_Constr_Culvert.dwg

BMP DETAIL

SCALE: NONE

NOTES:

1. CULVERT DESIGN AND LAYOUT SHALL BE COORDINATED WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST (NGES).
2. CROWN ROADWAY 1/2 INCH PER FOOT.
3. LAY THE CULVERT STRAIGHT AND AS NEARLY AS POSSIBLE ALONG THE EXISTING STREAM BED AND WITH THE INVERTS AT OR SLIGHTLY BELOW BED ELEVATION.
4. CORRUGATED METAL PIPE IS TO BE GALVANIZED STEEL, OR ALUMINIZED STEEL (TYPE 2), WITH BOLTED CONNECTORS.
5. DIAMETERS SHALL BE AS PER THE PROJECT DRAWINGS AND THE SPECIFICATION. THE PIPE GAGE SHALL BE AS FOLLOWS:

DIAMETER (INCHES)	GAGE
12" – 15"	.004"
18" – 24"	.079"
30" – 36"	.109"

6. INSTALLATION OF CULVERTS LARGER THAN 36 INCH DIAMETER SHALL REQUIRE SPECIAL ENGINEERING DESIGN.
7. SELECT SUBGRADE SHALL BE A GRANULAR MATERIAL AS DESCRIBED IN NYSDOT SPECIFICATION ITEM 203–2.02C, OR AS APPROVED BY A NGES.
8. STONE RIPRAP SHALL BE AS DESCRIBED IN NYSDOT SPECIFICATION ITEM 203–2.02D, WITH 8 INCH MAXIMUM SIZE, OR AS APPROVED BY A NGES. EXCEPT WHERE PROTECTED BY STONE, ALL EMBANKMENT SLOPES ARE TO BE STABILIZED, MULCHED AND SEEDED AS PER PROJECT SPECIFICATIONS.
9. OUTLET SHOULD BE CONFIGURED NOT TO CREATE HYDRAULIC JUMP OR PLUNGE POOL.
10. INSTALL EROSION CONTROLS ADJACENT TO THE CULVERT ENDS TO PROTECT THE WATERWAY FROM ROADWAY DEBRIS.

BMP PICTURE

BMP PICTURE

NOTE:

1. PICTURE SHOWS VIEW OF ACCESS WAY STABILIZATION ADJACENT TO A WETLAND.
2. COORDINATE STABILIZATION DESIGN AND PRODUCT WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

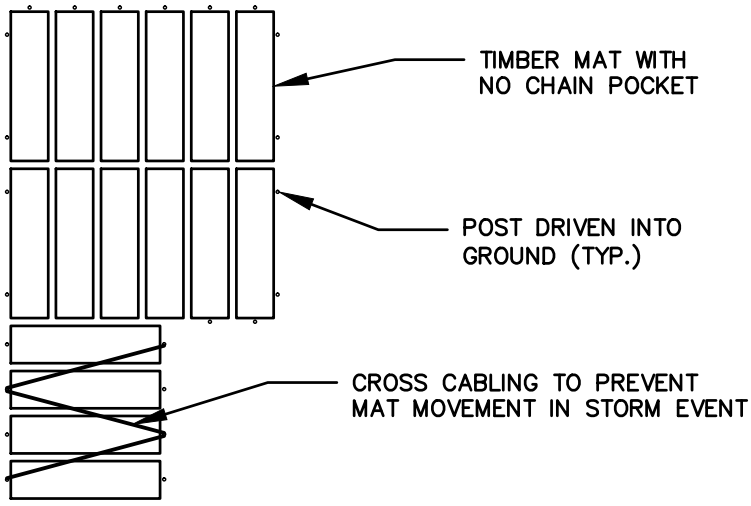

NO ACCESS – WETLAND/STREAM CROSSING MATS REQUIRED

NO ACCESS – A.) PROJECT LIMITS E.G. ROW LIMITS
B.) HISTORICAL/CULTURAL
C.) ENVIRONMENTALLY SENSITIVE E.G. THREATENED & ENDANGERED
D.) OTHER

APPROVED ACCESS

BMP DETAIL 1

SCALE: NONE



TYPICAL PLAN VIEW

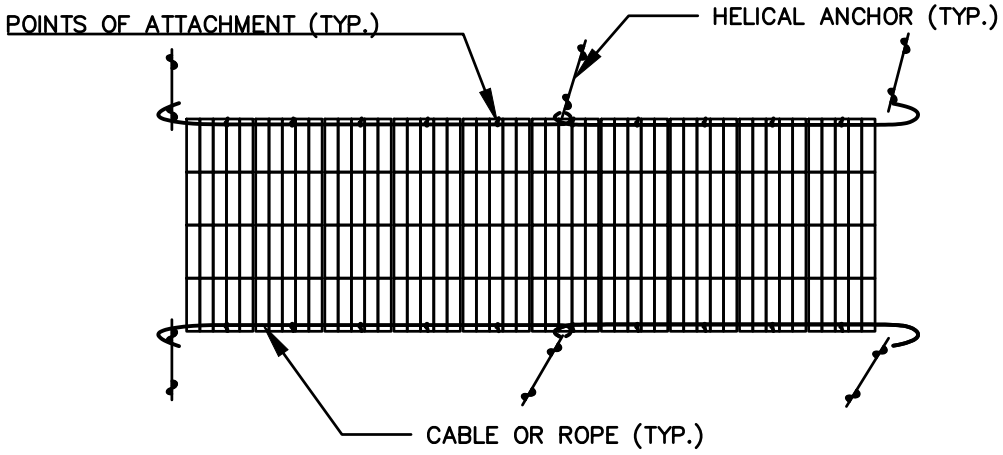
NOTES:

1. EXAMPLES OF ANCHORING ONLY. MATTING CONTRACTOR SHALL PROPOSE THE METHOD OF ANCHORING BASED ON FIELD CONDITIONS.
2. ANCHORING METHOD TO BE APPROVED BY THE NATIONAL GRID ENVIRONMENTAL SCIENTIST AND TRANSMISSION LINE CONSTRUCTION SUPERVISOR.

BMP DETAIL 2

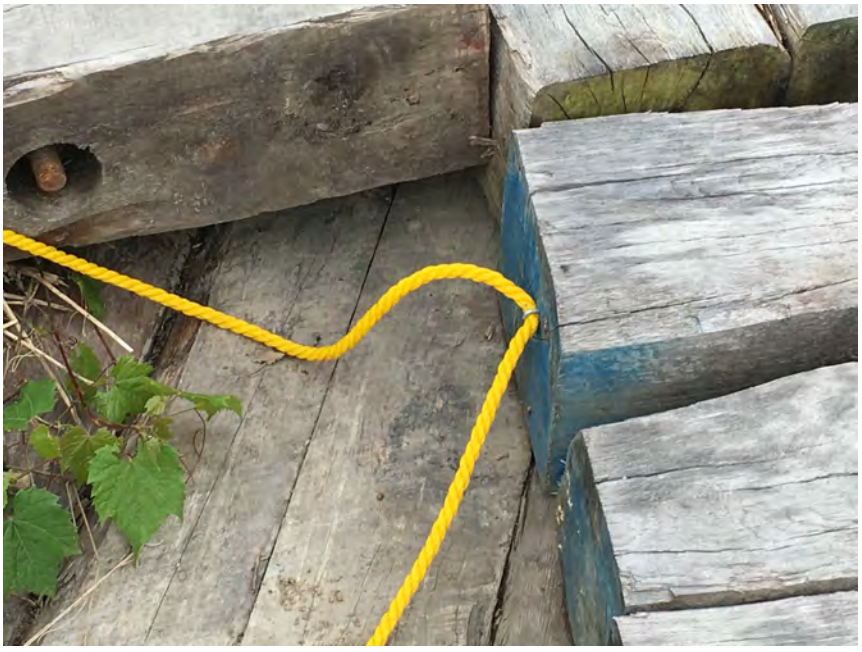
NOTES:

1. TYPICAL HELICAL ANCHOR AND CABLE CONFIGURATION FOR MAT CONTAINMENT IN FLOODPLAINS/LAND SUBJECT TO FLOODING.
2. TYPICAL POINTS OF ATTACHMENT HEAVY STAPLES, EYE BOLTS OR OTHER SUITABLE HARDWARE TO SECURE ATTACHMENT OF MAT TO LINEAR CABLE. IF CHAIN POCKETS ARE PRESENT IN THE MATS CABLE OR ROPE CAN BE LOOPED THROUGH RODS.



BMP PICTURE 1

BMP PICTURE 2



CM-12
EXAMPLE OF CONSTRUCTION MAT ANCHORING (2 OF 2)

File: Const_Mat_Anchoring.dwg

BMP DETAIL

SCALE: NONE

WIRE BACKED SILT FENCE

MUTUAL INDUSTRIES WIRE BACKED SILT FENCE
PART # 1776-14-24
36" X 100'
36" MISF 1776 FABRIC
24" 14GA WIRE MESH
OPENING OF MESH 2" X 4"
FABRIC HOG RINGED EVERY 12"-18" ALONG THE TOP OF THE FENCE

ROLL WEIGHT 40 LBS

32 ROLLS PER PALLET

NOTES:

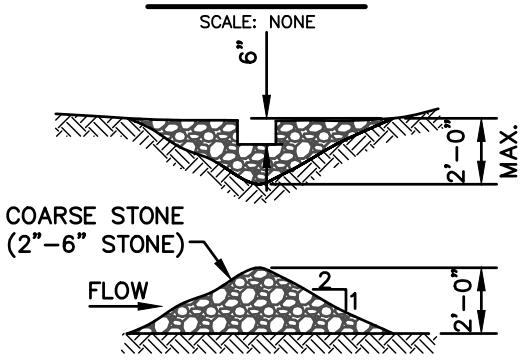
1. PRODUCT TO BE MUTUAL INDUSTRIES' WIRE BACKED SILT FENCE OR APPROVED EQUAL BY NATIONAL ENVIRONMENTAL SCIENTIST.
2. COORDINATE INSTALLATION METHOD AND LOCATION WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

NOTE:

1. PICTURE SHOWS SEDIMENT FILTER WITHIN A WETLAND.

BMP DETAIL



STONE CHECK DAM

NOTES:

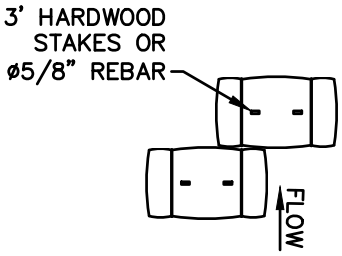
1. USE CHECK DAMS TO SLOW WATER FLOWS AND AS SMALL SEDIMENT TRAPS IN DITCHES ALONG ACCESS ROADS.
2. CLEAN SEDIMENT AND REPLACE DAMS AS NECESSARY.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6" LOWER THAN THE OUTER EDGES.
4. COORDINATE SPACING WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
5. MAX. SPACING: TOE OF THE UPSTREAM DAM IS SAME ELEVATION AS TOP OF DOWNSTREAM DAM.
6. STONE SHALL BE FREE OF FINE PARTICLES TO PREVENT TURBID DISCHARGES.

BMP PICTURE

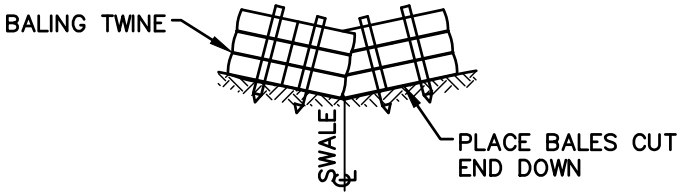
NOTE: A SMALLER STONE SIZE IS SHOWN IN THIS PICTURE.

BMP DETAIL

SCALE: NONE



PLAN VIEW



SECTION VIEW

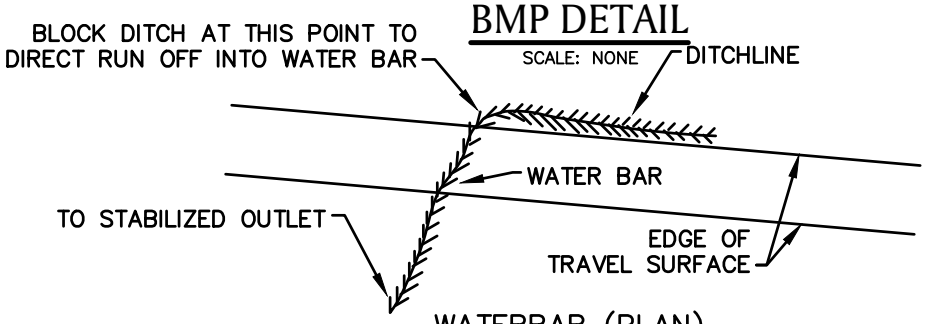
NOTES:

1. USE CHECK DAMS TO SLOW WATER FLOWS AND AS SMALL SEDIMENT TRAPS IN DITCHES ALONG ACCESS ROADS.
2. CLEAN SEDIMENT AND REPLACE DAMS AS NECESSARY.
3. COORDINATE SPACING WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

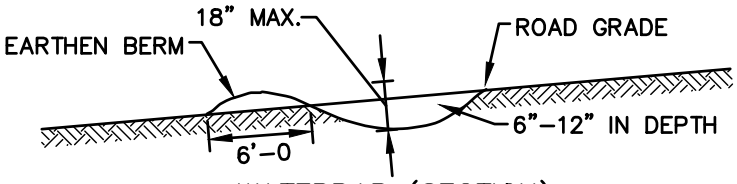
BMP PICTURE

BMP DETAIL

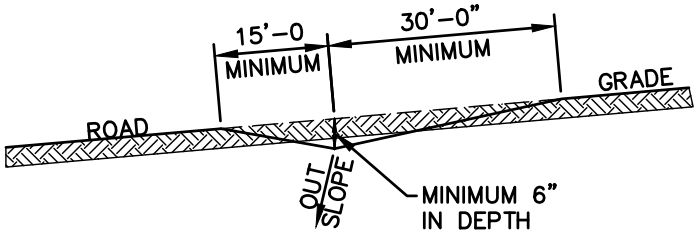
SCALE: NONE



WATERBAR (PLAN)



WATERBAR (SECTION)



DISCHARGE (SECTION)

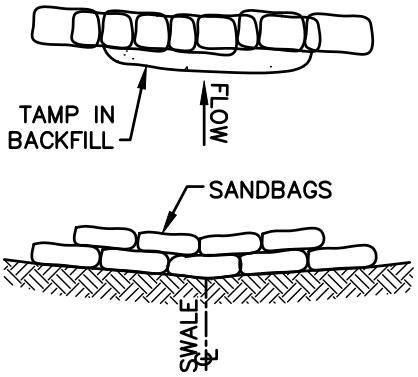
NOTE:

1. LINE WITH 2"–6" STONE UNDERLAIN BY GEOTEXTILE FILTER FABRIC, KEYED INTO ROAD SURFACE AT LEAST 10 FEET EACH SIDE OF WATERBAR.
2. COORDINATE SPACING WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

BMP DETAIL

SCALE: NONE



SANDBAG CHECK DAM

NOTES:

1. USE CHECK DAMS TO SLOW WATER FLOWS AND AS SMALL SEDIMENT TRAPS IN DITCHES ALONG ACCESS ROADS.
2. CLEAN SEDIMENT AND REPLACE DAMS AS NECESSARY.
3. COORDINATE SPACING WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

NOTE:

1. PICTURE DOES NOT DEPICT "TAMP IN BACKFILL"

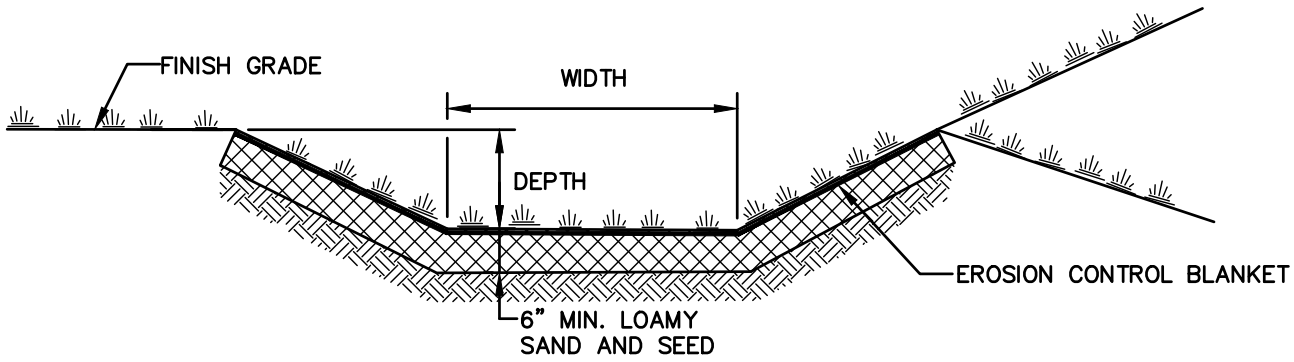
BMP PICTURE

NOTE:

1. EXACT SIZE, LOCATION AND DESIGN IS DEPENDANT ON SITE CONDITIONS, AND LOCAL AND STATE REGULATIONS. COORDINATE THIS BMP WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST PRIOR TO CONSTRUCTION.

BMP DETAIL

SCALE: NONE



NOTES:

1. WIDTH AND DEPTH OF SWALE, AND EROSION CONTROL BLANKET TYPE TO BE COORDINATED WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. REFER TO DETAILS SEC–10 AND SEC–11 FOR SEED MIXTURE OPTIONS.

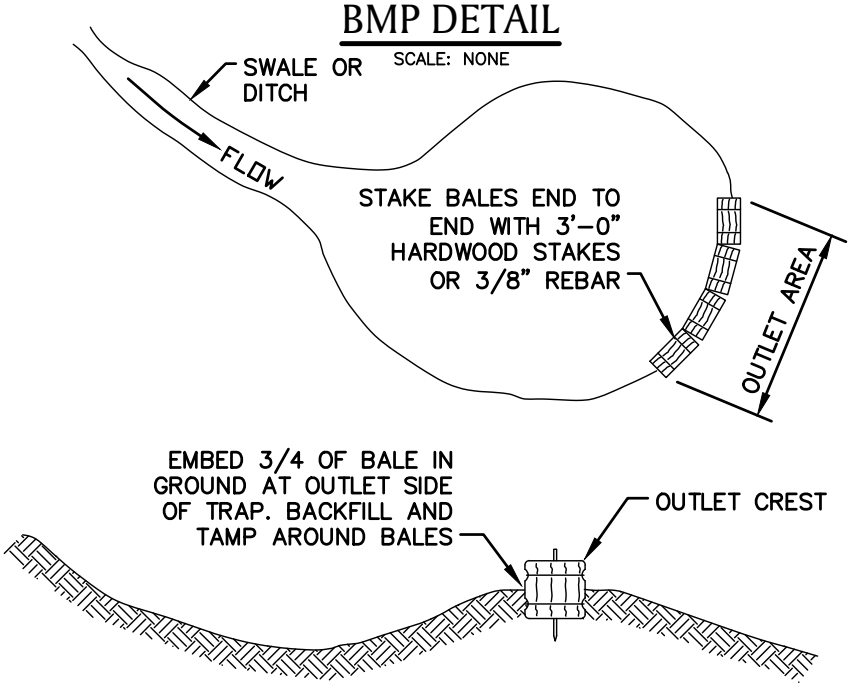
BMP PICTURE

AA-8
DRAINAGE SWALE AND
LINED DITCH

File: Lined_Drainage_Swale.dwg

BMP DETAIL

SCALE: NONE



TYPICAL PROFILE

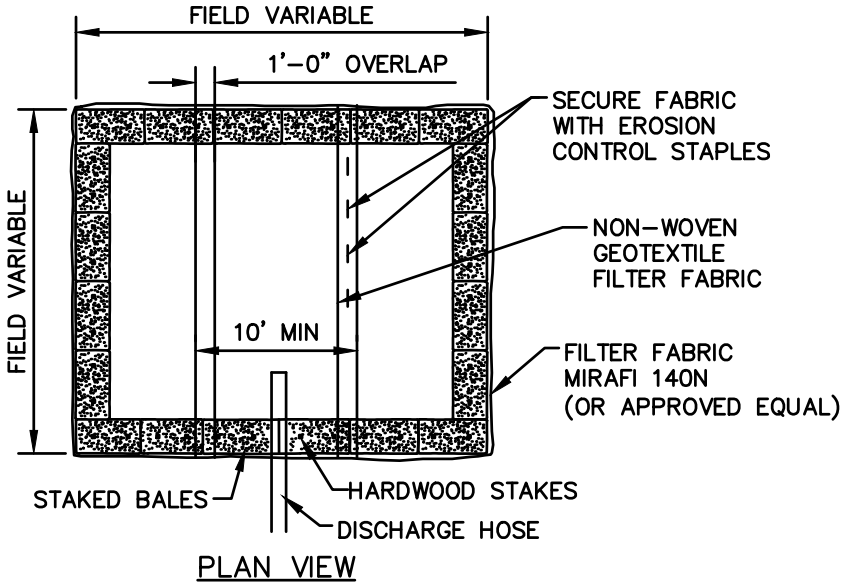
NOTES

1. SIZE, SHAPE AND PROFILE OF SEDIMENT WILL VARY ACCORDING TO ANTICIPATED FLOW VOLUME AND SURROUNDING TERRAIN AND SHALL BE COORDIANTED WITH THE NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. THE BASIN SHALL BE CUT BELOW THE GROUNDLINE. FILL SHALL NOT BE USED TO HOLD WATER UNLESS ROLLED AND COMPACTED.
3. OUTLET AREA IS TO REMAIN FREE OF EXCAVATION SPOILS.
4. OUTLET CREST ELEVATION SHALL BE LOWER THAN INLET ELEVATION AND AT LEAST 1'–0" BELOW THE TOP OF THE BASIN.ARMOUR SLOPES >8% IN OUTLET AREA WITH STONE OF APPROPRIATE SIZE TO PREVENT SCOUR.
5. ARMOUR SLOPES >8% IN OUTLET AREA WITH STONE OF APPROPRIATE SIZE TO PREVENT SCOUR.

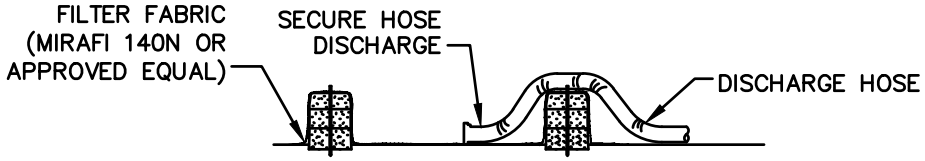
BMP PICTURE

BMP DETAIL

SCALE: NONE



PLAN VIEW



CROSS–SECTION

NOTES:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS,
2. THE BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.
3. KEEP AS FAR FROM WETLANDS AS PRACTICAL.
4. CLEAN AND REMOVE AS SOON AS DEWATERING IS COMPLETE.

BMP PICTURE

AA-10
DEWATERING BASIN
(SMALL SCALE)

File: Dewat_Bas_Small.dwg

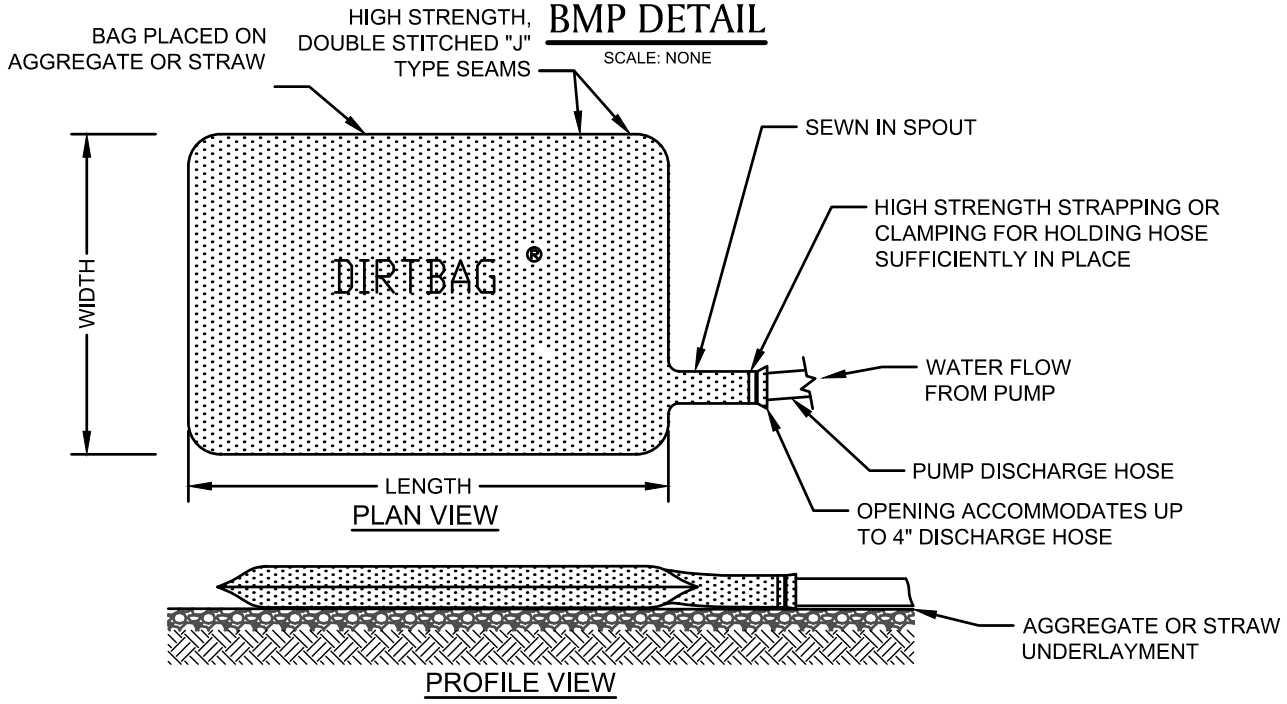
BMP PICTURE

NOTE:

1. EXACT SIZE, LOCATION AND DESIGN IS DEPENDANT ON SITE CONDITIONS, AND LOCAL AND STATE REGULATIONS. COORDINATE THIS BMP WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST PRIOR TO CONSTRUCTION.

BMP DETAIL

SCALE: NONE



NOTE:
ONCE PUMPING COMMENCES, THE DIRT BAG SHALL BE MONITORED FREQUENTLY TO ASSURE THAT THE CONNECTIONS ARE SECURELY FASTENED AND THE RATE OF WATER DELIVERY TO THE STRUCTURE IS LOW ENOUGH TO PREVENT UNFILTERED WATER FROM FLOWING FROM THE HOSE CONNECTIONS OR BAG.

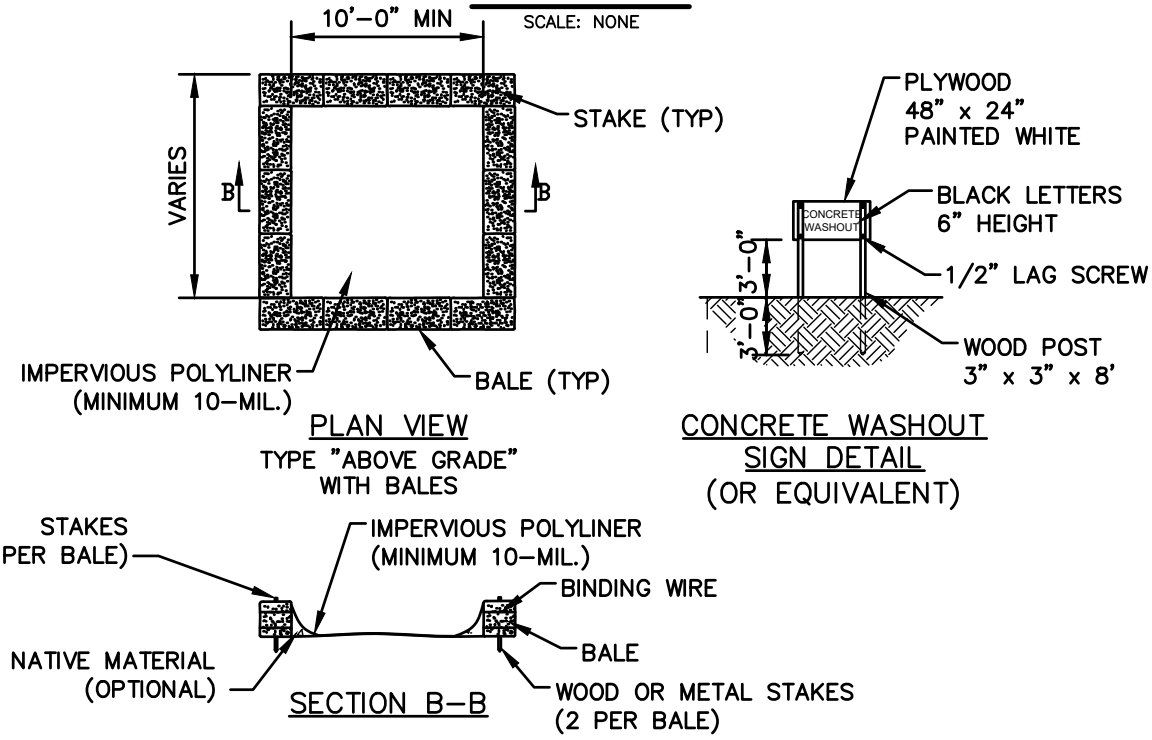
BMP PICTURE

* PICTURE AND DETAIL PROVIDED BY ACF ENVIRONMENTAL

AA-12
DIRTBAG *

File: Dirtbag.dwg

BMP DETAIL



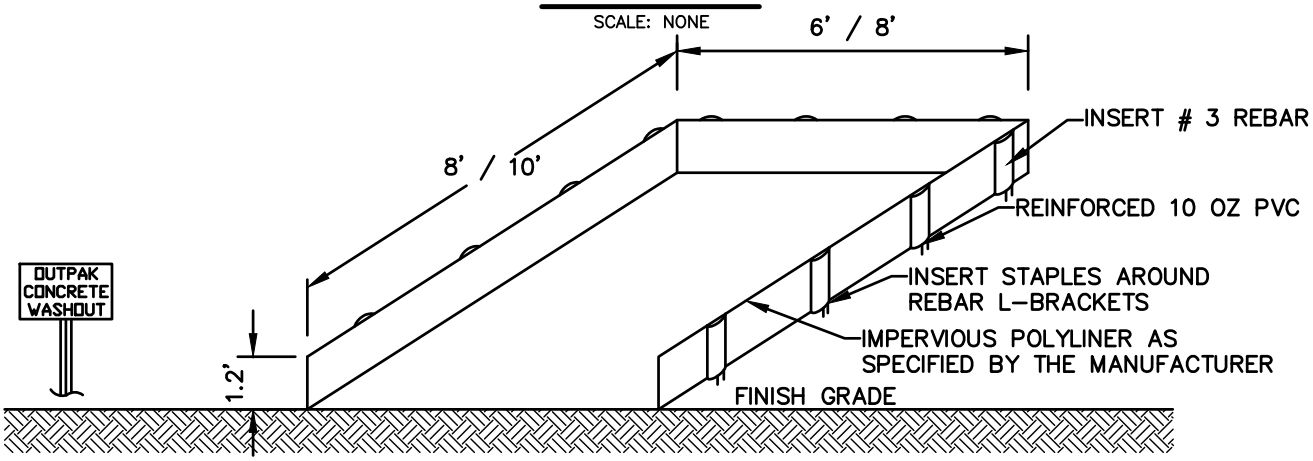
NOTES:

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS. COORDINATE SIZE AND LOCATION OF CONCRETE WASTE SUMP WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. KEEP AS FAR FROM DRAINAGE CHANNELS AND WETLAND AREAS AS PRACTICAL.
3. SUMPS TO BE CLEANED AND WASTE CONCRETE REMOVED AND PROPERLY DISPOSED OF UPON COMPLETION OF WORK.
4. SEE ADDITIONAL NOTES ON DETAIL AA–14.

BMP PICTURE

BMP DETAIL

SCALE: NONE



CROSS SECTION

NOTES:

1. PRODUCT TO BE OUTPAK PVC CONCRETE WASHOUT OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT.
3. SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
4. THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
5. WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPENSED OF AT AN APPROVED WASTE SITE.
6. DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE.
7. DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
8. AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
9. LOCATE WASHOUT AREA AT LEAST 50' FROM STORM DRAIN, OPEN DITCHES, OR WATERBODIES. COORDINATE LOCATION WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.
10. WASH OUT WASTES INTO THE OUTPAK WASHOUT WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.
11. A SECURE, NON-COLLAPSING, NON-WATER COLLECTING COVER MUST BE PLACED OVER CONCRETE WASHOUT PRIOR TO PREDICTED WET WEATHER TO PREVENT ACCUMULATION AND OVERFLOW OF PRECIPITATION.

BMP PICTURE

*** PICTURE AND DETAIL PROVIDED BY OUTPAK WASHOUT**
APPROVED BY: VICE PRESIDENT, ENVIRONMENTAL SERVICES
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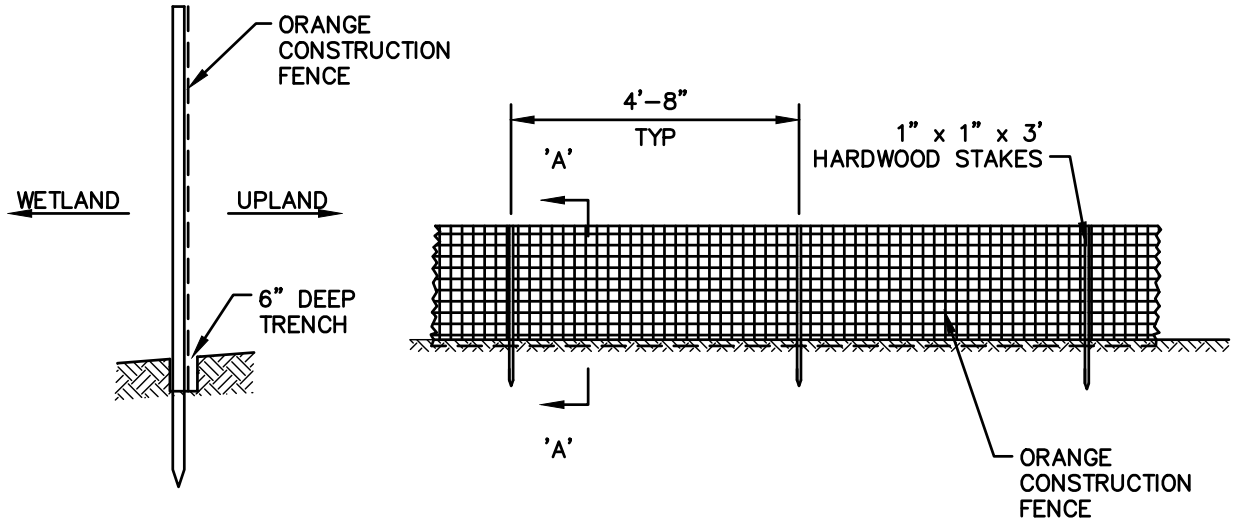
AA-14
OUTPAK CONCRETE WASHOUT *

File: Outpak_Washout.dwg

BMP DETAIL

SCALE: NONE



SECTION A-A

BMP PICTURE

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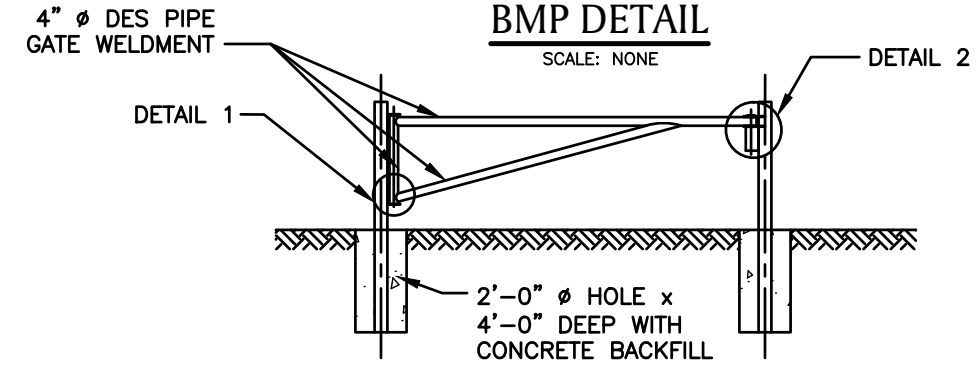
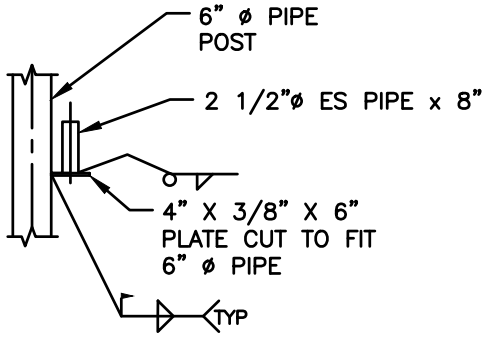
AA-15
BARRIER FENCE
(CONSTRUCTION FENCE)

File: Barrier_Fence.dwg

BMP DETAIL

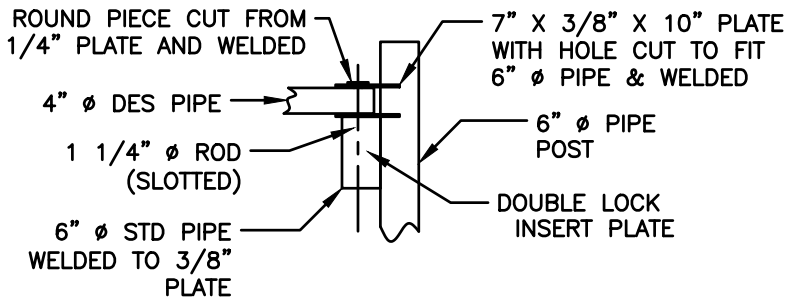
SCALE: NONE





DETAIL 1

SIMILAR DETAIL AT TOP



DETAIL 2

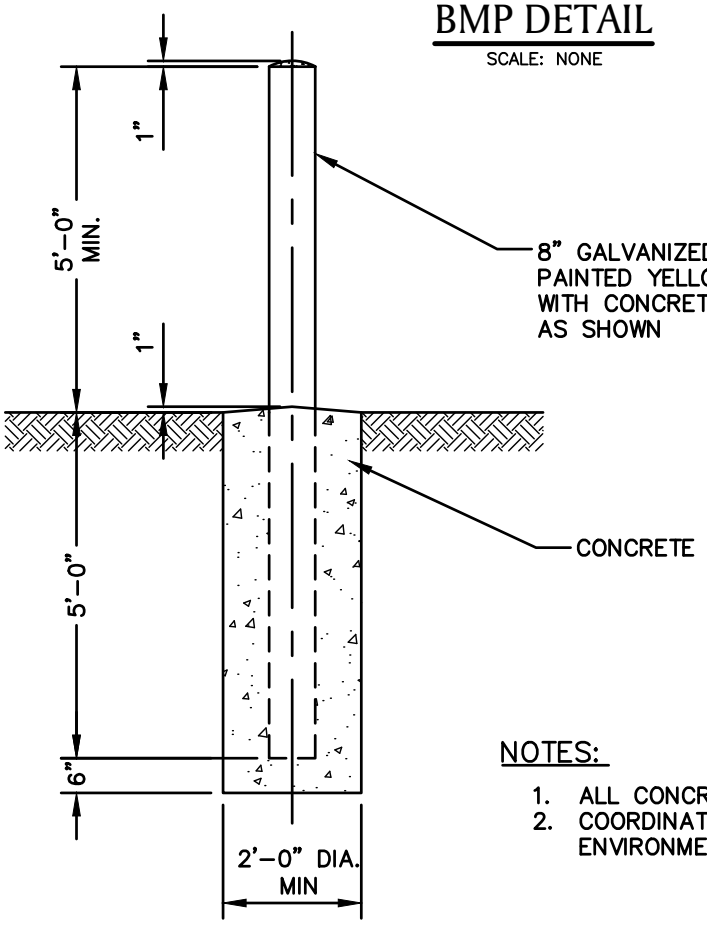
NOTES:

1. ALL GATE STEEL PIPES SHALL BE IN ACCORDANCE WITH ASTM A–501, PLATES SHALL BE ASTM A–36.
2. ALL STEEL PIPES SHALL BE PRIMED WITH ZINC–CHROMATE PRIMER AND FINISHED WITH AN APPROVED OSHA "SAFETY YELLOW" TOP COAT COMPATIBLE WITH THE PRIMER AND FOR EXTERIOR EXPOSURE.
3. REFLECTORS SHALL BE SPACED AT 3 FEET ALONG THE LENGTH OF THE CROSSBAR AND BRACE
4. BACKFILL AT POSTS TO BE COMPACTED.

BMP PICTURE

BMP DETAIL

SCALE: NONE



NOTES:

1. ALL CONCRETE TO BE 2500 P.S.I. MINIMUM.
2. COORDINATE LOCATIONS WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

BMP

Definition

The control of dust resulting from land-disturbing activities.

Purpose

To prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the local permitting authority.

Construction Specifications

A. Non-driving Areas – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. Driving Areas – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access routes.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

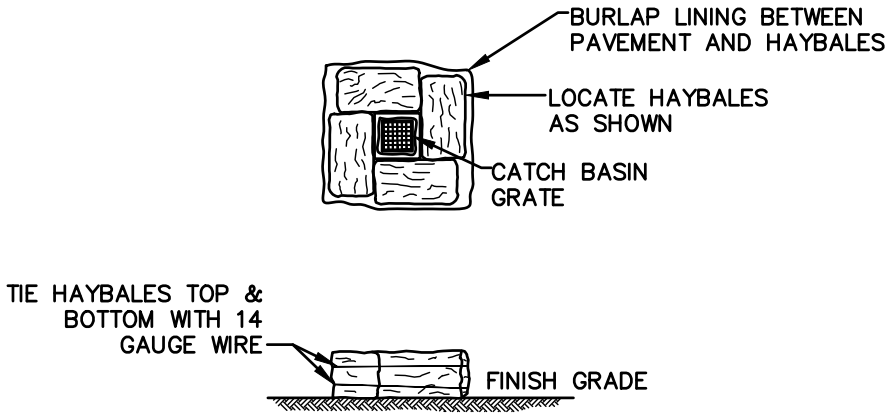
Barriers – Woven geotextiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

BMP DETAIL

SCALE: NONE



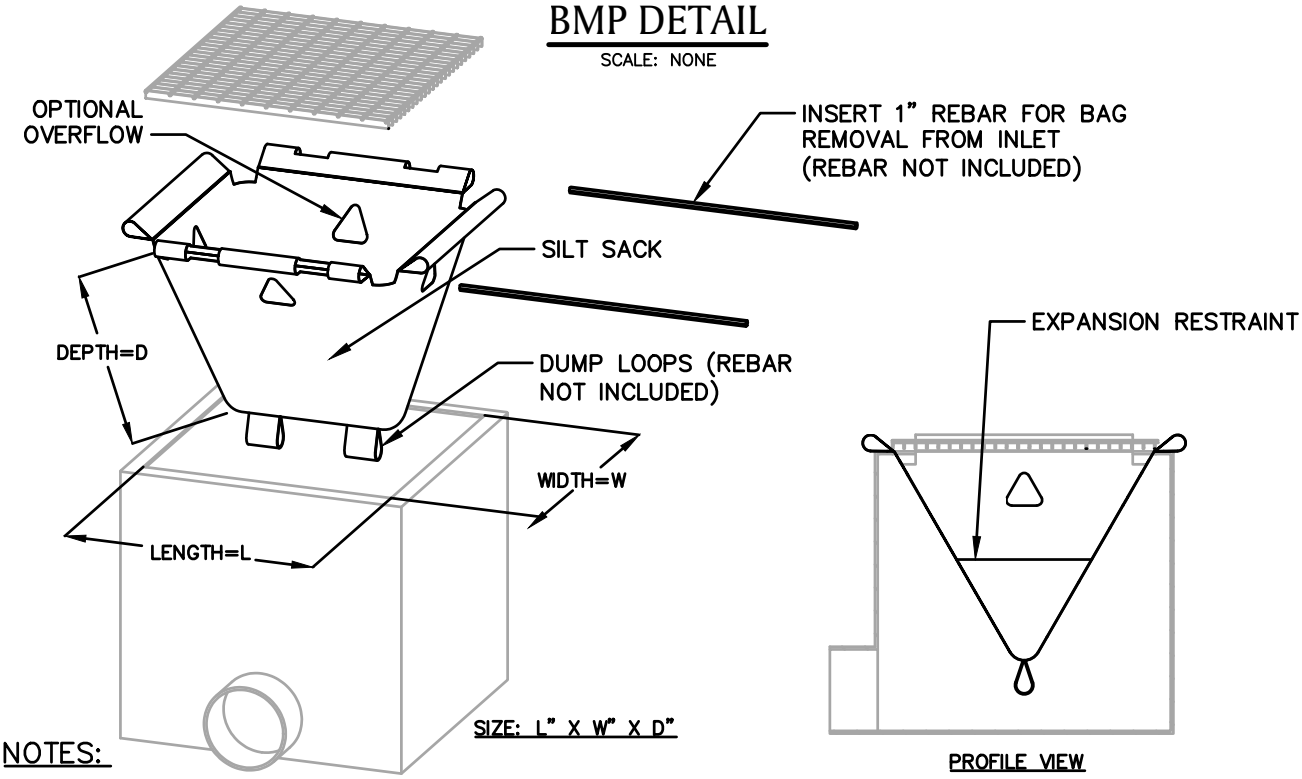
NOTES:

1. SURROUND STREET DRAINAGE STRUCTURE INLET WITH HAY BALES PRIOR TO CONSTRUCTION AND MAINTAIN UNTIL CONSTRUCTION IS COMPLETED. ACCUMULATED SEDIMENTS SHALL BE REMOVED.
2. HAYBALES PLACED ON PAVEMENT SHALL HAVE BURLAP PLACED BETWEEN PAVEMENT AND HAYBALE

BMP PICTURE

BMP DETAIL

SCALE: NONE



NOTES:

1. PRODUCT TO BE SILT SACK OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. THE USE OF A SILT SACK OPTIONAL OVERFLOW AND OVERALL DIMENSIONS ARE TO BE COORDINATED WITH A NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP PICTURE

*** DETAIL PROVIDED BY ACF ENVIRONMENTAL**

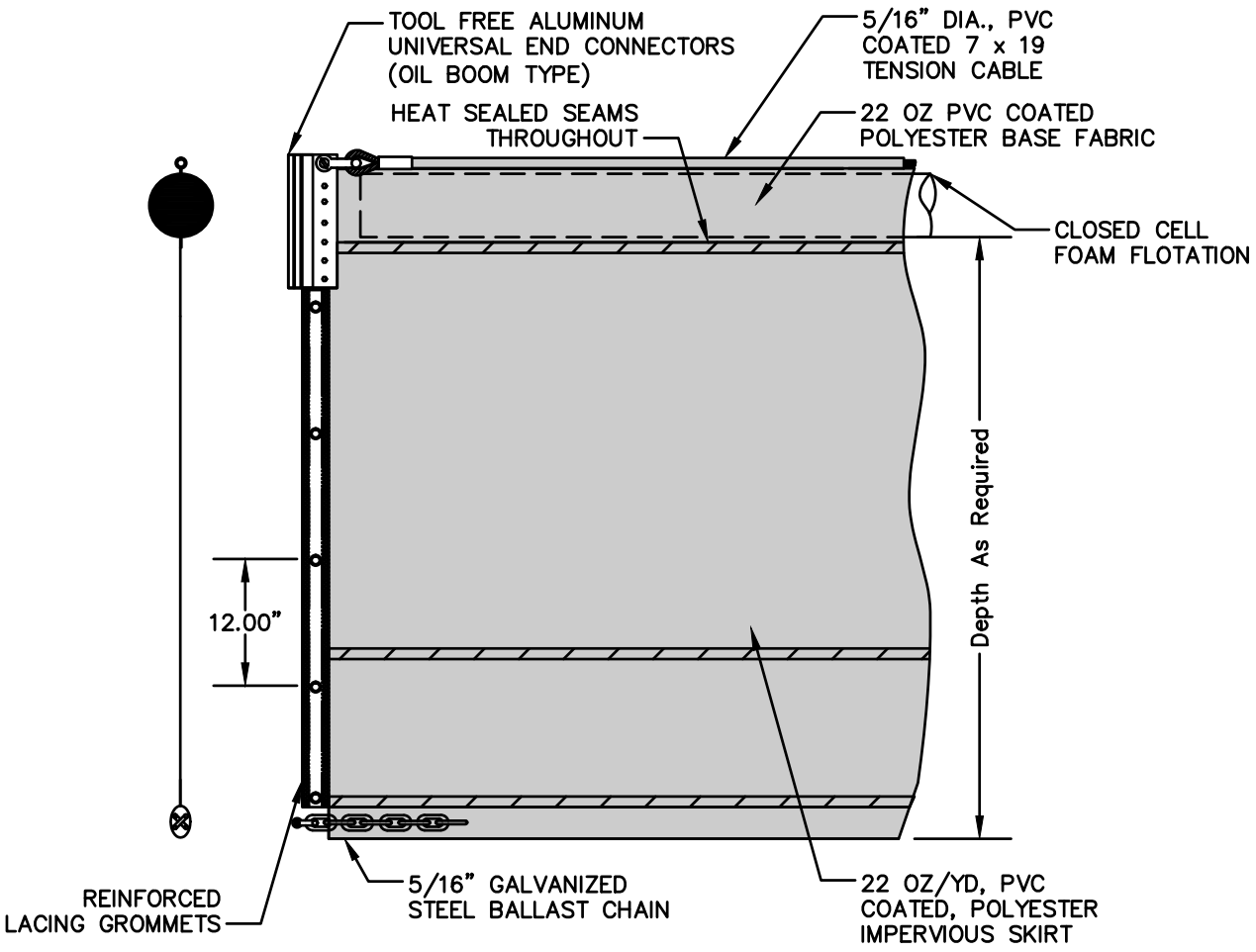
APPROVED BY: VICE PRESIDENT, ENVIRONMENTAL SERVICES

AA-20
SILT SACK *

File: SILT SACK.dwg

BMP DETAIL

SCALE: NONE



BMP PICTURE

*** DETAIL PROVIDED BY BROCKTON EQUIPMENT / SPILLDAM INC.**
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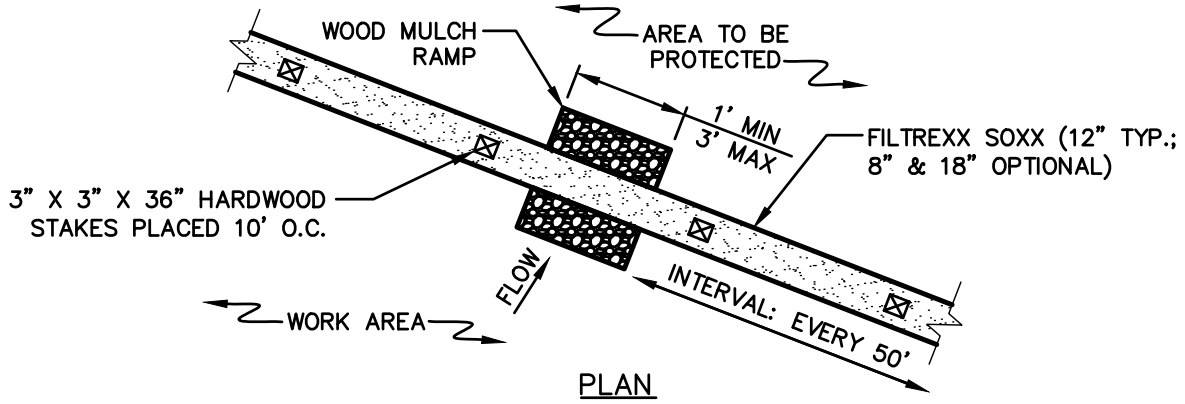
AA-21
TURBIDITY CURTAIN *

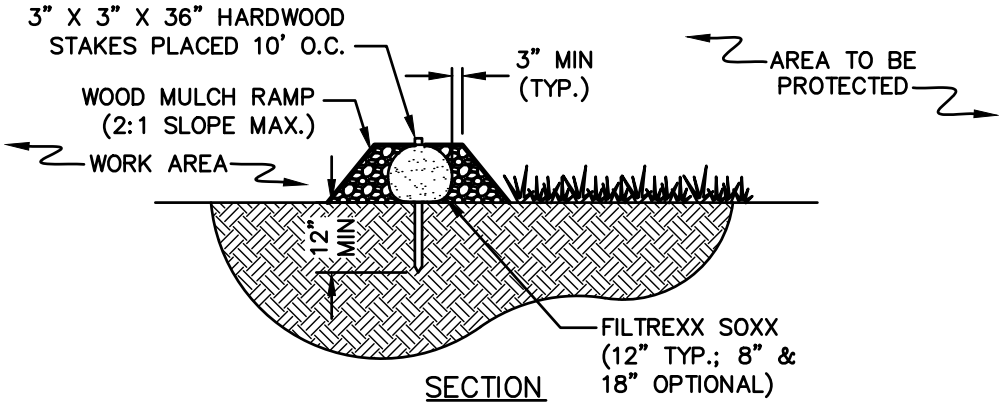
File: Turbidity_Curtain.dwg

BMP DETAIL

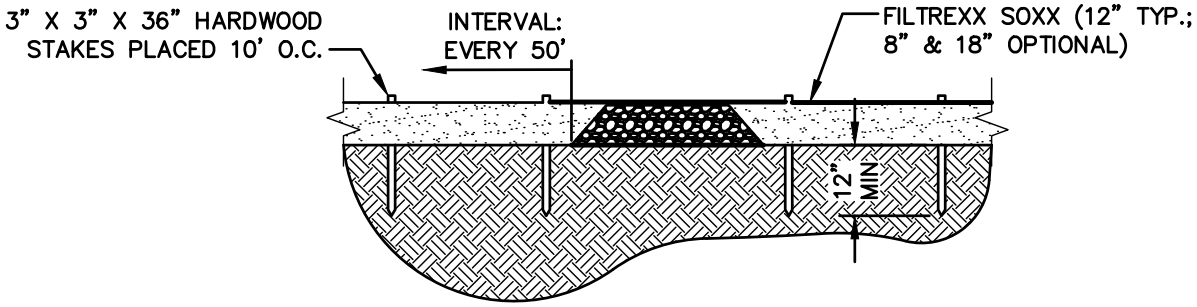
SCALE: NONE



PLAN



SECTION



PROFILE

NOTES

1. PRODUCT TO BE FILTREXX SILT SOXX OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
4. NON-MONOFILAMENT CONTAINMENT MATERIAL SHOULD BE KNITTED PHOTODEGRADABLE OR BIODEGRADABLE MATERIAL, WITH OPENING SIZES BETWEEN 1/8" – 1/4".
5. COMPOST MEDIA SHOULD HAVE PARTICLE SIZE WHERE 99% < 2", 50% > 1/2".
6. COMPOST MATERIAL TO BE DISPOSED OF ON-SITE, OR IN ACCORDANCE WITH ENVIRONMENTAL PERMITS AS APPROVED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
7. WOOD MULCH RAMP IS OPTIONAL DEPENDING ON SUBSTRATE/SITE CONDITIONS, AND TO BE APPROVED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP # AA-22
SILTSOXX AMPHIBIAN & REPTILE CROSSING #1 (1 OF 2)

File: Alternate_Mulch_Ramp_Siltsoxx.dwg

BMP PICTURE

SALAMANDER AND SNAKE CROSSING #1

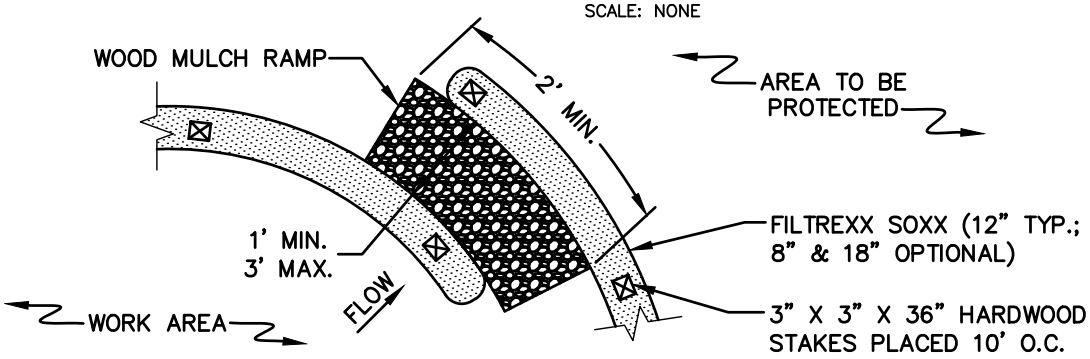
ALTERNATE WOOD MULCH RAMP SILTSOXX NOTES:

1. SILTSOXX, BY FILTREX INTERNATIONAL, OR APPROVED EQUAL PRODUCT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.

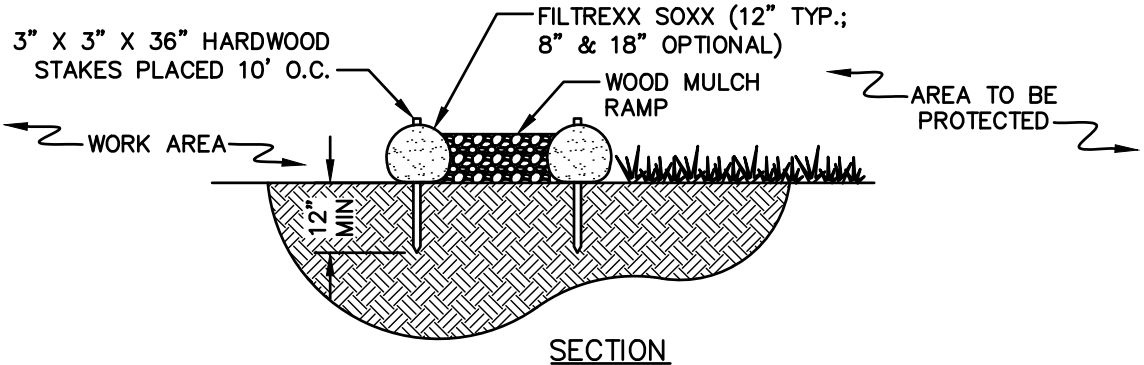
2. BMP SHOULD ONLY BE UTILIZED IN AREAS WHERE RARE SALAMANDER AND SNAKE HABITAT OCCURS, OR AT THE DIRECTION OF THE NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP DETAIL

SCALE: NONE



PLAN



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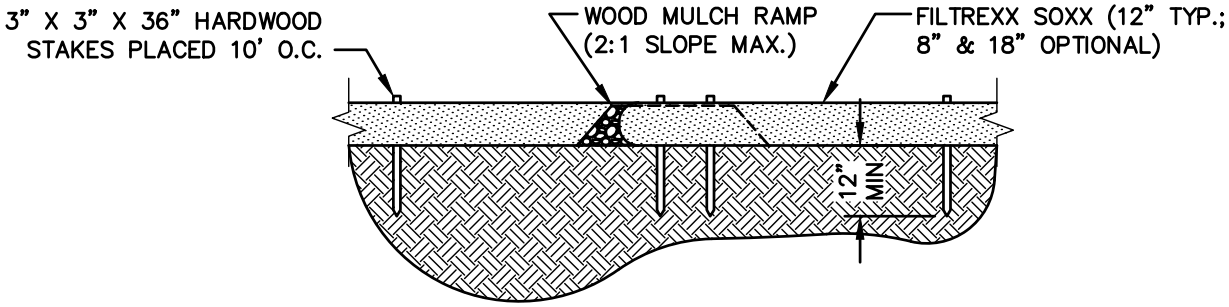


PROFILE

NOTES

1. PRODUCT TO BE FILTREXX SILT SOXX OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
4. NON-MONOFILAMENT CONTAINMENT MATERIAL SHOULD BE KNITTED PHOTODEGRADABLE OR BIODEGRADABLE MATERIAL, WITH OPENING SIZES BETWEEN 1/8" – 1/4".
5. COMPOST MEDIA SHOULD HAVE PARTICLE SIZE WHERE 99% < 2", 50% > 1/2".
6. COMPOST MATERIAL TO BE DISPOSED OF ON-SITE, OR IN ACCORDANCE WITH ENVIRONMENTAL PERMITS AS APPROVED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
7. WOOD MULCH RAMP IS OPTIONAL DEPENDING ON SUBSTRATE/SITE CONDITIONS, AND TO BE APPROVED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
8. GAPS TO BE SPACED EVERY 50 FT, IF POSSIBLE GIVEN WETLAND PERMIT CONDITIONS.

BMP # AA-23
SILTSOXX AMPHIBIAN & REPTILE CROSSING #2 (1 OF 2)

File: Alternate_Siltsoxx.dwg

BMP PICTURE

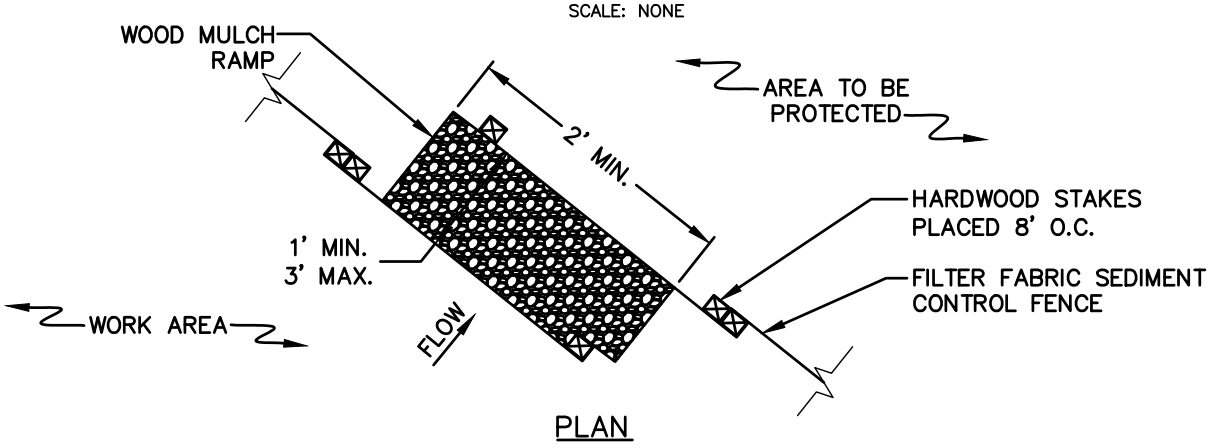
SILTSOXX AMPHIBIAN & REPTILE CROSSING #2

ALTERNATE WOOD MULCH RAMP SILTSOXX NOTES:

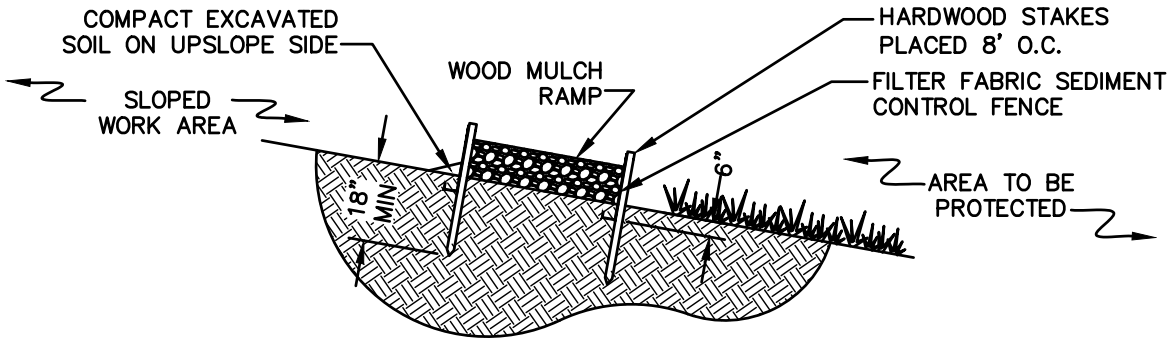
1. SILTSOXX, BY FILTREX INTERNATIONAL, OR APPROVED EQUAL PRODUCT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES.
2. BMP SHOULD ONLY BE UTILIZED IN AREAS WHERE RARE SALAMANDER AND SNAKE HABITAT OCCURS OR AT THE DIRECTION OF THE NATIONAL GRID ENVIRONMENTAL SCIENTIST.

BMP DETAIL

SCALE: NONE



PLAN



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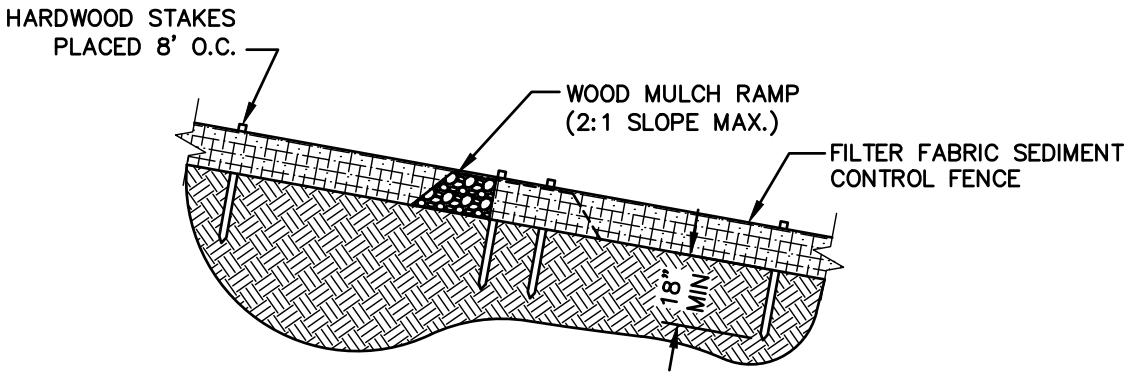


PROFILE

NOTES

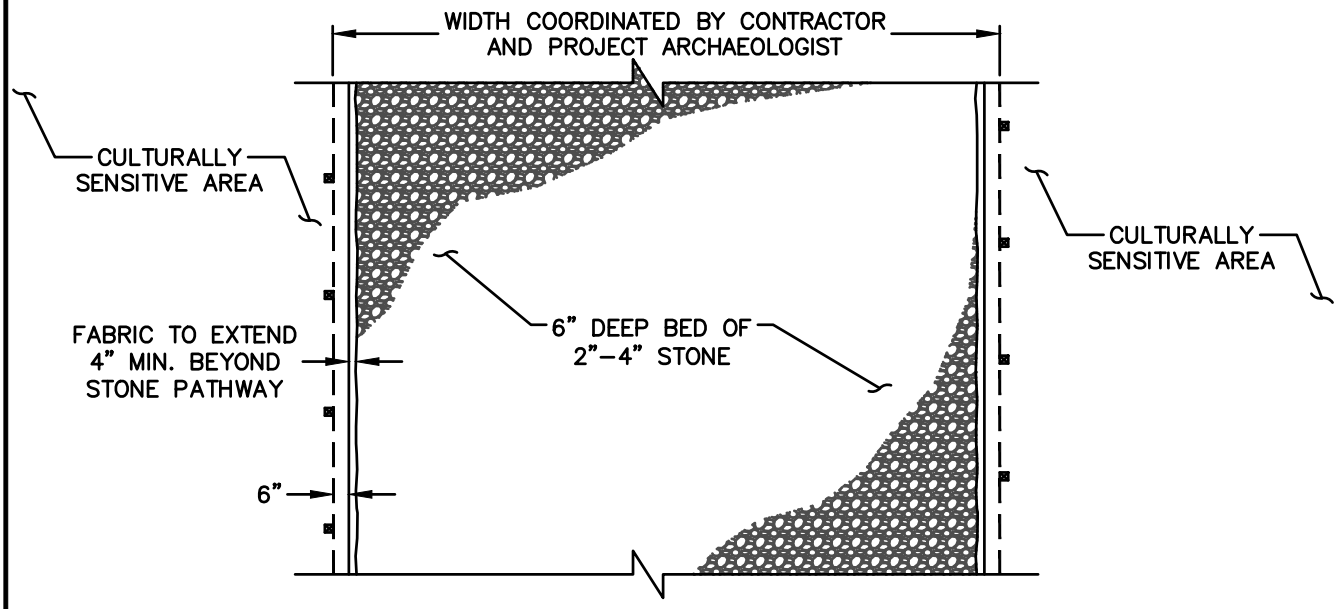
1. IN AREAS WHERE SLOPES OR RUN-OFF VOLUME PROHIBIT USE OF SILTSOXX, CROSSINGS CAN BE PROVIDED THROUGH TRENCHED SILT FENCE.
2. INTALL SILT FENCE TO SPECIFICATIONS IN EG303 APPENDIX 7 "SEC-2 SEDIMENT CONTROL FENCE."
3. WOOD MULCH RAMP IS OPTIONAL DEPENDING ON SUBSTRATE/SITE CONDITIONS, AND TO BE APPROVED BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
4. GAPS TO BE SPACED EVERY 50 FT, IF POSSIBLE GIVEN WETLAND PERMIT CONDITIONS.

BMP # AA-24
SILT FENCE AMPHIBIAN & REPTILE CROSSING #3

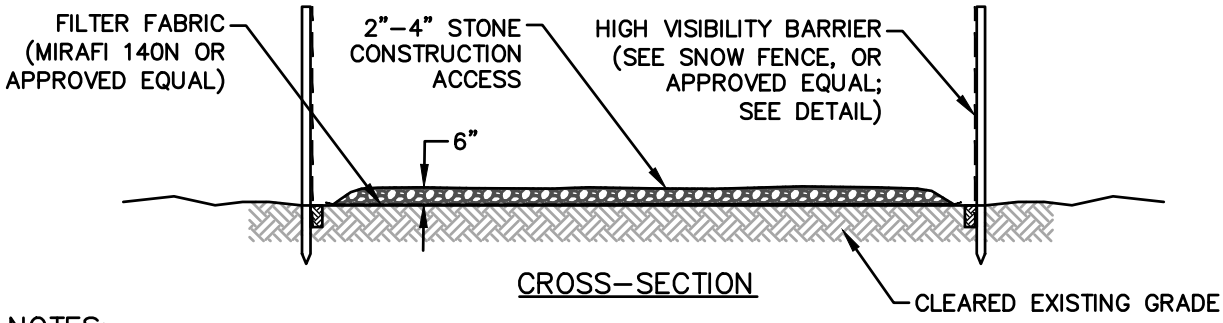
File: Alternate_Siltsoxx.dwg

BMP DETAIL

SCALE: NONE



PLAN VIEW



CROSS–SECTION

NOTES:

1. ARCHAEOLOGICAL SITE BOUNDARIES, AS DEFINED BY INTENSIVE ARCHAEOLOGICAL SURVEY AND SITE AVOIDANCE AND PROTECTION PLANS, WILL BE DEMARCATED BY STAKING BY THE PROJECT ARCHAEOLOGIST.
2. GEOTEXTILE AND STONE MAY REMAIN IN PLACE FOLLOWING CONSTRUCTION IF PERMANENT PROTECTION IS NECESSARY AND DEPENDENT ON EASEMENT RIGHTS.
3. WHERE APPROVED BY THE PROJECT–SPECIFIC SAPP, CONSTRUCTION MATTING MAY BE ADDED OVER, OR IN PLACE OF, THE FABRIC AND STONE.
4. INSTALLATION AND REMOVAL OF FABRIC AND STONE, EROSION CONTROLS, AND/OR CONSTRUCTION MATTING WILL BE MONITORED BY THE PROJECT ARCHAEOLOGIST AT EACH LOCATION(S).
5. INSTALLATION OF THESE MEASURES WILL BE CONDUCTED WITH LOW–GROUND PRESSURE VEHICLES WHERE FEASIBLE.
6. WHERE REQUIRED BY THE PROJECT–SPECIFIC SAPP, TEMPORARY, HIGH VISIBILITY PROTECTIVE FENCING (E.G., SNOW FENCE OR PLASTIC FENCE) WILL BE ERECTED ALONG THE SITE BOUNDARIES OUTSIDE OF THE WORKSPACE WITHIN THE ROW IN ORDER TO PREVENT VEHICLES FROM TRAVELING THROUGH THOSE SITE AREAS DURING CONSTRUCTION. THE PROTECTIVE FENCE WILL BE POSTED WITH "NO TRESPASSING" SIGNS, SO THAT THE SITES CAN BE AVOIDED BY ALL CONSTRUCTION RELATED ACTIVITIES. THE FENCING WILL BE REMOVED UPON COMPLETION OF THE PROJECT. THE INSTALLATION AND REMOVAL OF FENCING WILL BE MONITORED BY THE PROJECT ARCHAEOLOGIST.

BMP PICTURES

APPENDIX 5
CERTIFICATION FORM FOR INVASIVE SPECIES CONTROL

Certain permit conditions, therefore a Condition of Contracts for the Prime Contractor, any Subcontractors, and any equipment or mat vendors for ***National Grid Projects*** shall be required to Certify their equipment[7] {each piece of equipment used on site} as 'clean'[8].

_____ (*name of firm*) hereby Certifies that

_____ (*make, model, and/or type*)

_____ (*equipment ID tag or #)* meets the following

1. before entry on to the job site, has been sufficiently cleaned to remove all accumulated mud, debris, plant fragments, and detritus that could harbor seeds, roots, or plant fragments of so-called invasive plant species; and

2. that the above piece of equipment has neither been off-loaded nor operated in the interval between cleaning and delivery to the jobsite.

3. that equipment deployed in areas of invasive species (as identified in project plans) shall be cleaned prior to redeployment.

_____ (*signed*) _____ (*dated*)

_____ (*printed name*) _____ (*title*)

_____ (*Firm*)

The signed original of this form {one for each piece of equipment (or lot[9] of mats)} is to be given to the NG Construction Supervisor assigned to the project.

---

7 Equipment may include, but is not limited to bulldozers, excavators, backhoes, bucket trucks (tracked or wheeled), pulling equipment, concrete trucks, compressors, drilling equipment, and mats (composite, wood, or other materials).

8 With regard to invasive species, the definition of clean means free of accumulated mud, debris, plant fragments, and detritus that could harbor seeds, roots, or plant fragments of so-called invasive plant species.

9 Lot of mats is the number of mats that may be transported by one forwarder/truck at a time.

Appendix 6 – Snow Disposal Guidelines

See EG303NE_App6 published separately

APPENDIX 6
SNOW DISPOSAL GUIDELINES

Finding a place to dispose of collected snow poses a challenge. While we are all aware of the threats to public safety caused by snow, collected snow that is contaminated with road salt, sand, litter, and automotive pollutants such as oil also threatens public health and the environment.

As snow melts, road salt, sand, litter, and other pollutants are transported into surface water or through the soil where they may eventually reach the groundwater. Road salt and other pollutants can contaminate water supplies and are toxic to aquatic life at certain levels. Sand washed into water bodies can create sand bars or fill in wetlands and ponds, impacting aquatic life, causing flooding, and affecting our use of these resources.

There are several steps that should be taken to minimize the impacts of snow disposal on public health and the environment.

- **DO NOT** dump snow into any water body, including rivers, the ocean, reservoirs, ponds, or wetlands. In fact, a buffer of at least 50 feet between any snow disposal area and any the high-water mark of any surface water should be kept. A silt fence or equivalent barrier should be securely placed between the snow storage area and the high-water mark. In addition to water quality impacts and flooding, snow disposed in surface waters can cause navigational hazards when it freezes into ice blocks.
- **DO NOT** dump snow within a wellhead protection area (e.g., a Zone II), in a high or medium-yield aquifer, or within 75 feet of a private well, where road salt may contaminate water supplies**. Ask an Environmental Department representative for guidance in determining if a proposed disposal area is located within one of these sensitive areas.**
- Avoid disposing of snow on top of storm drain catch basins or in storm water drainage swales or ditches. Snow combined with sand and debris may block a storm drainage system, causing localized flooding. A high volume of sand, sediment, and litter released from melting snow also may be quickly transported through the system into surface water.
- All debris in a snow storage area should be cleared from the site and properly disposed of no later than May 15 of each year the area is used for snow storage.

Under extraordinary conditions, when all land-based snow disposal options are exhausted, disposal of snow that is not obviously contaminated with road salt, sand, and other pollutants may be allowed near (within 50 feet) or even in certain water bodies under certain conditions.

In these dire situations, **notify the Environmental Department** so that the local Conservation Commission and the appropriate MassDEP Regional Service Center (in MA), RI DEM Office of Water Resources – RIPDES

Program (in RI), NH Department of Environmental Services – NHDES (in NH) and VT Department of Environmental Conservation - VT DEC (in VT) can be contacted before disposing of snow in a water body.

In emergency situations and after consulting an Environmental Department representative the following guidance should be followed:

- Dispose of snow in open water with adequate flow and mixing to prevent ice dams from forming.
- Do not dispose of snow in saltmarshes, vegetated wetlands, certified vernal pools, shellfish beds, mudflats, drinking water reservoirs and their tributaries, wellhead protection areas, or other environmentally sensitive areas.
- Do not dispose of snow where trucks may cause shoreline or stream bank damage or erosion.

September 2021

NEW ENGLAND POWER COMPANY

N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Wetland and Stream Delineation Report

PROJECT NUMBER:
146782

PROJECT CONTACT:
Jamie Durand
EMAIL:
Jamie.Durand@powereng.com
PHONE:
(774) 643-1829

POWER ENGINEERS

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N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Wetland and Stream Delineation Report

PREPARED FOR:
NEW ENGLAND POWER COMPANY
40 SYLVAN ROAD, E3.685
WALTHAM, MA 02451

PREPARED BY:
POWER ENGINEERS CONSULTING, PC
2 HAMPSHIRE STREET, SUITE 301
FOXBOROUGH, MA 02035

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ACRONYMS AND ABBREVIATIONS

BE	Coastal Beach
BVWs	Bordering Vegetated Wetlands
CB	Coastal Bank
CD	Coastal Dune
CMR	Code of Massachusetts Regulations
CVP	Certified Vernal Pool
CWA	Clean Water Act
DCT	double circuit tower
DPA	Designated Port Area
E1UB	Estuarine Subtidal Unconsolidated Bottom
E2EM	Estuarine Intertidal Emergent
E2US	Estuarine Intertidal Unconsolidated Shore
FAC	Facultative
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographic Information Systems
GPS	Global Positioning System
HUC	Hydrologic Unit Code
IB	Inland Bank
ILSF	Isolated Land Subject to Flooding
IVW	Isolated Vegetated Wetland
kV	kilovolt
LSCSF	Land Subject to Coastal Storm Flowage
LUO	Land Under the Ocean
LUWW	Land Under Water Bodies and Waterways
MassDEP	Massachusetts Department of Environmental Protection
NHD	National Hydrography Dataset
NHESP	Natural Heritage and Endangered Species Program
NEP	New England Power
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OBL	Obligate
OHWM	ordinary high-water mark
PEM	Palustrine Emergent
PFO	Palustrine Forested
POWER	POWER Engineers Consulting, PC
Project	N12/M13 Double Circuit Tower Separation Project
PSS	Palustrine Scrub-Shrub
PVP	Potential Vernal Pool
RFA	Riverfront Area
ROW(s)	right(s)-of-way
SF	Land Containing Shellfish
SM	Salt Marsh
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WPA	Massachusetts Wetlands Protection Act

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1.0 INTRODUCTION

The New England Power Company (NEP) is proposing to undertake the N12/M13 Double Circuit Tower (DCT) Separation Project (Project) to improve transmission system reliability in the Southeastern Massachusetts and Rhode Island service area. As shown in Figure 1, the Project will be located within an existing 115 kilovolt (kV) electric transmission line right-of-way (ROW) that extends from NEP's Pottersville Switching Station in Somerset, Massachusetts to its Sykes Road Substation in Fall River, Massachusetts a distance of approximately 1.85 miles. This ROW is currently occupied by two 115 kV overhead transmission circuits – the N12 and the M13 – supported on double circuit towers; i.e., the two circuits, each consisting of three individual phase conductors, share the same series of towers within the ROW. The main disadvantage of the DCT configuration is reliability; a contingency affecting a single structure could cause an outage to both lines. Placing the N12 and M13 onto separate sets of structures will improve the reliability of the electric transmission system.

On behalf of NEP, POWER Engineers Consulting, PC (POWER) conducted wetland and watercourse delineations for the Project in Somerset and Fall River, Massachusetts. POWER conducted wetland, watercourse, and vernal pool field assessments within the limit of the existing transmission line ROW associated with the Project (hereafter referred to as the "Survey Area"). Wetland and water course field assessments occurred in November-December 2015, September 2017, July 2018, May 2019, and June 2021. Vernal pool surveys were conducted during spring 2015 to spring 2019. During the field investigations, five wetlands, one tidal river, two perennial watercourses, one intermittent watercourse, and one ephemeral watercourse were identified and delineated within the Survey Area. No vernal pools were found within the Survey Area.

This report discusses the methods used to identify and delineate the wetlands within the Survey Area and summarizes the findings of these surveys. Wetlands have been labeled based upon an alpha-numeric coding system followed by increasing numbers from east to west. Representative photographs of delineated wetlands and watercourses appear in Attachment A. Attachment B contains the United States Army Corps of Engineers (USACE) wetland data sheets used to document wetland delineations. Watercourses are labeled based upon the wetland the stream is associated with. Attachment C contains the stream data forms.

1.1 Site Description

NEP's existing N12 and M13 transmission line ROW varies in width from approximately 80 feet to 150 feet wide and has been held by NEP and used for overhead transmission purposes for over half a century. The Survey Area originates at the Pottersville Substation on the west side of the Taunton River in Somerset and then heads east across the Taunton River into Fall River. The ROW heads northeast parallel to the Taunton River for less than a half mile before turning east and crossing over North Main Street into residential neighborhoods. The ROW crosses over state highways Route 79 and Route 24 before ending at the Sykes Substation. Refer to Figure 2 at the end of this report.

According to the town of Somerset zoning information, the Pottersville Switching Station on the west side of the Taunton River is located in the Industrial District (Town of Somerset 2018). As the ROW crosses over the Taunton River into Fall River, according to the city of Fall River zoning information, lands on the east side of the Taunton River lie within the Waterfront and Transit Oriented Development District (City of Fall River 2013 and 2017). The ROW crosses through short portions of the Commercial Mill District and the Two Family Residence District as the ROW heads northeast. The ROW turns and heads to the east, crossing North Main Street and entering the Single Family Residence District on the

east side of North Main Street. Sykes Substation is located within both the Single Family Residence District and the Industrial Park District.

A network of both improved and unimproved roads are aligned along the existing transmission line corridor for performing routine maintenance that includes but is not limited to, ROW vegetation management. As a result of the ROW vegetation management, which is typically performed on a five-year cycle, the ROWs are generally dominated by deciduous shrubs, grasses, and other dense herbaceous vegetation compatible with operation and maintenance of the transmission lines.

1.1.1 Hydrological Site Description

The Project lies within the major basin of the Taunton River (MassGIS 2003). Watersheds within major basins are further delineated into smaller watersheds identified by a unique 12-level, Hydrologic Unit Code (HUC) (United States Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 2005). The Project is located within the sub watershed of the Taunton River-Mill River to mouth (HUC #010900040804).

Wetlands lying on either side of Route 24 drain to Steep Brook, which leads to the Taunton River. The Survey Area does not lie within any Outstanding Resource Waters (Massachusetts Department of Environmental Protection [MassDEP] 2010).

1.2 Analysis of Existing Data

Prior to the commencement of the wetland field investigations/delineations, existing information was reviewed to determine the potential extent of wetlands within the survey area. These source materials included:

- United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map – Fall River, Massachusetts and Fall River East, Massachusetts (USGS 1985)
- MassDEP Wetland Data (MassDEP 2005)
- Natural Heritage and Endangered Species Program (NHESP) Certified Vernal Pool (CVP) Maps (NHESP 2015-2021)
- NHESP Potential Vernal Pool (PVP) Maps (NHESP 2013)
- USDA NRCS 2015 - 2020 Web Soil Survey (USDA NRCS 2015-2020)
- USDA NRCS HUC Basins (8,10,12) (NRCS 2005)
- USGS Color Ortho Imagery (USGS 2013-2014, 2019)
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Wetlands Mapper (USFWS 1977 and 2008)
- USGS National Hydrography Dataset (NHD) Viewer (USGS 2014-2019)
- MassGIS Major Drainage Basins (MassGIS 2003)
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Bristol County, Massachusetts Map No. Map No. 25005C_1296 (FEMA 2017)
- MassDEP Outstanding Resource Waters (MassDEP 2010)

- Massachusetts Office of Coastal Zone Management's Designated Port Area Boundary Maps (Massachusetts Office of Coastal Zone Management 2011)

- Massachusetts Division of Marine Fisheries. Shellfish Sanitation and Management Maps (Massachusetts Division of Marine Fisheries 2015)

The information was compiled and synthesized into a geographic information system (GIS) geo-referenced database and used in the field to assist wetland scientists in the location and identification of wetland systems and watercourses in the Survey Area.

1.3 Wetland Delineation Methodology/Procedure

During the field surveys, wetlands were identified and delineated in accordance with requirements of the following jurisdictions:

- Clean Water Act (CWA) (33 United States Code [U.S.C.] §§ 1251 et seq., Section 404 and Section 401)
- Massachusetts Wetland Protection Act (WPA) (M.G.L. c. 131, § 40) and associated Regulations (310 Code of Massachusetts Regulations [CMR] 10.00)

Evidence indicative of wetland from three parameters – predominance of wetland vegetation, hydric soils and hydrology – was used to identify and delineate the wetlands in accordance with the 1987 *United States Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the subsequent *Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012). With the exception of unusual or atypical situations, evidence of wetland must be exhibited by all three parameters for an area or position to be designated as wetland.

The field teams also used established delineation procedures as outlined in MassDEP's *Handbook on Delineating Bordering Vegetated Wetlands* (Jackson 1995). Locally, the Conservation Commissions for the town of Somerset and the city of Fall River regulate activities in and adjacent to wetlands under the provisions of the WPA administered by MassDEP. Both Somerset and Fall River have not adopted local wetlands protection bylaws and therefore local jurisdiction of activities in or adjacent to wetlands is limited to the WPA.

In order to identify and quantify the number of wetlands, each wetland was numbered and classified by USFWS NWI codes[1] that make use of the *Classification of Wetlands and Deepwater Habitats of the United States* to differentiate wetland cover types (Cowardin et al. 1979). Two freshwater wetland community types were identified in the Survey Area: Palustrine Scrub-Shrub (PSS) and Palustrine Emergent (PEM). Palustrine Forested (PFO) communities were identified on edges of the ROWs. In addition, the tidal Taunton River is Estuarine Subtidal Unconsolidated Bottom (E1UB) and adjacent wetlands to the Taunton River includes salt marsh, or Estuarine Intertidal Emergent (E2EM).

Photographs were taken of each wetland (Attachment A), with other additional observations and descriptive information recorded for each wetland including: location, wetland classification, vegetative community, wetland functions and values, and general wildlife use. Detailed information was collected at paired data plots in the wetland and upland along each side of the boundary from representative wetlands

[1] https://www.fws.gov/wetlands/data/wetland-codes.html

to document the vegetation, soils and hydrology criteria used to establish wetland boundaries. This information appears on USACE Wetland data sheets completed for delineated wetlands (Attachments B). The wetland boundaries were marked with consecutively numbered pink flagging hung on vegetation at approximately 15- to 30-foot intervals. As stated previously, wetlands have been labeled based upon an alpha-numeric coding system, based upon the letter of the transmission line.

In addition to wetland surveys, vernal pool surveys were also conducted. The WPA defines vernal pool habitat as confined basin depressions that typically hold water for two continuous months during the spring and are free of adult fish populations. These areas provide essential breeding habitat for a variety of amphibian species such as wood frogs (*Lithobates sylvatica*) and the spotted salamander (*Ambystoma maculatum*). CVPs are those that have been certified by the NHESP according to the Guidelines for Certification of Vernal Pool Habitat (NHESP 2015-2019) and are protected if they fall under the jurisdiction of the WPA. CVPs are also afforded protection under Section 401 of the federal CWA, the Massachusetts Surface Water Quality Standards that relate to Section 401, and the Massachusetts Forest Cutting Practices Act. No CVPs are identified to occur in the Survey Area (NHESP 2015). In addition, no PVPs have been mapped by NHESP; however, PVPs do not receive protection under the WPA or under any other state or federal wetlands protection laws (NHESP 2013).

Streams and drainage ways were examined for the presence/absence of an ordinary high-water mark (OHWM) and defined bed (refer to *Land Under Water Bodies and Waterways* in Section 2.0) and bank (refer to *Inland Bank* in Section 2.0). Generally, if these characteristics were observed along a waterway, it was determined to be a regulated stream but if absent, or atypical circumstances existed, these areas were determined to be a drainage way, swale, ditch, or other erosional feature, and likely not a CWA-regulated feature (i.e., not a "water of the United States"). Any streams encountered were classified based on the observed flow and channel characteristics at the time of the field review. Watercourses were delineated with blue flagging. As stated previously, watercourses are labeled based upon the wetland the stream is associated with. Photographs were taken of each watercourse (Attachment A). Data forms completed for delineated watercourse can be found in Attachment C.

Wetland and watercourse flag positions and data point locations were recorded using a Trimble Geo XT mapping-grade Global Position System (GPS) unit with positional data post-processed to sub-meter accuracy for transfer onto GIS-based mapping of the Project footprint.

1.4 Post-Survey Analysis

The field survey data was differentially corrected and post-processed using Trimble Pathfinder Office software (version 5.81). The corrected GPS data was then exported from Pathfinder Office as shapefiles for use on Project aerial-based field survey mapping. The locations of the wetland boundaries were then reviewed and confirmed by POWER's wetland scientists and are displayed in Figure 3 at the end of this report.

2.0 RESULTS

POWER conducted wetland and watercourse delineations of the Survey Area in November and December 2015 and more detailed information was collected at paired data plots in the wetland and upland along each side of the wetland boundaries in September 2017. Additional surveys were conducted in July 2018, May 2019, and June 2021. Resource Areas subject to the WPA have been field delineated or identified to occur in the Survey Area:

Coastal Wetlands

- Designated Port Area (310 CMR 10.26) and Regulations (301 CMR 25.00)
- Coastal Beach (310 CMR 10.27)
- Coastal Dune (310 CMR 10.28)
- Coastal Bank (310 CMR 10.30)
- Salt Marsh (310 CMR 10.32)
- Land Containing Shellfish (310 CMR 10.34)
- Land Subject to Coastal Storm Flowage
- Land Under the Ocean (310 CMR 10.25)

Inland Wetlands

- Inland Bank (310 CMR 10.54)
- Bordering Vegetated Wetlands (310 CMR 10.55)
- Land Under Water Bodies and Waterways (310 CMR 10.56)
- Riverfront Area (310 CMR 10.58)

Two additional Resource Areas were evaluated, Bordering Land Subject to Flooding (310 CMR 10.57 (a)) and Isolated Land Subject to Flooding (310 CMR 10.57 (2)(b)), but were not identified in the Survey Area. Isolated Land Subject to Flooding (ILSF) particularly was evaluated to determine if the isolated vegetated wetland (IVW) M9A that is not bordering on any creek, river, stream, pond or lake met the criteria for ILSF. This Resource Area is defined as an isolated depression or closed basin without an inlet or an outlet (310 CMR 10.57 (2) (b)). It is an area which at least once a year confines standing water to a volume of at least 0.25 acre-feet and to an average depth of at least six inches. Consequently, these wetland plant communities are not subject to regulation under the WPA. However, should an appropriate nexus to "waters of the United States" be determined by the USACE, the one isolated area of freshwater wetland (M9A) would be regulated under the CWA.

The 11 Resource Areas are further described below.

Coastal Wetlands

<u>Designated Port Area</u>

Designated Port Areas (DPAs) are portions of developed harbors, that are usually located in estuaries (310 CMR 10.26(1)). Landforms in DPAs have been altered from their natural shape, and coastal engineering structures often have replaced natural protection for upland areas from storm damage and flooding. Relatively high level of contaminants, from vessel discharges and point and non-point source discharges, are likely to occur in DPAs. DPAs do not have a buffer zone.

Coastal Beach

Coastal Beach (BE) is defined as unconsolidated sediment subject to wave, tidal, and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. BEs extend from the mean low water line landward to the dune line, coastal bank line or seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean (310 CMR 10.27(2)). BE does not have a buffer zone.

Coastal Bank

Coastal Bank (CB) is defined as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland (310 CMR 10.30(2)). A 100-foot wide buffer zone extends landward from the top of a CB.

Coastal Dune

Coastal Dune (CD) is defined as any natural hill, mound, or ridge of sediment landward of a BE deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control. A 100-foot-wide buffer zone extends landward from the top of a CD.

Salt Marsh

Salt Marsh (SM) is defined as a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils (310 CMR 10.32(2)). Dominant plants within salt marshes typically include salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*), but may also include, without limitation, spike grass (*Distichlis spicata*), high-tide bush (*Iva frutescens*), black grass (*Juncus gerardii*), and common reed (*Phragmites australis*). A 100-foot-wide buffer zone is associated with SM.

Land Containing Shellfish

Land Containing Shellfish (SF) is defined as land under the ocean, tidal flats, rocky intertidal shores, salt marshes, and land under salt ponds when any such land contains shellfish (310 CMR 10.34(2)). Shellfish means the following species: bay scallop (*Argopecten irradians*), blue mussel (*Mytilus edulis*), ocean quahog (*Arctica islandica*), oyster (*Crassostrea virginica*), quahog (*Mercenaria merceneria*), razor clam (*Ensis directus*), sea clam (*Spisula solidissima*), sea scallop (*Placopecten magellanicus*), and soft-shell clam (*Mya arenaria*).

Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage (LSCSF) is defined as land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

Land Under the Ocean

Land Under the Ocean (LUO) means land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries (310 CMR 10.25(2)). The tidal Taunton River includes LUO.

Inland Wetlands

Inland Bank

Inland Bank (IB) is defined as the portion of the land surface which normally abuts and confines a water body (310 CMR 10.54(2)(a)(c)). IB occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, the IB occurs between a water body and upland. An IB may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone. The upper boundary of an IB is the first observable break in the slope or the mean annual flood level, whichever is lower. The lower boundary of an IB is the mean annual low flow level. A 100-foot-wide buffer zone extends from the upper boundary of an IB and therefore is typically encompassed within Riverfront Area described below.

Bordering Vegetated Wetlands

Bordering Vegetated Wetlands (BVWs) are defined as freshwater wetlands which border on creeks, rivers, streams, ponds and lakes (310 CMR 10.55(2)(a)). BVWs are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground and surface water regime and the vegetation community which occur in each type of freshwater wetland (wet meadows, marshes, swamps and bogs) area are specified in the WPA. A 100-foot-wide buffer zone is associated with BVW.

Land Under Water Bodies and Waterways

Land Under Water Bodies and Waterways (LUWW) is defined as the land beneath any creek, river, stream, pond, or lake and the boundary of an LUWW is the mean annual low water level. LUWW may be composed of muck or peat, fine sediments, rocks, or bedrock (310 CMR 10.56(2)). LUWW does not have a buffer zone.

Riverfront Area

Riverfront Area (RFA) is defined as the area of land between a river's mean annual high water line and a parallel line measured horizontally (310 CMR 10.58(2)). "Rivers" are any natural flowing body of water that empty to any ocean, lake, pond, or other river and which flows throughout the year (310 CMR 10.58(1)). Rivers include streams that are perennial because surface water flows within them throughout the year. Intermittent streams are therefore not rivers because surface water does not flow throughout the year. The RFA may include or overlap other resource areas or their buffer zones. The RFA does not have a buffer zone.

Summary of Field Survey Results

As illustrated in Tables 1 and 2, a total of five watercourses (Table 1) and five wetlands (Table 2) were identified in the Survey Area. There were no vernal pools identified during the spring 2015 to spring 2019 field surveys.

2.1 Watercourses

The five watercourses in the Survey Area are displayed on Figure 3 (at the end of this report), and representative photographs of each watercourse appear in Attachment A. Waterbody data forms completed for delineated watercourses can be found in Attachment D.

All five watercourses are "*waters of the United States*" and subject to the jurisdiction of the CWA. WPA Resources Areas associated with all four streams include IB along each side of the channel, beneath which is LUW. Other WPA Resource Areas associated with the streams are also summarized in Table 1.

The Taunton River (SM10) is a tidal watercourse. Steep Brook (SM9A) and an unnamed stream (SM9) are perennial watercourses which have an associated RFA. Due to the perennial classifications, SM10, SM9A, and SM9 are therefore classified as "Rivers" so the Resource Area, RFA occurs on both sides of the rivers. In Fall River, the RFA extends for a distance of 25 feet outward from the stream banks (IB), whereas in Somerset, the designated distance is 200 feet. Therefore, SM10 has a RFA of 200 feet from the stream banks (IB) on the west side of the Taunton River in Somerset and a RFA of 25 feet from the stream banks (IB) on the east side of the river in Fall River. SM9A and SM9 have RFAs of 25 feet from the stream banks (IB) since the stream is solely located in Fall River.

No RFA is associated with the intermittent stream SM8 and the ephemeral stream SM9B.

The list and descriptions of the watercourses are below. Please refer to Figure 3 at the end of this report.

SM10 is the navigable Taunton River that is estuarine (E1UB) and lies between Somerset to the west and Fall River to the east. The Taunton River is designated as a Wild and Scenic River and is the longest undammed coastal river in New England (National Wild and Scenic Rivers System 2018). The river contains quahogs, oysters, and soft-shell clams and is therefore designated as a SF (Massachusetts Division of Marine Fisheries 2015). On the Somerset side of the river, the Mount Hope Bay DPA includes a section of the Taunton River and extends landward to Riverside Avenue but does not encompass the area crossed by the transmission line corridor in Fall River.

Where the transmission line crosses the Taunton River, the FIRM (Panel Number 25005C_1296, effective date November 14, 2017) prepared by FEMA indicates 17 feet (North American Vertical Datum of 1988) is the 100-year event VE Zone (High Risk Coastal Area) elevation. On each side of the river this elevation corresponds to the boundary of LSCSF. Also on both sides of the river the top or landward edge of the Resource Area, CB occurs above elevation 17 feet (North American Vertical Datum of 1988) at the location where the slope becomes less steep than 4:1 (Wetland Program Policy 92-1).

SM9A is the perennial Steep Brook. The stream flows north through the ROW but at this location no wetland community borders this especially steep reach of the stream channel. Steep Brook empties into the Taunton River (SM10).

SM9B is an ephemeral stream and is connected to two sections of the perennial Steep Brook (SM9A) within the ROW. No wetland community borders the relatively steep channels. The channel is anticipated to be dry for most of the year.

SM9 is an unnamed perennial stream that flows off the ROW and eventually into Steep Brook (SM9A). The stream flows south across the ROW through wetland M9. There are box culverts on each side of Wilson Road allowing the stream to flow under the road. The stream has a shallow channel (OHWM depth of about two feet) and dense vegetation.

SM8 is an intermittent stream which flows across the northwestern portion of the ROW southward through wetland M8.

TABLE 1 WATERCOURSES WITHIN SURVEY AREA

STREAM ID	MA SURFACE WATER QUALITY STANDARD CLASS	FREQUENCY	RIVERFRONT AREA	100-YR FLOODPLAIN (CSF)
SM 10 (Taunton River)	Class B ("other waters")	Tidal	200 feet in Somerset 25 feet in Fall River	Yes
SM9A (Steep Brook)	Class B ("other waters")	Perennial	25 feet in Fall River	No
SM9B	Class B ("other waters")	Ephemeral	NA	No
SM9	Class B ("other waters")	Perennial	25 feet in Fall River	No
SM8	Class B ("other waters")	Intermittent	NA	No

Class B: Designated as habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment. Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value. (314 CMR 4.05:(3)(b)) (https://www.mass.gov/files/documents/2017/10/18/314cmr4.pdf).

2.2 Wetlands

The five wetlands identified in the Survey Area are displayed on Figures 3 and 5 (at the end of this report) and representative photographs of the wetlands appear in Attachment A. USACE Wetland and Upland data sheets can be found in Attachment B. MassDEP Bordering Vegetated Wetlands field data forms completed for delineated wetlands can be found in Attachment C.

2.2.1 Wetland Vegetation

As discussed above, NWI codes were used to classify the wetlands delineated for the Project. As a result of regular vegetation maintenance within the existing transmission line corridor, the freshwater wetlands are generally represented by a deciduous PSS community dominated by a dense community of smooth arrowwood (*Viburnum dentatum*), highbush blueberry (*Vaccinium corymbosum*) and sweet pepperbush (*Clethra alnifolia*), with emergent vegetation including spotted joe-pye weed (*Eutrochium maculatum*), common reed (*Phragmites australis*), and soft rush *(Juncus effusus*) comprising the sparse herbaceous understory. Uncleared or treed wetland areas, such as adjacent to the maintained corridor, are for the most part represented by a deciduous PFO community dominated by red maple (*Acer rubrum*) with a shrub understory of highbush blueberry and sweet pepperbush. The tidal wetlands along the Taunton River are generally represented by an E2EM community including species such as salt marsh cord grass, salt meadow cord grass, and common reed.

All of the above listed plants in the three wetlands are identified as Obligate (OBL), Facultative Wetland (FACW) or Facultative (FAC) indicators of wetland by the 2016 State of Massachusetts National Wetland Plant List prepared by the USACE and are therefore hydrophytes.

2.2.2 Wetland Soils

A hand auger was used to document the presence of hydric soils beneath the delineated wetlands in shallow soil profiles. Site specific soil information for representative delineated wetlands, along with detailed documentation of vegetation and hydrologic indicators appear on data forms in Attachments B and C.

Soils in Bristol County have also been mapped by the USDA NRCS with specific soil series such as Ridgebury fine sandy loam where the soil series is assigned an alpha-numeric code (e.g., 71A). Drainage properties of soils are also classified by NRCS and soils identified as very poorly drained, or poorly drained are hydric soils and indicative of wetlands. Refer to Figure 5 (at the end of this report) for soil unit boundary mapping.

Soils located on the east side of the Taunton River are classified as Udorthents, smoothed which are described as filled soil and do not have a drainage class rating. The salt marsh and freshwater emergent wetland (M10) lie within this soil unit. However, hydric soils were found in these areas during the wetland delineations. Between North Main Street and Route 79 are wetlands M9A and M9B. Wetland M9B is underlain by Pits-Udorthents complex, gravelly (617) which does not have a drainage class rating. Wetland 9A is underlain by well-drained Paxton fine sandy loam with 15 to 25 percent slopes (306D). However, hydric soils were found in both wetlands M9A and M9B during the wetland delineations.

Located on the west side of Route 24 is wetland M9 which is underlain predominately by Scarboro mucky fine sandy loam (39A) with the northern portion of the wetland underlain by Whitman fine sandy loam (73A), which are both very poorly drained soils. Soils beneath the delineated wetland (M8) to the west of Sykes Substation and east of Route 24 are described as Whitman fine sandy loam (73A) and Ridgebury fine sandy loam (71A), which have soil drainage classifications of very poorly drained and poorly drained soils, respectively.

TABLE 2 WETLANDS WITHIN SURVEY AREA

WETLAND ID	WETLAND CLASS[1]		JURISDICTIONAL STATUS[2]	STATE-REGULATED WETLAND BUFFER AREA
	NWI	State		
M10	E2US, E2EM	CB, BE, SM	Federal and State	100 feet
M9B	PFO	BVW	Federal and State	100 feet
M9A	PEM/PSS	IVW	Federal	Not Applicable
M9	PSS/PFO	BVW	Federal and State	100 feet
M8	PSS/PEM/PFO	BVW	Federal and State	100 feet

[1] Wetlands were classified according to Cowardin et al. (1979). E2US = Estuarine Intertidal Unconsolidated Shore, E2EM = Estuarine Intertidal Emergent, PFO = palustrine forest, PSS = palustrine scrub-shrub wetland, PEM = palustrine emergent wetland.
[2] Please note that the determination of each wetland's isolated or connected status represents the professional opinion of POWER. Final determination of jurisdictional status is the purview of the USACE.

2.2.3 N12/M13 Transmission Line Wetland Descriptions

Five wetland systems occur in the Survey Area from Pottersville Substation in Somerset to Sykes Substation in Fall River. Wetland M10 is associated with the Taunton River and contains several different Resource Areas. Wetlands M9 and M8 are BVWs and are segments of larger wetland systems that continue off the ROW that "border" Steep Brook. The descriptions of the wetlands in the Survey Area are listed below. Please refer to Figure 3 at the end of this report.

M10 is associated with the tidal and estuarine Taunton River (E1UB) and includes additional Resource Areas such as CB, CD, BE, and SM. As stated under Watercourses, Section 2.1, CB occurs on both sides of the Taunton River (SM10) where the top or landward edge of the Resource Area, CB occurs above elevation 17 feet (North American Vertical Datum) at the location where the slope becomes less steep than 4:1 (Wetland Program Policy 92-1). On the Fall River side of the Taunton River, dependent on elevation with respect to the tide range, narrow fringes of low and high Salt Marsh (SM) (E2EM) occur

along the ROW spanned between existing Structures 2 and 3. At Structure 2 on the Fall River side of the Taunton River, the high marsh (E2EM) is backed by a narrow, short length of gravelly BE. Both CB and BE are described as Estuarine Intertidal Unconsolidated Shore (E2US).

M9B is located to the east of North Main Street. This wetland is a broad-leaved deciduous forested wetland (PFO) located in the non-maintained portion of a NEP property. Long-beaked willows (*Salix bebbiana*) is the dominant tree species. The wetland continues off the NEP ROW via a narrow channel and "borders" on Steep Brook which lies to the north of M9B.

M9A is an isolated depression located to the east of North Main Street. M9A is predominately an emergent wetland (PEM) comprised of reed canary grass (*Phalaris arunndinacea*) and broad-leaved cattails (*Typha latifolia*), with scattered shrubs. There is no indication the depression M9A meets the volume and flooding requirements to be regulated as an ILSF.

M9 lies to the west of Route 24 where a portion of an unnamed perennial stream (SM9) flows through this broad-leaved deciduous shrub (PSS) wetland. The dominant shrub is smooth arrowwood. Forested wetland occurs in the non-maintained portion of the ROW.

M8 lies to the west of Sykes Substation and this wetland is a mixture of broad-leaved deciduous wetland shrub (PSS) communities intermixed with emergent wetlands (PEM) in the maintained portion of the ROW. Common shrubs in M8 include smooth arrowwood and highbush blueberry. Emergent vegetation includes spotted joe-pye weed, soft rush, and purple loosestrife (*Lythrum salicaria*). This wetland "borders" on Steep Brook. Broad-leaved deciduous forest occurs in the non-maintained portion of the ROW and is dominated by red maple trees.

2.3 Summary

Freshwater wetlands and streams in the Survey Area are regulated by the USACE under the provisions of Section 401 and 404 of the federal Clean Water Act (33 U.S.C. §§ 1251 et seq.), and by the MassDEP and the City of Fall River under the Massachusetts Wetlands Protection Act (MGL Ch. 131§40).

Between November 2015 and June 2021, POWER identified and field delineated five wetlands, one tidal river, two perennial streams, one intermittent stream, and one ephemeral stream in the Survey Area subject to regulation by the USACE, MassDEP and the City of Fall River. No vernal pools were identified in the Survey Area. Field boundaries of wetlands and the watercourses were located with sub-meter accuracy GPS from which post-processed information related to location and extent of the wetlands were entered into a GIS geo-referenced database. This data, along with other relevant NEP infrastructure information, were used for the purposes of designing and permitting the Project.

3.0 REFERENCES

City of Fall River. 2013. Chapter 86: Fall River Zoning Ordinance. City of Fall River, Massachusetts. Available at: http://www.jjmanning.com/zoning/14-1548-9%20Fall%20River%20Zoning.pdf. Accessed April 20, 2015- July 09, 2021.

_____. 2017. Web GIS Zoning Map 2017. City of Fall River, Massachusetts. Available at: http://host.cdmsmithgis.com/fallriverma/. Accessed April 20, 2015-July 09, 2021.

Cowardin, L.M., F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Fish and Wildlife Service, United States Department of the Interior, Washington, DC.

Environmental Laboratory. 1987. United States Army Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Federal Emergency Management Agency (FEMA). 2017. Flood Insurance Rate Map Bristol County, Massachusetts Map No. 25005C_1296. MassGIS Data: FEMA National Flood Hazard Layer. Available at: https://www.mass.gov/info-details/massgis-data-fema-national-flood-hazard-layer. Accessed April 20, 2015- July 09, 2021.

Jackson, S. 1995. Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act. Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways.

Massachusetts Department of Environmental Protection (MassDEP). 2005. MassDEP Wetland Data. Available at: https://www.mass.gov/info-details/massgis-data-massdep-wetlands-2005. Accessed April 20, 2015- July 09, 2021.

_____. 2010. MassGIS Data – Outstanding Resource Waters. Available at: https://www.mass.gov/info-details/massgis-data-outstanding-resource-waters. Accessed April 20, 2015- July 09, 2021.

_____. 2013. Massachusetts Surface Water Quality Standards. 314 CMR 4.00. Available at: https://www.mass.gov/files/documents/2017/10/18/314cmr4.pdf. Accessed April 20, 2015- July 09, 2021.

_____. 1992. Wetlands Program Policy 92-1: Coastal Banks. Available at: https://www.mass.gov/guides/wetlands-program-policy-92-1-coastal-banks. Accessed April 20, 2015- July 09, 2021.

Massachusetts Division of Marine Fisheries. 2015. Shellfish Sanitation and Management. Available at: http://www.massmarinefisheries.net/shellfish/dsga/MHB2.pdf. Accessed April 20, 2015- July 09, 2021.

Massachusetts Office of Coastal Zone Management. 2011. Designated Port Area Boundary Maps. Available at: https://www.mass.gov/service-details/designated-port-area-boundary-maps. Accessed April 20, 2015- July 09, 2021.

MassGIS. 2003. Major Drainage Basins. Available at https://www.mass.gov/info-details/massgis-data-major-drainage-basins. Accessed April 20, 2015- July 09, 2021.

National Wild and Scenic Rivers System. 2018. Taunton River, Massachusetts. Available at: https://www.rivers.gov/rivers/taunton.php. Accessed July 09, 2021.

Natural Heritage and Endangered Species Program (NHESP). 2013. MassGIS Data – Potential Vernal Pools. Available at: https://www.mass.gov/info-details/massgis-data-nhesp-potential-vernal-pools. Accessed April 20, 2015- July 09, 2021.

_____. 2015-2021. MassGIS Data – Certified Vernal Pools. Available at: https://www.mass.gov/info-details/massgis-data-nhesp-certified-vernal-pools. Accessed April 20, 2015- July 09, 2021.

Town of Somerset. 2018. Official Zoning Town of Somerset, Massachusetts. Available at: https://www.townofsomerset.org/sites/g/files/vyhlif3821/f/uploads/officialzoning_map_march_2018.pdf. Accessed April 20, 2015- July 09, 2021.

United States Army Corps of Engineers (USACE). 2007. Regulatory Guidance Letter 07-01: Practices for Documenting Jurisdictional Determinations under Section 404 of the Clean Water Act (CWA) and Sections 9 and 10 of the Rivers and Harbors Act (RHA) of 1899.

_____. 2012. Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). ERDC/EL TR-12-9. Vicksburg, MS: United States Army Engineer Research and Development Center.

United States Department of Agriculture, Natural Resources Conservation Service (USDA NRCS). 2015-2020. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed April 20, 2015- July 09, 2021.

_____. 2005. NRCS Hydrologic Unit Code (HUC) Basins (8,10,12). Available at: https://www.mass.gov/info-details/massgis-data-nrcs-huc-basins-81012. Accessed April 20, 2015- July 09, 2021.

United States Geological Survey (USGS). 1985. 7.5-minute Topographic Quadrangle Map, Fall River, MA and Fall River East, MA.

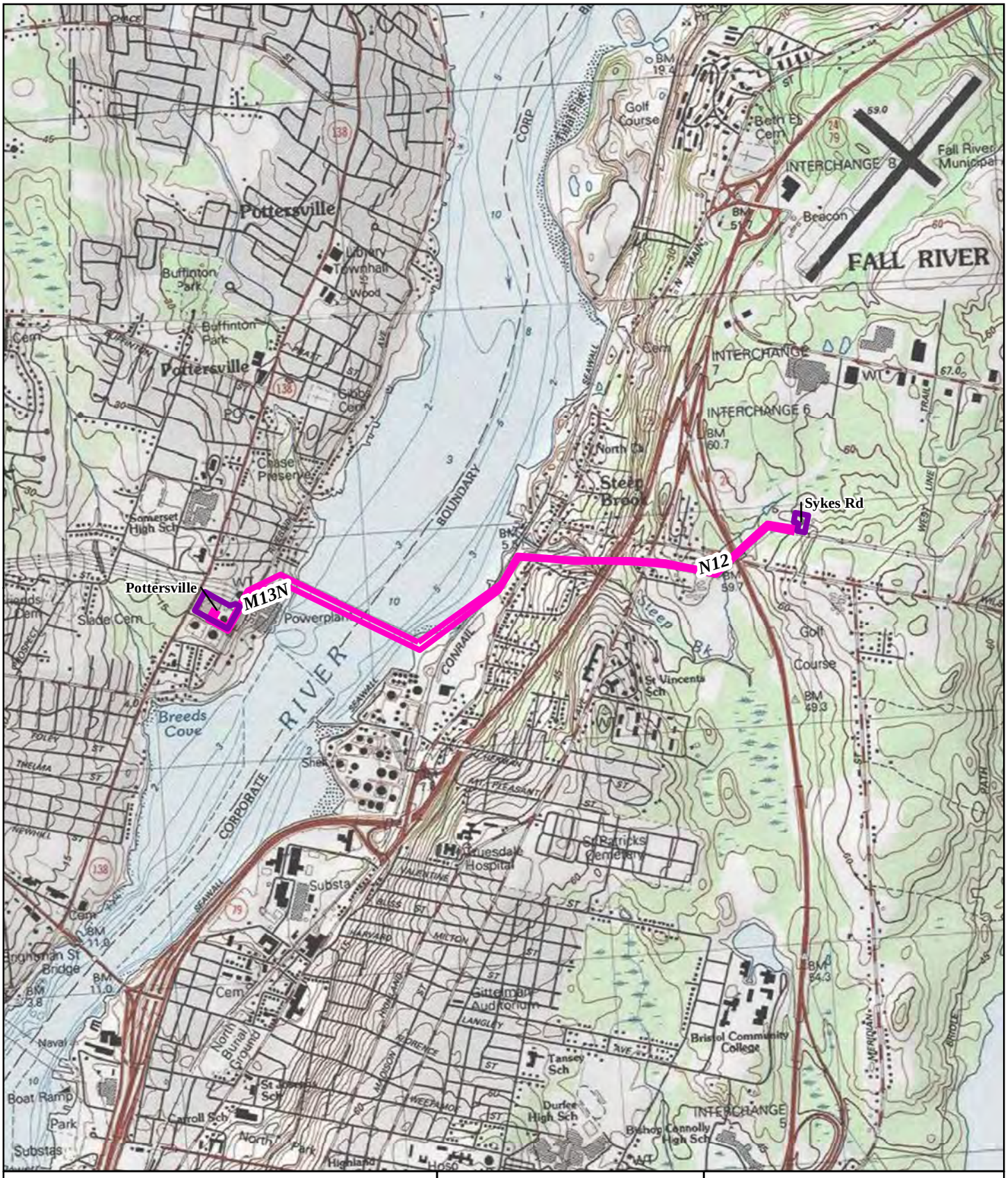
_____. 2013-2014, 2019. MassGIS Data: USGS Color Ortho Imagery. Available at: https://www.mass.gov/info-details/massgis-data-2019-aerial-imagery. Accessed April 20, 2015- July 09, 2021.

_____. 2019. MassGIS Data: Hydrography (1:100,000). Available at: https://www.mass.gov/info-details/massgis-data-hydrography-1100000. Accessed April 20, 2015- July 09, 2021.

United States Fish and Wildlife Service (USFWS). 1977 and 2008. National Wetland Inventory (NWI) Wetlands Mapper. Available at: http://www.fws.gov/wetlands/data/mapper.HTML. Accessed April 20, 2015- July 09, 2021.

FIGURES

FIGURE 1 PROJECT OVERVIEW: TOPOGRAPHIC MAP



Legend

- N12/M13 Double Circuit Tower Separation Project
- Substation

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 1 - Topographic Map

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

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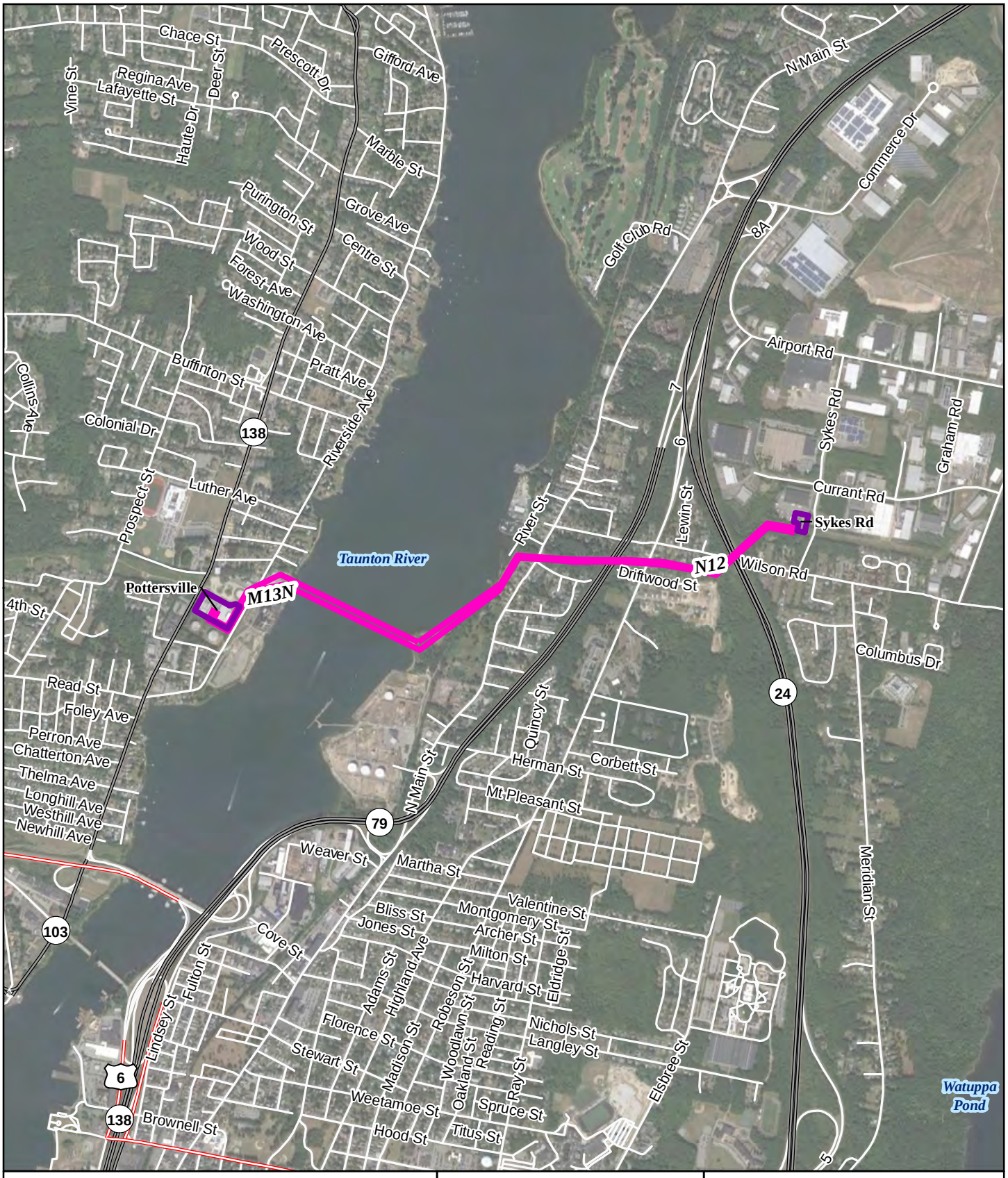
FIGURE 2 PROJECT OVERVIEW: AERIAL PHOTOGRAPHY



Legend

- N12/M13 Double Circuit Tower Separation Project
- Substation
- Interstate Highway
- US Highway
- State Highway
- Local Road

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 2 - Aerial Photography

New England Power Company

NAD 1983 UTM Zone 18N USFt
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Transverse Mercator
North American 1983

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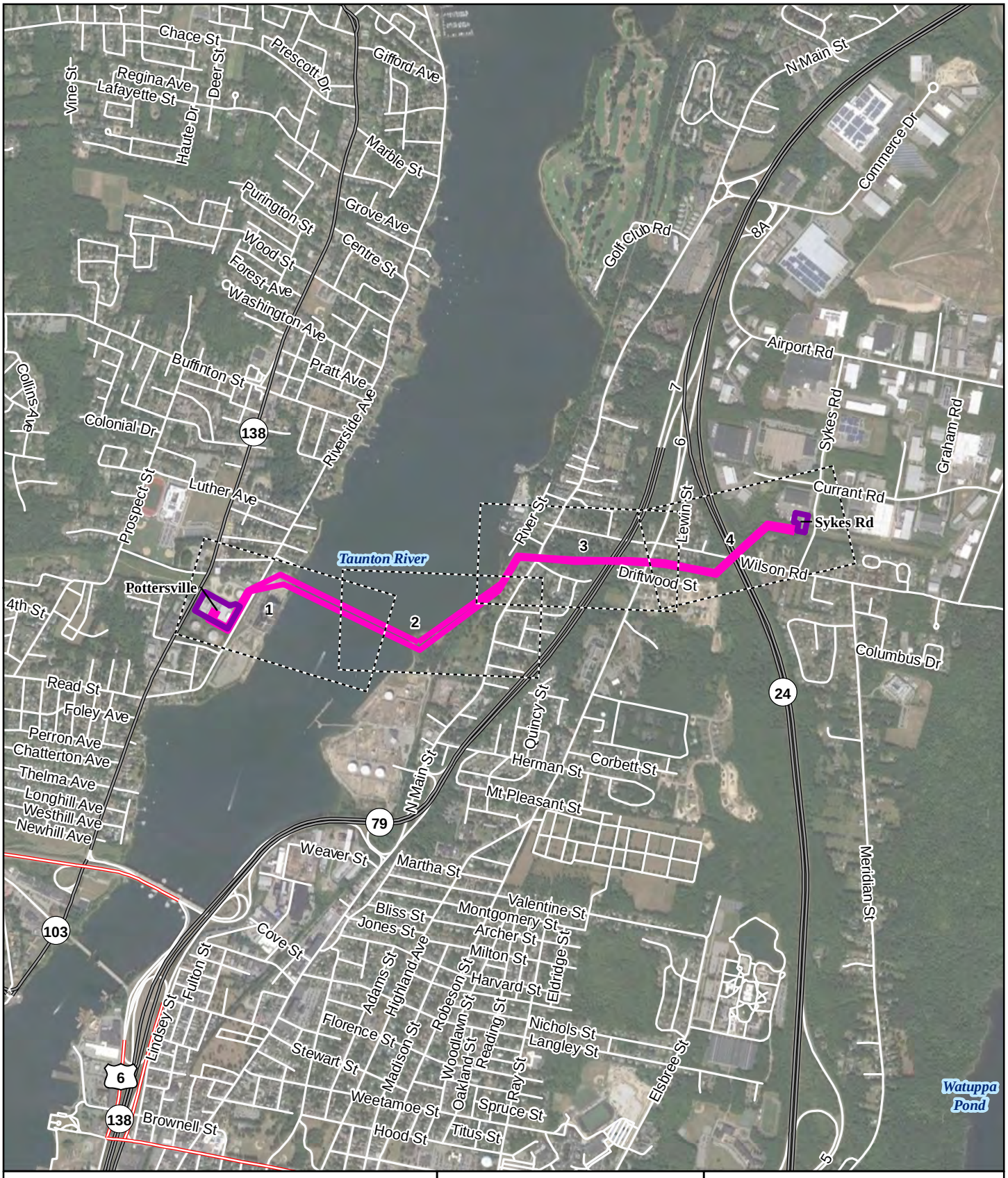
FIGURE 3 EXISTING CONDITIONS



Legend

- Page Boundary
- N12/M13 Double Circuit Tower Separation Project
- Substation
- Interstate Highway
- US Highway
- State Highway
- Local Road

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 3 - Existing Conditions Page Index

New England Power Company

NAD 1983 UTM Zone 18N USFt
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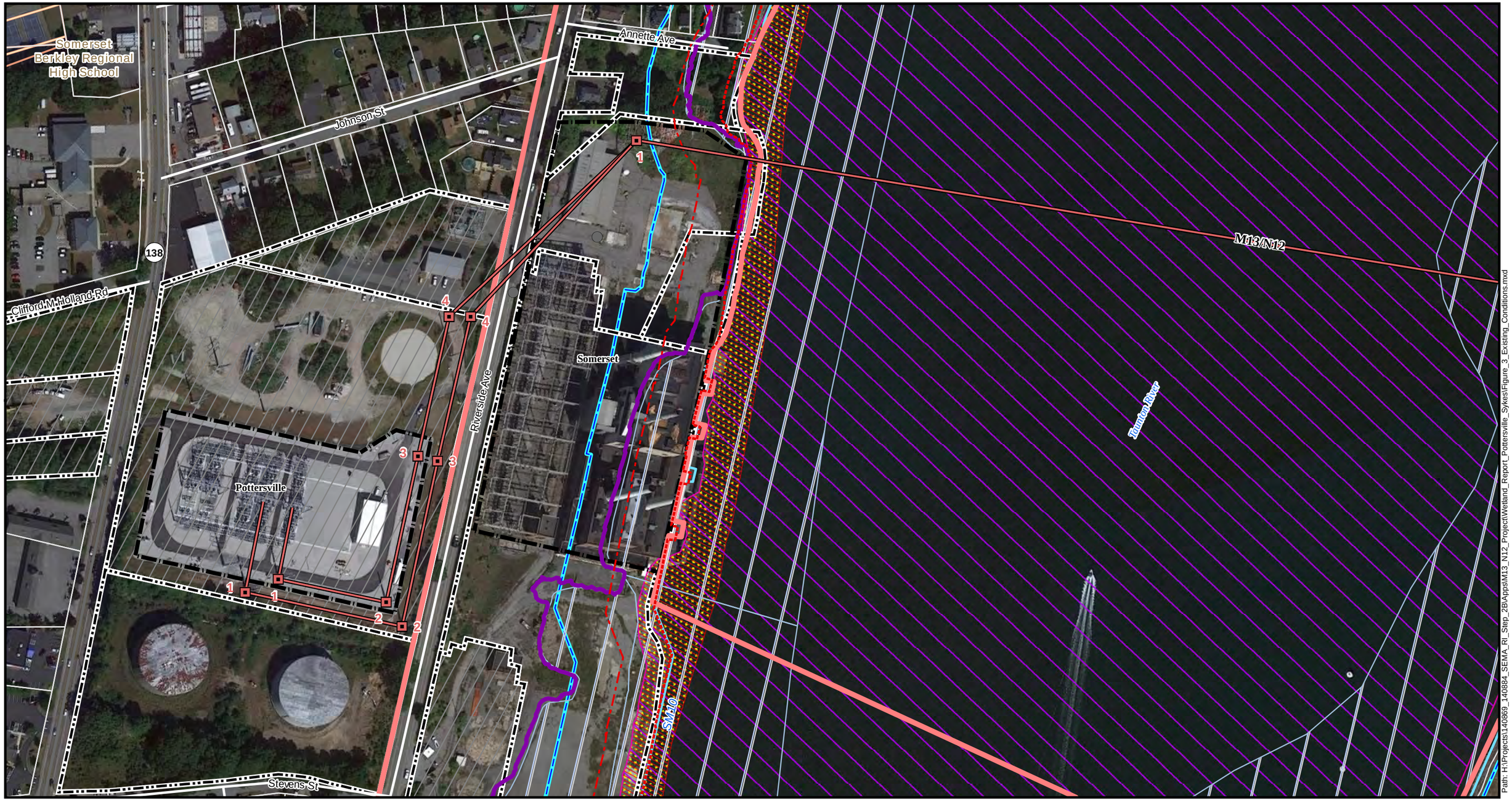

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Legend

- Existing Structure
- Transmission Line
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road

Field GPS Survey Point

- Man Hole

Field GPS Survey Line

- Mean Annual High Water Line
- Riverfront Area
- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Other Protected Lands
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)
- Designated Port Area (DPA)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)

- American Oyster
- Quahog
- Soft-shell Clam

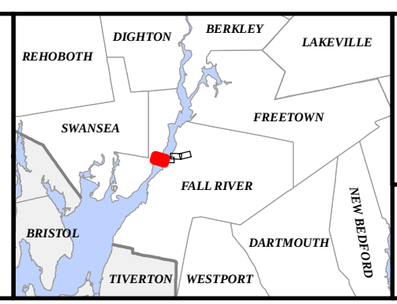
N12/M13 Double Circuit Tower Separation Project

Figure 3
Existing Conditions

Page 1 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Somerset

NAD 1983 UTM Zone 18N USFt

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POWER ENGINEERS

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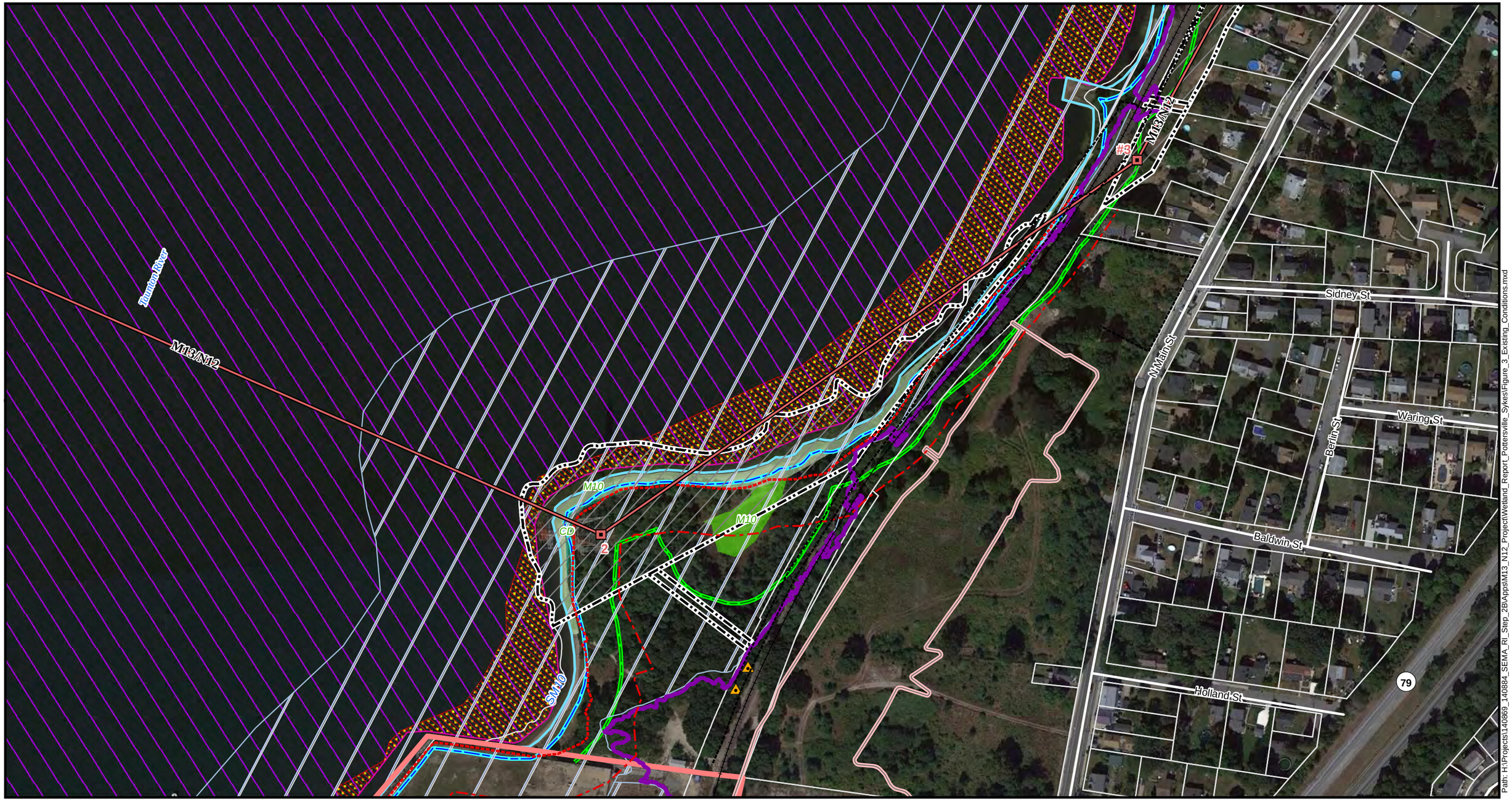

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Legend

- Existing Structure
- Transmission Line
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road
- Railroad
- Proposed MassDOT Rail Station

Field GPS Survey Point

- Man Hole
- Pipeline Marker
- Approximate Pipeline Location

Field GPS Survey Line

- Stone Wall
- Mean Annual High Water Line
- Coastal Beach and Salt Marsh
- Coastal Dune Wetland (CD)
- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer
- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)
- Designated Port Area (DPA)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)

- American Oyster
- Quahog
- Soft-shell Clam

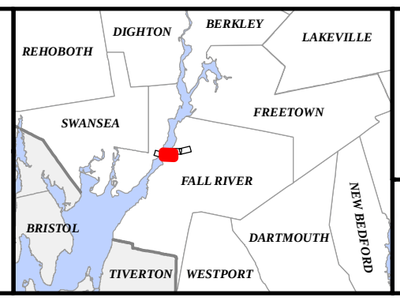
N12/M13 Double Circuit Tower Separation Project

Figure 3
Existing Conditions

Page 2 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Fall River

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- Existing Structure
- Transmission Line
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road
- Railroad

Field GPS Survey Point

- Man Hole
- Approximate Pipeline Location

Field GPS Survey Line

- Stone Wall
- Perennial Stream or River
- Mean Annual High Water Line
- Ephemeral Stream
- Coastal Beach and Salt Marsh
- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer

- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)

- American Oyster
- Quahog
- Soft-shell Clam

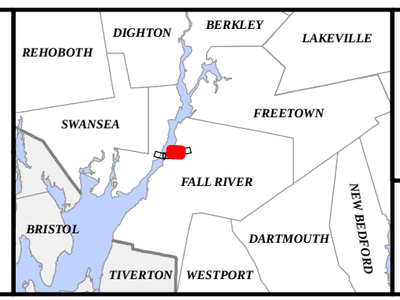
N12/M13 Double Circuit Tower Separation Project

Figure 3 Existing Conditions

Page 3 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Fall River

NAD 1983 UTM Zone 18N USFt

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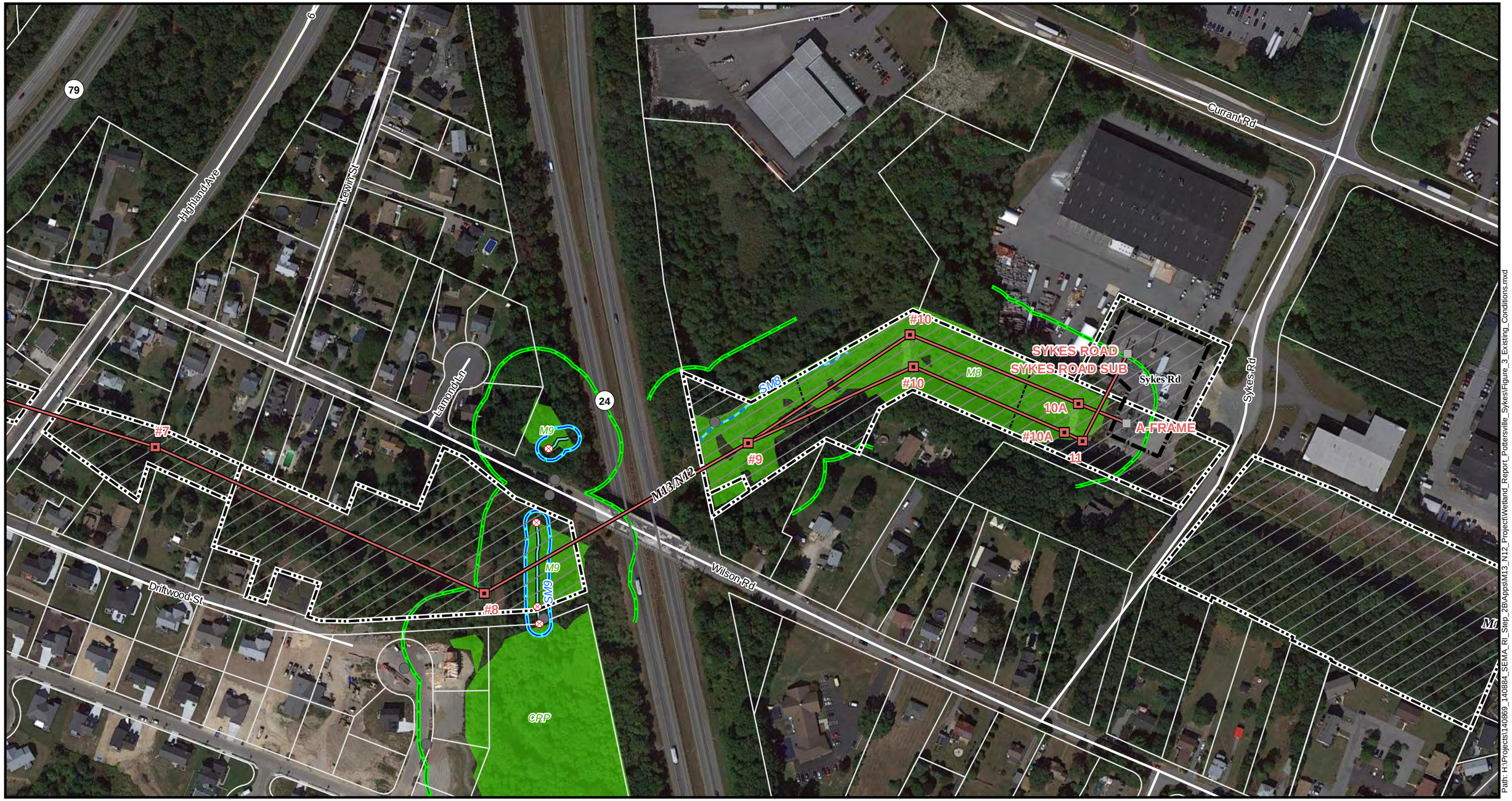

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Legend

- Existing Structure
- Substation BUS
- Transmission Line
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road

Field GPS Survey Point

- Culvert
- Man Hole

Field GPS Survey Line

- Stone Wall
- Perennial Stream or River
- Intermittent Stream
- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer

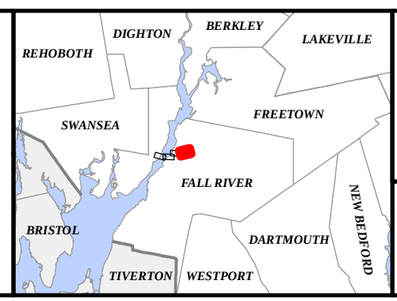
N12/M13 Double Circuit Tower Separation Project

Figure 3
Existing Conditions

Page 4 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

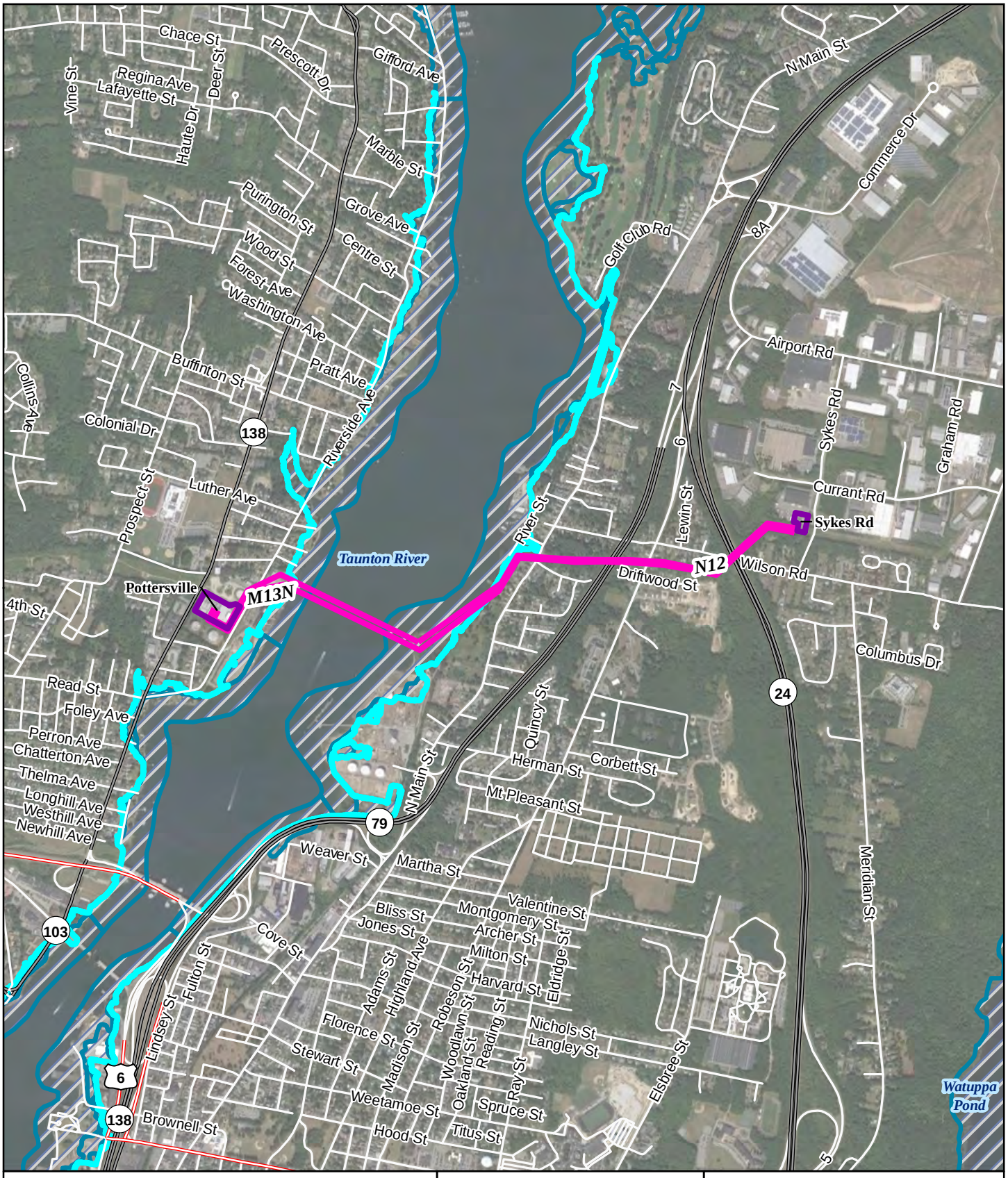
Bristol County:
Town/City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS

FIGURE 4 FEMA FLOOD INSURANCE RATE MAP



Legend

- N12/M13 Double Circuit Tower Separation Project
- Substation
- Interstate Highway
- US Highway
- State Highway
- Local Road
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- FEMA Flood Hazard (DFIRM 100yr)
- Floodway

The State of Massachusetts

Bristol County
Somerset and
Fall River

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

N12/M13 Double Circuit
Tower Separation Project

Figure 4 - FEMA 100 Year Floodplains and Floodways

New England Power Company

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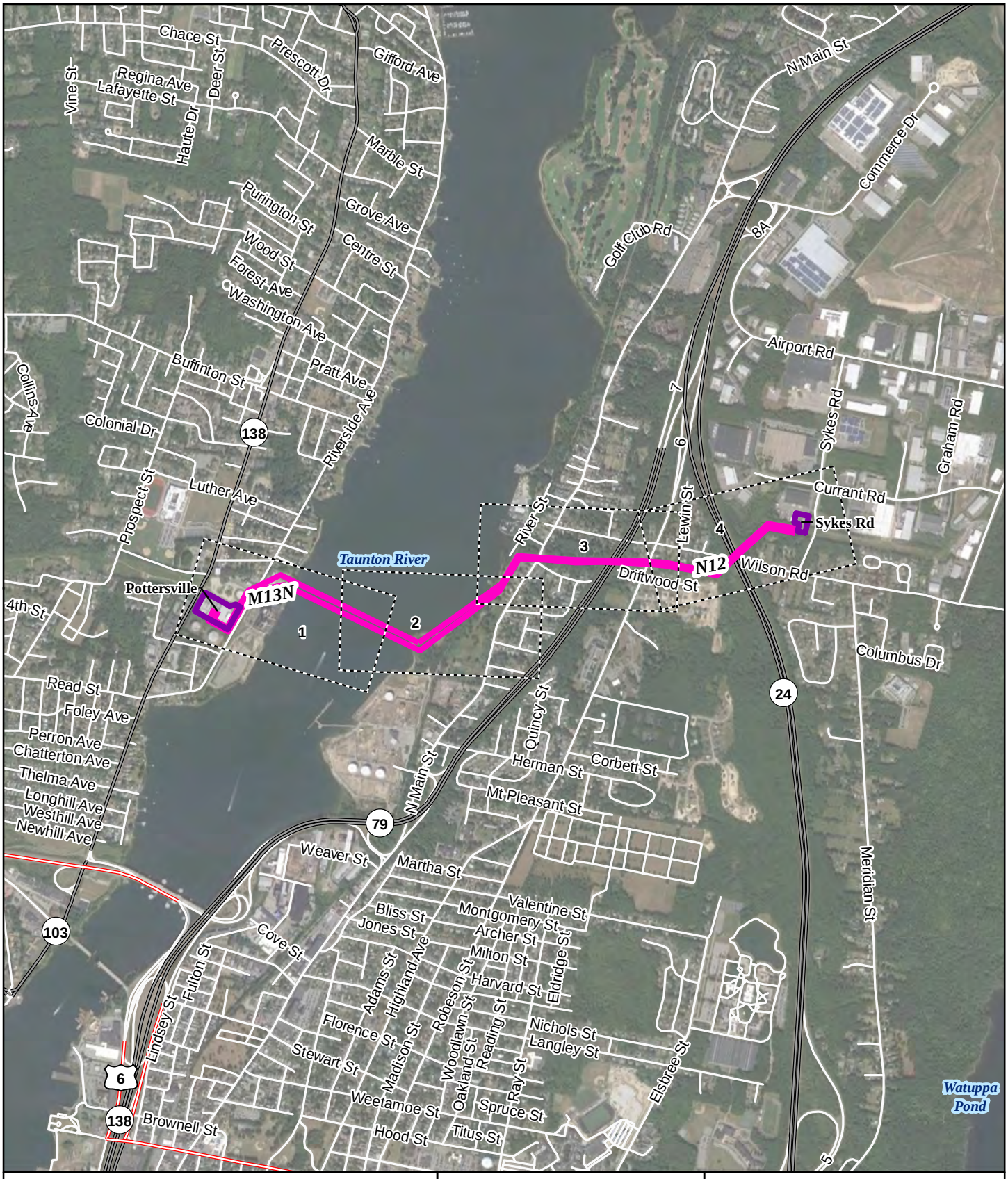
FIGURE 5 SOIL UNIT BOUNDARIES WITH ENVIRONMENTAL CONSTRAINTS



Legend

- Page Boundary
- N12/M13 Double Circuit Tower Separation Project
- Substation
- Interstate Highway
- US Highway
- State Highway
- Local Road

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 5 - Soil Unit Boundaries Page Index

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

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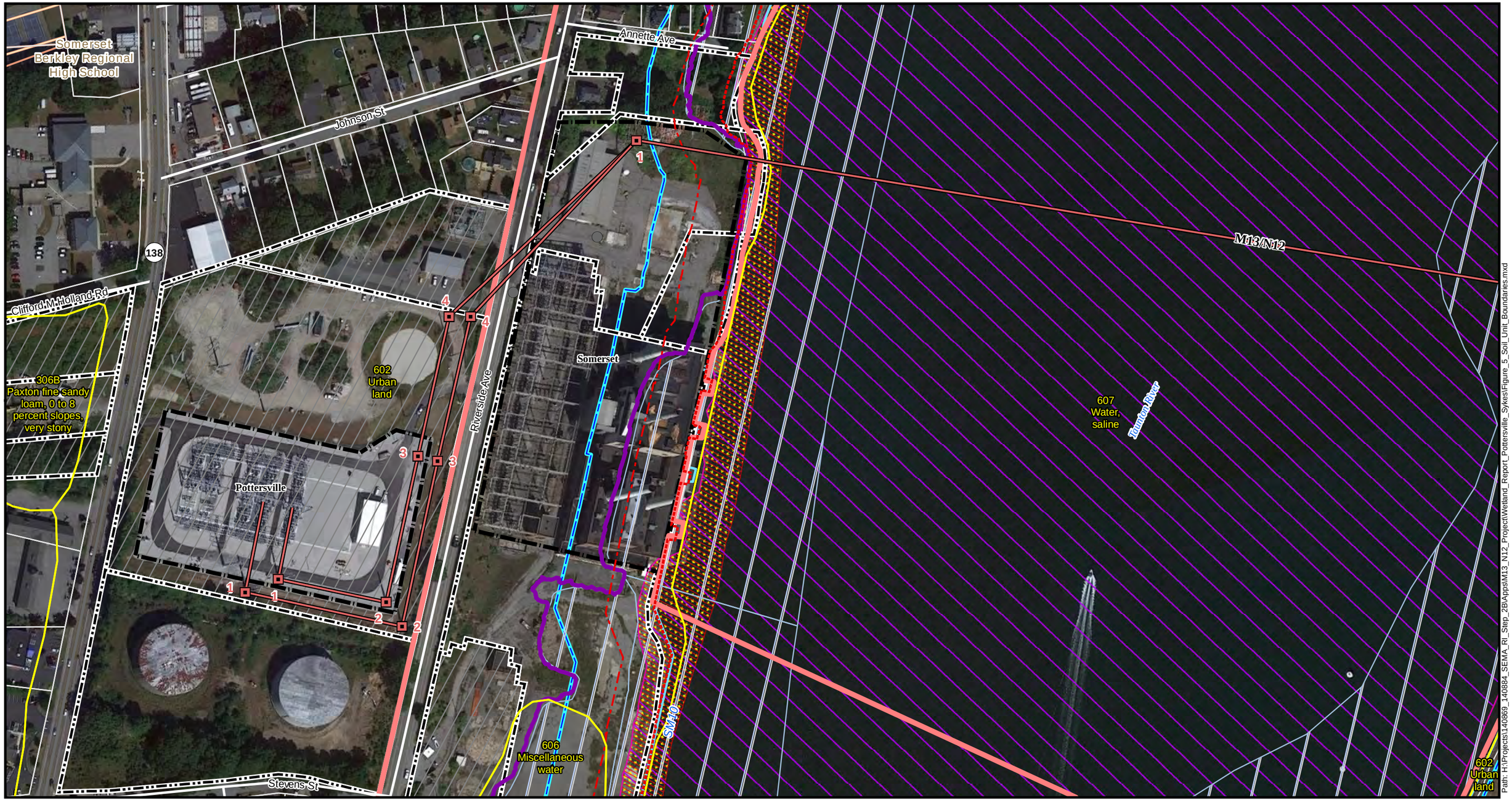

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1 " = 200 '

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Feet

Legend

- Soil Unit Boundary
- Existing Structure
- Transmission Line
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road

Field GPS Survey Point
- Man Hole

Field GPS Survey Line
- Mean Annual High Water Line
- Riverfront Area
- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Other Protected Lands
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)
- Designated Port Area (DPA)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)
- American Oyster
- Quahog
- Soft-shell Clam

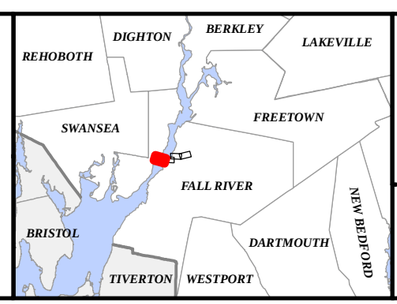
N12/M13 Double Circuit Tower Separation Project

Figure 5
Soil Unit Boundaries

Page 1 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Somerset

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS

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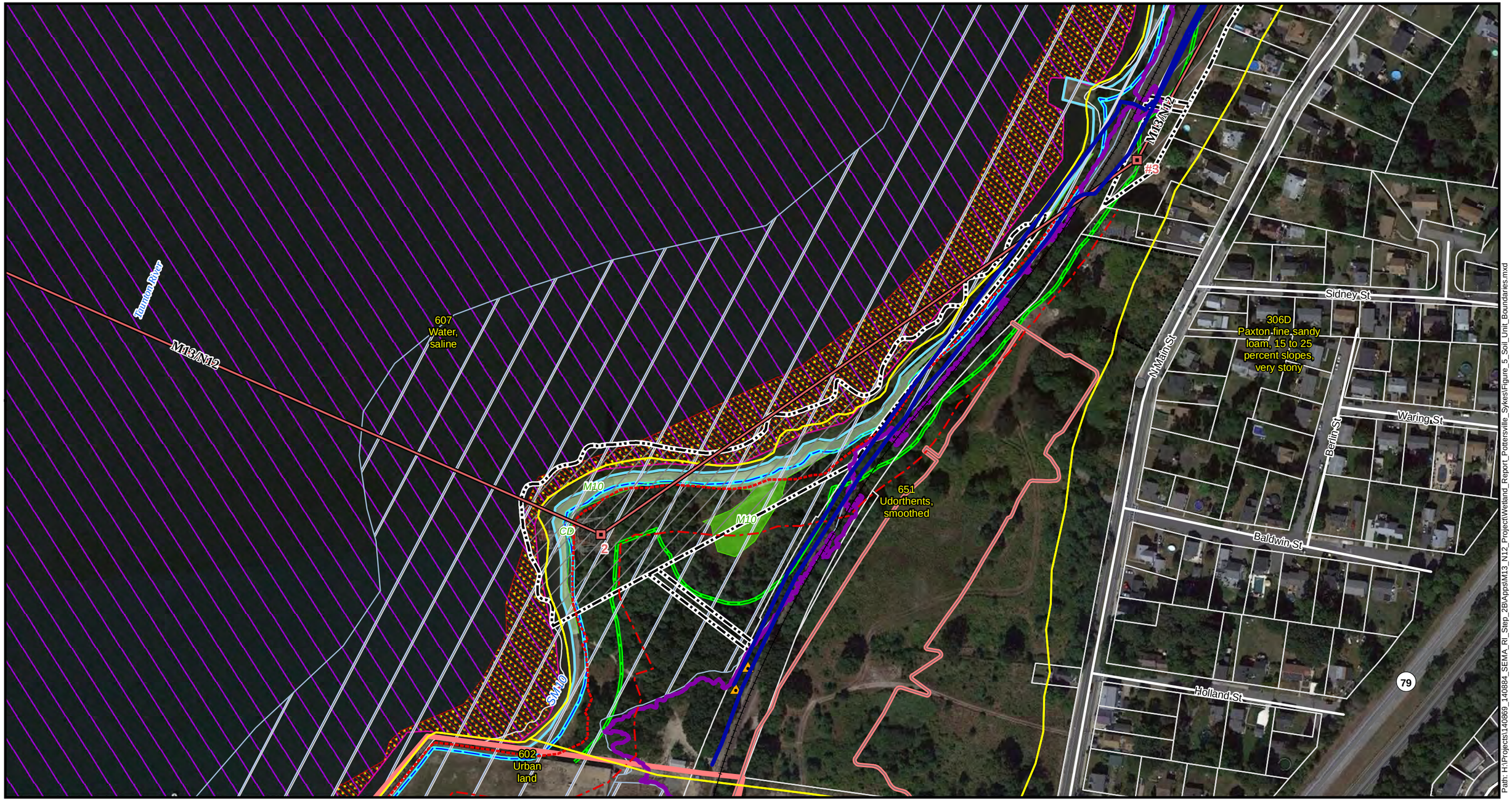


N

W E

S

1 " = 200 '

0 100 200 300

Feet

Legend

- Soil Unit Boundary
- Existing Structure
- Transmission Line
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road
- Railroad
- Proposed MassDOT Rail Station

Field GPS Survey Point

- Man Hole
- Pipeline Marker
- Approximate Pipeline Location

Field GPS Survey Line

- Stone Wall
- Wetland Border
- Mean Annual High Water Line
- Coastal Beach and Salt Marsh
- Coastal Dune Wetland (CD)

- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer Wetland
- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)
- Designated Port Area (DPA)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)

- American Oyster
- Quahog
- Soft-shell Clam

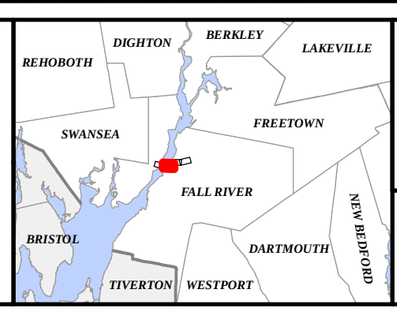
N12/M13 Double Circuit Tower Separation Project

Figure 5
Soil Unit Boundaries

Page 2 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS

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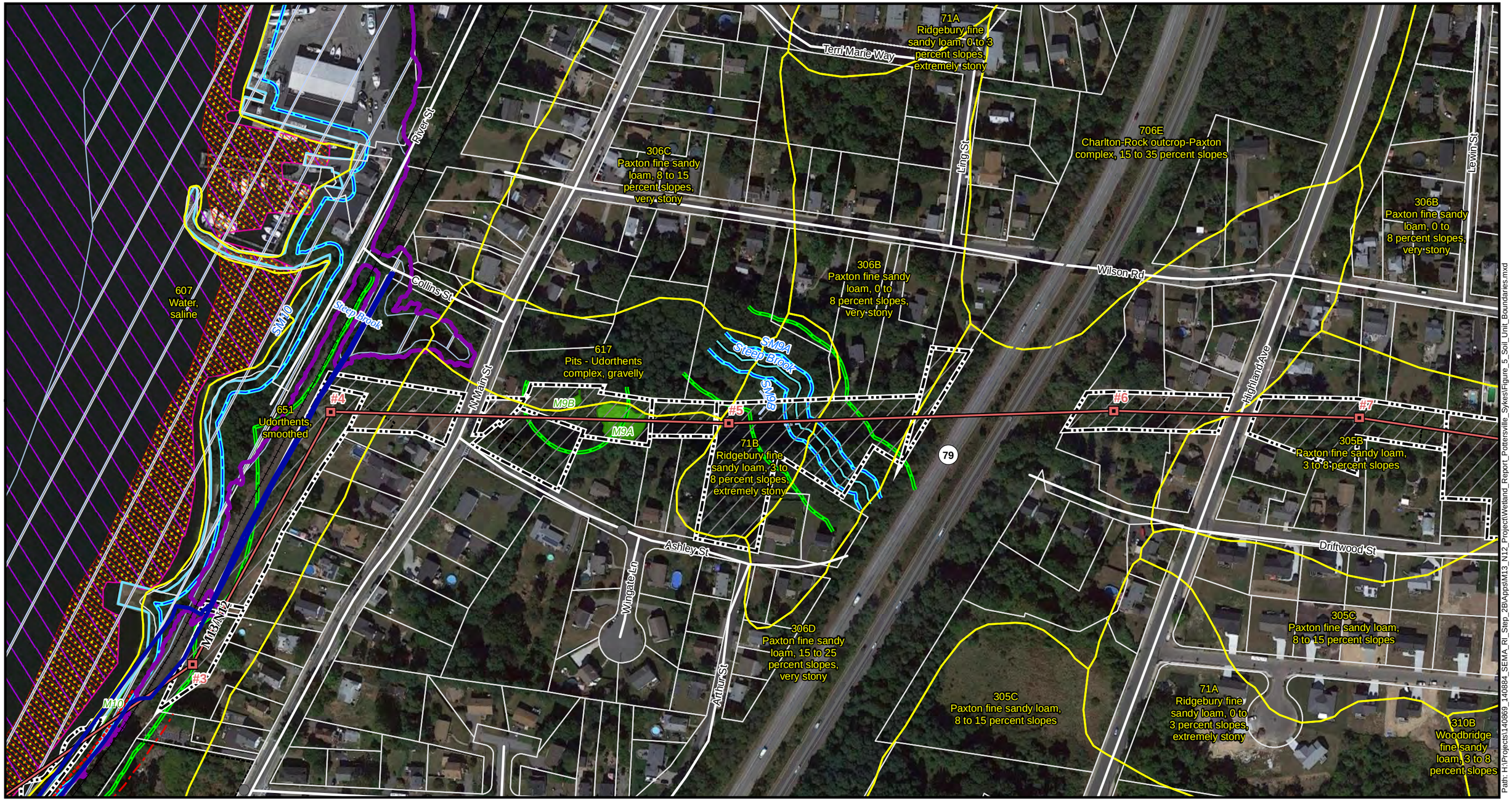


N
W E
S

1 " = 200 '

0 100 200 300
Feet

Legend

- Soil Unit Boundary
- Existing Structure
- Transmission Line
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road
- Railroad
- Field GPS Survey Point
- Man Hole
- Approximate Pipeline Location
- Field GPS Survey Line
- Stone Wall
- Wetland Border
- Isolated Wetland Border
- Perennial Stream or River
- Mean Annual High Water Line
- Ephemeral Stream
- Coastal Beach and Salt Marsh
- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer Wetland
- FEMA Flood Hazard (DFIRM 100yr)
- Land Subject to Coastal Storm Flowage (FEMA VE 17 ft)
- Top of Coastal Bank
- 100 Foot Buffer Zone (Top of Coastal Bank)

Shellfish Suitability Areas (Restricted Harvest DMF Area MHB 2.0)

- American Oyster
- Quahog
- Soft-shell Clam

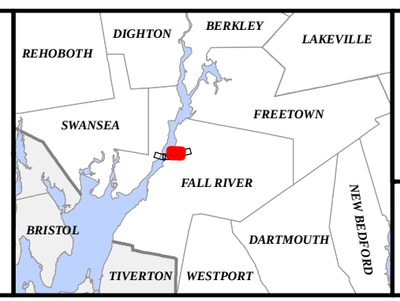
N12/M13 Double Circuit
Tower Separation Project

Figure 5
Soil Unit Boundaries

Page 3 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

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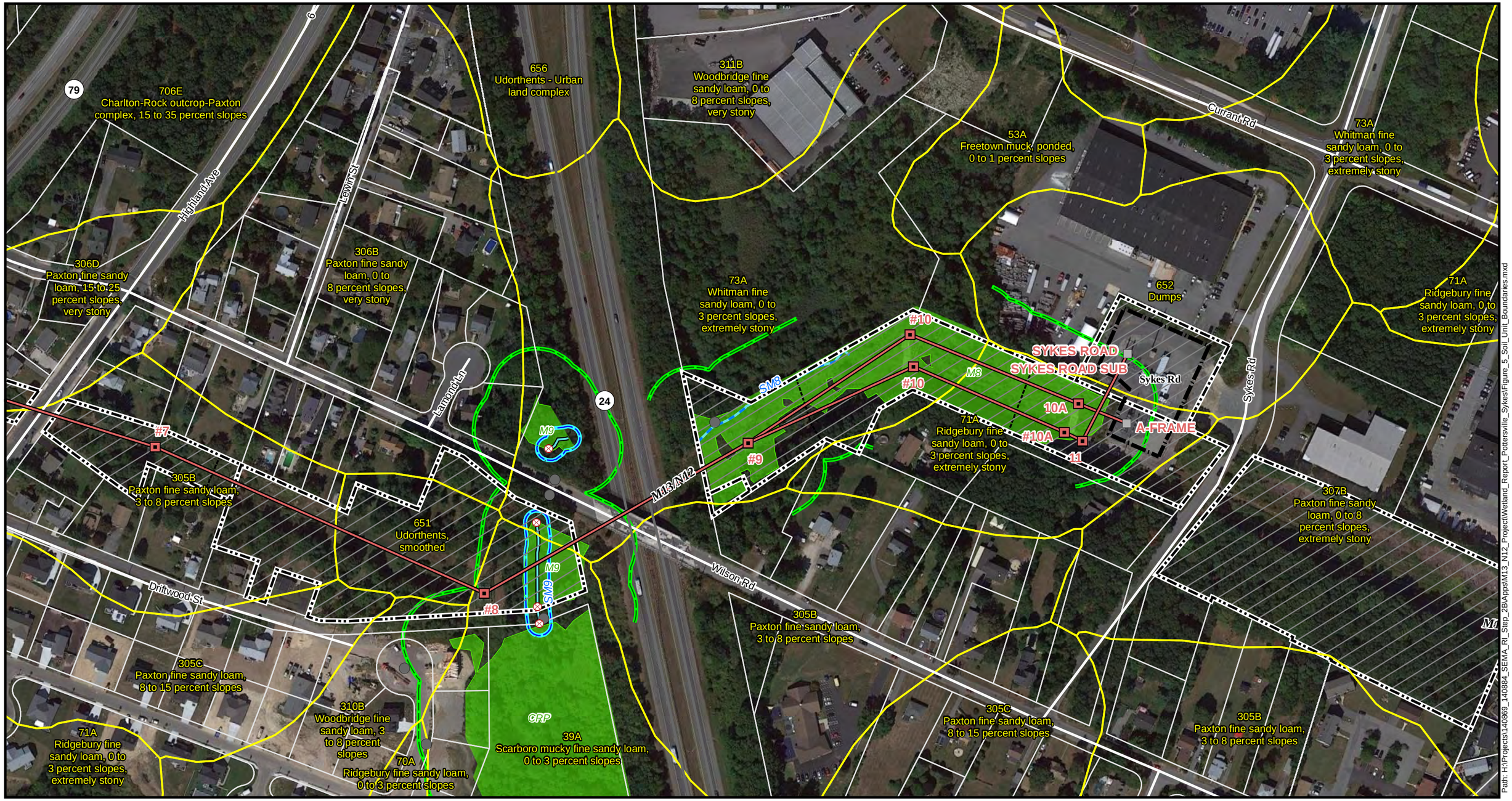


1 " = 200 '

0 100 200 300

Feet

Legend

- Soil Unit Boundary
- Existing Structure
- Substation BUS
- Transmission Line
- Existing or Proposed Substation Site
- Existing Right of Way
- National Grid Owned Land
- Parcel Boundary
- State Highway
- Local Road
- Field GPS Survey Point
- Culvert
- Man Hole
- Field GPS Survey Line
- Stone Wall
- Wetland Border
- Perennial Stream or River
- Intermittent Stream
- Field Delineated Resource Boundary
- Riverfront Area
- 100 ft Buffer Wetland

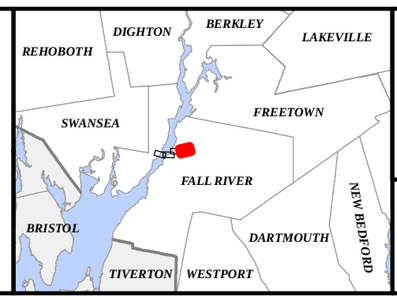
N12/M13 Double Circuit Tower Separation Project

Figure 5
Soil Unit Boundaries

Page 4 of 4

New England Power Company

Date: 9/30/2021 Author: TDH



Commonwealth of Massachusetts

Bristol County:
Town/City of Fall River

NAD 1983 UTM Zone 18N USFt

nationalgrid

POWER ENGINEERS

Path: H:\Projects\140869_140884_SEMA_RI_Step_2B\Apps\M13_N12_ProjectWetland_Report_Pottersville_Sykes\Figure_5_Soil_Unit_Boundaries.mxd

ATTACHMENT A STREAM AND WETLAND PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG

Site Location: SM10

Photo No.	**Date:**
1	11-03-15

Direction Photo Taken:

West

Description:

Taunton River

View across the tidal Taunton River of N12 Structure #1 located to the west of a Coastal Bank on the east side of Riverside Avenue in Somerset.

PHOTOGRAPHIC LOG

Site Location: M10

Photo No.	**Date:**
2	11-03-15

Direction Photo Taken:

Northeast

Description:

Gravelly Coastal Beach around N12 Structure #2 in Fall River.

PHOTOGRAPHIC LOG

Site Location: M10

Photo No.	**Date:**
3	05-09-17

Direction Photo Taken:

Northwest

Description:

Salt Marsh

N12 Structure #2 is in the photo background.

PHOTOGRAPHIC LOG

Site Location: M10

Photo No.	**Date:**
4	11-03-15

Direction Photo Taken:

Northeast

Description:

Salt Marsh and Coastal Beach along the Taunton River between N12 Structure #2 and Structure #3.

PHOTOGRAPHIC LOG

Site Location: M9B

Photo No.	**Date:**
5	06-18-21

Direction Photo Taken:

Northwest

Description:

Bordering Vegetated Wetland

PFO

PHOTOGRAPHIC LOG

Site Location: M9A

Photo No.	**Date:**
6	06-18-21

Direction Photo Taken:

East

Description:

Isolated Vegetated Wetland

PEM/PSS

PHOTOGRAPHIC LOG

Site Location: SM9A

Photo No.	**Date:**
7	03-12-21

Direction Photo Taken:

South

Description:

Perennial Stream (Steep Brook)

Upstream View

PHOTOGRAPHIC LOG

Site Location: SM9B

Photo No.	**Date:**
8	03-12-21

Direction Photo Taken:

North

Description:

Ephemeral Stream

Downstream View

PHOTOGRAPHIC LOG

Site Location: SM9

Photo No.	**Date:**
9	09-14-17

Direction Photo Taken:

Northwest

Description:

Perennial Stream

Upstream View

PHOTOGRAPHIC LOG

Site Location: M9

Photo No.	**Date:**
10	09-14-17

Direction Photo Taken:

North

Description:

Bordering Vegetated Wetland

PSS

PHOTOGRAPHIC LOG

Site Location: SM8

Photo No.	**Date:**
11	05-09-19

Direction Photo Taken:

Southwest

Description:

Intermittent Stream

Downstream View

PHOTOGRAPHIC LOG

Site Location: M8

Photo No.	**Date:**
12	09-14-17

Direction Photo Taken:

West

Description:

Bordering Vegetated Wetland

PSS/PEM

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ATTACHMENT B USACE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 09/14/2017
Applicant/Owner: NEP State: MA Sampling Point: WET-M8
Investigator(s): M. Lamothe and B, Pelletier Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR R Lat: 41.740229 Long: -71.116708 Datum: WGS-84
Soil Map Unit Name: Ridgebury fine sandy loam, 0 to 3 percent slopes, extremely stony NWI Classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined not to be within a wetland due to the lack of wetland hydrology.

Pockets of PSS throughout wetland.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): _____	
Water Table Present?	Yes _____	No **X**	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): _____	**Wetland Hydrology Present?** **Yes** _____ **No X**

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

Remarks:

No positive indication of wetland hydrology was observed.

Pools of standing water observed in May 2017 vernal pool survey. No standing water now.

VEGETATION - Use scientific names of plants.

Sampling Point: **WET-M8**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Viburnum dentatum*	5	Yes	FAC
2. *Robinia pseudoacacia*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Eupatorium novae-angliae*	55	Yes	FACW
2. *Solidago nemoralis*	15	No	UPL
3. *Juncus effusus*	10	No	OBL
4. *Senecio vulgaris*	10	No	FACU
5. *Lythrum salicaria*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	**15**	x 1 =	**15**
FACW species	**55**	x 2 =	**110**
FAC species	**5**	x 3 =	**15**
FACU species	**25**	x 4 =	**100**
UPL species	**15**	x 5 =	**75**
Column Totals:	**115** (A)		**315** (B)

Prevalence Index = B/A = **2.74**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

Trees not present; maintained ROW.

Species within the Sapling/Shrub stratum which have less than 5% cover include: Rosa multiflora.

Species within the Herbaceous stratum which have less than 5% cover include: Parthenocissus quinqueflia.

40% of herb plot covered by Sphagnum moss.

Evidence of spraying and cutting (black locust) in area.

SOIL

Sampling Point: **WET-M8**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4							Oi	
4-9	2.5Y 3/1	100	None	—	—		Fine Sandy Loam	
9-14	2.5Y 6/2	93	10YR 5/6	7	C	M	Loamy Fine Sand	cobbles @ 30% throughout matrix

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** **X** **No** ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 09/14/2017
Applicant/Owner: NEP State: MA Sampling Point: UPL-M8
Investigator(s): M. Lamothe and B. Pelletier Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3-7
Subregion (LRR or MLRA): LRR R Lat: 41.740124 Long: -71.116191 Datum: WGS-84
Soil Map Unit Name: Ridgebury fine sandy loam, 0 to 3 percent slopes, extremely stony NWI Classification: Herbaceous Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____ No **X**	Depth (inches): _____	
Water Table Present?	Yes _____ No **X**	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No **X**	Depth (inches): _____	**Wetland Hydrology Present?** Yes _____ No **X**

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

Remarks:

No positive indication of wetland hydrology was observed.

VEGETATION - Use scientific names of plants.

Sampling Point: **UPL-M8**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Betula lenta*	5	Yes	FACU
3. *Quercus rubra*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Rubus allegheniensis*	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Holcus lanatus*	60	Yes	FACU
2. *Solidago rugosa*	35	Yes	FAC
3. *Rubus flagellaris*	20	No	FACU
4. *Dennstaedtia punctilobula*	10	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *None Observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**50**	x 3 =	**150**
FACU species	**120**	x 4 =	**480**
UPL species	**10**	x 5 =	**50**
Column Totals:	**180** (A)		**680** (B)

Prevalence Index = B/A = **3.78**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

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

No positive indication of hydrophytic vegetation was observed.

Trees located at EDGE of ROW.

Species within the Herbaceous stratum which have less than 5% cover include: Eupatorium dubium.

SOIL

Sampling Point: **UPL-M8**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2							Organic	
2-4	10YR 4/3	100	None	—	—	—	Fine Sand Loam	
4-11	10YR 5/6	100	None	—	—	—	Fine Sand Loam	gravels @ 60%

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 11

Hydric Soil Present? **Yes** ____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

Very shallow soil associated with substation work area.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 09/14/2017
Applicant/Owner: NEP State: MA Sampling Point: WET-M9
Investigator(s): M. Lamothe and B. Pelletier Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR R Lat: 41.739039 Long: -71.120057 Datum: WGS-84
Soil Map Unit Name: Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony NWI Classification: PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined to be within a wetland due to the presence of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): _____	
Water Table Present?	Yes _____	No **X**	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): _____	**Wetland Hydrology Present?** **Yes X** **No** _____

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

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

VEGETATION - Use scientific names of plants.

Sampling Point: **WET-M9**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Viburnum dentatum*	60	Yes	FAC
2. *Alnus serrulata*	15	No	OBL
3. *Rubus allegheniensis*	10	No	FACU
4. *Quercus rubra*	5	No	FACU
5.			
6.			
7.			
	90 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Parthenocissus quinquefolia*	5	Yes	FACU
2. *Phragmites australis*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	**15**	x 1 =	**15**
FACW species	**5**	x 2 =	**10**
FAC species	**60**	x 3 =	**180**
FACU species	**30**	x 4 =	**120**
UPL species	**0**	x 5 =	**0**
Column Totals:	**110** (A)		**325** (B)

Prevalence Index = B/A = **2.95**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

Species within the Sapling/Shrub stratum which have less than 5% cover include: Prunus serotina and Vaccinium corymbosum.

Species within the Herbaceous stratum which have less than 5% cover include: Toxicodendren radicans.

Evidence of shrubs being clipped.

SOIL

Sampling Point: **WET-M9**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100	None	—	—	—	Loamy Sand	
6-16	10YR 4/2	30	5YR 4/6	7	C	M	Fine Sand	
	2.5Y 5/2	58	10YR 4/6	5	C	M	Fine Sand	gravels @ 30%

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** **X** **No** ____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 09/14/2017
Applicant/Owner: NEP State: MA Sampling Point: UPL-M9
Investigator(s): M. Lamothe and B. Pelletier Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 20-25
Subregion (LRR or MLRA): LRR R Lat: 41.739115 Long: -71.120000 Datum: WGS-84
Soil Map Unit Name: Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony NWI Classification: Herbaceous Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No **X**

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

Remarks:

No positive indication of wetland hydrology was observed.

VEGETATION - Use scientific names of plants.

Sampling Point: **UPL-M9**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Viburnum dentatum*	15	Yes	FAC
2. *Quercus rubra*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Schizachyrium scoparium*	55	Yes	FACU
2. *Rubus flagellaris*	25	Yes	FACU
3. *Solidago canadensis*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *Vitis labrusca*	5	Yes	FACU
2.			
3.			
4.			
	5 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **20%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**15**	x 3 =	**45**
FACU species	**110**	x 4 =	**440**
UPL species	**0**	x 5 =	**0**
Column Totals:	**125** (A)		**485** (B)

Prevalence Index = B/A = **3.88**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

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

No positive indication of hydrophytic vegetation was observed.

Trees not present; maintained ROW.

Species within the Sapling/Shrub stratum which have less than 5% cover include: Red cedar.

SOIL

Sampling Point: **UPL-M9**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100	None	—	—	—	Loamy Sand	
2-8	10YR 4/4	100	None	—	—	—	Loamy Fine Sand	gravels @ 30%
8-14	2.5Y 5/3	100	None	—	—	—	Loamy Fine Sand	gravels @ 30%

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 06/18/2021
Applicant/Owner: NEP State: MA Sampling Point: WET-M9A
Investigator(s): M. Lamothe and C. Dancy Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): LRR R Lat: 41.739517 Long: -71.129297 Datum: WGS-84
Soil Map Unit Name: Paxton fine sandy loam, 15 to 25 percent slopes, very stony NWI Classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined to be within a wetland due to the presence of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): _____	
Water Table Present?	Yes **X**	No _____	Depth (inches): **8**	
Saturation Present? (includes capillary fringe)	Yes **X**	No _____	Depth (inches): **6**	**Wetland Hydrology Present?** **Yes X** **No** _____

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

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

VEGETATION - Use scientific names of plants.

Sampling Point: **WET-M9A**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Rhus glabra*	30	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Phalaris arundinacea*	75	Yes	FACW
2. *Typha latifolia*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *None Observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	**10**	x 1 =	**10**
FACW species	**75**	x 2 =	**150**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**30**	x 5 =	**150**
Column Totals:	**115** (A)		**310** (B)

Prevalence Index = B/A = **2.70**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

Trees not present; maintained ROW.

Species within the Shrub stratum which have less than 5% cover include: Viburnum dentatum and Sambucus nigra

Species within the Herb stratum which have less than 5% cover include: Impatiens capensis

SOIL

Sampling Point: **WET-M9A**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2							Oi	Fibric
2-9	10YR 2/2	100	None	—	—		Mucky SiL	
9-16	10YR 5/6	93	10YR 4/2	7			SiL	

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 06/18/2021
Applicant/Owner: NEP State: MA Sampling Point: UPL-M9A
Investigator(s): M. Lamothe and C. Dancy Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5-10
Subregion (LRR or MLRA): LRR R Lat: 41.739416 Long: -71.129318 Datum: WGS-84
Soil Map Unit Name: Paxton fine sandy loam, 15 to 25 percent slopes, very stony NWI Classification: Scrub-Shrub Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No **X**

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

Remarks:

No positive indication of wetland hydrology was observed.

VEGETATION - Use scientific names of plants.

Sampling Point: **UPL-M9A**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *None observed*			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Rosa multiflora*	30	Yes	FACU
2. *Rhus glabra*	5	No	UPL
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Impatiens capensis*	25	Yes	FACW
2. *Celastrus orbiculatus*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *None Observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**25**	x 2 =	**50**
FAC species	**0**	x 3 =	**0**
FACU species	**30**	x 4 =	**120**
UPL species	**15**	x 5 =	**75**
Column Totals:	**70** (A)		**245** (B)

Prevalence Index = B/A = **3.50**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

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

No positive indication of hydrophytic vegetation was observed.

Species within the Shrub/Sapling stratum which have less than 5% cover include: Gleditsia triacanthos.

SOIL

Sampling Point: **UPL-M9A**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SiL	
3-9	10YR 3/2	100					SiL	
9-17	2.5Y 4/2	100					SaL	

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 06/18/2021
Applicant/Owner: NEP State: MA Sampling Point: WET-M9B
Investigator(s): M. Lamothe and C. Dancy Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): LRR R Lat: 41.739670 Long: -71.129513 Datum: WGS-84
Soil Map Unit Name: Pits-Udorthents complex, gravelly NWI Classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined to be within a wetland due to the presence of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____		
Water Table Present?	Yes X	No _____	Depth (inches): 2		
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** _____

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

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

VEGETATION - Use scientific names of plants.

Sampling Point: **WET-M9B**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix bebbiana*	70	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Rhus glabra*	20	Yes	UPL
2. *Salix bebbiana*	10	Yes	FACW
3. *Rosa multiflora*	5	No	FACU
4.			
5.			
6.			
7.			
	35 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Impatiens capensis*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *None Observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **75%** (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**	
FACW species	**85**	x 2 =	**170**	
FAC species	**0**	x 3 =	**0**	
FACU species	**5**	x 4 =	**20**	
UPL species	**20**	x 5 =	**100**	
Column Totals:	**110**	(A)	**290**	(B)

Prevalence Index = B/A = **2.64**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

Species within the Herbaceous stratum which have less than 5% cover include: Linnaea borealis

Species within the Woody vine stratum which have less than 5% cover include: Lonicera japonica

SOIL

Sampling Point: **WET-M9B**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9							Oa	Organic sapric
9-16	10YR 2/2	95	7.5YR 3/4	5	C	RC	MkSiL	

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** **X** **No** ___

Remarks:

A positive indication of hydric soil was observed.

Hydrogen sulfide odor was detected 1 inch from the soil surface.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: N12/M13 City/County: Fall River/Bristol Sampling Date: 06/18/2021
Applicant/Owner: NEP State: MA Sampling Point: UPL-M9B
Investigator(s): M. Lamothe and C. Dancy Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 15-20
Subregion (LRR or MLRA): LRR R Lat: 41.739677 Long: -71.129465 Datum: WGS-84
Soil Map Unit Name: Pits-Udorthents complex, gravelly NWI Classification: Forested Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No ____ (if no, explain in Remarks.)
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

Remarks:

No positive indication of wetland hydrology was observed.

VEGETATION - Use scientific names of plants.

Sampling Point: **UPL-M9B**

Tree Stratum (Plot size: 30 feet)	Absolute % cover	Dominant Species?	Indicator Status
1. *Carya tomentosa*	30	Yes	UPL
2. *Salix bebbiana*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Rhus glabra*	45	Yes	UPL
2. *Rosa multiflora*	15	Yes	FACU
3. *Lonicera tatarica*	10	No	FACU
4.			
5.			
6.			
7.			
	70 = Total Cover		

Herb Stratum (Plot size: 5 feet)			
1. *Impatiens capensis*	10	Yes	FACW
2. *Ranunculus repens*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15.00 = Total Cover		

Woody Vine Stratum (Plot size: 15 feet)			
1. *None Observed*			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**	
FACW species	**40**	x 2 =	**80**	
FAC species	**5**	x 3 =	**15**	
FACU species	**25**	x 4 =	**100**	
UPL species	**75**	x 5 =	**375**	
Column Totals:	**145**	(A)	**570**	(B)

Prevalence Index = B/A = **3.93**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ____ **No** **X**

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

No positive indication of hydrophytic vegetation was observed.

Species within the Woody Vine stratum which have less than 5% cover include: Lonicera japonica.

SOIL

Sampling Point: **UPL-M9B**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					SiL	
5-15	10YR 4/2	100					SaL	with gravels

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

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

Hydric Soils Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock refusal

Depth (inches): 15

Hydric Soil Present? **Yes** _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

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ATTACHMENT C STREAM FIELD DATA FORMS

Waterbody Data Sheet

FEATURE ID: SM8

WATERBODY NAME: Unnamed Stream

SURVEY DATE: 5/09/2019

INVESTIGATOR: ML, DR

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [x] INTERMITTENT
- [ ] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): 2 feet

CURRENT WATER DEPTH AT CROSSING (FT): 3 inches

SUBSTRATE

- [ ] BEDROCK
- [ ] GRAVEL
- [ ] SAND
- [ ] OTHER _____
- [x] SILT
- [ ] CLAY

- [x] RUNS
- [x] POOLS
- [x] RIFFLES

COMMENTS: See photographs section below.

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): 4 inches (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): 4 inches (WHEN FACING DOWNSTREAM)
SLOPE [x] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [x] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

TOP OF BANK WIDTH (FT): 15 feet

OHWM WIDTH (FT): 14 feet OHWM HEIGHT (FT): 1 foot

EVIDENCE OF SCOUR OR EROSION: No

RIPARIAN HABITAT

RIPARIAN VEGETATION [x] YES [ ] NO

DOMINANT RIPARIAN SPECIES: See Photographs section below.

INVASIVES/NOXIOUS VEGETATION [ ] YES [x] NO

IF YES, SPECIES PRESENT:

ADJACENT WETLAND [x] YES [ ] NO Wetland M8

SENSITIVE SPECIES PRESENT [ ] YES [x] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

- [x] CLEAR, NATURAL LINE IMPRESSED ON BANK
- [ ] VEGETATION MATTED DOWN, BENT OR ABSENT
- [x] LEAF LITTER DISTURBED OR WASHED AWAY
- [ ] DESTRUCTION OF TERRESTRIAL VEGETATION
- [ ] ABRUPT CHANGE IN PLANT COMMUNITY
- [ ] CHANGES IN SOIL CHARACTER
- [ ] SEDIMENT DEPOSITION
- [ ] SEDIMENT SORTING
- [x] PRESENCE OF LITTER OR DEBRIS
- [ ] PRESENCE OF WRACK LINE
- [ ] SHELVING
- [ ] SCOUR
- [ ] WATER STAINING
- [ ] OTHER:

PHOTOGRAPHS

Substrate comments:
Runs: ~70%, pools: ~ 10%, riffles: ~20%

Dominant Riparian Species: Acer rubrum, Nyssa sylvatica, Viburnum dentatum, Vaccinium corymbosum, Juncus effusus, Onoclea sensibilis, Grass spp.

Waterbody Data Sheet

FEATURE ID: SM9

WATERBODY NAME: Unnamed

SURVEY DATE: 9/14/2017

INVESTIGATOR: ML, BP

FLOW CHARACTERISTICS

- [ ] EPHEMERAL
- [ ] INTERMITTENT
- [x] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): 15 feet

CURRENT WATER DEPTH AT CROSSING (FT): 2 feet

SUBSTRATE

- [ ] BEDROCK
- [x] GRAVEL
- [ ] SAND
- [ ] OTHER _____
- [ ] SILT
- [ ] CLAY

- [x] RUNS
- [x] POOLS
- [ ] RIFFLES

COMMENTS:

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): 5 feet (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): 5 feet (WHEN FACING DOWNSTREAM)
SLOPE	SLOPE
[x] 0 - 30°	[x] 0 - 30°
[ ] 31 - 45°	[ ] 31 - 45°
[ ] 46 - 60°	[ ] 46 - 60°
[ ] 61 - 90°	[ ] 61 - 90°

TOP OF BANK WIDTH (FT): 18 feet

OHWM WIDTH (FT): 18 feet OHWM HEIGHT (FT): 4.5 feet

EVIDENCE OF SCOUR OR EROSION: No

RIPARIAN HABITAT

RIPARIAN VEGETATION [x] YES [ ] NO

DOMINANT RIPARIAN SPECIES: See Photographs section below.

INVASIVES/NOXIOUS VEGETATION [x] YES [ ] NO

IF YES, SPECIES PRESENT: Rosa multiflora

ADJACENT WETLAND [x] YES [ ] NO Wetland M9

SENSITIVE SPECIES PRESENT [ ] YES [x] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

- [x] CLEAR, NATURAL LINE IMPRESSED ON BANK
- [x] VEGETATION MATTED DOWN, BENT OR ABSENT
- [x] LEAF LITTER DISTURBED OR WASHED AWAY
- [ ] DESTRUCTION OF TERRESTRIAL VEGETATION
- [ ] ABRUPT CHANGE IN PLANT COMMUNITY
- [ ] CHANGES IN SOIL CHARACTER
- [ ] SEDIMENT DEPOSITION
- [ ] SEDIMENT SORTING
- [x] PRESENCE OF LITTER OR DEBRIS
- [ ] PRESENCE OF WRACK LINE
- [ ] SHELVING
- [ ] SCOUR
- [x] WATER STAINING
- [ ] OTHER:

PHOTOGRAPHS

There is a concrete box culvert with an approximate 4 foot opening that allows the the stream to flow under Wilson Road.

There are raccoon prints on the river.

There is water staining on the culvert and adjacent trees.

Dominant Riparian Species: Acer rubrum, Fraxinus pennsylvanica, Rosa multiflora.

Waterbody Data Sheet

FEATURE ID: SM9A

WATERBODY NAME: Steep Brook

SURVEY DATE: 3/12/2021

INVESTIGATOR: ML, DR

FLOW CHARACTERISTICS

[ ] EPHEMERAL
[ ] INTERMITTENT
[✓] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): 8 feet

CURRENT WATER DEPTH AT CROSSING (FT): 1 feet

SUBSTRATE

[ ] BEDROCK
[✓] GRAVEL
[ ] SAND
[✓] OTHER Cobble
[ ] SILT
[ ] CLAY

[✓] RUNS
[✓] POOLS
[✓] RIFFLES

COMMENTS:

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): 2.5 feet (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): 4.5 feet (WHEN FACING DOWNSTREAM)
SLOPE [ ] 0 - 30° [✓] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [ ] 0 - 30° [ ] 31 - 45° [✓] 46 - 60° [ ] 61 - 90°

TOP OF BANK WIDTH (FT): 13 feet

OHWM WIDTH (FT): 8 feet OHWM HEIGHT (FT): 1 feet

EVIDENCE OF SCOUR OR EROSION: Yes

RIPARIAN HABITAT

RIPARIAN VEGETATION [✓] YES [ ] NO

DOMINANT RIPARIAN SPECIES: See Photographs section

INVASIVES/NOXIOUS VEGETATION [✓] YES [ ] NO

IF YES, SPECIES PRESENT: See Photographs section

ADJACENT WETLAND [ ] YES [✓] NO

SENSITIVE SPECIES PRESENT [ ] YES [✓] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[✓] CLEAR, NATURAL LINE IMPRESSED ON BANK
[ ] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[ ] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[ ] SEDIMENT DEPOSITION
[ ] SEDIMENT SORTING
[✓] PRESENCE OF LITTER OR DEBRIS
[✓] PRESENCE OF WRACK LINE
[ ] SHELVING
[✓] SCOUR
[✓] WATER STAINING
[ ] OTHER:

PHOTOGRAPHS

There is undercutting on the right bank of Steep Brook.

Dominant Riparian Species: Rhus hirta, Rosa multiflora, Fallopia japonica, Lonicera japonica.

Invasive Species: Rosa multiflora, Fallopia japonica, Lonicera japonica.

Waterbody Data Sheet

FEATURE ID: SM9B

WATERBODY NAME: Unnamed

SURVEY DATE: 3/12/2021

INVESTIGATOR: ML, DR

FLOW CHARACTERISTICS

- [x] EPHEMERAL
- [ ] INTERMITTENT
- [ ] PERENNIAL

COMMENTS:

CURRENT WATER WIDTH AT CROSSING (FT): No water

CURRENT WATER DEPTH AT CROSSING (FT): No water

SUBSTRATE

- [ ] BEDROCK
- [x] GRAVEL
- [ ] SAND
- [x] OTHER Cobble
- [ ] SILT
- [ ] CLAY

- [ ] RUNS
- [ ] POOLS
- [ ] RIFFLES

COMMENTS:

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): 7 feet (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): 6 feet (WHEN FACING DOWNSTREAM)
SLOPE	SLOPE
[ ] 0 - 30°	[ ] 0 - 30°
[ ] 31 - 45°	[ ] 31 - 45°
[ ] 46 - 60°	[ ] 46 - 60°
[x] 61 - 90°	[x] 61 - 90°

TOP OF BANK WIDTH (FT): 15 feet

OHWM WIDTH (FT): 5 feet OHWM HEIGHT (FT): 1.5 feet

EVIDENCE OF SCOUR OR EROSION: Yes

RIPARIAN HABITAT

RIPARIAN VEGETATION [x] YES [ ] NO

DOMINANT RIPARIAN SPECIES: See Photographs section

INVASIVES/NOXIOUS VEGETATION [x] YES [ ] NO

IF YES, SPECIES PRESENT: See Photographs section

ADJACENT WETLAND [ ] YES [x] NO

SENSITIVE SPECIES PRESENT [ ] YES [x] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

- [x] CLEAR, NATURAL LINE IMPRESSED ON BANK
- [ ] VEGETATION MATTED DOWN, BENT OR ABSENT
- [ ] LEAF LITTER DISTURBED OR WASHED AWAY
- [ ] DESTRUCTION OF TERRESTRIAL VEGETATION
- [ ] ABRUPT CHANGE IN PLANT COMMUNITY
- [ ] CHANGES IN SOIL CHARACTER
- [ ] SEDIMENT DEPOSITION
- [ ] SEDIMENT SORTING
- [x] PRESENCE OF LITTER OR DEBRIS
- [x] PRESENCE OF WRACK LINE
- [ ] SHELVING
- [x] SCOUR
- [x] WATER STAINING
- [ ] OTHER:

PHOTOGRAPHS

This is an ephemeral channel of Steep Brook. The channel was dry at the time of the site visit.

There is bank undercutting on both sides of the channel.

Dominant Riparian Species: Rhus hirta, Fallopia japonica.

Invasive Species: Fallopia japonica.

Waterbody Data Sheet

FEATURE ID: SM10

WATERBODY NAME: Taunton River

SURVEY DATE: 5/09/2017

INVESTIGATOR: ML

FLOW CHARACTERISTICS

[ ] EPHEMERAL
[ ] INTERMITTENT
[ ] PERENNIAL

COMMENTS: Estuarine

CURRENT WATER WIDTH AT CROSSING (FT): ~ 1800 feet estimate

CURRENT WATER DEPTH AT CROSSING (FT): Unknown

SUBSTRATE

[ ] BEDROCK
[✓] GRAVEL
[ ] SAND
[ ] OTHER _____
[ ] SILT
[ ] CLAY

[ ] RUNS
[ ] POOLS
[ ] RIFFLES

COMMENTS: Tidal waters

STREAM CHARACTERISTICS

LEFT BANK HEIGHT (FT): Tidal (WHEN FACING DOWNSTREAM)	RIGHT BANK HEIGHT (FT): Tidal (WHEN FACING DOWNSTREAM)
SLOPE [✓] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°	SLOPE [✓] 0 - 30° [ ] 31 - 45° [ ] 46 - 60° [ ] 61 - 90°

TOP OF BANK WIDTH (FT): ~2,000 feet estimate

OHWM WIDTH (FT): Tidal OHWM HEIGHT (FT): Tidal

EVIDENCE OF SCOUR OR EROSION: No

RIPARIAN HABITAT

RIPARIAN VEGETATION [✓] YES [ ] NO

DOMINANT RIPARIAN SPECIES: See Photographs section below.

INVASIVES/NOXIOUS VEGETATION [✓] YES [ ] NO

IF YES, SPECIES PRESENT: Phragmites australis

ADJACENT WETLAND [✓] YES [ ] NO Salt marsh

SENSITIVE SPECIES PRESENT [ ] YES [✓] NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

[✓] CLEAR, NATURAL LINE IMPRESSED ON BANK
[ ] VEGETATION MATTED DOWN, BENT OR ABSENT
[ ] LEAF LITTER DISTURBED OR WASHED AWAY
[ ] DESTRUCTION OF TERRESTRIAL VEGETATION
[✓] ABRUPT CHANGE IN PLANT COMMUNITY
[ ] CHANGES IN SOIL CHARACTER
[✓] SEDIMENT DEPOSITION
[✓] SEDIMENT SORTING
[✓] PRESENCE OF LITTER OR DEBRIS
[✓] PRESENCE OF WRACK LINE
[ ] SHELVING
[ ] SCOUR
[ ] WATER STAINING
[ ] OTHER:

PHOTOGRAPHS

Riparian vegetation: Spartina alterniflora, Spartina patens, Phragmites australis

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September 2021

NEW ENGLAND POWER COMPANY

N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Wildlife Habitat Evaluation

PROJECT NUMBER:
146782

PROJECT CONTACT:
Jamie Durand
EMAIL:
jamie.durand@powereng.com
PHONE:
774-643-1829

POWER ENGINEERS

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N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Wildlife Habitat Evaluation

PREPARED FOR:
NEW ENGLAND POWER COMPANY
40 SYLVAN ROAD, E3.685
WALTHAM, MA 02451

PREPARED BY:
POWER ENGINEERS CONSULTING, PC
2 HAMPSHIRE STREET, SUITE 301
FOXBOROUGH, MA 02035

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ACRONYMS AND ABBREVIATIONS

Bioreserve	Southeastern Massachusetts Bioreserve
BMP(s)	Best Management Practices
BVW	Bordering Vegetated Wetland
CMR	Code of Massachusetts Regulations
dbh	diameter at breast height
DCT	double circuit tower
kV	kilovolt
m	meter
MassDEP	Massachusetts Department of Environmental Protection
NEP	New England Power Company
NHESP	Natural Heritage and Endangered Species Program
NWI	National Wetlands Inventory
PEM	Palustrine Emergent
PFO	Palustrine Forested
POWER	POWER Engineers Consulting, PC
Project	N12/M13 Double Circuit Tower Separation Project
PSS	Palustrine Scrub-Shrub
ROW(s)	right(s)-of-way
USFWS	United States Fish and Wildlife Service
VMP	Vegetation Management Plan
WPA	Massachusetts Wetlands Protection Act

1.0 INTRODUCTION

The New England Power Company (NEP) is proposing to undertake the N12/M13 Double Circuit Tower (DCT) Separation Project (Project) to improve transmission system reliability in the Southeastern Massachusetts and Rhode Island service area. As shown in Figure 1, the Project will be located within an existing 115 kilovolt (kV) electric transmission line right-of-way (ROW) that extends from NEP's Pottersville Switching Station in Somerset, Massachusetts to its Sykes Road Substation in Fall River, Massachusetts, a distance of approximately 1.85 miles. This ROW is currently occupied by two 115 kV overhead transmission circuits – the N12 and the M13 – supported on double circuit towers; i.e., the two circuits, each consisting of three individual phase conductors, share the same series of towers within the ROW. The main disadvantage of the DCT configuration is reliability; a contingency affecting a single structure could cause an outage to both lines. Placing the N12 and M13 onto separate sets of structures will improve the reliability of the electric transmission system.

On behalf of NEP, POWER Engineers Consulting, PC (POWER) conducted a wildlife habitat evaluation and wetland, watercourse, and vernal pool field assessments within the limit of the existing transmission line ROW associated with the Project (hereafter referred to as the "Survey Area"). Wetland and watercourse field assessments occurred in November-December 2015, September 2017, July 2018, May 2019, and June 2021. Vernal pool surveys were conducted during spring 2015 to spring 2019. During the field investigations, four Bordering Vegetated Wetlands (BVWs), one Isolated Vegetated Wetland, one tidal river, two perennial watercourses, one intermittent watercourse, and one ephemeral watercourse were identified and delineated within the Survey Area. No vernal pools were found within the Survey Area. Additional detailed wildlife habitat evaluation data was collected in November 2019, March 2021, and June 2021 in the BVWs and watercourses. In addition, constructability reviews were conducted of proposed activities in an effort to further minimize impacts to resource areas. As a result, the layout of the Project was adjusted in several instances, resulting in a Project that avoids and minimizes impacts to the maximum extent practicable.

2.0 DETAILED WILDLIFE HABITAT EVALUATION

This document presents the results of a wildlife habitat evaluation conducted pursuant to the Massachusetts Wetland Protection Act (WPA) (M.G.L. c. 131 § 40), Regulations addressing Wildlife Habitat Evaluations (310 Code of Massachusetts Regulations [CMR] 10.60), and the procedures and methods detailed in the Massachusetts Department of Environmental Protection (MassDEP) *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* (Guidance; MassDEP 2006).

The Project exceeds review thresholds for wildlife habitat alteration under the WPA, as implemented by the Wetland Regulations (310 CMR 10.00). Anticipated impacts to three BVWs and two perennial streams are greater than 5,000 square feet due to tree clearing, temporary (construction) impacts associated with construction mats, and permanent impacts associated with the installation of new structures. NEP has undertaken an Appendix B Detailed Wildlife Habitat Evaluation for areas affected by the Project. This documentation is consistent with the standards of the MassDEP Guidance.

NEP has consulted with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) on the occurrence of state-listed species and critical habitats known to occur in the Project area. Through consultation and review of the NHESP data, it is determined that there is no NHESP priority habitat or estimated habitat affected by the Project.

Habitat features or characteristics were evaluated in the Survey area based on characteristics identified on the Guidance detailed data form (Attachment A). Important wildlife habitat features found during the field analyses include:

- Upland/wetland food plants (fruit)
- Standing dead tree (snag)
- Dense herbaceous cover
- Large woody debris on ground
- Standing water present at least part of the growing season
- Small mammal burrows
- Overhanging branches at, or within one meter above the water's surface
- Live or dead standing vegetation overhanging water or offering good visibility of open water
- Medium to large (> 6.0 inches) flat rocks within streams
- Areas of ice-free open water in winter

Representative photographs of habitat characteristics within the resource area are presented in Attachment B. Table 2 includes additional wildlife observations or signs collected during the field wildlife habitat evaluation.

The remainder of this document includes: Best Management Practices (BMPs) which will be used throughout the course of Project activities (Section 4.0), anticipated Project impacts to wildlife habitat with potential mitigation actions listed to offset Project impacts (Section 5.0), and an adverse effect analysis and conclusion (Section 6.0).

3.0 EXISTING HABITAT CONDITIONS

3.1 Important Habitat Features

Wildlife habitat features and characteristics identified by the MassDEP Guidance were evaluated in BVW M8, BVW M9, BVW M9B, and along the perennial Steep Brook (SM9A) and an unnamed perennial stream SM9. The wildlife habitat features and characteristics were documented on the detailed data forms (Attachment A).

In BVW M8, multiple sites of impact are planned to take place. Temporary Project impacts include construction matting for work pads and access routes to structures. Tree clearing is also anticipated in a section of BVW M8 as well as permanent impacts from the installation of a structure. Therefore, wildlife habitat characteristics were collected at three representative sites in BVW M8 (M8-1, M8-2, and M8-3). Based on the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) classification system (Cowardin et al. 1979), BVW M8 is a scrub-shrub wetland (PSS) intermixed with emergent (PEM) (non-woody) vegetation with forested wetland (PFO) along the edges of ROW.

Tree clearing is also planned to take place in BVW M9 and over the streambanks of perennial stream SM9. Wildlife habitat characteristics were collected at one representative site for this impact in the vicinity of the wetland and the stream. BVW M9 is a broad-leaved deciduous shrub (PSS) wetland with a

portion of an unnamed perennial stream (SM9) flowing through the wetland. Forested wetland (PFO) occurs in the non-maintained portion of the ROW.

BVW M9B will have minor temporary impacts due to construction matting. BVW M9B is a forested wetland (PFO) located within the non-maintained portion of the ROW. One representative site had wildlife habitat data collected.

At the perennial stream SM9A, Steep Brook, temporary impacts consist of construction matting used to facilitate access over the stream as well as an associated ephemeral channel (SM9B). Wildlife habitat characteristics were evaluated at one representative location. At this location Steep Brook had very steep banks with no bordering wetland community and the ephemeral channel was dry during March 2021.

A variety of suburban wetland wildlife species utilize these habitats including an assemblage of chiefly small mammals (other than white-tailed deer (*Odocoileus virginianus*) and Eastern coyote (*Canis latrans* var.)), songbirds, reptiles, amphibians, and invertebrates. These wetland habitats provide feeding, nesting, breeding, and cover opportunities for wildlife, which are otherwise surrounded by highly residential areas with sections of commercial and industrial zones. Characteristics of the forest and shrub wetlands which provide necessary resources for wildlife include: berry-producing shrubs for food sources, young, developing shrubs and emergent plants providing an understory for cover, and localized areas of surface water in the form of depressions.

Summarized below in Table 1 are the wildlife habitat characteristics observed at each representative location within BVW M8, BVW M9, BVW M9B, perennial Steep Brook (SM9A) and an unnamed perennial stream (SM9) during the field surveys. The listed habitat characteristics are those identified on the MassDEP detailed habitat evaluation data forms that are relevant to Project wetland resource areas. Therefore, Table 1 is a summary of these data forms (Attachment A) and presents a comprehensive overview of the wildlife habitat evaluation for the Project. Following the table is a detailed description of each of the listed habitat characteristics.

TABLE 1 EXISTING WILDLIFE HABITAT FEATURES

HABITAT CHARACTERISTICS	WETLAND RESOURCE AREA	EXISTING HABITAT FEATURES	NOTES/COMMENTS
Wildlife Food: Upland/wetland food plants (hard mast and fruit)	BVW M8-1	Present	Common blackberry, smooth arrowwood, roundleaf greenbrier, winterberry, Asian bittersweet, and multiflora rose.
	BVW M8-2	Present	Winterberry, swamp dewberry, and multiflora rose.
	BVW M8-3	Present	Roundleaf greenbrier, multiflora rose.
	BVW M9	Present	Multiflora rose, arrowwood
Standing Dead Trees 12-18 inches diameter at breast height (dbh)	BVW M8-3	1	White oak
Dense herbaceous cover	BVW M8-1	Present	Common reed, soft rush, and goldenrods.
	BVW M8-2	Present	Soft rush and goldenrods.
	BVW M9	Present	Sensitive fern, sedge.
	Perennial Steep Brook (SM9A)	Present	Multiflora rose, Japanese knotweed, Japanese honeysuckle.

HABITAT CHARACTERISTICS	WETLAND RESOURCE AREA	EXISTING HABITAT FEATURES	NOTES/COMMENTS
Large woody debris on ground	BVW M8-2	Present	Large shrubs had been cut/mowed providing potential habitat and ground cover.
	BVW M8-3	Present	Four fallen trees on the ground.
	BVW M9	Present	Large fallen tree branch.
	Perennial Steep Brook (SM9A)	Present	Large fallen tree branch on the ground adjacent to the stream.
Standing water present at least part of the growing season	BVW M8-1, BVW M8-2, and BVW M8-3 BVW M9B	Present	All pockets of standing water present are suitable for foraging and rehydration of non-breeding amphibians. Pockets of standing water are present as isolated depressions within the wetlands.
Small Mammal Burrows	BVW M8-1 and BVW M8-2	Present	Woodchuck holes observed in May 2019.
Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above water's surface	BVW M9	Present	Willow branches overhanging stream (SM9) within BVW M9.
	Perennial Steep Brook (SM9A)	Present	Multiflora rose branches overhanging stream..
Live or dead standing vegetation overhanging water or offering good visibility of open water	BVW M9	Present	Dead trees and branches hanging over stream (SM9) within wetland. Live trees nearby from unmaintained ROW.
Medium to large (>6") flat rocks within stream	Perennial Steep Brook (SM9A)	Present	Several large & medium rocks within the stream providing potential habitat and nesting for stream salamanders.
Areas of ice-free open water in winter	Perennial Steep Brook (SM9A) and perennial stream (SM9)	Present	These perennial streams have the potential to provide ice-free water for wildlife during winter months.

TABLE 2 WILDLIFE OBSERVATIONS AND SIGNS

WETLAND RESOURCE AREA	OBSERVED WILDLIFE SPECIES	OBSERVED WILDLIFE SIGNS
BVW M8	-Red-winged blackbirds -Deceased Eastern mole -Gray catbird -American robins	-Woodchuck holes -White-tailed deer droppings
BVW M9 and Perennial Stream SM9	-	-Deer trail
BVW M9B	-	-White-tailed deer droppings

3.1.1 Upland / Wetland Food Plants (Fruit)

Several of the survey areas were documented to have a variety of native shrubs and woody vines, as well as invasive species, providing fruit and seeds for wildlife food, particularly to birds and mammals. Native shrubs serving as a wildlife food source in BVW M8 include common blackberry (*Rubus allegheniensis*), winterberry (*Ilex verticillata*), smooth arrowwood (*Viburnum dentatum*) and swamp dewberry (*Rubus hispidus*). A native woody vine providing fruit for wildlife is roundleaf greenbrier (*Smilax rotundifolia*).

Invasive species within the wetland, including Asian bittersweet (*Celastrus orbiculatus*) and multiflora rose (*Rosa multiflora*), also produce fruits that serve as a wildlife food source. Smooth arrowwood and multiflora rose serve as a wildlife food source in BVW M9.

3.1.2 Standing Dead Trees (Snag)

Standing dead trees, also known as snags, provide feeding, nesting, denning, roosting, or perching areas for wildlife. One dead white oak (*Quercus alba*) was recorded within an impact area in BVW M8-3, with a diameter at breast height (dbh) range of 12 to 18 inches. Woodpeckers such as the downy woodpecker (*Picoides pubescens*) or the hairy woodpecker (*Picoides villosus*) feed on wood-boring larvae beetles found in snags; thereby creating holes or nesting cavities in snag trees while trying to access the beetles. Smaller snags provide nesting or feeding sites for such suburban birds as the black-capped chickadee (*Poecile atricapillus*), tufted titmouse (*Baeolophus bicolor*), and white-breasted nuthatch (*Sitta carolinensis*). Small mammals, such as the Eastern gray squirrel (*Sciurus carolinensis*) may den in tree cavities during the winter (DeGraaf and Yamasaki 2001).

3.1.3 Dense Herbaceous Cover

Nonwoody vegetation can provide a thick cover under the established shrub overstory. The dense herbaceous cover predominant in BVW M8 consists of common reed (*Phragmites australis*), soft rush (*Juncus effusus*) and a variety of goldenrods (*Solidago spp*.). In BVW M9 the dense herbaceous layer includes sedges (*Carex spp.*) and sensitive fern (*Onoclea sensibilis*). Along the streambanks of Steep Brook, (SM9A), the dense herbaceous layer consists of predominantly invasive species with Japanese knotweed (*Fallopia japonica*) on the eastern streambanks and multiflora rose and Japanese honeysuckle (*Lonicera japonica*) on the western streambanks.

3.1.4 Large Woody Debris on Ground

Large woody debris on the ground was identified in BVW M8, specifically in locations M8-2 and M8-3. At M8-2, large cut shrubs were left on the ground adjacent to the existing Line N12/M13 Structure #10. The cut shrubs provide ground cover and potential nesting habitat for small mammals. At the M8-3 location there were four fallen trees on the ground. In BVW M9 remains of fallen dead trees and branches were on the ground. Large woody debris from fallen dead trees were located in the upland adjacent to the perennial Steep Brook (SM9A). These fallen trees provide potential denning sites within the decaying interior of the logs (Hagan and Grove 1999). Decaying logs also provide food sources for a variety of insects residing within the decaying logs, and cover for specific woodland amphibian species including the red-backed salamander (*Plethodon cinereus*) (DeGraaf and Yamasaki 2001).

3.1.5 Standing water Present at Least Part of the Growing Season

Shallow pockets of standing water occur throughout BVW M8. These water-filled depressions provide non-breeding amphibians foraging and rehydration opportunities. Water was present in interspersed pockets during the surveys conducted from November 2015 - November of 2019. BVW M9B had evidence of previous standing water earlier in the growing season suitable for non-breeding amphibians based upon a field review in June 2021.

3.1.6 Small Mammal Burrows

During the 2019 surveys, woodchuck holes were identified in upland mounds within BVW M8. These observations demonstrate BVW M8 has the potential to provide wildlife habitat.

3.1.7 Rocks, Fallen Logs, Overhanging Branches Above Water

Branches within one meter above the water's surface can provide perching locations for many wildlife species such as amphibians, turtles, and birds. In BVW M9, willow branches and logs from dead trees were observed overhanging perennial stream SM9.

Steep Brook (SM9A) has multifora rose and broken Japanese knotweed branches overhanging the streambanks. The stream also had several medium to large rocks suitable for perching wildlife including small mammals.

3.1.8 Live or Dead Vegetation Over Water

Within BVW M9 several dead fallen trees were observed hanging over perennial stream SM9. This section of wetland is also location within a non-maintained portion of ROW. Live trees were growing over SM9 providing good visibility into the stream for birds.

3.1.9 Medium to Large Rocks Within Stream

Steep Brook (SM9A) consisted of a very rocky bottom and included medium to large rocks, greater than 6 inches within the streambed. These rocks have the potential to provide cover and nesting for stream salamanders. Steep Brook has the potential to provide habitat for the northern two-lined salamander (*Eurycea bislineata*) which can be found in swift-flowing rocky stream and are tolerant to urbanization (Connecticut Department of Energy and Environmental Protection 2016). The northern two-lined salamander is known to use the underside of rocks within streams to lay its eggs (Connecticut Department of Energy and Environmental Protection 2016).

3.1.10 Ice-Free Open Water in the Winter

Wildlife habitat data was collected in March 2021 at the Steep Brook (SM9A) and unnamed perennial stream (SM9) locations. At this time Steep Brook was a fast running stream (approximately one-foot depth) with signs of overflow during heavy rain events or flooding due to the associated ephemeral dry tributary (SM9B). An unnamed perennial stream (SM9) associated with BVW M9 also had ice-free water (approximately two-foot depth). Both streams show potential for having ice-free open water during the winter providing wildlife with water when other standing water may be frozen.

3.2 Landscape Context

The Survey Area and lands surrounding and contiguous to the Project serve as a connector to adjacent areas of habitat and are, therefore, important for connectivity with adjoining natural habitats. Surrounding the Survey Area are residential, commercial and industrial zones with pockets of upland and wetland forest. The western portion of the Survey Area transects through residential, commercial and industrial zones before crossing over the Taunton River into Somerset. The eastern portion of the Survey Area extends through residential and an industrial zone and ends at the Sykes Substation. East of the Sykes

Substation, the ROW and enters into the Southeastern Massachusetts Bioreserve (Bioreserve), which includes over 13,600 acres of protected land in Fall River and Freetown. The Bioreserve is managed by the Commonwealth of Massachusetts, the City of Fall River, and the Trustees of Reservation and offers diverse habitats and natural communities. The location of the Bioreserve in southeastern Massachusetts serves as vital habitat since this area is one of the fastest growing regions in the state with residential, commercial, and industrial zones. Wildlife currently inhabiting the Project area are accustomed to the existing utility infrastructure in the area. The existing ROW provides natural shrubland habitats and connectivity to adjacent pockets of upland and wetland forest, including the Bioreserve, in an otherwise developed landscape.

The Project is not anticipated to permanently impact the integrity of the ROW as a wildlife habitat connector. After Project completion, the ROWs will continue to serve a role as a landscape connector to wildlife habitats in this developed section of the ROW in Fall River, as well as providing habitats for suburban wildlife species.

3.3 Habitat Degradation

The representative wetland and watercourse impact areas reviewed during the wildlife habitat evaluation have been subject to previous alterations, predominately from the existing NEP infrastructure and habitat degradation from the adjacent land uses of residential, commercial, and industrial lands. BVW M8, BVW M9, BVW M9B and perennial streams SM9A and SM9 all have invasions of exotic plants. The invasive plants observed within the survey areas include: multiflora rose, Asian bittersweet, common reed, purple loosestrife (*Lythrum salicaria*), Japanese knotweed, and Japanese honeysuckle. No observations of chemical contamination or erosion and sedimentation problems were observed within the Survey Area while conducting the wildlife habitat evaluation.

All wetlands and watercourses along the NEP ROW have been altered to some degree, chiefly by removal of trees. Temporary disturbances will continue to occur within the ROW, since NEP conducts a regular vegetation maintenance program of the existing transmission line ROWs. The vegetation maintenance cycle follows a five-year timeline. NEP's ROW vegetation practices encourage the growth of low-growing shrubs and other vegetation which provide a degree of natural vegetation control. Vegetation management is necessary to ensure the reliable and safe delivery of electric services to NEP customers. This is accomplished by allowing for the proper clearance between vegetation and electrical conductors and supporting structures. Vegetation maintenance will continue to occur in accordance to National Grid's 2019-2023 Vegetation Management Plan (VMP), which is in compliance with the Massachusetts Rights-of-Way Management regulations (333 CMR 11.00) administered by the Massachusetts Department of Agricultural Resources (National Grid 2018).

4.0 BEST MANAGAMENT PRACTICES

Throughout the planning and design process for the Project, wetland and watercourse impacts have been minimized to the greatest extent practicable by utilizing an existing transmission line ROW. However, given the landscape setting of the Project, certain wetland impacts associated with the construction cannot be avoided. Construction of the Project will result in permanent and temporary impacts to the wetlands and stream.

Temporary impacts to BVW M8, BVW M9B, and SM9A are anticipated due to the placement of temporary timber construction mats used for temporary access roads to mobilize construction equipment as well as for temporary construction areas. Construction mats will be used in areas where permanent access is not required and access is only needed for such activities as tree clearing, vegetation removal,

and for upgrades or maintenance. In SM9A temporary construction matting will be used for access over the stream. After work has been completed, the mats will be removed and the temporarily impacted areas restored.

Permanent impacts due to the installation of new structures and the replacement of one structure will occur in wetland BVW M8. The structure installation and replacement will result in permanent fill in the wetland.

The majority of the existing N12 and M13 transmission corridor has been cleared of trees and maintained historically as active ROW. However, selective tree clearing within BVW M9 and BVW M8 in Fall River will be required for safe installation and operation of the M13N line. Tree removal will result in the conversion of some forested wetlands to either scrub-shrub or emergent BVW in these locations. Once the trees are removed, these once forested sections will be maintained as scrub-shrub or emergent wetlands. A section of tree canopy over the banks of perennial stream (SM9) will be removed. Tree trimming and "danger" tree removal will be performed, as necessary, as well as mowing of low-growth vegetation along the ROW.

BMPs, as detailed in National Grid's *ROW Access, Maintenance and Construction Best Management Practices* (EG-303NE), will be employed to minimize disturbances to wetlands during construction of the Project. The boundaries of the wetlands in the Project area would be clearly demarcated by a qualified wetland scientist prior to the commencement of work. NEP will implement a Wetland Invasive Species Control Plan during the construction of the Project to minimize the spread of invasive plant species in wetland resource areas.

NEP will comply with all applicable wetland regulatory permit requirements and conditions, as well as the associated Project plans and specifications submitted in support of these permit applications.

4.1 Structures

Specific measures will be taken when replacing, removing, and installing structures. Temporary soil erosion controls will be installed around structure work sites in or near wetlands to minimize the potential for soil erosion and sedimentation. All soil erosion and sediment controls and other applicable construction BMPs will be inspected and maintained on a routine basis. Grading in wetlands will be limited for structure foundations. Construction mats will be used in wetlands to provide a safe workspace. Spoil piles will be placed in uplands, where possible, or properly contained on construction mats in wetlands.

4.2 Access Roads

Existing access roads will be used to the extent practicable during the construction phase of the Project to minimize access through wetlands. Where access roads must be improved or developed in certain sections, the roads will be designed (where practical) so as not to interfere with surface water flow or the functions of the wetland. The type of stabilization measures to be used in wetlands will depend on soil saturation and depth of organic matter. All temporary access roads through wetlands will be restored following the completion of installation activities by removing the construction mats, re-grading the area to pre-construction elevations to the extent practicable, and allowing the wetlands to re-vegetate. If necessary, vegetation will also be restored within the wetland through native seeding.

4.3 Construction Areas

The size, shape, location, and configuration of work pads were evaluated to minimize impacts to the wetland to the extent practicable. Temporary construction matting will be placed on the existing wetland vegetation where wetland impacts could not be avoided. The type of work pad material chosen will depend upon soil saturation and depth of organic matter in the wetland. Temporary construction matting and other possible construction area materials will be removed upon completion of the Project. Wetlands will be restored to pre-construction configuration and elevations to the extent practicable, and allowing the wetlands to re-vegetate. If necessary, vegetation will also be restored within the wetland through native seeding.

4.4 Soil Erosion and Sediment Control, and Stormwater Pollution Prevention Plans

Soil erosion and sediment control devices will be installed along the perimeter of the identified wetland resource area prior to the onset of soil disturbance activities to ensure that excess soil piles and other impacted soil areas are confined and do not result in downslope sedimentation of sensitive areas. Low-growing tree species, shrubs, and grasses will be removed/mowed along access roads, at pole locations, and with a portion of the ROW to accommodate line clearance. To avoid disturbing the root mat, tree stumps will be left in place except at structure locations and at construction work pads. Sediment controls will be inspected on a regular basis and will be maintained or replaced as necessary.

4.5 Wetland Mitigation

In order to reduce the impacts associated with the construction and operation of the Project, NEP incorporated design measures to minimize Project impacts. These measures, which include alignment of existing and proposed structure locations, structure design and configuration, and the use of existing access roads, where possible, have resulted in the avoidance and minimization of impacts to wetlands and wildlife to the greatest extent practicable.

For the permanent impacts in BVW M8, NEP will provide appropriate mitigation. While mitigation plans are currently in the preliminary phases of development, NEP is committed to working with the USACE, MassDEP, and the Fall River Conservation Commission to develop an appropriate mitigation package so there is no net loss of wetland functions and values as a result of the M13N Line. Examples of possible wetland mitigation strategies include wetland restoration, targeted property acquisition for land preservation and participation in the USACE Massachusetts in-lieu fee program. To offset environmental impacts associated with the M13N Line, appropriate compensatory mitigation (in collaborative consultation with local, state, and federal resource agencies and other stakeholders) will be provided, as a component of the final M13N Line design.

4.6 Wildlife Mitigation and Wildlife Habitat Enhancement

In the areas of tree clearing, there are several wildlife habitat mitigation activities which can be performed to enhance wildlife habitat in the surrounding area. Such activities may include: seeding disturbed areas with a conservation seed mix, leaving woody debris to create cover for wildlife, and leaving snag trees as potential wildlife habitat.

5.0 PROJECT IMPACTS AND MITIGATION

Throughout the planning and design process for the Project, wetland impacts have been minimized to the greatest extent practicable by utilizing an existing transmission line ROW and existing access roads. However, given the landscape setting of the Project, certain wetland impacts associated with Project construction cannot be avoided. The following section describes the temporary and permanent impacts associated with the construction of the Project including excavation for pole structures, tree clearing and the placement of temporary construction matting. This section also addresses the associated impacts which are most likely to occur to wildlife as a result of the Project and potential mitigation actions which could be implemented.

5.1 Temporary Habitat Impacts and Mitigation

Wildlife currently using forested areas adjacent to the ROW will be temporarily impacted by construction of the Project, but the small pockets of intact woodland will continue to remain along both sides of the ROW. Larger, more mobile species such as white-tailed deer and Eastern coyote are expected to temporarily relocate from the construction area, but are unlikely to be permanently impacted by the displacement. Small mammals such as Eastern gray squirrels, woodchucks (*Marmota monax*), skunks (*Mephitis mephitis*), and raccoons (*Procyon lotor*), as well as herpetofauna are also likely to move away from areas of construction activity. Depending upon the time of year, some avifauna may also be temporarily displaced, possibly impacting breeding and nesting activities, but are otherwise likely to return after construction and in subsequent years. In wetlands which will have temporary work pads or temporary construction access, these disturbed areas will be restored to pre-existing grade where necessary and allowed to revegetate.

5.2 Permanent Habitat Impacts and Mitigation

NEP designed the Project to first avoid and then minimize permanent impacts to wetlands to the extent practicable, but unavoidable permanent fill of 388 square feet will be required for structure installation. With respect to the surrounding available wetland wildlife habitat resources associated with the transmission line ROW, it is not expected that this small area of permanent fill will result in a long-term negative impact on the ability of the area to provide valuable wildlife habitat for the existing assemblage of wetland-dependent species.

Where excavation occurs for new structures, there are several mitigation activities which can be performed to enhance wildlife habitat as a result of the vegetation loss. Such activities may include: seeding disturbed areas with a conservation seed mix and leaving woody debris to create cover for wildlife.

In areas where trees will be cleared there are several mitigation activities which can be performed to enhance wildlife habitat as a result of tree loss. Such activities may include: seeding disturbed areas with a conservation seed mix, leaving woody debris to create cover for wildlife, and leaving snag trees as potential wildlife habitat.

6.0 CONCLUSION

BVW M8, BVW M9, BVW M9B, and SM9A all provide wildlife habitat functions including food, shelter, migration, breeding, and overwintering areas for wildlife. Important wildlife habitat characteristics have been identified within the Project area. These include:

- Upland/wetland food plants (fruit).
- Standing dead tree (snag).
- Dense herbaceous cover.
- Large woody debris on ground.
- Standing water present at least part of the growing season.
- Small mammal burrows.
- Rocks, fallen logs, and overhanging branches above water (within one meter).
- Live and dead vegetation over water.
- Medium to large rocks with a stream.
- Ice-free open water in the winter.

NEP will develop a mitigation plan for the Project. Possible wildlife habitat enhancements that may be proposed include:

- Stockpiling woody debris nearby to provide cover.
- Seeding disturbed areas with a conservation seed mix.
- Creating additional snags for denning and nesting sites where possible/available.

Alterations to wetlands (which include BVW) which have impacts above the thresholds permitted under the WPA are only permitted if the impacts will have no adverse impact on wildlife habitat. *Adverse effects on wildlife habitat mean the alteration of any habitat characteristic listed in 310 CMR 10.60(2), insofar as such alteration will, following two growing seasons of project completion and thereafter (or, if a project would eliminate trees, upon the maturity of replanted saplings) substantially reduce its capacity to provide the important wildlife habitat functions listed in 310 CMR 10.60(2). Such performance standard, however, shall not apply to the habitat of rare species which are covered by the performance standards established under 310 CMR 10.59.*

There are no adverse effects on wildlife habitat since resource areas within the Project area will not be substantially reduced in their function to serve as valuable sources of wildlife habitat in an area. Where new structures are to be installed and replaced, the impact area will be minimal, and wildlife will still be able to use the ROW as habitat.

NEP has identified important habitat features and incorporated appropriate measures to avoid and/or minimize and mitigate adverse impacts. The proposed alterations will not substantially reduce the long-term capacity of the site to provide food, cover, migratory, and breeding areas. Although there will be some localized fill within the wetland, the associated habitat functions are expected to remain the same. NEP will compensate for all permanent loss of wetland per conformance with the requirements of the permitting state and federal agencies.

7.0 REFERENCES

Connecticut Department of Energy and Environmental Protection. 2016. Northern Two-lined Salamander. Available at: https://portal.ct.gov/DEEP/Wildlife/Fact-Sheets/Northern-Two-lined-Salamander. Accessed August 25, 2021.

Cowardin, L.M., F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Fish and Wildlife Service, United States Department of the Interior, Washington, DC.

DeGraaf, R.M. and M. Yamasaki. 2001. New England Wildlife: Habitat, Natural History, and Distribution. 2nd Edition. Hanover, NH: University Press of New England. 482 p.

Hagan, J. M. and S.L. Grove. 1999. Coarse Woody Debris: Humans and Nature Competing for Trees. Journal of Forestry 97: 6-11.

Massachusetts Department of Environmental Protection (MassDEP). 2006. Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands. 73 pp.

National Grid. 2018. Five Year Vegetation Management Plan 2019-2023. Available at: https://www9.nationalgridus.com/non_html/National%20Grid%20VMP%202019-2023.pdf. Accessed August 19, 2021.

FIGURES

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FIGURE 1 PROJECT OVERVIEW: TOPOGRAPHIC MAP

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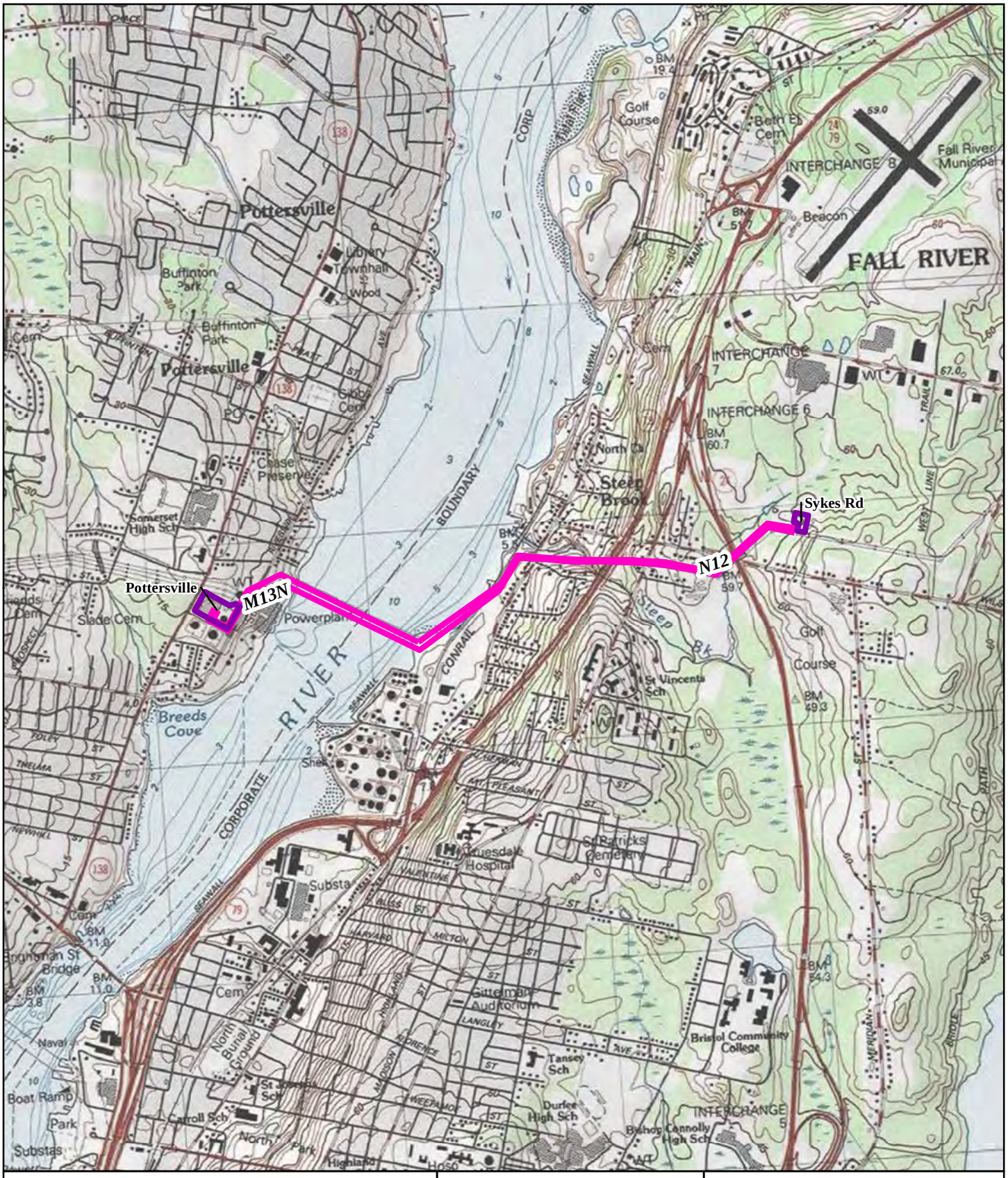

Legend

- N12/M13 Double Circuit Tower Separation Project
- Substation

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 1 - Topographic Map

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

0 1,000 2,000 3,000
Feet

N
W E
S

POWER ENGINEERS

nationalgrid

Date: 9/27/2021

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ATTACHMENT A WILDLIFE HABITAT EVALUATION FORMS

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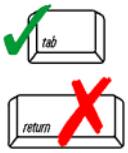
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Bordering Vegetated Wetland M8-1
Location

Please refer to breakdown of permanent and temporary impacts below for wetland M8.

08/25/2021
Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Permanent (excavation and fill for new structures)		388 sf		388 sf
2. Tree clearing		6,521 sf		6,521 sf
3. Temporary (work pads, pull pads, access)		120,884 sf		120,884 sf
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

Bordering Vegetated Wetland M8-1
Impact Area (number/name)

11/26/2019
Date(s) of Site Visit(s) and Data Collection

Sunny, 56 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: Palustrine Subsystem: -

Class: Scrub Shrub/Emergent Subclass: 1

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☒ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	0	65	10	T	25
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Shrub	Rubus allegheniensis* (35%)	Herb	Juncus effusus* (30%)
Shrub	Rosa multiflora* (20%)	Herb	Solidago sp.* (30%)
Shrub	Vibernum dentatum (15%)	Herb	Phragmites australis (10%)
Shrub	Spiraea alba (5%)		
Shrub	Ilex verticillata (5%)	Woody Vine	Smilax rotundifolia (10%)

C. Inventory (Soils)

Whitman FSaL, 0-3% slopes, extremely stony	Very Poorly Drained
Soil Survey Unit	Drainage Class
SiL (0"-4"), SiL (4"-12")	12"
Texture (upper part)	Depth
No Water Table	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	☐ Yes	☒ No
	100 acres in size?	☐ Yes	☒ No
	250 acres in size?	☐ Yes	☒ No
	500 acres in size?	☐ Yes	☒ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☒ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☒ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

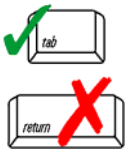
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Bordering Vegetated Wetland M8-2
Location

Please refer to breakdown of permanent and temporary impacts below for wetland M8.

08/25/2021
Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Permanent (excavation and fill for new structures)		388 sf		388 sf
2. Tree clearing		6,251 sf		6,251 sf
3. Temporary (work pads, pull pads, access)		120,884 sf		120,884 sf
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

Bordering Vegetated Wetland M8-2
Impact Area (number/name)

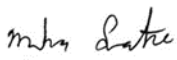
11/26/2019
Date(s) of Site Visit(s) and Data Collection

Sunny, 56 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated



II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: Palustrine — Subsystem: -

Class: Scrub Shrub/Emergent — Subclass: 1

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☒ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	0	55	0	15	45
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Shrub	Ilex verticillata* (25%)	Herb	Juncus effusus* (20%)
Shrub	Spiraea tomentosa* (15%)	Herb	Solidago sp.* (15%)
Shrub	Clethra alnifolia* (15%)	Herb	Rubus hispidus (10%)
Shrub	Salix discolor (10%)	Herb	Lythrum virgatum (5%)
Shrub	Multiflora rose (5%)	Herb	Scirpus cyperinus (5%)

C. Inventory (Soils)

Whitman FSaL, 0-3% slopes, extremely stony	Very Poorly Drained
Soil Survey Unit	Drainage Class
SiL (0"-12"), FSaL (12"-16")	16"
Texture (upper part)	Depth
~11" and rising, water seeping into pit ~8"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☒ Present ☐ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No

For upland resource areas is the impact area part of contiguous forested habitat at least

(forest interior nesting birds)	50 acres in size?	☐ Yes	☒ No
	100 acres in size?	☐ Yes	☒ No
	250 acres in size?	☐ Yes	☒ No
	500 acres in size?	☐ Yes	☒ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☒ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☒ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

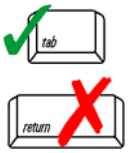
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Bordering Vegetated Wetland M8-3
Location

Please refer to breakdown of permanent and temporary impacts below for wetland M8.

08/25/2021
Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Permanent (excavation and fill for new structures)		388 sf		388 sf
2. Tree clearing		6,251 sf		6,251 sf
3. Temporary (work pads, pull pads, access)		120,884 sf		120,884 sf
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

Bordering Vegetated Wetland M8-3
Impact Area (number/name)

03/12/2021
Date(s) of Site Visit(s) and Data Collection

Sunny, 60 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: Palustrine Subsystem: -

Class: Forested Subclass: 1

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Intermittently exposed
- ☐ Semi-permanently flooded
- ☒ Seasonally flooded
- ☐ Saturated
- ☐ Temporarily flooded
- ☐ Intermittently flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	75	10	15	0	5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	Carpinus caroliniana (45%)*	Vine	Smilax rotundifolia (15%)*
Tree	Acer rubrum (15%)*		
Tree	Nyssa sylvatica (10%)"	Herb	Onoclea sensibilis (5%)*
Shrub	Carpinus caroliniana (10%)*		
Shrub	Clethra alnifolia (5%)		
Shrub	Rosa multiflora (T)		

C. Inventory (Soils)

Whitman FSaL, 0-3% slopes, extremely stony	Very Poorly Drained
Soil Survey Unit	Drainage Class
SiL (0"-12"), FSaL (12"-15")	15"
Texture (upper part)	Depth
> 15"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	1 Quercus alba	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No

For upland resource areas is the impact area part of contiguous forested habitat at least

(forest interior nesting birds)	50 acres in size?	☐ Yes	☒ No
	100 acres in size?	☐ Yes	☒ No
	250 acres in size?	☐ Yes	☒ No
	500 acres in size?	☐ Yes	☒ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☒ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☒ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

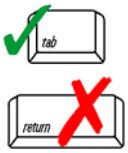
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Bordering Vegetated Wetland M9 and Perennial Stream SM9
Location

Please refer to breakdown of permanent and temporary impacts below. 08/25/2021
Size of Area Being Impacted Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Tree clearing in BVW M9		5,641 sf		5,641 sf
2. Tree clearing over stream (SM9)		47 lf		47 lf
3.				
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

Bordering Vegetated Wetland M9 and Perennial Stream SM9
Impact Area (number/name)

03/12/2021
Date(s) of Site Visit(s) and Data Collection

Sunny, 63 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated

Mike Lamothe

II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: Palustrine Subsystem: -

Class: Forested Subclass: 1

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☒ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	55	35	10	0	35
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	Acer rubrum (50%)*	Vine	Vitis labrusca (10%)*
Tree	Salix sp. (5%)	Herb	Onoclea sensibilis (20%)*
Shrub	Viburnum dentatum " (25%)*	Herb	Carex sp. (15%)*
Shrub	Rosa multiflora (10%)*	Herb	Juncus effusus (10%)*
Shrub	Swida amomum (T)		

C. Inventory (Soils)

Scarboro mucky fine SaL, 0-3% slopes	Very Poorly Drained
Soil Survey Unit	Drainage Class
SiL (0"-3"), Mucky SiL with gravels (3"-14")	14"
Texture (upper part)	Depth
9"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☒ Present ☐ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☒ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☒ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☒ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☒ Present ☐ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	☐ Yes	☐ No
	100 acres in size?	☐ Yes	☐ No
	250 acres in size?	☐ Yes	☐ No
	500 acres in size?	☐ Yes	☐ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☐ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☐ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☒ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

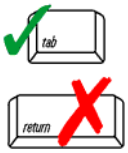
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Bordering Vegetated Wetland M9B
Location

Please refer to breakdown of impacts below. 08/25/2021
Size of Area Being Impacted Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Temporary (work pads)		112 sf		112 sf
2.				
3.				
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

Bordering Vegetated Wetland M9B
Impact Area (number/name)

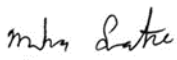
06/18/2021
Date(s) of Site Visit(s) and Data Collection

Sunny, 77 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated



II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: Palustrine — Subsystem: -

Class: Forested — Subclass: 1

Hydrology/Water Regime

- ☐ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☒ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	70	35	0	0	5
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	Salix bebbiana (70%)*		
Shrub	Rhus glabra (20%)*		
Shrub	Salix bebbiana (10%)*		
Shrub	Rosa multiflora (5%)*		

C. Inventory (Soils)

Pits – Udorthents complex, gravelly	Not Rated
Soil Survey Unit	Drainage Class
Oe (0"-9"), MkSiL (9"-16")	16"
Texture (upper part)	Depth
2"	
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☐ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☐ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☐ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☐ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☐ Present ☒ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☐ Present ☒ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No

For upland resource areas is the impact area part of contiguous forested habitat at least

(forest interior nesting birds)	50 acres in size?	☐ Yes	☒ No
	100 acres in size?	☐ Yes	☒ No
	250 acres in size?	☐ Yes	☒ No
	500 acres in size?	☐ Yes	☒ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☒ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☒ No

B. **Connectivity with adjoining natural habitats**

- ☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)
- ☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)
- ☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)
- ☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)
- ☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

- ☐ Evidence of significant chemical contamination
- ☐ Evidence of significant levels of dumping
- ☐ Evidence of significant erosion or sedimentation problems
- ☐ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)
- ☐ Disturbance from roads or highways ☒ Other human disturbance
- ☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

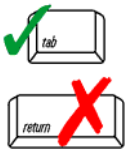
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 1. Summary Sheet

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



N12/M13 Double Circuit Tower Separation Project
Project Name

Fall River, MA. Perennial Stream Steep Brook (SM9A) and the associated ephemeral tributary SM9B
Location

Please refer to breakdown of temporary impacts below. — Size of Area Being Impacted

08/25/2021 — Date

Impact Areas (linear feet, square feet, or acres for each of the impact areas within the site)

Name	Waterbody/ Waterway	Wetland	Upland*	Total Area
1. Temporary (Construction matting)		208 lf		208 lf
2.				
3.				
4.				
5.				
6.				
7.				

*Riverfront Area/BLSF

Attach Sketch map and/or photos of the Impact Areas

Narrative Description of Site (attach separate page if necessary)

Please refer to attached Wildlife Habitat Evaluation for the Project which also includes a photographic log.

Certification

I hereby certify that this project has been designed to avoid, minimize, and mitigate adverse effects on wildlife habitat, and that it will not, following two growing seasons of project completion and thereafter, substantially reduce its capacity to provide important wildlife habitat functions.

M. Lamothe
Typed or Printed Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (for each wetland or non-wetland resource area)

I. General Information

Fall River, MA
Project Location (from NOI page 1)

SM9A – Steep Brook and its associated ephemeral tributary (SM9B)
Impact Area (number/name)

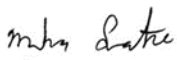
03/12/2021
Date(s) of Site Visit(s) and Data Collection

Sunny, 63 degrees for temperature
Weather Conditions During Site Visit (if snow cover, include depth)

M. Lamothe — Person completing form per 310 CMR 10.60(1)(b)

08/25/2021 — Date this form was completed

The information on this data sheet is based on my observations unless otherwise indicated



II. Site Description (complete A or B under Classification - see instructions for full description)

A. Classification

1. For Wetland Resource Areas, complete the following:

System: N/A Subsystem: _____

Class: _____ Subclass: _____

Hydrology/Water Regime

- ☒ Permanently flooded
- ☐ Saturated
- ☐ Intermittently exposed
- ☐ Temporarily flooded
- ☐ Semi-permanently flooded
- ☐ Intermittently flooded
- ☐ Seasonally flooded
- ☐ Artificially flooded

2. For Riverfront or Bordering Land Subject to Flooding Resource Areas, complete the following. Use a terrestrial classification system such as one of the two listed below:
   a. "Classification of the Natural Communities of Massachusetts (Draft)" by Patricia C. Swain and Jennifer B. Kearsley, MA DFW NHESP, Westborough, MA. July 2000. (Department of Fish & Game Website)
   b. "New England Wildlife: Habitat, Natural History, and Distribution" by Richard M. DeGraaf and Deborah D. Rudis, USDA Forest Service, Northeastern Forest Experiment Station. General Technical Report NE-108. August 1992. 491 pages.

Community Name

Vegetation Description

Physical Description

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

B. Inventory (Plant community)

% Cover:	5	40	10	0	60
	Trees (> 20')	Shrubs (< 20')	Woody vines	Mosses	Herbaceous

Plant Lists (species that comprise 10% or more of the vegetative cover in each strata; "*" designates a dominant plant species for the strata):

Strata	Plant Species	Strata	Plant Species
Tree	Acer plataoides (5%)*		
Shrub	Rosa multiflora (35%)*		
Shrub	Rhus hirta (5%)		
Shrub	Salix discolor (T)		
Vine	Lonicera japonica (10%)*		
Herb	Fallopia japonica (60%)*		

C. Inventory (Soils)

Ridgebury FSaL, 3-8% slopes, extremely stony	Poorly Drained
Soil Survey Unit	Drainage Class
Texture (upper part)	Depth
Depth to Water Table	

III. Important Habitat Features (complete for all resource areas)

If the following habitat characteristics are present, describe & quantify them on a separate sheet & attach.

Wildlife Food

Important Wetland/Aquatic Food Plants (smartweeds, pondweeds, wild rice, bulrush, wild celery)

☐ Abundant ☐ Present ☒ Absent

Important Upland/Wetland Food Plants (hard mast and fruit/berry producers)

☐ Abundant ☐ Present ☒ Absent

Shrub thickets or streambeds with abundant earthworms (American woodcock)

☐ Present ☒ Absent

Shrub and/or herbaceous vegetation suitable for veery nesting

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Number of trees (live or dead) > 30" DBH: 0

Number (or density) of Standing Dead Trees (potential for cavities and perches):

6-12" dbh	12-18" dbh	18-24" dbh	> 24" dbh
0	0	0	0

Number of Tree Cavities in trunks or limbs of:

0
6-12" diameter (e.g., tree swallow, saw whet owl, screech owl, bluebird, other songbirds)

0
12-18" diameter (e.g., hooded merganser, wood duck, common goldeneye, mink)

0
>18" diameter (e.g., hooded merganser, wood duck, common goldeneye, common merganser, barred owl, mink, raccoon, fisher)

Small mammal burrows

☐ Abundant ☐ Present ☒ Absent

Cover/Perches/Basking/Denning/Nesting Habitat

☒ Dense herbaceous cover (voles, small mammals, amphibians & reptiles)

☒ Large woody debris on the ground (small mammals, mink, amphibians & reptiles)

☐ Rocks, crevices, logs, tree roots or hummocks under water's surface (turtles, snakes, frogs)

☒ Rocks, crevices, fallen logs, overhanging branches or hummocks at, or within 1m above the water's surface (turtles, snakes, frogs, wading birds, wood duck, mink, raccoon)

☐ Rock piles, crevices, or hollow logs suitable for:

☐ otter ☐ mink ☐ porcupine ☐ bear ☐ bobcat ☐ turkey vulture

☐ Live or dead standing vegetation overhanging water or offering good visibility of open water (e.g., osprey, kingfisher, flycatchers, cedar waxwings)

Depressions that may serve as seasonal (vernal/autumnal) pools

☐ Present ☒ Absent

Standing water present at least part of the growing season, suitable for use by

☒ Breeding amphibians ☒ Non-breeding amphibians (foraging, re-hydration)

☐ Turtles ☐ Foraging waterfowl

Sphagnum hummucks or mats, moss-covered logs or saturated logs, overhanging or directly adjacent to pools of standing water in spring (four-toed salamander)

☐ Present ☒ Absent

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Important habitat characteristics (if present, describe and quantify them on a separate sheet)

Medium to large (> 6"), flat rocks within a stream (cover for stream salamanders and nesting habitat for spring & two-lined salamanders)

☒ Present ☐ Absent

Flat rocks and logs on banks or within exposed portions of streambeds (cover for stream salamanders and nesting habitat for dusky salamanders)

☐ Present ☒ Absent

Underwater banks of fine silt and/or clay (beaver, muskrat, otter)

☐ Present ☒ Absent

Undercut or overhanging banks (small mammals, mink, weasels)

☐ Present ☒ Absent

Vertical sandy banks (bank swallow, kingfisher)

☐ Present ☒ Absent

Areas of ice-free open water in winter

☒ Present ☐ Absent

Mud flats

☐ Present ☒ Absent

Exposed areas of well-drained, sandy soil suitable for turtle nesting

☐ Present ☒ Absent

Wildlife dens/nests (if present, describe & quantify them on the back of this sheet)

Turtle nesting sites

☐ Present ☒ Absent

Bank swallow colony

☐ Present ☒ Absent

Nest(s) present of ☐ Bald Eagle ☐ Osprey ☐ Great Blue Heron

Den(s) present of ☐ Otter ☐ Mink ☐ Beaver

Part 2. Field Data Form (continued)

Project area is within:

☐ 100' of beaver, mink or otter den, bank swallow colony or turtle nesting area

☐ 200' of Great Blue Heron or osprey nest(s)

☐ 1400' of a Bald Eagle nest[1]

Emergent Wetlands (if present, describe & quantify them on a separate sheet)

Emergent wetland vegetation at least seasonally flooded during the growing season (wood duck, green heron, black-crowned night heron, king rail, Virginia rail, coot, etc.)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (pied-billed grebe)	☐ Present	☒ Absent

Persistent emergent wetland vegetation at least seasonally flooded during the growing season (mallard, American bittern, sora, common snipe, red-winged blackbird, swamp sparrow, marsh wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Cattail emergent wetland vegetation at least seasonally flooded during the growing season

Flooded > 5 cm (marsh wren)	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

Fine-leafed emergent vegetation (grasses and sedges) at least seasonally flooded during the growing season (common snipe, spotted sandpiper, sedge wren)

Flooded > 5 cm	☐ Present	☒ Absent
Flooded > 25 cm (least bittern, common moorhen)	☐ Present	☒ Absent

IV. Landscape Context

A. **Habitat Continuity** (if present, describe the landscape context on a separate sheet and its importance for area-sensitive species)

Is the impact area part of an emergent marsh at least	1.0 acre in size?	☐ Yes	☒ No
(marsh and waterbirds)	2.0 acres in size?	☐ Yes	☒ No
	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No

[1] 1400 feet is the distance used by NHESP for evaluating potential disturbance impacts on eagle nests under MESA. Keep in mind, however, that this doesn't give jurisdiction within 1400' of an eagle's nest; it only identifies it on the checklist so that adverse effects can be avoided if work in a resource area is within 1400 feet.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

Is the impact area part of a wetland complex at least	2.5 acres in size?	☐ Yes	☒ No
(turtles, frogs, waterfowl, mammals)	5.0 acres in size?	☐ Yes	☒ No
	10.0 acres in size?	☐ Yes	☒ No
	25.0 acres in size?	☐ Yes	☒ No
For upland resource areas is the impact area part of contiguous forested habitat at least			
(forest interior nesting birds)	50 acres in size?	☐ Yes	☐ No
	100 acres in size?	☐ Yes	☐ No
	250 acres in size?	☐ Yes	☐ No
	500 acres in size?	☐ Yes	☐ No
(grassland nesting birds)	> 1.0 acre in size?	☐ Yes	☐ No
(special habitat such as gallery floodplain forest, alder thicket, etc.)	> 1.0 acre in size?	☐ Yes	☐ No

B. **Connectivity with adjoining natural habitats**

☐ No direct connections to adjacent areas of wildlife habitat (little connectivity function)

☐ Connectors numerous or impact area is embedded in a large area of natural habitat (limited connectivity function)

☒ Impact area contributes to a limited number of connectors to adjacent areas of habitat (somewhat important for connectivity function)

☐ Impact area serves as *part of* a sole connector to adjacent areas of habitat (important for connectivity function)

☐ Impact area serves as *only* connector to adjacent areas of habitat (very important for connectivity function)

V. Habitat Degradation (describe degradation and wildlife impacts on the back of the sheet)

☐ Evidence of significant chemical contamination

☐ Evidence of significant levels of dumping

☐ Evidence of significant erosion or sedimentation problems

☒ Significant invasion of exotic plants (e.g., purple loosestrife, *Phragmites*, glossy buckthorn)

☐ Disturbance from roads or highways ☐ Other human disturbance

☐ Is the site the only resource area in the vicinity of an otherwise developed area

Note: These are not the only important habitat features that may be observed on a site. If the wildlife specialist identifies other features they should be noted in the application.

Wildlife Habitat Protection Guidance

Appendix B: Detailed Wildlife Habitat Evaluation

Part 2. Field Data Form (continued)

VI. Quantification Table for Important Habitat Characteristics

Habitat Characteristic	Amount Impacted in Impact Area	Current (entire site)	Post-Construction (entire site)
Example: standing dead trees 6-12” dbh	4	12	8

ATTACHMENT B HABITAT CHARACTERISTICS PHOTOGRAPHS

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PHOTOGRAPHIC LOG

Site Location: BVW M8-1

Photo No. 1	**Date:** 11/26/19

Direction Photo Taken:

South

Description:

View of berry-producing shrubs within BVW M8-1 including common winterberry (*Ilex verticillata*) and common blackberry (*Rubus allegheniensis*).

PHOTOGRAPHIC LOG

Site Location: BVW M8-1

Photo No. 2	**Date:** 5/9/19

Direction Photo Taken:

North

Description:

View of water pooled at the leg of Line N12/M13 Structure #9. Emergent vegetation including soft rush (*Juncus effusus*) and common reed (*Phragmites australis*) are growing around the Structure.

PHOTOGRAPHIC LOG

Site Location: BVW M8-2

Photo No. 3	**Date:** 11/26/19

Direction Photo Taken:

West

Description:

View of the dense vegetation in BVW M8-2 including rosy meadowsweet (*Spiraea tomentosa*) and a variety of goldenrods (*Solidago spp.*).

PHOTOGRAPHIC LOG

Site Location: BVW M8-2

Photo No. 4	**Date:** 11/26/19

Direction Photo Taken:

North

Description:

View of cut shrubs in BVW M8-2 that were left on the ROW. The cut shrubs provide floor coverage for small mammals.

PHOTOGRAPHIC LOG

Site Location: BVW M8-3

Photo No. 5	**Date:** 3/12/21

Direction Photo Taken:

West

Description:

Large woody debris was observed on the ground which can provide cover and denning site for small mammals.

PHOTOGRAPHIC LOG

Site Location: BVW M8-3

Photo No. 6	**Date:** 3/12/21

Direction Photo Taken:

East

Description:

View of standing dead white oak (*Quercus alba*) tree, also known as a snag, with potential cavities and perches for bird and small mammal species.

PHOTOGRAPHIC LOG

Site Location: BVW M9

Photo No. 7	**Date:** 3/12/21

Direction Photo Taken:

East

Description:

View of perennial stream SM9, within BVW M9, with fallen logs and branches hanging closely (within 1 m) over the water providing perching and resting locations.

PHOTOGRAPHIC LOG

Site Location: BVW M9

Photo No. 8	**Date:** 3/12/21

Direction Photo Taken:

Northeast

Description:

Dense thickets of vegetation including smooth arrowwood (*Viburnum dentatum*), fox grape (*Vitis labrusca*), and fallen red maple (*Acer rubrum*) trees and branches were observed in BVW M9.

PHOTOGRAPHIC LOG

Site Location: SM9A

Photo No. 9	**Date:** 3/12/21

Direction Photo Taken:

South

Description:

Steep Brook (SM9A) was surrounded by dense vegetation with Japanese knotweed (*Fallopia japonica*) to the west and multiflora rose (*Rosa multiflora*) to the east.

PHOTOGRAPHIC LOG

Site Location: SM9A

Photo No. 10	**Date:** 3/12/21

Direction Photo Taken:

North

Description:

View of fallen tree hanging over perennial stream SM9A providing locations for perching above Steep Brook.

PHOTOGRAPHIC LOG

Site Location: BVW M9B

Photo No. 11	**Date:** 6/18/21

Direction Photo Taken:

West

Description:

Evidence of previous standing water was observed in BVW M9B in June 2021.

September 2021

NEW ENGLAND POWER COMPANY

N12/M13 Double Circuit Tower Separation Project
Somerset and Fall River, Massachusetts

Wetland Invasive Species Control Plan

PROJECT NUMBER:
146782

PROJECT CONTACT:
Jamie Durand
EMAIL:
Jamie.Durand@powereng.com
PHONE:
(774) 643-1829

POWER ENGINEERS CONSULTING, PC

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N12/M13 Double Circuit Tower Separation Project
Wetland Invasive Species Control Plan

PREPARED FOR:
NEW ENGLAND POWER COMPANY
40 SYLVAN ROAD, E3.685
WALTHAM, MA 02451

PREPARED BY:
POWER ENGINEERS CONSULTING, PC
2 HAMPSHIRE STREET, SUITE 301
FOXBOROUGH, MA 02035

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TABLE OF CONTENTS

TABLES

FIGURES

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ACRONYMS AND ABBREVIATIONS

DCT	double circuit tower
IVM	Integrated Vegetation Management
kV	kilovolt
NEP	New England Power Company
NRCS	Natural Resources Conservation Service
POWER	POWER Engineers Consulting, PC
Project	N12/M13 Double Circuit Tower Separation Project
ROW	Right-of-way
WISCP	Wetland Invasive Species Control Plan

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1.0 INTRODUCTION

The New England Power Company (NEP) is proposing to undertake the N12/M13 Double Circuit Tower (DCT) Separation Project (Project) to improve transmission system reliability in the Southeastern Massachusetts and Rhode Island service area. As shown in Figure 1, the Project will be located within an existing 115 kilovolt (kV) electric transmission line right-of-way (ROW) that extends from NEP's Pottersville Switching Station in Somerset, Massachusetts to its Sykes Road Substation in Fall River, Massachusetts, a distance of approximately 1.85 miles. This ROW is currently occupied by two 115 kV overhead transmission circuits – the N12 and the M13 – supported on double circuit towers; i.e., the two circuits, each consisting of three individual phase conductors, share the same series of towers within the ROW. The main disadvantage of the DCT configuration is reliability; a contingency affecting a single structure could cause an outage to both lines. Placing the N12 and M13 onto separate sets of structures will improve the reliability of the electric transmission system.

On behalf of NEP, POWER Engineers Consulting, PC (POWER) conducted wetland invasive species surveys within the limit of NEP's existing transmission line ROW associated with the Project in Somerset and Fall River, Massachusetts. Surveys occurred in November-December 2015, September 2017, May 2019, and June 2021. This Wetland Invasive Species Control Plan (WISCP) addresses measures NEP will implement to minimize the spread and/or introduction of invasive species in wetlands in the Project Area during construction. Invasive plants are species that are not native or indigenous to a region and can thrive in areas beyond their natural dispersal range, often out-competing native plants for space, nutrients, sunlight, and water (Natural Resource Conservation Service [NRCS] 2018a). Invasive species are highly adaptable and have few natural control agents in the environment into which they have been introduced, making them very prolific plant species. Invasive species may also be referred to as nuisance, undesirable, noxious, or exotic species.

The WISCP identifies the invasive wetland plant species that are of concern in the Project Area. However, not all the wetlands within the Project Area will be impacted, and the wetlands that will be disturbed as a result of Project construction activities could be more susceptible to colonization by invasive species. In addition, the movement of construction equipment and materials through wetlands that presently contain invasive species could promote the spread of invasive species to nearby, un-infested wetlands.

The overall objective of the WISCP is to define the procedures to be used during Project construction to preserve the value and functions of wetlands in the Project Area and to minimize the further spread of invasive plants within wetlands that already contain them. The specific objectives of this plan are as follows:

- Inventory the invasive plant species known to occur in the wetlands in the Project Area that were identified during the wetland delineations conducted for the Project.
- As a baseline, identify the wetlands in the Project Area where such invasive species presently exist.
- Describe NEP's existing vegetation management programs, discuss how these existing programs contribute to minimizing the proliferation of invasive species within the Project Area, and explain the constraints to long-term invasive species management along portions of the Project.
- Summarize the procedures that NEP proposes to implement to minimize the potential for the spread of wetland invasive species during the construction of the Project.

Overall, the goal of the WISCP is to protect the ecological conditions of wetlands within the Project Area, specifically focusing on minimizing the spread of invasive species within affected wetlands and avoiding the introduction of invasive species to areas where they are not currently present. It should be noted that wetlands containing invasive plants are located outside of the Project Area and are thereby also another potential source unrelated to the Project. Therefore, attempting to eradicate invasive species from portions of such wetlands within the proposed work areas is unlikely to be successful and is not considered a practical goal of this WISCP.

2.0 OVERVIEW OF PROJECT ACTIVITIES

The construction of the Project will involve a series of sequential activities. During the Project design process, NEP implemented measures to avoid and minimize the disturbance to wetland vegetation or soils. However, unavoidable construction activities with the potential to influence the spread of invasive plant species in wetlands include:

- Vegetation and tree clearing within wetlands for the transmission line work.
- Temporary improvements to existing access roads or the development of new access roads (temporary) across wetlands.
- Use of temporary access routes across wetlands to facilitate the movement of vegetation clearing equipment.
- Installation of temporary work pads in wetlands.
- Excavation and fill within wetland for the installation of structures.
- Removal of temporary fills (e.g., access roads and work pads) and the restoration of affected wetlands.

3.0 PROJECT WETLAND RESOURCES

As part of the Project planning process, POWER conducted field investigations (in November-December 2015, September 2017, May 2019, and June 2021) to delineate jurisdictional wetlands within the Project Area. As a result of these field studies, a total of five wetlands were identified. As part of the wetland resource delineations, vegetation types and dominant species were identified. Portions of all these wetlands are located within presently managed areas of NEP's existing utility ROWs, and all five wetlands are recorded to contain an invasive species.

3.1 Invasive Species of Concern in Wetlands

The federal government and the state of Massachusetts maintain information regarding invasive wetland plants. For example, the Massachusetts Department of Environmental Protection maintains a list of invasive species (Massachusetts Invasive Plant Advisory Group 2005). Similarly, the United States Department of Agriculture, NRCS also maintains a list of noxious plants by state (NRCS 2018b).

Based on a review of these lists and the characteristics of the Project Area (as determined by field investigations), the most abundant invasive species located in wetlands along the ROW is common reed (*Phragmites australis*). Table 1 lists the wetland invasive plants that were found in the Project Area.

TABLE 1 COMMON INVASIVE SPECIES FOUND IN WETLANDS IN THE PROJECT AREA

COMMON NAME	LATIN NAME
Asian bittersweet	*Celastrus orbiculatus*
Japanese honeysuckle	*Lonicera japonica*
Purple loosestrife	*Lythrum salicaria*
Reed canary grass	*Phalaris arundinacea*
Common reed	*Phragmites australis*
Black locust	*Robinia pseudoacacia*
Multiflora rose	*Rosa multiflora*

A baseline survey of invasive plant species within each wetland in the Project Area was conducted in November-December 2015, September 2017, May 2019, and June 2021. The extent of each invasive species estimated was based on four cover classes: ≤5 percent; 6 to 25 percent; 26 to 50 percent; and >50 percent. A representative descriptive characterization of the four cover classes is: Sparse (**S**), Common (**C**), Abundant (**A**), and Dominant (**D**), respectively. In some instances, the invasive species was only observed along the wetland/upland boundary and was characterized as Edge (**E**).

Table 2 includes a listing of each invasive plant species and the corresponding aerial cover class for each wetland. As seen in Table 2, four of the five wetlands contain more than one invasive species. Common reed was the most prevalent invasive species in the Project Area, which was found in three out of the five wetlands. Purple loosestrife (*Lythrum salicaria*), Japanese honeysuckle (*Lonicera japonica*), and reed canary grass (*Phalaris arundinacea*) were observed in one wetland each. The least prevalent species were multiflora rose (*Rosa multiflora*), Asian bittersweet (*Celastrus orbiculatus*), and black locust (*Robinia pseudoacacia*), each with a sparse (≤5%) cover.

The survey documents the density of specific invasive species present within each wetland and thereby establishes a baseline for implementing measures to limit spread of invasive plants between wetlands during Project construction. Where there is an ample seed stock or a system of rhizomes of these invasive species, communities of invasive plants will tend to be the first "pioneer" species to populate and colonize areas that have been disturbed and left exposed (New York State Department of Transportation 2018).

TABLE 2 EXTENT OF INVASIVE SPECIES FOR EACH WETLAND IN THE PROJECT AREA

ID	TOTAL[1] COVER CLASS	COMMON REED	MULTIFLORA ROSE	PURPLE LOOSE-STRIFE	BLACK LOCUST	ASIAN BITTER-SWEET	JAPANESE HONEY-SUCKLE	REED CANARY GRASS
M10	S	S	-	-	-	-	-	-
M9B	S	-	S	-	-	-	S	-
M9A*	D	-	S	-	-	S	-	D
M9	C	C	S	-	-	-	-	-
M8	C	C	S	C	S/E	S	-	-

Notes:
[1] "Total" is based upon a visual field estimation of the percent cover of all invasive species within each wetland. This estimate is not based upon species in multiple stratums/layers but instead is for the wetland as a whole.
*Wetland does not meet the jurisdictional criteria of the Massachusetts Wetland Protection Act (WPA M.G.L c. 131, § 40) and associated Regulations (310 CMR 10.00).
Aerial Cover Classes: S = Sparse: ≤5%; C = Common: 6-25%; A = Abundant: 26-50%; D = Dominant: >50%; E = Edge of wetland/upland boundary.

4.0 INVASIVE SPECIES MANAGEMENT IN WETLANDS DURING PROJECT CONSTRUCTION

During the construction of the Project, NEP will implement measures to control the spread of invasive plant communities during construction. The main objectives will be to:

- Perform construction activities so as to minimize the spread of invasive plant species within wetlands and from wetland-to-wetland along the ROWs.
- Restore wetlands affected by the Project promptly to limit the potential for invasive species to colonize disturbed soils.

Invasive species control requirements will be incorporated into construction contracts for the Project. Prior to construction, NEP will provide environmental training to the contractors, inspectors, and work crews responsible for implementing the WISCP. The training will include an overview of the WISCP, a review of the ROW, a discussion and listing of the target species, ways to identify invasive plants in the field, and presentation of the best management practices to be implemented during construction.

NEP's Project team will include an environmental monitor, who will perform site inspections and will oversee the contractors' compliance with applicable federal, state and local permit conditions, Project plans (including this WISCP) and NEP policies and procedures. Care and consideration will be taken during construction to prevent and/or reduce the introduction or the spread of invasive species. Wetland invasive species control efforts will be important throughout the construction of the Project, but the focus of these efforts will be during the following construction phases, which will involve work directly in wetlands and thus will have the greatest potential for construction equipment to come into contact with invasive species:

- Vegetation clearing.
- Placing and removing construction mats, and other temporary access roads and work pads.
- Moving equipment and vehicles through areas containing invasive species, such as for the installation, maintenance, and final removal of temporary soil erosion and sedimentation controls.

To control the spread of invasive plant species, NEP will require construction contractors to implement the procedures described below, as appropriate to the phase of the construction that each contractor will perform:

- All construction equipment, vehicles, and materials (e.g., construction mats) must be clean and free of excess soil, debris, and vegetation before being mobilized to the Project Area. The vendor shall use the certification form provided as Appendix 5 in National Grid's Environmental Guidance Document EG-303NE – Access, Maintenance and Construction Best Management Practices to document compliance.
- Mats or equivalent will be used in wetlands during clearing operations to minimize the spread of invasive species within a wetland by the clearing equipment itself.
- To minimize the potential for spreading invasive plant species from wetland-to-wetland, any equipment working in or traversing a wetland will be cleaned prior to relocating to another work site. Cleaning of vehicles and other equipment (including the tracks and tires) will involve removal of visible dirt, debris and vegetation through the use of brooms, shovels, and, if needed, compressed air.

- Construction mats or equivalent will be used at wetland crossings so construction vehicles that frequently travel along on-ROW access roads, such as pickups carrying personnel or material delivery trucks, can avoid direct wetland interaction.
- Construction mats will be cleaned prior to relocation to other work areas or wetlands. Cleaning of matting will involve dropping mats one on top of another to shake loose any sediment and debris. The matting will then be swept to remove loose soil and any plant material.
- Construction equipment and excavated soil material will be contained within the approved limits of work areas within the ROW; these limits of work will be defined on the Project plans.
- Soil excavated from wetlands or riparian areas containing a predominance of invasive plants will be stockpiled separately (to the extent there is sufficient work space) and contained within staked bales, silt fence or other approved soil erosion and sedimentation control device to minimize the potential of spreading these soils elsewhere on the ROWs.
- Final restoration of the Project Area will be performed in accordance with National Grid's Environmental Guidance Document EG-303NE – Access, Maintenance and Construction Best Management Practices.

5.0 REVIEW OF EXISTING VEGETATION MANAGEMENT PROGRAMS AND HABITAT BENEFITS

5.1 ROW Vegetation Management Requirements

NEP's existing ROW is presently managed according to national and regional standards and regulations for electric transmission line operation, including required clearances between conductors and vegetation and around the perimeter of electric substations. In areas where NEP will be acquiring additional easement, these easements will similarly be managed in accordance with these national and regional standards for the installation of the new overhead M13N Line. These standards and regulations include but are not limited to:

- Federal Energy Regulatory Commission standards including North American Electric Reliability Corporation Standard FAC-003-1, Commissioner Order 693, FAC-003-2 (effective July 1, 2014).
- North American Electric Reliability Corporation Standard FAC-003-1 – Transmission Vegetation Management Program, effective date of April 7, 2006.
- National Electrical Safety Code Section 21, Part 2, Rule 218 and the American National Standards Institute pruning standards, A300, Part 1, Part 7, and Z-133.

NEP has established plans and procedures for applying an Integrated Vegetation Management (IVM) approach to manage vegetation within their existing utility corridors and around electric substations in accordance with these standards (National Grid 2018). IVM is a system of managing plant communities in which managers set objectives; identify compatible and incompatible vegetation; consider action thresholds; and then evaluate, select and implement the most appropriate control methods to achieve those objectives. IVM provides NEP with a proven range of techniques to manage ROW vegetation to conform to federal and regional standards for transmission line operation, accommodate the varying interests of stakeholders along the ROW, minimize environmental effects, and balance cost considerations. NEP uses a combination of mechanical and chemical controls (i.e., mowing, hand cutting and select herbicide

application) to target vegetation that may impact the operation and safety of the transmission lines. The goal is to manage the upland and wetland vegetation within the ROWs using natural vegetative control. Natural vegetative control is the process of working with the cycles of plant succession and interspecies competition to facilitate the spread and stabilization of native, early successional plant communities that discourage the establishment of taller woody vegetation (Bramble et al. 1990).

Therefore, NEP targets undesirable vegetation such as trees and limbs, tall growing shrubs, vegetation growing around stations, guy wires, access roads, gates, and anywhere vegetation impedes access to the ROW. Because of this IVM approach, ROWs are one of the primary remaining early successional ecological communities in New England. These dense, low growing plant communities can help discourage the establishment of undesirable vegetation, do not hinder access to the ROWs, and do not generally interfere with the operation and maintenance of the transmission lines and station facilities.

Plant species that are generally encouraged on the ROWs include herbaceous and shrub species and other vegetation that has a mature height of less than approximately 12 feet. As a result of these ROW vegetation management practices, most of the wetland habitats within the managed portions of the ROWs consist of shrub or emergent marsh.

5.2 Habitat Benefits of ROW Management

The management and maintenance of ROW creates early successional habitats dominated by scrub-shrub vegetation and open areas with dense grasses and other herbaceous vegetation. Many animal species use the habitats provided along the ROWs as their homes, feeding and breeding grounds, migration corridors or nurseries, and many plant species adapt to the growing conditions provided within the managed portions of the ROWs. The early successional landscape maintained within the ROWs, however, is not by nature stable; it is instead the sustained result of the IVM program NEP established in the late 1980s. Although there will be vegetation clearing for the Project, herbaceous and shrub species will be allowed to regrow after construction and will be managed via the IVM.

Different types of successional communities have various benefits to flora and fauna. For example, a study in Massachusetts indicated an increase in wildlife use, notably avian species, following clearing of ROWs (Nickerson and Thibodeau 1984). This study attributed the increase in wildlife use to the conversion of forested areas into wetland and upland shrub and emergent plant communities. Creating and maintaining additional shrub-land habitat along the ROWs, in many instances, represents a long-term positive effect on some species, since shrub-land habitat is otherwise declining in New England. This is important because land use trends suggest that this habitat type will continue to decline and ROWs will become increasingly significant (Confer 2003). This decline is a result of various factors (e.g., development, ecological succession, absence of fire). A managed transmission ROW is considered a major source of shrub-land habitat (Saucier 2003; Confer and Pascoe 2003); in fact, in the eastern United States utilities maintain more acreage of managed shrub-lands on ROWs than all other sources of this habitat combined (Confer et al. 2004).

Other studies also have indicated that this change of forested areas into scrub-shrub habitats may be beneficial (King et al. 2009; Yahner et al. 2004; Bramble et al. 1992). Scrub-shrub habitats within the ROW can provide wildlife habitat such as nesting for birds, browse for deer, and cover for small mammals (Ballard et al. 2004). The establishment of low-growing species, i.e., grasses and forbs, is also a form of biological control that reduces the re-invasion of the ROW corridor by tree species (Ballard et al. 2004). Some plant species also have the ability to inhibit the growth or invasion of other species which is referred to as allelopathy (Money 2008). Establishment of such dense shrub and herbaceous emergent plant communities that do not require continued disturbances for management activities may contribute to

minimizing the spread of invasive species. In this regard, some invasive plant communities have been shown to provide some beneficial effects such as breeding bird nesting habitat, cover for animals traversing the ROWs, food sources (fruit-bearing plants), buffers to sensitive areas (such as along riparian zones) and, in some instances, serve as a deterrent to unwarranted access (e.g., all-terrain vehicle use) along the ROWs due to the dense thickets and thorn-producing shrubs that may colonize certain areas. The eradication of invasive plants could, therefore, eliminate some of the beneficial uses on the ROWs. In addition, continued regular treatment of invasive plants could inadvertently result in minimizing wildlife use of the ROWs through the frequency of human contact, removal of cover (albeit invasive), and reduction of food sources.

6.0 REFERENCES

Ballard, B.D., H.L. Whittier, and C.A. Nowak. 2004. *Northeastern Shrubs and Short Tree Identification, a Guide for Right-of-Way Vegetation Management.* State University of New York-College of Environmental Science and Forestry.

Bramble, W.C., W.R. Byrnes, and R.J. Hutnik. May 1990. "Resistance of Plant Cover Types to Tree Seeding Invasion on an Electric Utility Transmission Right-of-Way." *Journal of Arboriculture*, 16(5).

Bramble, W.C., Yahner, R.H., and W.R. Byrnes. 1992. "Nesting of breeding birds on an electric utility line right-of-way." *Journal of Arboriculture*, 20(2).

Confer, J.L. 2003. "Management, vegetative structure and shrubland birds on rights-of- way." Environmental Concerns in Rights-of-Way Management, Seventh International Symposium (J. W. Goodrich-Mahoney, Ed.). Electric Power Research Institute, Washington, D.C.

Confer, J.L. and S.M. Pascoe. 2003. *Avian Communities on Utility Rights-of-Way and other Managed Shrublands in the Northeastern United States*. Forest Ecology and Management 185:193-205.

Confer, J.L., T. Hauck, M.E. Silvia, and V. Fray. 2004. "Avian shrub land management and shrub land nesting success." In Proceeding of the Eighth International Symposium on Environmental Concerns in Rights-of-Way Management. (J. W. Goodrich, L. P. Abrahamson, J. L. Ballard, S. M. Tikalsky, Eds.). Electric Power Research Institute, Washington, D.C., pages 407-412.

Massachusetts Invasive Plant Advisory Group. 2005. *The Evaluation of Non-Native Plant Species for Invasiveness in Massachusetts.* Available at: http://www.mass.gov/eea/docs/dfg/nhesp/land-protection-and-management/invasive-plant-list.pdf. Accessed July 09, 2021.

National Grid. 2018. Massachusetts Five Year Vegetation Management Plan. 2019-2023. Available at: https://www9.nationalgridus.com/non_html/National%20Grid%20VMP%202019-2023.pdf. Accessed July 09, 2021.

Natural Resource Conservation Service (NRCS). 2018a. United States Department of Agriculture's NRCS Texas Forestry Technical Note, TS-FX-12-2. Available at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_002134.pdf. Accessed July 09, 2021.

_____. 2018b. United States Department of Agriculture's NRCS Federal and State Noxious Weed lists. Available at: https://plants.usda.gov/java/noxiousDriver. Accessed July 09, 2021.

King, D.I., R.B. Chandler, J. Collins, W.R. Peterson, and T.E. Lautzenheiser. 2009. Effects of width edge and habitat on the abundance and nesting success of scrub-shrub birds on powerline corridors. Biological Conservation 142: 2672–2680.

Money, Nelsen, R. 2008. "Development of an Integrated Resource Management Strategy for Transmission Right-of-Way Corridors for Successful Implementation of Integrated Vegetation Management in California." In Proceeding of the Eighth International Symposium on Environmental Concerns in Rights-of-Way Management. (J. W. Goodrich, L. P. Abrahamson, J. L. Ballard, S. M. Tikalsky, Eds.). Electric Power Research Institute, Washington, D.C., pages 33-36.

New York State Department of Transportation. 2018. The Environmental Manual. Available at: https://www.dot.ny.gov/divisions/engineering/environmental-analysis/manuals-and-guidance/epm/repository/. Accessed July 09, 2021.

Nickerson, N.H. and F.R. Thibodeau. 1984. *Wetlands and Rights-of-Way*. Final report submitted to the New England Power Company, 25 Research Drive, Westboro, Massachusetts.

Saucier, Laura. 2003. Shrubland habitat information from "Wildlife Habitat in Connecticut: Shrubland." Habitat Management Program, in Connecticut Wildlife. July/August 2003.

Yahner, R.H., R.J. Hutnick, and R.J. Liscinsky. 2004. Long-term trends in bird population on an electrical transmission right-of-way. *Journal of Arboriculture.* 29(3).

FIGURES

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FIGURE 1 PROJECT OVERVIEW: TOPOGRAPHIC MAP

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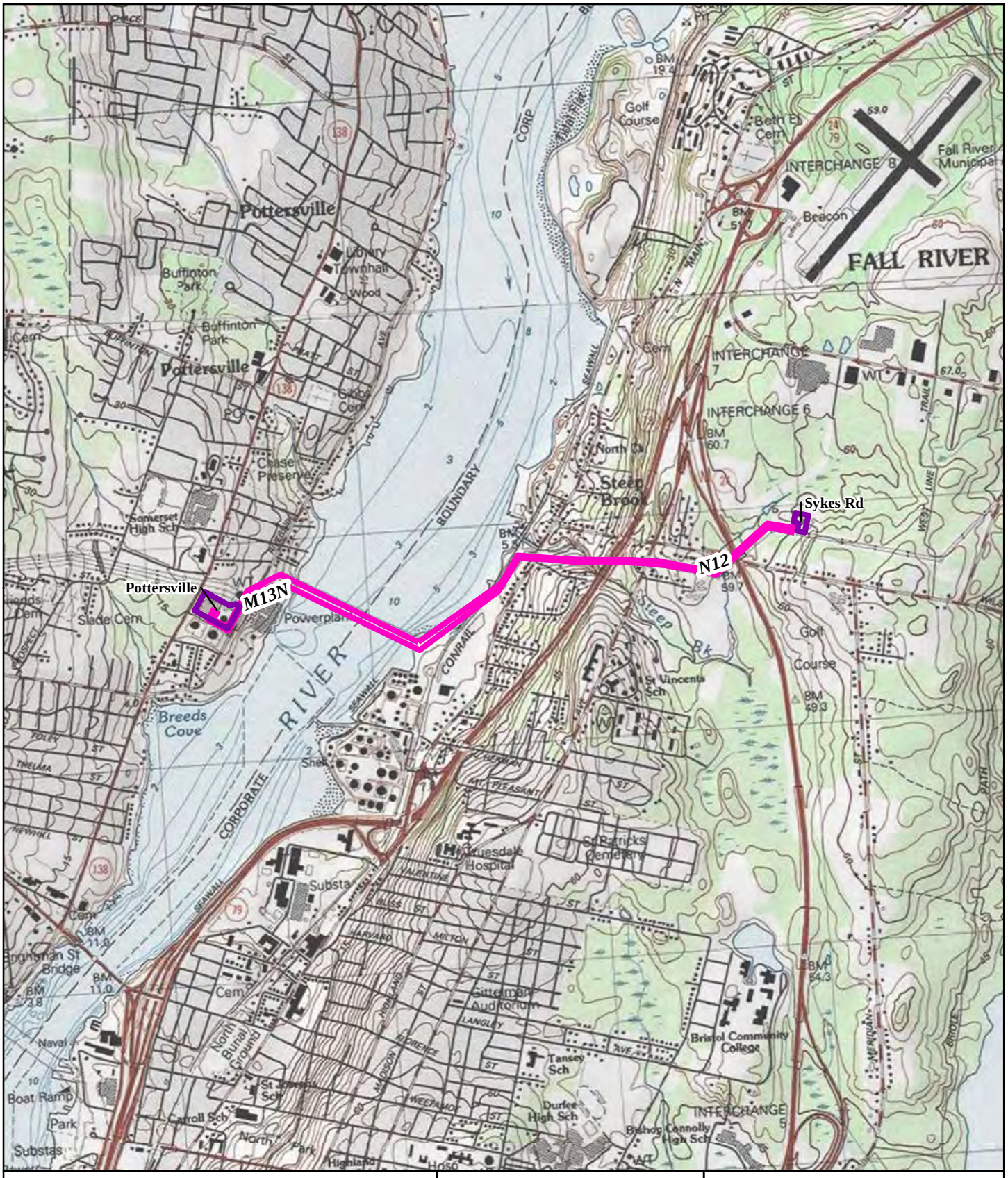

Legend

- N12/M13 Double Circuit Tower Separation Project
- Substation

The State of Massachusetts

Bristol County
Somerset and
Fall River

N12/M13 Double Circuit
Tower Separation Project

Figure 1 - Topographic Map

New England Power Company

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

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Erin Whoriskey
Lead Environmental Scientist
NE Environmental Permitting

July 16, 2018

Ms. Lauren Glorioso
Endangered Species Review Biologist
MA Division of Fisheries and Wildlife
Natural Heritage and Endangered Species Program
1 Rabbit Hill Road
Westborough, MA 01581

Subject: **New England Power Company d/b/a National Grid (NEP)**
N12 and M13 115 kV Double Circuit Tower Separation and Construction of a New 115 kV Line
Somerset and Fall River, Massachusetts

Dear Ms. Glorioso:

The New England Power Company d/b/a National Grid ("NEP") is planning a transmission reliability project in southeastern Massachusetts. The project involves a double circuit separation ("DCT") of the existing N12 and M13 115 kilovolt ("kV") transmission lines from the Pottersville Switching Station in Somerset to the Sykes Road Substation in Fall River (~1.75 miles); and the installation of a new 115 kV circuit to consist of a combination of overhead and underground lines, including an overhead crossing of the Taunton River from Somerset to Fall River, Massachusetts (Figure 1). The overhead route is located within existing transmission line rights-of-way ("ROW") easements. The majority of the underground route is located within city streets and roadway ROW.

The core purpose of the project is to eliminate the double circuit tower contingency, solve the reliability constraints in the service area, and address thermal and voltage violations.

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) shares data yearly with NEP, which includes vertebrate and invertebrate animals and native plants officially listed as Endangered, Threatened, or of Special Concern in Massachusetts. Based on a review of the most recent data provided by the NHESP, there are no species of special concern or rare plant species documented by NEP in the vicinity of the Project.

In addition, POWER Engineers, Inc. ("POWER") has reviewed the current United States Fish and Wildlife (USFWS) Endangered Species Consultation website (https://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm) in regard to the project. No federally-designated Critical Habitat is identified for Bristol County, Massachusetts. The website indicates one Federal-listed species, the Northern Long-eared Bat (NLEB", *Myotis septentrionalis*), may occur in the project area. NLEB may possibly be found in the project area due to portions of unfragmented forested habitat. NLEB is listed statewide for all of New England however designation of Critical Habitat for NLEB has been determined "not prudent" (https://www.fws.gov/midwest/endangered/mammals/nleb/) by the USFWS.

With regard to NLEB, review of the most recent mapping (November 29, 2016) by NHESP https://www.mass.gov/service-details/the-northern-long-eared-bat indicates there are no known winter hibernacula or maternity roost trees occurring in Bristol County. The Project is currently more than 30 miles from the nearest mapped maternity roost tree and more than 35 miles from the nearest mapped hibernacula. In regards to NLEB, based on the results of the review of USFWS and NHESP mapping and guidance, it is NEP's understanding that no further action or agency consultation for federally-listed species (e.g., NLEB) is required for the Project. Please let us know if you concur with our conclusion.

NEP is seeking updated information, if available, on the listing and locations of state-listed rare species within the project area. Please note that the proposed crossing of the Taunton River will be an aerial crossing of the river. We are also seeking your opinion on whether avoidance and protection measures agreed to by the NHESP and NEP are sufficient, since the project involves mostly aerial work within existing ROW and underground routing within the existing city streets in Fall River.

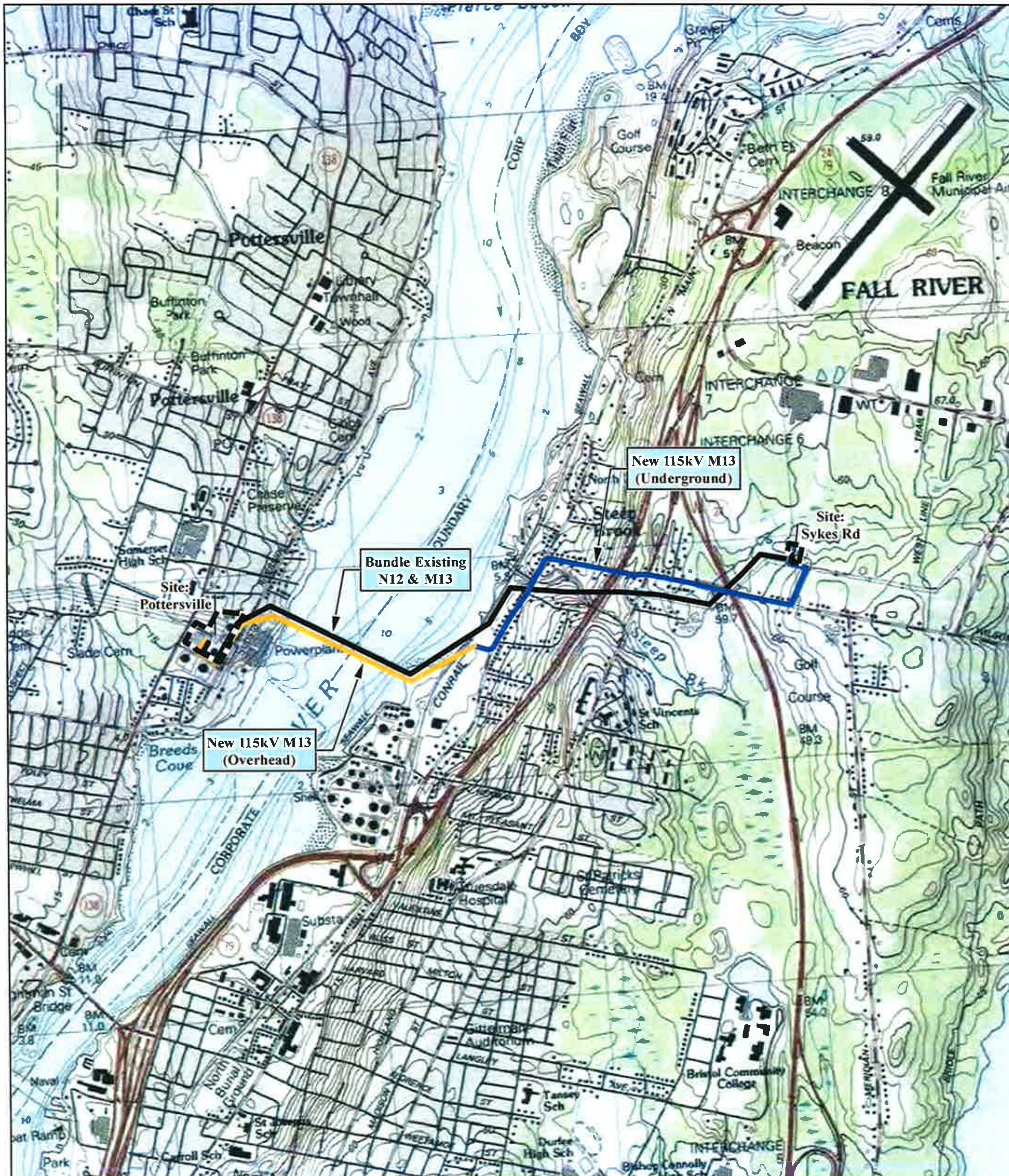
If you have any questions, please do not hesitate to contact us Erin Whoriskey at (781) 907-3598 (Erin.Whoriskey@nationalgrid.com) or Jamie Durand at (401) 439-3020 (jamie.durand@powereng.com).

Sincerely,

Erin Whoriskey Cahill
Lead Environmental Scientist
National Grid

Attachment: N12 and M13 115 kV Double Circuit Tower Separation and Construction of a New 115 kV Line Map

Cc: Dave Beron, National Grid
Andrew Alexiades, POWER
Jamie Durand, POWER
Devon Robinson, POWER



Legend

Existing Substation Site

DCT Separation Project

Bundle Existing N12 & M13

New 115kV M13 (Overhead)

New 115kV M13 (Underground)

The State of Massachusetts

Bristol County
Somerset and
Fall River

NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

Figure 1

N12 and M13 115kV Double Circuit Tower Separation and Construction of a New 115kV Line

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POWER ENGINEERS

national grid

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[redacted]

[redacted]

[redacted]

From: Cheeseman, Melany (FWE) <melany.cheeseman@state.ma.us>
Sent: Wednesday, July 25, 2018 8:24 AM
To: erin.whoriskey@nationalgrid.com; Durand, Jamie <jamie.durand@powereng.com>
Subject: MESA Info Requests

Good morning,
We received three letters requesting information about rare species information at National Grid project sites:

- N12 and M13 115kV Double Circuit Tower Seperation and Construction of a New 115kV Line, Somerset and Fall [redacted]

The first project site is not currently mapped as Priority habitat for rare species. [redacted] Please let me know if you have any questions. Thank you,

Melany Cheeseman
Endangered Species Review Assistant
Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
ph: 508.389.6357 | fax: 508.389.7890
melany.cheeseman@state.ma.us | www.mass.gov/nhesp

[redacted]

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: July 13, 2021
Consultation Code: 05E1NE00-2021-SLI-4126
Event Code: 05E1NE00-2021-E-12492
Project Name: N12 and M13 Double Circuit Transmission Separation Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-4126
Event Code: 05E1NE00-2021-E-12492
Project Name: N12 and M13 Double Circuit Transmission Separation Project
Project Type: TRANSMISSION LINE
Project Description: The New England Power Company (NEP) is proposing to undertake the N12 and M13 Double Circuit Transmission (DCT) Separation Project (Project) to improve system reliability in the Southeastern Massachusetts and Rhode Island service area. Project activities will occur within NEP's existing right-of-way (ROW) from the Pottersville Switching Station in Somerset to the Sykes Road Substation in Fall River. The Project includes the bussing (electrically connecting) and reconductoring of NEP's existing N12 and M13 Lines to resolve the current DCT configuration reliability concern and provide additional electrical capacity. The Project also includes the construction of a new 115kV transmission line (M13N) beginning near the Pottersville Switching Station in Somerset to just outside the Sykes Road Substation in Fall River. Tree trimming and "danger" tree removal will be performed, as necessary, as well as mowing of low-growth vegetation along the ROW. This will help to ensure the lines are clear and safely accessible and help to create safe work space areas such as work pads and pull pads. Selective tree clearing is proposed within the NEP ROW and easements. Temporary construction matting may be used for access and work space in wetlands within the ROW.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.7395636,-71.12952232740217,14z

Counties: Bristol County, Massachusetts

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9045

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: July 13, 2021
Consultation code: 05E1NE00-2021-TA-4126
Event Code: 05E1NE00-2021-E-12495
Project Name: N12 and M13 Double Circuit Transmission Separation Project

Subject: Verification letter for the 'N12 and M13 Double Circuit Transmission Separation Project' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Devon Robinson:

The U.S. Fish and Wildlife Service (Service) received on July 13, 2021 your effects determination for the 'N12 and M13 Double Circuit Transmission Separation Project' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

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[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

N12 and M13 Double Circuit Transmission Separation Project

2. Description

The following description was provided for the project 'N12 and M13 Double Circuit Transmission Separation Project':

> The New England Power Company (NEP) is proposing to undertake the N12 and M13 Double Circuit Transmission (DCT) Separation Project (Project) to improve system reliability in the Southeastern Massachusetts and Rhode Island service area. Project activities will occur within NEP's existing right-of-way (ROW) from the Pottersville Switching Station in Somerset to the Sykes Road Substation in Fall River. The Project includes the bussing (electrically connecting) and reconductoring of NEP's existing N12 and M13 Lines to resolve the current DCT configuration reliability concern and provide additional electrical capacity. The Project also includes the construction of a new 115kV transmission line (M13N) beginning near the Pottersville Switching Station in Somerset to just outside the Sykes Road Substation in Fall River. Tree trimming and "danger" tree removal will be performed, as necessary, as well as mowing of low-growth vegetation along the ROW. This will help to ensure the lines are clear and safely accessible and help to create safe work space areas such as work pads and pull pads. Selective tree clearing is proposed within the NEP ROW and easements. Temporary construction matting may be used for access and work space in wetlands within the ROW.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.7395636,-71.12952232740217,14z

Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

7. Will the action involve Tree Removal?

   Yes

8. Will the action only remove hazardous trees for the protection of human life or property?

   No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

   No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

    No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

3.95

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

PERMIT TO CONDUCT ARCHAEOLOGICAL FIELD INVESTIGATION

Permit Number 4091 Date of Issue May 18, 2021

Expiration Date May 18, 2022

PAL is hereby authorized to conduct an archaeological field investigation pursuant to Section 27C of Chapter 9 of General Laws and according to the regulations outlined in 950 CMR 70.00.

New England Power Co. Line N12/M13 DCT Separation,
Highland Avenue Potential Cemetery Delineation, Fall River

Project Location

Brona Simon

Brona Simon, State Archaeologist
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

PERMIT TO CONDUCT ARCHAEOLOGICAL FIELD INVESTIGATION

Permit Number 4092 Date of Issue May 18, 2021

Expiration Date May 18, 2022

PAL is hereby authorized to conduct an archaeological field investigation pursuant to Section 27C of Chapter 9 of General Laws and according to the regulations outlined in 950 CMR 70.00.

New England Power Co. Line N12/M13 DCT Separation,
Ashley House Site Examination, North Main Street, Fall River

Project Location

Brona Simon

Brona Simon, State Archaeologist
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

May 25, 2021

Deborah C. Cox
President
PAL
26 Main Street
Pawtucket, RI 02860

Attn: Dianna Doucette

RE: New England Power Company d/b/a National Grid Line N12/M13 115 kV Transmission Line Reconductoring and DCT Separation Project, Fall River and Somerset, MA. **PAL #3495**. MHC #RC.64999.

Dear Deborah:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the archaeological reports:

- *Archaeological Site Examination, Darling Site, New England Power Company, Line N12/M13 Double Circuit Transmission (DCT) Separation Project, Fall River, Massachusetts*; and
- *Supplemental Intensive (Locational) Archaeological Survey Line N12/M13 Double Circuit Transmission (DCT) Separation Project, Fall River, Massachusetts*, for the project referenced above.

Please provide the MHC with second copies of the archaeological reports, CDs with a Word file listing the report author, date, report title, page count and the archaeological abstract, and original and/or updated archaeological site forms for the identified archaeological sites to the MHC.

These comments are provided to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800), the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 Fed. Reg. 190)(1983)), and 950 CMR 70. If you have questions or require additional information, please contact me at this office.

Sincerely,

Jonathan K. Patton
Staff Archaeologist/Preservation Planner
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

SUBJECT	REFERENCE
Excess Soil Management from Construction Projects on Rights-of-Way	**EP No. 17 – Construction Projects**

PURPOSE: To document the procedure to appropriately manage excess soils generated during construction projects conducted on rights-of-way (ROWs) in Massachusetts.

SCOPE: This guidance document applies to all construction projects conducted by National Grid employees or contractors on National Grid ROWs in Massachusetts.

RESPONSIBILITIES: It is the responsibility of the person managing the excess soils, usually a National Grid Project Manager or Contractor Project Manager, to ensure that this guidance is followed.

PROCEDURE: The table incorporated into this guidance document shall be used to determine appropriate methods of disposal for excess soil generated from construction projects on ROWs.

SUBJECT	REFERENCE
Excess Soil Management from Construction Projects on Rights-of-Way	**EP No. 17 – Construction Projects**

Guidance for Disposal of Excess Soil from Construction Projects on ROWs

		Origin of Excess Soil		
		From Greenfields Site[1]	***From Around Base of Existing Structure***	
			Wood Pole	***Metal Structure***
Disposal Options	***Ship Off Site***	No sampling required – **Ship off site to sand & gravel operation. Does not require National Grid Environmental Department approval**	**Sample prior to disposal at National Grid-approved facility[2]**	**Sample prior to disposal at National Grid-approved facility[3]**
	Lose on Site in Appropriate Location[4]	**Yes, with prior approval of National Grid Environmental Department**	If stained soil exists around base of pole – **Yes, if in immediate vicinity of existing structure. Requires prior approval of National Grid Environmental Department[5]** If no stained soil is present around base of pole – **Yes, with prior approval of National Grid Environmental Department[5]**	**Yes, with prior approval of National Grid Environmental Department[5]**

Notes:

1) **"Greenfields Site" -** Defined as previously undeveloped land within a National Grid ROW and land in ROW outside of the boundary of the original footprint of existing structures.
2) See National Grid Approved Disposal Facilities List. Samples will be collected from the top six inches of soil around the base of the pole and will be analyzed for parameters required by the disposal facility. Soil samples will be collected at an appropriate frequency from around representative poles. Sampling plan must be approved by the National Grid Environmental Department before samples are collected.
3) See National Grid Approved Disposal Facilities List. Sampling around metal structures will be collected from the top six inches of soil around base of structure. Samples around base of structure will be composited into one sample and analyzed for Pb, PCBs, Cr, and Cd and any other parameter required by the disposal facility prior to disposal at a National Grid-approved facility or sand and gravel operation. Soil samples will be collected at an appropriate frequency from around representative structures. Sampling plan must be approved by the National Grid Environmental Department before samples are collected.
4) **"Appropriate Location" -** Defined as <u>not</u> located within a floodplain, buffer zone, wetlands, priority habitat, Area of Critical Environmental Concern, or at an archaeologically sensitive site. Additionally, the grade of the site must be relatively flat and the placement of the soil must not create any safety clearance violation or a "moonscape" appearance. The soil must be free of invasive vegetation. The proximity of abutters or other nearby residents/land owners must be considered. The soil placement must be entirely within the ROW and approved by the National Grid Environmental Department. Placement of material in an existing ROW road for repair of potholes should be prioritized. As warranted, the area should be re-seeded and mulched for stabilization.
5) Approval shall be documented in written form such as an e-mail and may be location-specific or general for the entire project.

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
0	01/27/10	Initial issue.

PURPOSE

This guidance document provides guidance on conducting projects at existing electrical substations.

SCOPE

All National Grid employees and contractors involved in construction projects at existing electrical substations must comply with this guidance document.

RESPONSIBILITIES

It is the responsibility of all National Grid employees and contractors to conduct their work activities in accordance with all environmental regulations and National Grid Environmental Guidance Documents.

PROCEDURE

Project personnel should involve the Environmental Department as early in the planning stages as possible of all projects in order to minimize the potential for project delays.

Environmental Protection.

For planning substation activities, the environmental checklist provided in the applicable State EG 301 procedure is to be used to consider the potential presence of protected natural resources, help determine if environmental permitting is required, and address other potential environmental issues. These checklists are to be used as early in the work or project development and planning process as possible.

Environmental Engineer and/or environmental consultant support should also be requested as early in the planning process as possible. The Environmental Department or an environmental consultant will assist in determining whether environmental permitting is required as well as the appropriate best management practices for erosion controls.

It is important to be aware that projects do not have to be in a wetland in order to be governed by natural resource protection regulations. The presence of a wetland or other resource area in the vicinity of the project may be enough to cause the project to be regulated.

Spill Prevention Controls and Countermeasures (SPCC)

Projects that will result in the addition or removal of oil-filled equipment from a substation will require SPCC Plan revision within 6 months. Project Personnel must provide the Substation

Engineering Department with the specifics of the project (the oil capacity of the equipment that is being added or removed) and a site plan showing the site configuration following the equipment removal/addition.

Project Due Diligence

Site Work at Substations With Known Oil and/or Hazardous Material (OHM) Contamination

- An understanding of subsurface site conditions is needed prior to the start of work. This knowledge may be obtained through review of existing site assessment data or through the conduct of soil sampling and analysis. Groundwater sampling may be appropriate if the proposed project will involve excavation dewatering. Contact the Environmental Department for assistance.

Site Work at Substations without Known OHM Contamination

The following minimal due diligence must be conducted by the Environmental Department or an environmental consultant prior to the start of a project:

- A records review in order to determine if the area involved in the proposed project was subject to previous releases of OHM as well as to determine if oil-filled equipment was previously located in the vicinity. If affirmative, the concentration of PCBs involved in the release or utilized in the former equipment should be determined.
- A site visit to look for the presence of OHM staining.
- Soil sampling should also be conducted in order to prevent possible construction delays as well as to ensure adequate worker protection.
- Groundwater sampling may be appropriate if the proposed work activities are expected to encounter groundwater. The decision to conduct such sampling will be on a case-by-case basis.

Excavated Soil Management

Soil management must be performed in a manner to prevent fugitive dust. All soil must be stored in a secure manner (within a fenced and locked location).

Substations With Known OHM Contamination

Sites with known OHM contamination will often have controls in place to regulate the management of excavated soils. These controls may be in the environmental deed restriction, site-specific soil management plan, regulatory approval, or within the regulations themselves.

Substations Without Known OHM Contamination

- Excess excavated soil may be reused onsite if all of the following conditions are met:
  - The area is on the same property where the Project is taking place; and
  - The area is fenced and secure; and
  - The area is owned by National Grid; and
  - The excess excavated soil is covered by 6 inches of ¾ inch yard stone.
- For Projects where it is anticipated that excess excavated soils will not be able to be reused on-site, sampling of the excess excavated soil is required.

"Clean" Soils

For soils where the results of laboratory analysis shows OHM concentrations below all state and/or federal notification and/or cleanup criteria, the following options are available:

1. Reuse as fill on other National Grid properties (as long as the facility is completely fenced and in accordance with all wetland and other permitting requirements);
2. Disposal/recycling at a Construction & Demolition facility/Sand & Gravel facility;
3. Manage the soil as though it is "Contaminated" (see below).
4. Excess excavated soils may be reused outside of a fenced/secure area under the following conditions (applicable in New York only):
   - The area is owned by National Grid;
   - Provisions are made to prevent erosion/soil migration (where necessary); and,
   - The Division Environmental Engineer is notified to coordinate soil characterization, approve the sampling and analysis, and approve the location for placement of the soil. [Ref. TAGM 4046 for soil criteria]

"Contaminated" Soils

For soils where the results of laboratory analysis show OHM concentrations above applicable state and/or federal notification and/or cleanup criteria, the following disposal options are available:

- Asphalt Batching;
- Thermal Treatment;
- Hazardous Waste Landfill;
- Non-hazardous Waste Landfill;
- Landfill Daily Cover.

Concrete

Concrete foundations that either are currently being used to support oil-filled equipment or have been used to do so in the past and are excavated may be either reused on-site as fill (in accordance with applicable solid waste requirements) or transported off-site for disposal/recycling. However, if the concrete is currently used in connection with oil-filled equipment containing > 50 ppm PCBs or may have been so in the past, the concrete must be sampled prior to reuse of disposal/recycling. The requirement for sampling is required regardless of the presence or absence of staining.

- Reuse of on concrete on site as fill may require regulatory approval. If the concrete was used in connection with oil-filled equipment containing > 50 ppm PCBs, the concrete must be sampled prior to reuse.
- The use of recycled concrete as fill material should be minimized. Potential leaching from use of such material may cause future environmental impacts
- Concrete must be sampled prior to off-site shipment if the concrete was used in connection with oil-filled equipment containing > 50 ppm PCBs. If the results are less than 1 ppm PCBs, then the concrete may be sent to an asphalt batching plant, construction debris landfill or Asphalt, Brick, Concrete (ABC) facility. If the concentrations exceed 1 ppm PCBs, then the Environmental Department must be notified.

Groundwater Management

Management of groundwater may be regulated by natural resources permitting conditions as well as state and federal "remediation" regulations. These issues should be thoroughly researched prior to managing groundwater.

As stated above, “listed” sites with known contamination may have restrictions on allowed groundwater management activities.

If an oil sheen is observed on the groundwater, notify the Environmental Department.

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
1	06/08/07	Update.
2	3/31/12	Update to remove reference to Engineering Design Procedures (EDP) and add reference to EG 301 for environmental review requirements. (Corp Audit 1238).
3	09/07/17	Replaced the word "Environmental" with "Substation Engineering" at the bottom of page one/top of page two under SPCC section. Removed reference that Environmental maintains a list of substations with AULs under the section **Project Due Diligence** Site Work at Substations With Known Oil and/or Hazardous Material (OHM) Contamination

1. PURPOSE: This guidance document provides instructions for general employees and Westboro Dispatch staff in reporting a release/spill of oil or any other chemical to the environment.

2. SCOPE: This guidance document covers oil and chemical releases to the environment in Massachusetts.

3. DEFINITIONS:

a. **Oil** – means oil of any kind, including petroleum and mineral oil in electrical equipment, motor oil, fuel oil, hydraulic fluid, diesel fuel, etc.
b. **PCB Contaminated Oil** – means oil containing PCBs in the quantity ranging from 50-499 ppm.
c. **PCB Oil –** means oil containing PCBs in a concentration at or greater than 500 ppm.
d. **Release** – means any spilling, leaking pumping, pouring, emitting, emptying, or a substance to the environment.
e. **Reportable Quantity (RQ) –** means that quantity of a material released to the environment as defined in 40 CFR Part 117 and 40 CFR Part 302.

4. RESPONSIBILITIES:

a. **Any Employee** – All employees are responsible to report any release of oil or chemical to their supervisor or Westboro Dispatch.
b. **Divisional Engineer** – Responsible for determining whether or not a chemical has exceeded the Reportable Quantity, and follow up notification and reporting as required in EP-5. Responsible for two hour notification to the Massachusetts Department of Environmental Protection, Local Emergency Planning Coordinator (LEPC) and notification to the National Response Center, if required.

5. PROCEDURE

5.1 GENERAL EMPLOYEES:

a. Upon discovery of any oil or chemical spill, immediately notify your supervisor and/or the Trouble Center.

Trouble Center: 1.888.367.7693

NOTE: ALL OIL SPILLS ARE REQUIRED TO BE CALLED IN TO YOUR SUPERVISOR, NO MATTER WHAT THE VOLUME.

b. Provide as much information as possible including:
- location of release(including pole number)
- what the material was released/spilled
- when the spill was discovered

- estimated amount spilled
- what caused the release
- a description of the spill area
- any other pertinent information

c. Contact Environmental Engineer directly or call the Trouble Center to determine on-call environmental engineer.

5.2 Trouble Center – For After Hours Spills

a. Upon notification from the field of a release, gather information from the caller as to substance spilled, volume, cause, date and time of spill, etc.
b. Contact on-call environmental engineer or designated representative and relay appropriate information.

5.3 DIVISIONAL ENVIRONMENTAL ENGINEER

a. Determine if release is reportable and contact Massachusetts Department of Environmental Protection / Massachusetts Emergency Management Agency (MEMA) within two hours if it is. Call the 888.304.1133 number and you will be routed to correct DEP Regional Office.
b. In addition, report oil spills to water and PCB oil spills (see definition section) to the National Response Center at 1-800-424-8802.
c. Provide assistance in deploying spill clean up resources (equipment, contractors) when requested.
d. Complete Spill Report form.
e. Report spill to other required agencies per EP-5, as required.
f. Provide assistance to clean up crews in making arrangements for clean up debris disposal.
g. Categorize the spill as a Category 1 or Category 2 spill.
h. Confirm clean up.
i. Provide additional information to state agency to close out the spill.

RELEASE INFORMATION

Location of Release: _____
Town / City: _____
County: _____
District / Region:_____
Spill Number (NY): _____

Date of Release: _____
Time of Release:_____
Weather Conditions:_____
NG Employee Reporting Release: _____
Telephone Number: _____

Material Released: _____
Quantity Released: _____
Source of Release: _____

Cause and Brief Description: _____
_____
_____
_____
_____
_____
_____

Non-PCB Label? ☐ Yes ☐ No ☐ Unknown

Material Released To:

☐ LAND ☐ WATER ☐ AIR
- ☐ soil ☐ lake/pond
- ☐ street ☐ stream/river
- ☐ farmland/grazing land ☐ wetland
- ☐ vegetable garden ☐ catch basin/drain

☐ OTHER _____

NOTIFICATION INFORMATION

Agency Notified	Person Contacted	Date Reported	Time Reported	Agency Report #
In-house Only				
State Environmental Agency				
State Emergency Response Commission				
Local Emergency Response Commission				
Local Sewer/Water Authority				
National Response Center (NRC)				
Environmental Protection Agency (EPA)				
Other				
Other				

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DIELECTRIC FLUID INFORMATION

PCB Concentration of Fluid:	**Based On:**
☐ No PCBs (<2 ppm)	☐ Nameplate Information or manufacturer's label
☐ Non-PCB (<50 ppm)	☐ Clor-N-Oil® Test
☐ PCB Contaminated (50-499 ppm)	☐ Lab Test
☐ PCB (≥500 ppm)	☐ Assumed 50-499 ppm*

**** If equipment was manufactured prior to July 2, 1979 and/or not labeled, and a Clor-N-Oil® Test cannot be conducted, then the oil must be considered "PCB Contaminated."***

***** Clor-N-Oil® test results are to be used for interim handling only. All wastes from unlabeled transformers requires laboratory analysis by gas chromatography prior to disposal. Field screening tests such as Clor-n-Oil tests cannot be used to determine PCB content for ultimate waste disposal purposes.***

SOURCE OF RELEASE

Source of Release (type of equipment): _____
Manufacturer: _____
Size: _____
Serial or Badge # (if available): _____

RELEASE RESPONSE INFORMATION

In-house crews used ☐
Contractor used: _____

Consultant used: _____

Describe nature of cleanup: _____
_____
_____
_____
_____
_____
_____
_____
_____

IN-HOUSE NOTIFICATION INFORMATION

Copies of Release Report Sent To:

☐ NY or NE Manager of Environmental Compliance
☐ Spill Database Updated / Release Report kept in local file

CERTIFICATION

Completed By:_____

Date:_____

INCIDENT CATEGORY
(to be completed by NG Division Environmental Engineer)

☐ Category 1 – Significant Incident
☐ Category 2 – Non Significant Incident
☐ Near Miss Incident

ADDITIONAL COMMENTS / INFORMATION

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1. PURPOSE: This guidance document provides instructions for general employees and Westboro Dispatch staff in reporting a release/spill of oil or any other chemical to the environment.

2. SCOPE: This guidance document covers oil and chemical releases to the environment in Massachusetts.

3. DEFINITIONS:

a. **Oil** – means oil of any kind, including petroleum and mineral oil in electrical equipment, motor oil, fuel oil, hydraulic fluid, diesel fuel, etc.
b. **PCB Contaminated Oil** – means oil containing PCBs in the quantity ranging from 50-499 ppm.
c. **PCB Oil –** means oil containing PCBs in a concentration at or greater than 500 ppm.
d. **Release** – means any spilling, leaking pumping, pouring, emitting, emptying, or a substance to the environment.
e. **Reportable Quantity (RQ) –** means that quantity of a material released to the environment as defined in 40 CFR Part 117 and 40 CFR Part 302.

4. RESPONSIBILITIES:

a. **Any Employee** – All employees are responsible to report any release of oil or chemical to their supervisor or Westboro Dispatch.
b. **Divisional Engineer** – Responsible for determining whether or not a chemical has exceeded the Reportable Quantity, and follow up notification and reporting as required in EP-5. Responsible for two hour notification to the Massachusetts Department of Environmental Protection, Local Emergency Planning Coordinator (LEPC) and notification to the National Response Center, if required.

5. PROCEDURE

5.1 GENERAL EMPLOYEES:

a. Upon discovery of any oil or chemical spill, immediately notify your supervisor and/or the Trouble Center.

Trouble Center: 1.888.367.7693

NOTE: ALL OIL SPILLS ARE REQUIRED TO BE CALLED IN TO YOUR SUPERVISOR, NO MATTER WHAT THE VOLUME.

b. Provide as much information as possible including:
- location of release(including pole number)
- what the material was released/spilled
- when the spill was discovered

- estimated amount spilled
- what caused the release
- a description of the spill area
- any other pertinent information

c. Contact Environmental Engineer directly or call the Trouble Center to determine on-call environmental engineer.

5.2 Trouble Center – For After Hours Spills

a. Upon notification from the field of a release, gather information from the caller as to substance spilled, volume, cause, date and time of spill, etc.
b. Contact on-call environmental engineer or designated representative and relay appropriate information.

5.3 DIVISIONAL ENVIRONMENTAL ENGINEER

a. Determine if release is reportable and contact Massachusetts Department of Environmental Protection / Massachusetts Emergency Management Agency (MEMA) within two hours if it is. Call the 888.304.1133 number and you will be routed to correct DEP Regional Office.
b. In addition, report oil spills to water and PCB oil spills (see definition section) to the National Response Center at 1-800-424-8802.
c. Provide assistance in deploying spill clean up resources (equipment, contractors) when requested.
d. Complete Spill Report form.
e. Report spill to other required agencies per EP-5, as required.
f. Provide assistance to clean up crews in making arrangements for clean up debris disposal.
g. Categorize the spill as a Category 1 or Category 2 spill.
h. Confirm clean up.
i. Provide additional information to state agency to close out the spill.

RELEASE INFORMATION

Location of Release: _____
Town / City: _____
County: _____
District / Region:_____
Spill Number (NY): _____

Date of Release: _____
Time of Release:_____
Weather Conditions:_____
NG Employee Reporting Release: _____
Telephone Number: _____

Material Released: _____
Quantity Released: _____
Source of Release: _____

Cause and Brief Description: _____
_____
_____
_____
_____
_____
_____

Non-PCB Label? ☐ Yes ☐ No ☐ Unknown

Material Released To:

☐ LAND ☐ WATER ☐ AIR
- ☐ soil ☐ lake/pond
- ☐ street ☐ stream/river
- ☐ farmland/grazing land ☐ wetland
- ☐ vegetable garden ☐ catch basin/drain

☐ OTHER _____

NOTIFICATION INFORMATION

Agency Notified	Person Contacted	Date Reported	Time Reported	Agency Report #
In-house Only				
State Environmental Agency				
State Emergency Response Commission				
Local Emergency Response Commission				
Local Sewer/Water Authority				
National Response Center (NRC)				
Environmental Protection Agency (EPA)				
Other				
Other				

.

DIELECTRIC FLUID INFORMATION

PCB Concentration of Fluid:	**Based On:**
☐ No PCBs (<2 ppm)	☐ Nameplate Information or manufacturer's label
☐ Non-PCB (<50 ppm)	☐ Clor-N-Oil® Test
☐ PCB Contaminated (50-499 ppm)	☐ Lab Test
☐ PCB (≥500 ppm)	☐ Assumed 50-499 ppm*

**** If equipment was manufactured prior to July 2, 1979 and/or not labeled, and a Clor-N-Oil® Test cannot be conducted, then the oil must be considered "PCB Contaminated."***

***** Clor-N-Oil® test results are to be used for interim handling only. All wastes from unlabeled transformers requires laboratory analysis by gas chromatography prior to disposal. Field screening tests such as Clor-n-Oil tests cannot be used to determine PCB content for ultimate waste disposal purposes.***

SOURCE OF RELEASE

Source of Release (type of equipment): _____
Manufacturer: _____
Size: _____
Serial or Badge # (if available): _____

RELEASE RESPONSE INFORMATION

In-house crews used ☐
Contractor used: _____

Consultant used: _____

Describe nature of cleanup: _____
_____
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IN-HOUSE NOTIFICATION INFORMATION

Copies of Release Report Sent To:

☐ NY or NE Manager of Environmental Compliance
☐ Spill Database Updated / Release Report kept in local file

CERTIFICATION

Completed By:_____

Date:_____

INCIDENT CATEGORY
(to be completed by NG Division Environmental Engineer)

☐ Category 1 – Significant Incident
☐ Category 2 – Non Significant Incident
☐ Near Miss Incident

ADDITIONAL COMMENTS / INFORMATION

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SPILL RESPONSE PROCEDURES & NOTIFICATIONS

Below is a summary of procedures to follow in the event of an oil spill. The on-call Environmental Engineer should be contacted whenever there is a reportable spill and/or whenever assistance is needed. Generally, the on-call Environmental Engineer will contact the appropriate agencies when there is a spill requiring notification. However, in the event that the Environmental Engineer cannot be reached, the supervisor in charge must be responsible for notifying the agencies as described below. For any spill, the Environmental Engineer should be contacted by the next working day and a National Grid Release Report Form must be completed (see Env. Infonet for a copy of the form).

SPILLS TO WATER

Oil spills to water are Category 1 classified in accordance with National Grid Environmental Procedure No. 15, if they are likely to result in an enforcement action from a regulatory agency.

If any quantity of oil, regardless of PCB content or other hazardous material, is released to water (*wetlands, streams, lakes, ponds, storm or sanitary sewer*) contact:

DEP	ASAP (No later than 2 hours)
NRC	Within 2 hours
LEPC	Within 2 hours
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP
Environmental Engineer/Consultant	ASAP

If any quantity of oil with concentrations of PCBs ≥50 ppm or greater additionally notify:

EPA	Within 24 hours

Additionally, in the **Town of Ayer**, notify the Fire Department regarding spills of ANY amount of oil, regardless of PCB content. In the **Town of Oxford**, notify the Fire Department of spills of 5 gallons or greater, regardless of PCB content.

SPILLS TO GROUND

Spills of over 250 gallons or containing 1 pound or PCBs ≥ 500 ppm are Category 1 classified in accordance with National Grid Environmental Procedure No. 15.

If 10 or more gallons of oil, regardless of PCB content, are released to ground (soil, pavement) contact:

DEP	ASAP (No later than 2 hours)
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP
Environmental Engineer/Consultant	ASAP

If PCB concentrations are ≥50 ppm or unknown additionally notify:

LEPC	Within 2 hours

If ***any quantity*** of oil is released to ground with concentrations of ***PCBs ≥500 ppm*** contact:

DEP	ASAP (No later than 2 hours)
LEPC	Within 2 hours
Local Fire Dept.	Within 2 hours
Clean-up Contractor	ASAP
Environmental Engineer/Consultant	ASAP

If PCB concentrations are between *50-499 ppm and over 2,700 gallons* are released or PCB concentrations are *≥500 ppm , and 270 gallons* are released, *additionally notify*:

EPA	Within 24 hours

Additionally, in the **Town of Ayer**, notify the Fire Department regarding spills of ANY amount of oil, regardless of PCB content. In the **Town of Oxford**, notify the Fire Department of spills of 5 gallons or greater, regardless of PCB content.

SPILLS TO VEGETABLE GARDENS, FARM LAND, GRAZING LAND

If any quantity of oil with detectable levels of PCBs is released to gardens, farms, or grazing land, contact:

DEP	ASAP (No later than 2 hours)
Local Fire Dept.	ASAP
Clean-up Contractor	ASAP
Environmental Engineer/Consultant	ASAP

If concentrations of PCBs are ≥**50 ppm**, additionally contact:

EPA	Within 24 hours
LEPC	Within 2 hours

Additionally, in the **Town of Ayer**, notify the Fire Department regarding spills of ANY amount of oil, regardless of PCB content. In the **Town of Oxford**, notify the Fire Department of spills of 5 gallons or greater, regardless of PCB content.

ALWAYS NOTIFY THE DIVISION ENVIRONMENTAL ENGINEER OF ANY SPILL AS NEEDED OR BY THE NEXT BUSINESS DAY OR WITHIN 24 HOURS. COMPLETE AN IN HOUSE REPORT FOR EACH SPILL WITHIN TWO BUSINESS DAYS.

AGENCY TELEPHONE NUMBERS

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MA DEP)
MASSACHUSETTS EMERGENCY MANAGEMENT AGENCY (MEMA)

MA DEP / MEMA 24 hours per day	**888.304.1133**

NOTE: THE MEMA DISPATCHER WILL ROUTE CALL TO APPROPRIATE MA DEP REGION.

NATIONAL RESPONSE CENTER (NRC)	**800.424.8802**
ENVIRONMENTAL PROTECTION AGENCY (EPA)	**617.223.7265**

LOCAL EMERGENCY PLANNING COMMITTEES (LEPCs)

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Abington	Chief David Majenski	(781) 878-3232
Acton	Chief Robert Craig	(978) 264-9645
Adams	John Morocco	(413) 662-3102
Alford	Doreen Hutchinson	(413) 528-0790 x3031
Amesbury	Chief James Broderick	(978) 388-8185
Andover	Jeff Coco/James Michitson	(978) 682-5212
Arlington	Chief William Middlemiss	(781) 862-0272
Ashburnham	James Wright	(978) 249-8275
Athol	James Wright	(978) 249-8275
Attleboro	Bob McDonald	(508) 223-2220
Auburn	Chief William Whynot	(508) 832-7800
Avon	Carl S. Fisher	(508) 583-5361
Ayer	William Shute	(978) 804-2084
Barnstable	Chief George Baker	(508) 375-6618
Barre	James Wright	(978) 249-8275
Bedford	Chief William Middlemiss	(781) 862-0272
Belchertown	Lt. Mike Spanknebel	(413) 584-0883
Bellingham	James Haughey	(508) 928-1007
Belmont	Chief William Middlemiss	(781) 862-0272
Berlin	Chief John T. Fleck	(978) 365-3502
Beverly	Dep. Chief James Coughlin	(978) 531-3447
Billerica	Mark Boldrighini	(978) 459-5552
Blackstone	Chief Michael Sweeney	(508) 883-1030
Bolton	Chief John T. Fleck	(978) 365-3502
Boston	Captain James Bruuynell	(617) 343-2116
Bourne	Chief George Baker	(508) 375-6618
Braintree	Chief Kenneth McHugh	(781) 843-3602 x4405
Brewster	Chief George Baker	(508) 375-6618
Boylston	Bruce Baker	(978) 422-6253
Boxborough	Chief Geoffrey Neagle	(978) 263-1116
Boxford	Robert Hazelwood	(978) 887-3135
Bridgewater	Herb Lemon	(508) 697-6191
Brimfield	Robert Corry	(413) 245-7334
Brockton	Morton Schleffer	(508) 588-7871
Brookfield	Joe Gadbois	(508) 867-6420

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Brookline	Chief William Middlemiss	(781) 862-0272
Burlington	Chief William Middlemiss	(781) 862-0272
Carlisle	Chief David Flannery	(978) 369-2888
Charlemont	John Taylor	(413) 774-3167
Charlton	John Hart	(508) 765-9771
Chatham	Chief George Baker	(508) 375-6618
Chelmsford	Mark Boldrighini	(978) 459-5552
Chelsea	Captain Richard Tustin	(781) 729-1802
Cheshire	John Morocco	(413) 662-3102
Clarksburg	John Morocco	(413) 662-3102
Clinton	Chief John T. Fleck	(978) 365-3502
Cohasset	Chief Robert Silvia	(781) 383-0616
Concord	Chief Kenneth MacLean	(978) 443-2239
Danvers	Dep. Chief James Coughlin	(978) 531-3447
Dennis	Chief George Baker	(508) 375-6618
Dighton	Jeffrey Allie	(508) 669-6611
Douglas	Pauline Labrecque	(508) 476-2267
Dracut	Mark Boldrighini	(978) 459-5552
Dudley	John Hart	(508) 765-9771
Dunstable	William Shute	(978) 804-2084
East Bridgewater	Deputy Fairburn	(508) 378-2071
East Brookfield	Jason Messenger	(508) 867-6575
East Longmeadow	Brian Falk	(413) 525-5400 x 420
Eastham	Chief George Baker	(508) 375-6618
Easthampton	Lt. Mike Spanknebel	(413) 584-0883
Easton	Thomas Stone	(508)230-0750
Egremont	Doreen Hutchinson	(413) 528-0790 x3031
Erving	John Taylor	(413) 774-3167
Essex	Dep. Chief James Coughlin	(978) 531-3447
Everett	Captain Richard Tustin	(781) 729-1802
Fall River	Richard Aquiar	(508) 324-2733
Falmouth	Chief Paul D. Brodeur	(508) 495-2517
Florida	John Morocco	(413) 662-3102
Foxborough	Gerald McNamara Sr.	(508) 543-1230
Franklin	Chief Gary McCarraher	(508) 528-2323
Gardner	James Wright	(978) 249-8275
Georgetown	Chief Albert B. Beardsley	(978) 352-5757
Gloucester	Dep. Chief James Coughlin	(978) 531-3447
Goshen	Lt. Mike Spanknebel	(413) 584-0883

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Grafton	Katharine Cederberg	(508) 826-0740
Granby	Lt. Mike Spanknebel	(413) 584-0883
Great Barrington	Doreen Hutchinson	(413) 528-0790 x3031
Groton	William Shute	(978) 804-2084
Groveland	Jeff Coco/James Michitson	(978) 682-5212
Halifax	Chief David Rich	(781) 585-2633
Hamilton	Jeff Coco/James Michitson	(978) 682-5212
Hampden	Doug Mellis	(413) 566-8011
Hancock	Chief Robert Czerwinski	(413) 448-9764
Hanover	James Purcell	(781) 826-3001
Hanson	Allen Hoyte	(781) 293-9571
Hardwick	James Wright	(978) 249-8275
Harwich	Chief George Baker	(508) 375-6618
Harvard	William Shute	(978) 804-2084
Haverhill	Jeff Coco/James Michitson	(978) 682-5212
Hawley	John Taylor	(413) 774-3167
Heath	John Taylor	(413) 774-3167
Hingham	Chief Mark J. Duff	(781) 741-1480
Holbrook	James Reichert	(781) 767-4312
Holland	James Gagne	(413) 245-9733
Hopedale	Chief Tom Daige	(508) 473-1050
Hubbardston	James Wright	(978) 249-8275
Hull	Chief Jane Walsh	(781) 925-8111
Ipswich	Jeff Coco/James Michitson	(978) 682-5212
Lancaster	Chief John T. Fleck	(978) 365-3502
Lawrence	Jeff Coco/James Michitson	(978) 682-5212
Leicester	Robert Wilson	(508) 892-7022
Lenox	Chief Robert Czerwinski	(413) 448-9764
Leominster	Charles Coggins	(978) 534-7580
Lexington	Chief William Middlemiss	(781) 862-0272
Lincoln	Chief Kenneth MacLean	(978) 443-2239
Littleton	William Shute	(978) 804-2084
Lowell	Mark Boldrighini	(978) 459-5552
Lynn	Dep. Chief James Coughlin	(978) 531-3447
Lynnfield	Paul Romano	(617) 334-3132
Malden	Captain Richard Tustin	(781) 729-1802
Manchester by the Sea	Dep. Chief James Coughlin	(978) 531-3447
Marblehead	Dep. Chief James Coughlin	(978) 531-3447
Marlborough	Donald P. Cusson	(508) 481-1933

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Mashpee	Chief George Baker	(508) 375-6618
Medford	Captain Richard Tustin	(781) 729-1802
Melrose	Captain Richard Tustin	(781) 729-1802
Mendon	Chief John Touhey	(508) 473-5330
Merrimac	Chief James Broderick	(978) 388-8185
Methuen	Jeff Coco/James Michitson	(978) 682-5212
Middleton	Jeff Coco/James Michitson	(978) 682-5212
Milford	Chief John Touhey	(508) 473-1214
Millbury	Robert Beausoleil	(508) 865-6957
Millville	Chief John Mullaly	(508) 883-4740
Milton	Mark Williams	(617) 821-1659
Monroe	John Taylor	(413) 774-3167
Monson	Jeremy Bedson	(413) 267-4128
Monterey	Doreen Hutchinson	(413) 528-0790 x3031
Mount Washington	Doreen Hutchinson	(413) 528-0790 x3031
Nahant	Dep. Chief James Coughlin	(978) 531-3447
Nantucket	Chief George Baker	(508) 375-6618
New Braintree	James Wright	(978) 249-8275
New Salem	John Taylor	(413) 774-3167
New Marlborough	Doreen Hutchinson	(413) 528-0790 x3031
Newbury	Chief James Broderick	(978) 388-8185
Newburyport	Chief Steven Cutter	(978) 465-4427
Newton	Chief Joseph LaCroix	(617) 796-2201
North Adams	John Morocco	(413) 662-3102
North Andover	Jeff Coco/James Michitson	(978) 682-5212
North Attleboro	Chief Peter Lamb	(508) 699-0140
North Brookfield	Douglas Blood	(508) 867-0206
North Reading	Captain Richard Tustin	(781) 729-1802
Northampton	Lt. Mike Spanknebel	(413) 584-0883
Northborough	Chief David Durgin/Brad Newman	(508) 393-1537
Northbridge	Chief Gary Nestor	(508) 234-8448
Norton	Chief Richard Gomes	(508) 285-0240
Norwell	Chief Paul Rosebach	(781) 659-8158
Norwood	Dan Matthews	(781) 461-6159
Oakham	James Wright	(978) 249-8275
Orange	John Taylor	(413) 774-3167
Orleans	Chief George Baker	(508) 375-6618
Oxford	Jeff Wilson	(508) 987-6009
Palmer	Chief Alan J. Roy	(413) 283-3861

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Peabody	Dep. Chief James Coughlin	(978) 531-3447
Pembroke	Jim Neenan	(781) 293-5414
Pepperell	William Shute	(978) 804-2084
Petersham	James Wright	(978) 249-8275
Phillipston	James Wright	(978) 249-8275
Plainville	Chief Merrick	(508) 695-7115
Quincy	Tom Gorman	(617) 376-1105
Randolph	Chief Charles D. Foley, Jr.	(781) 961-0992
Reading	Captain Richard Tustin	(781) 729-1802
Rehoboth	William Maiorano	(508) 252-6415
Revere	Captain Richard Tustin	(781) 729-1802
Rockland	Robert Bowles	(781) 878-5025
Rockport	Dep. Chief James Coughlin	(978) 531-3447
Rowe	John Taylor	(413) 774-3167
Rowley	Chief James Broderick	(978) 388-8185
Royalston	James Wright	(978) 249-8275
Rutland	James Wright	(978) 249-8275
Salem	Dep. Chief James Coughlin	(978) 531-3447
Salisbury	Chief James Broderick	(978) 388-8185
Sandwich	Chief George Baker	(508) 375-6618
Saugus	Captain Richard Tustin	(781) 729-1802
Scituate	Chief Edward Hurley	(781) 545-8748
Seekonk	Allan Jack	(508) 336-8510
Sheffield	Doreen Hutchinson	(413) 528-0790 x3031
Shrewsbury	Don Filiere	(508) 841-8422
Shirley	William Shute	(978) 804-2084
Shutesbury	John Taylor	(413) 774-3167
Somerset	Chief Steven J. Rivard	(508) 646-2810
Sterling	Bruce Baker	(978) 422-6253
Southborough	Neal Aspesi	(508) 485-3235
Southbridge	John Hart	(508) 765-9771
Spencer	Robert Parsons	(508) 885-3555
Stockbridge	Arthur Dutil	(413) 298-3691
Stoneham	Captain Richard Tustin	(781) 729-1802
Stoughton	David Jarden and Doug Campbell	(781) 344-3132
Sturbridge	Chief Thomas Ford	(508) 347-2500
Sudbury	Chief Kenneth MacLean	(978) 443-2239
Sutton	Paul Maynard	(508) 865-8737
Swampscott	Dep. Chief James Coughlin	(978) 531-3447

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Swansea	Chief Peter J. Burke	(508) 672-4305
Templeton	James Wright	(978) 249-8275
Tewksbury	Mark Boldrighini	(978) 459-5552
Topsfield	Charles Denault	(978) 887-5148
Tyngsboro	Wes Russell	(978) 649-7504
Upton	Chief Michael J.. Bradford, Sr.	(508) 529-3421
Uxbridge	Sgt. Peter Emerick	(508) 278-7755
Wakefield	Captain Richard Tustin	(781) 729-1802
Wales	Hank DeCoteau	(413) 245-7571
Waltham	Lt. Randy Mullin	(617) 421-0280
Ware	Lt. Mike Spanknebel	(413) 584-0883
Wareham	Chief Robert McDuffy	(508) 295-2973
Warren	Joe Laflower	(413) 436-9595
Warwick	John Taylor	(413) 774-3167
Watertown	Chief William Middlemiss	(781) 862-0272
Wayland	Chief Kenneth MacLean	(978) 443-2239
Webster	Chris Jolda	(508) 949-3840
Wellesley	Chief Kevin Rooney	(781) 235-1300
Wendell	John Taylor	(413) 774-3167
Wenham	Chief Robert A. Blanchard	(978) 468-5508
West Boylston	Bruce Baker	(978) 422-6253
West Bridgewater	Leonard T. Hunt	(508) 586-3232
West Brookfield	Bryce Lesily	(508) 867-1405
West Newbury	Chief James Broderick	(978) 388-8185
West Stockbridge	Doreen Hutchinson	(413) 528-0790 x3031
Westborough	Lt. Robert Rand	(508) 366-3040
Westford	William Shute	(978) 804-2084
Weston	Chief Kenneth MacLean	(978) 443-2239
Westminster	Brenton MacAloney	(978) 874-2313
Westport	Charlene Wood	(508) 636-1110
Weymouth	John Mulveyhill	(781) 340-5048
Whitman	Robert Schmidt	(781) 447-7677
Wilmington	Mark Boldrighini	(978) 459-5552
Winchendon	James Wright	(978) 249-8275
Winchester	Captain Richard Tustin	(781) 729-1802
Winthrop	Captain Richard Tustin	(781) 729-1802
Wilbraham	Nick Yarmac	(413) 596-3122
Williamsburg	Lt. Mike Spanknebel	(413) 584-0883
Williamstown	Chief Robert Czerwinski	(413) 448-9764

MUNICIPALITY	CHAIRPERSON	PHONE NUMBER
Winchendon	Captain Richard Tustin	(781) 729-1802
Woburn	Captain Richard Tustin	(781) 729-1802
Worcester	Thomas Gingras	(508) 799-1840
Wrentham	Joseph Heck	(508) 384-5400
Yarmouth	Chief George Baker	(508) 375-6618

During non-business hours, or if a LEPC member cannot be reached, inform the local fire department.

COMPANY CONTACTS

IMPORTANT: Contact the Trouble Center (888.367.7693) or Gas Dispatch (781.466.5484) to obtain assistance from on-call Environmental Engineer. On-call Environmental Engineers switch on-call every other week for nights/weekends; therefore, please obtain assistance from Environmental Engineer through the Trouble Center or Gas Dispatch.

Environmental Engineers

New England North Division
Erin Whoriskey (Bay State North)
774.364.3445 (mobile)
978.725.1530, x51530 (office)

New England South Division
Deborah Blanch (Bay State South)
617.908.8881 (mobile)
508.897.5520, x55520 (office)

Beverly Auxford-Paiva (Ocean State)
508.922.6309 (mobile)
401.784.7490, x44790 (office)

Environmental Manager
Joanne Lupa
508.328.5635 (mobile)

Environmental Director
Joseph Callanan
508.328.4222 (mobile)

Westboro Dispatch (Trouble Center): 888.367.7693
Gas Dispatch: 781.466.5484

For any spill, inform an environmental engineer by the next working day, or within 24 hours, or contact an environmental engineer whenever assistance is needed. Complete an in house spill report and send the report to the division environmental engineer within 2 working days.

If in the unlikely event that a National Grid Environmental Engineer cannot be contacted within an appropriate amount of time, please contact one of the Environmental Consultants listed below. The Environmental Consultant will then take pertinent information and begin necessary reporting requirements and response actions as needed.

ENVIRONMENTAL CONSULTANT AND CLEAN UP CONTRACTOR CONTACTS

CLEAN HARBORS **800.645.8265**
(Clean up Contractor) (1-800 OIL TANK)

MAXYMILILLIAN, INC. **413.499.3050**
(Clean up Contractor)

MORAN ENVIRONMENTAL SERVICES **888.233.5338**
(Clean up Contractor)

CONECO ENGINEERS AND SCIENTISTS **508.312.0090**
(Environmental Consultant)
After using pager number above, wait for call back. If page not returned within 10 to 15 minutes, try the mobile phone numbers, below:

Brian Klingler - **508.962.6277** (mobile)
John Aevazelis - **508.962.7423** (mobile)

TIGHE & BOND
(Environmental Consultant)
For Spills in Central MA area, contact Ken Gendron at **508.479.2924** (mobile) or **508.354.0528** (pager)
For Spills in Western MA area, contact ER Pager at **413.263.0957**

SPILL RESPONSE PROCEDURES

Below is general guidance for procedures to follow in the event of a spill.

The employee who discovers the spill should follow the steps below:

1. Immediately notify the Emergency Coordinator (EC) (if the spill occurs at facility) or supervisor or on call supervisor (if the spill occurs in the field).

2. Restrict access to the spill area.

3. Take measures to isolate and control the release, if trained and can do so safely. To the greatest extent possible, take actions to protect sensitive receptors such as wetlands, storm drains, streams, lakes, ponds, gardens, and farmland.

Upon notification, the EC/Supervisor should follow the steps below:

1. Report to the site and determine:
   - if a spill has occurred
   - the type of spill (sudden release or release occurring over a 24 hour period)
   - if it is a reportable quantity
   - the appropriate response actions and notifications.

2. Obtain information included on the Oil, Hazardous Substances, and PCB Release Report Form, if possible. This is the information that may be asked by the MA DEP and cleanup contractor. Do not delay notification if information is unknown.

3. Notify the appropriate agencies if the release is over the reportable quantity. The 2 hour clock starts when it is determined by National Grid that a release has occurred. Note: If it is suspected that a sudden, reportable release has occurred, do not delay notification if the amount cannot be determined. Notifications may be retracted later, if it is determined that the release is less than a reportable amount. The Environmental Engineer should be contacted to make the notifications or if assistance is needed.

4. Write down the Release Tracking Number that the DEP should provide. This is the number that the DEP or other regulatory agencies uses to track the spill and show that we notified. The Release Tracking Number may not be provided immediately if the spill occurs after hours/weekends.

5. Contact clean up contractors and environmental consultants if the release is over the reportable quantity. National Grid crews may clean up non-reportable releases. Any change to this must be approved by the Environmental Engineer.

6. Collect oil samples for laboratory analysis by Doble or other approved lab, whenever possible.

7. Determine when contractors can start clean up activities.

8. Ensure that oversight is provided by National Grid/Environmental Consultant during the clean up activities.

9. Contact an Environmental Engineer whenever you are not sure of response actions.

10. Complete an in house spill report on IMS, or on paper and submit to the Environmental Engineer within 2 working days.

Record of Change		
Date of Review/Revision:		
Revision	**Date**	**Description**
0	04/01/06	New EG for MA.
1	06/01/09	Updated to reflect changes in assignments of Environmental Engineers and telephone information for spill notifications. Also, combined three previous EG's (EG-502MA-BSN, EG-502MA-BSS, & EG-502MA-BSW).
2	12/28/09	Updated Environmental Engineer contact information.