E131 Asset Condition Refurbishment Project
Adams, North Adams, Florida, and Monroe, Massachusetts

EXPANDED ENVIRONMENTAL NOTIFICATION FORM

New England Power Company (NEP)

January, 2023

Tighe&Bond

N-5068105-04
January 30, 2023

Secretary Bethany A. Card
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: **Expanded Environmental Notification Form (EENF)**
E131 Asset Condition Refurbishment (ACR) Project
Adams, North Adams, Florida, and Monroe, Massachusetts

Dear Secretary Card:

On behalf of New England Power Company (NEP), Tighe & Bond is submitting this Expanded Environmental Notification Form (EENF) with a request for a Single Environmental Impact Report (SEIR) for the E131 ACR Project (the Project), which spans four municipalities in Massachusetts: Adams, North Adams, Florida, and Monroe. The Project's goals are to upgrade existing electrical utility infrastructure and construct improved roadways by which the transmission line can be accessed. These access roads will facilitate the proposed infrastructure improvements, as well as future maintenance activities and access by emergency personnel. The proposed project has been designed to improve the resiliency and reliability of the infrastructure and minimize impacts to the existing environment.

As part of the proposed Project in Massachusetts, 157 wooden H-frame, steel triple pole and steel lattice structures will be replaced with steel H-frame structures. These structure replacement activities qualify for exemption under the Utility Maintenance Exemption (Chapter 30, Section 62A) of the Massachusetts General Laws (M.G.L). However, due to the extent of work associated with the proposed improvements to existing/historical access roads and proposed construction of new access roads, the Project will meet three Environmental Notification Form (ENF) review thresholds for land alteration and wetlands, waterways, and tidelands. In addition, the Project meets three Environmental Impact Report (EIR) review thresholds for land, wetlands, waterways and tidelands, and Environmental Justice.

Enclosed with this submittal are the ENF form, a project narrative and alternatives analysis, project figures and plans, and other required materials. As this Project is required to protect and bolster critical infrastructure, and includes detailed descriptions of design alternatives, existing conditions, and efforts to avoid and minimize environmental impacts, this EENF is being submitted with a request for an SEIR in accordance with 301 CMR 11.06(8).

This EENF is being submitted for publication in the February 8th, 2023 edition of the *Environmental Monitor*. Should you have any questions or require additional information, please contact me by phone at (413) 875-1305 or by email at KLWilkins@tighebond.com.

Very truly yours,

TIGHE & BOND, INC.

Katherine L. Wilkins
Project Manager

Enclosures
Copy: Michael Tyrrell, New England Power Company
Refer to the Distribution and Circulation List (Attachment 1)

Tighe&Bond

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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: **E131 Asset Condition Refurbishment (ACR) Project**		
Street Address: **Line E131 Right-of-Way (ROW)**		
Municipality: **Adams, North Adams, Florida, and Monroe, Massachusetts**	Watershed: **Hoosic and Deerfield**	
Universal Transverse Mercator Coordinates:	Latitude: **42.65417[1]/42.75338[2]** Longitude: **-73.10516[1]/-72.93531[2]**	
Estimated commencement date: **May 2024**	Estimated completion date: **June 2026**	
Project Type: **Utility**	Status of project design: **75** %complete	
Proponent: **New England Power Company (NEP) (Attn: Michael Tyrrell)**		
Street Address: **170 Data Drive**		
Municipality: **Waltham**	State: **MA**	Zip Code: **02451**
Name of Contact Person: **Katherine Wilkins**		
Firm/Agency: **Tighe & Bond, Inc.**	Street Address: **53 Southampton Road**	
Municipality: **Westfield**	State: **MA**	Zip Code: **01085**
Phone: **(413) 875-1305**	Fax: **(413) 562-5317**	E-mail: **KLWilkins@tighebond.com**

[1] Location of the Adams Substation in Adams, Massachusetts (southwestern limit of Project)
[2] Location of the Harriman Substation in Readsboro, Vermont (northern limit of Project)

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)?
ENF Review:

- **Land 301 CMR 11.03(1)(b)(1)** - Direct alteration of 25 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices
- **Wetlands, Waterways and Tidelands 301 CMR 11.03(3)(b)(1)(d)** - Alteration of 5,000 or more sf of bordering or isolated vegetated wetlands
- **Wetlands, Waterways and Tidelands 301 CMR 11.03(3)(b)(1)(f)** – Alteration of one half or more acres of any other wetlands

ENF and Mandatory EIR:

- **301 CMR 11.03(1)(a)(1) – Land:** Direct alteration of 50 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices
- **301 CMR 11.03(3)(a)(1)(a)** - **Wetlands, Waterways and Tidelands:** Alteration of one or more acres of salt marsh or bordering vegetating wetlands
- **301 CMR 11.06(7)(b) - Environmental Justice:** The Secretary shall require an EIR for any Project that is located within a Designated Geographic Area around an Environmental Justice Population.

Which State Agency Permits will the project require?

- **MassDEP Individual 401 Water Quality Certification**
- **MESA Conservation and Management Permit**
- **MassDCR Construction Access Permit**
- **MassDOT Access 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:
None

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	463 ac – limit of disturbance		
New acres of land altered		19 ac (temporary) 92 ac (permanent)[3]	
Acres of impervious area	9 ac	0 ac	9 ac
Square feet of new bordering vegetated wetlands alteration		617,322 sf (temporary) 700 sf (permanent)[4]	
Square feet of new other wetland alteration		**Bank**: 64 lf **LUW**: 32 sf (permanent) **BLSF**: 146 sf (temporary) **RFA**: 74,451 sf (temporary) 102,971 sf (permanent)	
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
Maximum height (feet)	85	25	110
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 #15675, 16273) ☐No

[3] Represents the sum of permanent gravel access roads and work pads for the Project.
[4] Associated with the construction of one new switch structure with ground grid (Pole #79A), concrete caisson foundations needed to support four structures (43, 145, 150, 169) and the relocation of structures 24, 60, 80, 151, 172 from the 100-foot Buffer Zone to BVW (Please refer to Section 4 of the accompanying EENF Narrative for additional detail).

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Describe the existing conditions and land uses on the project site:

The Project Site (i.e., limit of work) consists of the Line E131 Right-of-Way (ROW), which includes an approximately 13-mile overhead electric transmission line, and certain access road improvements within and outside of the ROW. Line E131 extends from the Harriman #8 Substation in Readsboro, Vermont to the Adams #21 Substation in Adams, Massachusetts. The portion of the ROW within the Commonwealth of Massachusetts is approximately 11.4 miles. This line is part of the interconnected New England transmission system; it carries network power flows and supplies distribution load-serving stations in Vermont and Massachusetts, including some Green Mountain Power feeders from the Harriman Substation. The Project Site includes portions of the adjacent J10 Line and Bear Swamp Tap Line. The J10 Line splits from Line E131 in Adams, Massachusetts, where it runs roughly parallel to the Line E131 ROW for approximately three miles. The J10 line then rejoins Line E131 in Florida, Massachusetts. Approximately two miles northeast of the junction of Line E131 and the J10 Line, a second split occurs along the Line E131 ROW, forming the Bear Swamp Tap Line. The Bear Swamp Tap Line extends roughly perpendicular from Line E131 for approximately 0.20 miles.

The 115 kilovolt (kV) E131 transmission line easement rights range between 200 and 400 feet wide, with the existing line at the approximate center of the easement. The current maintained width ranges from approximately 100 feet to approximately 150 feet. The maintained ROW includes uplands, wetlands, perennial and intermittent streams, unimproved access routes, and improved gravel access roads. Approximately six miles of Line E131 passes through the Massachusetts Department of Conservation & Recreation (DCR)-owned Monroe, Florida, and Savoy Mountain State Forests. Line E131 traverses through mountainous terrain with steep slopes, rocky outcrops, cliffs, and large boulders. Although it passes through some rural residential areas in Florida and Monroe, Massachusetts, the ROW, and surrounding areas are generally densely forested.

A detailed description of the existing conditions and land uses on the project site is provided in the Project Narrative (Section 1: Introduction and Section 3: Land use).

Describe the proposed project and its programmatic and physical elements:

Line E131 was constructed in 1925. The existing wooden H-frame transmission structures are from its original construction. In 1971, reconductoring and shield wire installation updates were conducted throughout the line. In 2004, the line was refurbished with select replacement structures, replacement insulators, and improved grounding. Generally, the line is currently comprised of original wooden H-frame and steel lattice structures.

Based on the age of the infrastructure, a full refurbishment of the line is proposed to bring the utility into compliance with modern standards. The proposed Project will include the following:

- *Replacement of 151 structures with new steel pole H-frame structures*
- *Replacement of 6 triple pole structures*
- *Replacement of three (3) existing steel lattice structures with new steel structures*
- *Removal of four (4) existing H-frame structures and one (1) lattice structure*
- *Installation of approximately 24 structures requiring concrete caisson foundations at locations which require greater structural reinforcement*

- *Installation of micropile foundations at approximately one (1) structure location which requires greater structural reinforcement*
- *Installation of three (3) new switch gear structures*
- *Replacement of existing shield wire with OPGW*
- *Replacement of all insulators and hardware*
- *Replacement of conductor in four (4) sections for constructability purposes*

Due to the age of the line, the complex and varied terrain through which it traverses, and lack of recent broad-scale upgrades, access to and along the ROW is limited, and many portions of the line are currently inaccessible except by foot or utility terrain vehicles. Improvements to existing and construction of new access routes are required to facilitate the Project and its long-term maintenance. Given the mountainous topography over which the ROW extends, significant road improvements and construction of new roads are necessary to provide safe, reliable, and constructable access to structure locations and wire-pulling setups. This work will involve grading, tree removal, and gravel placement to safely navigate steep slopes. The proposed access road improvements will allow for future access for regular maintenance, including forestry management and overhead line work, or during emergency events such as storm responses.

Temporary access in the form of construction matting is proposed in sensitive areas including wetlands, stream spans, and rare species habitats. No permanent access roads are proposed within Bordering Vegetated Wetlands (BVW). However, due to the abundance of wetland resource areas along the ROW and the complexity of the terrain, the construction of new or improved access within Bordering Land Subject to Flooding (BLSF), Riverfront Area, and the 100-foot Buffer Zone is unavoidable. These impacts have been minimized to the extent feasible, while balancing safety and constructability.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

NEP has considered alternatives for completing and meeting the proposed project goals, as discussed in greater detail in Section 2 of the Project Narrative. The preferred alternative (the Project) is the only alternative that meets the identified needs while minimizing environmental impacts.

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

Site-specific mitigation measures will be implemented to offset temporary and permanent impacts to wetland resource areas as required by the Massachusetts Wetlands Protection Act and Sections 401 and 404 of the federal Clean Water Act. Temporary alterations will be restored in situ.

A detailed description of mitigation measures proposed for this Project is provided in the Project Narrative (Sections 3.3, 5.2, 5.4, 5.5, 7.3, 8.2 and 9).

If the project is proposed to be constructed in phases, please describe each phase:

The project is not anticipated to be constructed in phases but may have to pause based on winter weather conditions and the feasibility to work safely at that time.

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 (Specify: **Foxtail sedge (*Carex alopecoidea*); hairy-fruited sedge (*Carex trichocarpa*); longnose sucker (*Catostomus catostomus*); large-leaved goldenrod (*Solidago macrophylla*); woodland millet (*Milium effusum*); Bailey's sedge (*Carex baileyi*); ski-tipped emerald (*Somatochlora elongata*)**)

☐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: **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 Site. Additional information regarding surveys to identify and evaluate historic and archaeological resources for the Project can be found in Section 5.5 of the Narrative and Appendix G**)

☐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

☐No

if yes, identify the ORW and its location: ***Phelps Brook Reservoir (PWS ID 11900000-01S), a Public Water Supply Watershed, is located between Structures (STRs) 27 to 33, located in Monroe, Massachusetts. The extent is shown on Pages 46 through 47 of the provided Environmental Resources Map in Appendix B.***

(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?

☒Yes

☐No

if yes, identify the water body and pollutant(s) causing the impairment: ***Hoosic River: Alteration in stream-side or littoral vegetative covers; flow regime modification*.**

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission?

☐Yes

☒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:

The proposed project will not result in any new point source discharges. As greater than one acre of ground disturbance is anticipated, authorization under the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) will be required. A site-specific Stormwater Pollution Prevention Plan (SWPPP) will be developed, maintained on-site, and amended as necessary as per the CGP and the National Grid ROW Access, Maintenance and Construction Best Management Practices for New England (EG-303NE).

Per the Recommended Final Decision issued July 29, 2016, in the Matter of Berkshire Community College Docket No. WET-2015-023 from the MassDEP Office of Appeals and Dispute Resolution, it was ruled that 310 CMR 10.05(6)(k) through (q) do not apply to a project that does not propose a "point source" or "stormwater discharge" within Resource Areas or their Buffer Zones."

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
☐No

if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification): *RTN 1-9242 (2 Zylonite Station Road, Adams): According to the Permanent Solution Statement with No Conditions, dated April 2017 and prepared by Tighe & Bond, RTN 1-19242 is associated with detections of arsenic in groundwater and soil at the Adams Substation at 2 Zylonite Station Road in Adams. Arsenic at the site is presumed to be associated with historic fill materials used to raise the grade of the site prior to its development as a substation in the 1930s. Excavation and dewatering activities to address the impacts were conducted under a Release Abatement Measure (RAM). A level of No Significant Risk of Harm to human health, welfare, safety, and the environment exists at this site due to the remedial actions taken.*

No other RTNs were identified within the limits of work.

Is there an Activity and Use Limitation (AUL) on any portion of the project site?
☐Yes
☒No
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
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 proposed project involves the removal and replacement of existing structures within the Line E131 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 ROW to an approved off-site facility. Such materials will be handled in compliance with applicable laws and regulations and in accordance with NEP's policies and procedures.

Will your project disturb asbestos containing materials?
☐Yes
☒No
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:

The Proponent and their contractors will comply with MassDEP's Diesel Retrofit Program and vehicle idling will be limited to the extent practicable.

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
☒No

If yes, specify name of river and designation:

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

if yes, specify name of river and designation: _____

if yes, will the project 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. **Refer to the Table of Contents.**
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. **Refer to 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. **Refer to the Environmental Resource Map in Appendix B.**
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. **Refer to Refer to the Environmental Resource Map in Appendix B.**
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). **Refer to the Environmental Resource Map in Appendix B.**
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2). **Refer to the Circulation and Distribution List in Appendix I.**
7. List of municipal and federal permits and reviews required by the project, as applicable. **Refer to Section 1.4 of the attached Project Narrative.**
8. Printout of output report from RMAT Climate Resilience Design Standards Tool, available here. **Provided in Appendix H.**
9. Printout from the EEA EJ Maps Viewer showing the project location relative to Environmental Justice (EJ) Populations located in whole or in part within a 1-mile and 5 mile radius of the project site. **Refer to Figures 1 and 2 in Appendix E.**

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
☐No

- **Land 301 CMR 11.03(1)(b)(1)** - Direct alteration of 25 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices.
- **301 CMR 11.03(1)(a)(1) – Land:** Direct alteration of 50 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices.

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	0	0	0
Internal roadways	9.5	+45	54.5
Parking and other paved areas	0	0	0
Other altered areas	6	+47	53[1]
Undeveloped areas	379.5	-4.5[2]	365
Total: Project Site Acreage	463[3]	0	463[2]

The values presented represent conditions within the Limits of Work.

[1]Represents work pads and associated Limits of Disturbance.

[2]Represents the acreage of disturbance associated with the construction of new access roads located beyond the ROW limits.

[3]Of this, approximately 9 acres are located beyond the existing ROW easement.

B. Has any part of the project site been in active agricultural use in the last five years?

☒Yes
☐No

if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use? **0 acres. Agricultural lands are located in the vicinity of the Adams Substation and STRs 178 – 170 (both located in Adams, MA). The existing easement passes through these areas. No conversion to nonagricultural use of these lands is proposed.**

C. Is any part of the project site currently or proposed to be in active forestry use?

☐Yes
☒No

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

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

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

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

if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan:

The proposed ACR Project spans four municipalities in the Commonwealth of Massachusetts: Adams, North Adams, Florida, and Monroe. The towns of Adams, Florida, and Monroe do not have municipal comprehensive land use plans. The municipal comprehensive land use plan established by the City of North Adams is described in greater detail below.

City of North Adams:
Title: **North Adams Comprehensive Plan - North Adams Vision 2030**
Date: **2014 - 2030**

B. Describe the project's consistency with that plan with regard to:

1) economic development

North Adams Vision 2030 includes general economic goals and policies as well as economic goals related to specific economic activity areas. These areas are the downtown area, the Route 2 corridor west of downtown, and the Route 8 corridor south of downtown. The portion of Line E131 which extends through the municipal bounds of North Adams is not located within these designated areas.

The comprehensive plan establishes five general goals for the City of North Adams:

1. *Effectively rebrand and market the city*
2. *Leverage the city's many assets into economic catalysts*
3. *Work effectively with business, the community, and investors to achieve a continual cycle of investment and improvement in the city*
4. *Encourage job growth and business relocation in the city*
5. *Grow a skilled workforce to meet economic needs now and in the future*

These goals share a common focus on growth of business, industry, and tourism in the City of North Adams. With this growth will come additional demands for power; this project will provide the City of North Adams and its businesses, employees, tourists, and residents with reliable and improved supply of power, which will be a benefit to all users of the system. In addition, the project will allow for reduced downtimes during storm responses.

2) adequacy of infrastructure

North Adams Vision 2030 discusses infrastructure improvements such as multi-modal mobility options, reduction of dependence on energy from non-renewable sources, and addressing their backlog of capital investment projects. Although the proposed utility line refurbishment project is not directly related to these goals, the project will address the aging and outdated infrastructure which comprises the existing Line E131. In addition, some power is generated via hydroelectric means along the Deerfield River at the Bear Swamp Hydroelectric Power Station, located east of North Adams.

While the City of North Adams works to seek out future renewable energy sources, current business, industry, and residents still rely upon traditional sources of electricity. As noted above, the proposed refurbishment of Line E131 will provide a reliable and improved source of power to these users. Additionally, the proposed access road improvements will allow for future maintenance activities and emergency access. The proposed project aims to protect utility infrastructure that may be used to serve future development projects within North Adams. New development would not be possible without the availability of reliable utility infrastructure. As such, the proposed project is consistent with the plan's goals for infrastructure.

3) open space impacts

The Open Space and Recreation portion of the North Adams Vision 2030 describes goals, policies, and actions that can maximize economic and health benefits from recreation facilities and parks in downtown and neighborhood areas. The proposed project is not located in the vicinity of these areas; therefore, it will not result in impacts to open space within the City of North Adams.

4) compatibility with adjacent land uses

The proposed project will be located on an existing utility easement established and held for transmission lines and their associated access roads. Portions of proposed new access roads will extend beyond the ROW boundaries, and into the DCR-owned Savoy Mountain State Forest. In these areas, the proposed roads will be constructed such that they may be utilized by other users beyond NEP, such as recreationalists or DCR staff, with access authorization at the discretion of DCR. Work will be sited away from wetland resource areas to the extent feasible, though direct impacts to some wetland resource areas are unavoidable due to the existing locations of structures and access roads. Wetlands will be protected by use of temporary construction matting and implementation of stormwater management and BMPs designed to control runoff and mitigate impacts of stormwater to the adjacent landscape.

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)

The municipalities of Adams, North Adams, and Florida are within the bounds of the Berkshire Regional Planning Commission. Monroe, Massachusetts is located within the Franklin Regional Council of Governments.

RPA: **Berkshire Regional Planning Commission (BRPC)**
Title: **Sustainable Berkshires: Community Strategies for a Sustainable Future**
Date: **March 20, 2014**

RPA: **Franklin Regional Council of Governments (FRCOG)**
Title: **Sustainable Franklin County**
Date: **June 2013**

D. Describe the project's consistency with that plan with regard to:

1) economic development

Economic development strategies within the BRPC plan are primarily related to promoting education, attracting new workforce talent, supporting small business to drive economic growth opportunities, and promoting green business practices. Sustainable Franklin County lists three priority economic development goals: redevelop vacant or underutilized industrial and commercial buildings or sites, support sustainable economic development in the region, and promote and invest in specific business sectors including manufacturing, agriculture, and clean energy.

As discussed previously, utility infrastructure is a necessity to support new or re-development projects, including small businesses. The proposed project aims to protect utility infrastructure that may be used to serve future development projects within these municipalities. As the proposed project seeks to provide an improved and reliable source of power to local users, the project is consistent with the economic development plan goals established by the BRPC and FRCOG.

2) adequacy of infrastructure

Sustainable Franklin County states, "A strong [electricity] delivery system is vital to our region's safety, security and economic prosperity. Increasingly complex technology and high-performance

products are driving energy demands to new levels and placing an increasing strain on the local electric delivery infrastructure." Sustainable Berkshires does not explicitly include infrastructure related to electricity; rather, it focuses primarily on the safety and quality of roads, water, schools, and emergency services.

Refurbishing Line E131 will involve replacement of outdated wooden structures with more robust steel structures, construction of and improvements to access roads, installation of concrete caisson foundations, and replacement of insulators, OPGW, and hardware. As previously discussed, these upgrades will allow for a reliable source of power, which can be adequately maintained and accessed as needed by the proposed improved access roads.

3) open space impacts

In Sustainable Franklin County and Sustainable Berkshires, goals associated with open space are related primarily to housing development within dispersed areas. The proposed utility project will not impact open space as it relates to residential development. New and/or improved access roads situated within undeveloped areas are necessary for maintenance and emergency activities along the extent of the line. Therefore, these goals are not applicable to the proposed project.

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
☒No

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **rare species or habitat**?

☒Yes
☐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
☐No

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
☐No

If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)?

☒Yes
☐No

if yes, have you received a determination as to whether the project will result in the "take" of a rare species?

☐Yes
☒No

if yes, attach the letter of determination to this submission.

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
☐No

if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

NEP is coordinating with NHESP to undertake the proposed project. Based on correspondence with NHESP, the anticipated pathway for this project will involve the submittal of a MESA Project Checklist, resulting in an anticipated Conservation & Management Permit (CMP) with limited conditions to move forward with the proposed work.

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

Foxtail sedge (Carex alopecoidea); hairy-fruited sedge (Carex trichocarpa); longnose sucker (Catostomus catostomus); large-leaved goldenrod (Solidago macrophylla); woodland millet (Milium effusum); Bailey's sedge (Carex baileyi); ski-tipped emerald (Somatochlora elongata)

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act?

☒Yes
☐No

Botanical surveys were conducted for state-listed plant species along the Line E131 ROW in 2017, 2020, 2021 and 2022 by an NHESP-approved botanist.

5. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project?

☐Yes
☒No

Notices of Intent (NOIs) will be filed with all four municipalities and MassDEP. NEP anticipates that these NOIs will be filed circa Fall 2022. Where applicable, NOIs will be sent concurrently to NHESP at the time of their filing.

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

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
☐No

if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

Based on species data provided in the NHESP Operations and Maintenance Plan (OMP; NHESP File No. 20-39684, dated April 6, 2022) data sharing agreement, experience from prior projects in the vicinity of the Line E131 ROW, previous botanical surveys, and a prior CMP for the J10 Reconductoring Project (NHESP #18-37510/CMP #018-325.DFW), sufficient data was available to initiate pre-application discussions with NHESP. Refer to Section 5.3 of the attached Project Narrative for additional details.

As noted above, NEP is coordinating with NHESP to obtain coverage under a CMP with limited conditions to conduct the proposed project. This process will likely involve the submittal of a MESA Project Checklist followed by the submittal of a CMP. At this time, a formal CMP application has not yet been developed, however, potential minimizations and mitigation measures may include: construction oversight provided by a qualified Environmental Monitor, placement of temporary construction matting within rare species habitat, and additional botanical surveys post-construction, at the discretion of NHESP.

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))?

☒Yes
☐No

if yes, specify, in quantitative terms:

Summary of Construction-Period Impacts to Wetland Resource Areas

Resource Area	**Impacts[1]**		**Location**	**Activity**
	Temporary	**Permanent**		
Bank	0	64 lf	Intermittent stream between STRs 165 and 166	Culvert installation
BVW	617,322 sf	700 sf	Temporary impacts are sitewide. Permanent impacts are located at STRs 24, 43, 60, 79A, 80, 119, 145, 150, 151 and 172	Work pad and laydown area construction (temp); Placement of gravel apron in BVW, access road construction, transition to concrete caissons bases and direct embed of STRs within wetlands (perm)
LUWW	0	32 sf	Intermittent stream between STRs 165-166	Culvert installation
BLSF	146 sf	0 sf	STR 180 work pad construction matting	Access road construction (temp)
Riverfront Area	74,451	102,971 sf	Sitewide	Work pad construction (temp/perm)[2] Access road construction (perm)

[1] Note that impacts located within the limits of Riverfront Area overlap with impacts to BLSF, BVW, and the 100-foot Buffer Zone. Therefore, the total impacts to the Project Site are not equal to the sum of alterations.

[2] Work pads will consist of temporary construction matting within BVW and BLSF and will consist of gravel elsewhere. Where BVW and BLSF overlap with Riverfront Area, these impacts will be temporary; otherwise, work pad construction will be permanent.

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**?

☒Yes
☐No

if yes, specify which permit:

- *Orders of Conditions (Four total: Adams, North Adams, Florida, and Monroe Conservation Commissions) – local permits unless a Superseding Order of Conditions is issued*
- *Individual Section 401 Water Quality Certificate (Massachusetts Department of Environmental Protection (MassDEP)*

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)?

☒Yes
☐No

if yes, has a Notice of Intent been filed?

☐Yes
☒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
☒No

As discussed elsewhere in this EENF Form, NOIs will be filed with their respective Conservation Commissions, MassDEP, and NHESP (where applicable) circa Summer 2023. The Project qualifies for consideration as a Limited Project per 310 CMR 10.53(3)(d).

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Refer to the summary table above and Section 5.2 of the Project Narrative for details.

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:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	NA	NA
Designated Port Areas	NA	NA
Coastal Beaches	NA	NA
Coastal Dunes	NA	NA
Barrier Beaches	NA	NA
Coastal Banks	NA	NA
Rocky Intertidal Shores	NA	NA
Salt Marshes	NA	NA
Land Under Salt Ponds	NA	NA
Land Containing Shellfish	NA	NA
Fish Runs	NA	NA
Land Subject to Coastal Storm Flowage	NA	NA

Inland Wetlands		
Bank (lf)	64 lf	Perm
Bordering Vegetated Wetlands	617,322 sf / 700 sf	Temp/Perm
Isolated Vegetated Wetlands	0	NA
Land under Water	32 sf	Perm
Isolated Land Subject to Flooding	0	NA
Bordering Land Subject to Flooding	146 sf/ 0 sf	Temp/Perm

Riverfront Area 74,451 sf / 102,971 sf Temp/Perm

D. Is any part of the project:

1. proposed as a **limited project**?
   ☒Yes 310 CMR 10.53(3)(d)
   ☐No
   if yes, what is the area (in sf)? *This area comprises the existing ROW in the Commonwealth of Massachusetts (19,744,909 sf / 454 acres)*

2. the construction or alteration of a **dam**?
   ☐Yes
   ☒No
   if yes, describe:

3. fill or structure in a **velocity zone** or **regulatory floodway**?
   ☐Yes
   ☒No

4. dredging or disposal of dredged material?
   ☐Yes
   ☒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
   ☒No

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

7. located in buffer zones?
   ☒Yes
   ☐No
   if yes, how much (in sf) *158,377sf / 3.6 ac (temporary); 950,564 sf / 21.82 ac (permanent)*

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw?
   ☒Yes
   ☐No

2. alter any federally-protected wetlands not regulated under state law?
   ☐Yes
   ☒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?
☒Yes
☐No

if yes, is there a current Chapter 91 License or Permit affecting the project site?
☒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: *MassDEP License No. 6274 (1974) was issued to NEPOWER CO for the Line E131 span of the Hoosic River.*

B. Does the project require a new or modified license or permit under M.G.L.c.91?
☐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? Current ___ Change ___ Total ___

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

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site: **0 sf / N/A**
Area of filled tidelands covered by buildings: **0 sf / N/A**
For portions of site on filled tidelands, list ground floor uses and area of each use: **0 sf / N/A**

Does the project include new non-water-dependent uses located over flowed tidelands?
☐Yes
☒No

Height of building on filled tidelands: **N/A**

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
☒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
☒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
☒No

G. Does the project include dredging?
☐Yes
☒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

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone?
☐Yes
☒No

if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan?
☐Yes
☒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
☒No

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**?

☐Yes
☒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	_____	_____	_____

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
☒No

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**?

☐Yes
☒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?

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

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**?

☒Yes
☐No

if yes, specify which permit: **The proposed project may require a DOT permit for the span over Route 2 in Florida (see Page 23 of the Environmental Resources Map, in Appendix B).**

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	0	0	0
Number of vehicle trips per day	0	0	0
ITE Land Use Code(s):	N/A	N/A	N/A

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

Roadway	Existing	Change	Total
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement: **The Project will not permanently impact state-controlled roadways. Traffic controls will be implemented while work is being conducted across State Route 2.**

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?
Not applicable – the Project Site is a utility transmission line. Although portions of the Line E131 easement include sections of recreational trails, no formal pedestrian, bicycle facilities, or other access services are available to the public.

E. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site?

☐Yes
☒No

if yes, describe if and how the project will participate in the TMA:

F. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities?

☒Yes
☐No

if yes, generally describe:
The Line E131 easement crosses the Hoosic Tunnel, however, no impacts resulting from the proposed Project are anticipated.

G. 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)?

Not applicable – there are no airports in the vicinity of the Line E131 ROW.

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 Line E131 ROW does not include formal traffic, transit, pedestrian, or bicycle transportation facilities or services. The proposed Project is not anticipated to have long-term effects on traffic patterns at roadways which provide access to the Line E131 ROW. Traffic controls will be implemented as necessary during construction-period activities. These controls are temporary and will only impact roads which must be spanned by the utility line.

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

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**?

☒Yes
☐No

if yes, specify which permit: **The proposed project may require a DOT permit for the span over Route 2 in Florida (see Page 23 of the Environmental Resources Map, in Appendix B).**

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:

There are no formal transportation facilities in the immediate vicinity of the Project Site. Portions of the Line E131 ROW are accessible via existing gravel access roads, however, much of the ROW lacks developed access. The Project includes the construction of gravel access roads within and along the ROW to facilitate the proposed refurbishment work and to allow for future access. Vehicular access to existing and proposed access roads is limited to authorized personnel (e.g., maintenance, emergency response), with the exception of those portions of access roads which intersect established snowmobile trails in DCR-owned lands.

NEP does not propose to alter public roadways. Short-term impacts to public transportation facilities are limited to construction-period traffic controls. These controls will be implemented as needed and will only affect those roadways which the utility line spans.

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? 0
2. Cutting of living public shade trees (number)? 0
3. Elimination of stone wall (in linear feet)? 0

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:

Not applicable – the proposed Project does not include alterations to traffic patterns, roadways, or pedestrian or bicycle transportation facilities or services. The TIP, State Bicycle Plan, and State Pedestrian Plan do not apply to the proposed internal access road developments.

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

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**?

☐ Yes
☒ No

if yes, specify which permit:

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)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

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)?

C. 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

if yes, please describe:

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

III. Consistency

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

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

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**?

☐Yes
☒No

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, Attachment 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

if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**?

☐Yes
☒No

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?

☐Ye
☐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
☐No

if yes, attach correspondence.

Copies of correspondence with the MHC are provided in Appendix G. Refer to Section 5.5 of the Project Narrative for additional details.

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
☐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
☐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 Site. NEP will continue to consult with the MHC and Native American Tribes to avoid, minimize, or mitigate any adverse effects the Project may have on historic and archaeological resources that may be affected by the project Additional information regarding surveys to identify and evaluate historic and archaeological resources for the Project can be found below and in Section 5.5 of the attached Project Narrative.*

D. If you answered "No" to <u>all parts of both</u> questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to <u>any part of either</u> 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 is working with in consultation with MHC, USACE and Native American Tribes about historic and archaeological resources within and within the vicinity of the Project Site. Information regarding surveys to identify, evaluate and mitigate potential impacts to historic and archaeological

resources is available in Section 5.5 of the Project Narrative.

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 working with MHC, USACE and Native American Tribes under applicable requirements of federal and state law to identify, and where necessary address impacts to, historic and archaeological resources eligible for listing in the National Register of Historic Places.

CLIMATE CHANGE ADAPTATION AND RESILIENCY SECTION

This section of the Environmental Notification Form (ENF) solicits information and disclosures related to climate change adaptation and resiliency, in accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"), effective October 1, 2021. The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) and incorporates the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency steering committee responsible for implementation, monitoring, and maintenance of the SHMCAP, including the "Climate Resilience Design Standards and Guidelines" project. The RMAT team recently released the RMAT Climate Resilience Design Standards Tool, which is available here.

The MEPA Interim Protocol is intended to gather project-level data in a standardized manner that will both inform the MEPA review process and assist the RMAT team in evaluating the accuracy and effectiveness of the RMAT Climate Resilience Design Standards Tool. Once this testing process is completed, the MEPA Office anticipates developing a formal Climate Change Adaptation and Resiliency Policy through a public stakeholder process. Questions about the RMAT Climate Resilience Design Standards Tool can be directed to rmat@mass.gov.

All Proponents must complete the following section, referencing as appropriate the results of the output report generated by the RMAT Climate Resilience Design Standards Tool and attached to the ENF. In completing this section, Proponents are encouraged, but not required at this time, to utilize the recommended design standards and associated Tier 1/2/3 methodologies outlined in the RMAT Climate Resilience Design Standards Tool to analyze the project design. However, Proponents are requested to respond to a respond to a user feedback survey on the RMAT website or to provide feedback to rmat@mass.gov, which will be used by the RMAT team to further refine the tool. Proponents are also encouraged to consult general guidance and best practices as described in the RMAT Climate Resilience Design Guidelines.

Climate Change Adaptation and Resiliency Strategies

I. Has the project taken measures to adapt to climate change for all of the climate parameters analyzed in the RMAT Climate Resilience Design Standards Tool (sea level rise/storm surge, extreme precipitation (urban or riverine flooding), extreme heat)?
   ☒Yes
   ☐No

Note: Climate adaptation and resiliency strategies include actions that seek to reduce vulnerability to anticipated climate risks and improve resiliency for future climate conditions. Examples of climate adaptation and resiliency strategies include flood barriers, increased stormwater infiltration, living shorelines, elevated infrastructure, increased tree canopy, etc. Projects should address any planning priorities identified by the affected municipality through the Municipal Vulnerability Preparedness (MVP) program or other planning efforts, and should consider a flexible adaptive pathways approach, an adaptation best practice that encourages design strategies that adapt over time to respond to changing climate conditions. General guidance and best practices for designing for climate risk are described in the RMAT Climate Resilience Design Guidelines*.*

A. If no, explain why.

B. If yes, describe the measures the project will take, including identifying the planning horizon and climate data used in designing project components. If applicable, specify the return period and design storm used (e.g., 100-year, 24-hour storm).

NEP continues to consider climate change and long-term infrastructure resiliency an important goal in its project planning. For additional details regarding these strategies refer to Section 6 of the attached Project Narrative.

D. Is the project contributing to regional adaptation strategies?
   ☒Yes
   ☐No

If yes, describe.

Sustainable Berkshires: Community Strategies for a Sustainable Future includes goals, policies, and strategies related to climate change mitigation and adaptation strategies within the Berkshire region. Strategy B of Policy CE3.1 (Promote Available Efficiency Programs to Increase Use) seeks to maximize the efficiency of existing programs and services. Due to the age of existing infrastructure, Line E131 is not operating at a capacity that is commensurate with modern NEP standards. A primary goal of this project is to improve the efficiency of power distribution by the line through proposed upgrades and transmission structure replacement.

Climate adaptation goals listed in Sustainable Franklin County relate primarily to the reduction of energy consumption across all sectors, with specific strategies geared towards businesses, transportation, homeowners, and municipalities. No specific adaptation strategies are indicated for existing power supply utility infrastructure. However, Sustainable Franklin County does acknowledge that as more alternative energy projects are introduced to the market, grid capacity and aging infrastructure present challenges to the overall system. Additionally, the document notes that "Impacts from recent storms in the region have helped demonstrate the fragility of the electricity infrastructure and the need for utilities to shore up their emergency preparedness plan." As previously discussed, the refurbishment of Line E131 will bolster its capacity to withstand severe weather events, and the proposed permanent access roads will allow for more timely responses to storm damages.

II. Has the Proponent considered alternative locations for the project in light of climate change risks?

☒Yes
☐No

A. If no, explain why.

B. If yes, describe alternatives considered.

NEP has, to the extent practicable, selected access road locations based upon longevity, constructability, feasibility, safety, and known locations of sensitive environmental areas. It is prudent that these new access roads are sustainable in the long-term, as they will be utilized for maintenance and emergency work. As such, climate change risks such as increased frequency of extreme weather events, precipitation totals, and flood impacts were considered as part of the planning process. Additional details are provided in Section 6 of the Project Narrative.

II. Is the project located in Land Subject to Coastal Storm Flowage (LSCSF) or Bordering Land Subject to Flooding (BLSF) as defined in the Wetlands Protection Act?

☒Yes
☐No

If yes, describe how/whether proposed changes to the site's topography (including the addition of fill) will result in changes to floodwater flow paths and/or velocities that could impact adjacent properties or the functioning of the floodplain. General guidance on providing this analysis can be found in the CZM/MassDEP Coastal Wetlands Manual, available here.

Portions of the Line E131 ROW are situated within wetlands with the potential for flooding. As such, work within these areas is unavoidable. Access to transmission structures through these resource areas will be accomplished through the use of temporary construction matting, which will be removed at the completion of work. No permanent access roads or impacts are proposed within Bordering Land Subject to Flooding (BLSF). No substantial filling (i.e., addition of fill such that floodwater pathways or velocities will be altered) is proposed.

ENVIRONMENTAL JUSTICE SECTION

I. Identifying Characteristics of EJ Populations

A. If an Environmental Justice (EJ) population has been identified as located in whole or in part within 5 miles of the project site, describe the characteristics of each EJ populations as identified in the EJ Maps Viewer (i.e., the census block group identification number and EJ characteristics of "Minority," "Minority and Income," etc.). Provide a breakdown of those EJ populations within 1 mile of the project site, and those within 5 miles of the site.

According to the EJ Maps Viewer, the Line E131 ROW intersects two EJ populations:

- *Income (Block Group 1, Census Tract 9214, North Adams, Berkshire County)*
- *Income (Block Group 1, Census Tract 401, Monroe, Berkshire County)*

The following EJ populations are located within one mile (i.e., the Designated Geographic Area) of the Line E131 ROW:

- *Income (Block Group 2, Census Tract 9214, North Adams, Berkshire County)*
- *Income (Block Group 1, Census Tract 401, Rowe, Franklin County)*
- *Income (Block Group 4, Census Tract 9222, Adams, Berkshire County)*
- *Income (Block Group 3, Census Tract 9222, Adams, Berkshire County)*
- *Income (Block Group 2, Census Tract 9313, Savoy, Berkshire County)*

The project does not exceed MEPA review thresholds related to air quality (established at 301 CMR 11.03(8)(a)-(b)) and will not generate 150 or more average trips per day of diesel vehicle traffic over a duration of 1 year or more. As such, impacts to EJ populations beyond the 1-mile radius of the Project Site are not anticipated. Refer to Section 4.1 for a comprehensive list of EJ populations within the DGA and within 5 miles from the Project Site.

B. Identify all languages identified in the "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer as spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well." The languages should be identified for each census tract located in whole or in part within 1 mile and 5 miles of the project site, regardless of whether such census tract contains any designated EJ populations.

According to the EJ Maps Viewer, the Project Site is not mapped within an area which meets this language criteria.

C. If the list of languages identified under Section I.B. has been modified with approval of the EEA EJ Director, provide a list of approved languages that the project will use to provide public involvement opportunities during the course of MEPA review. If the list has been expanded by the Proponent (without input from the EEA EJ Director), provide a list of the additional languages that will be used to provide public involvement opportunities during the course of MEPA review as required by Part II of the MEPA Public Involvement Protocol for Environmental Justice Populations ("MEPA EJ Public Involvement Protocol"). If the project is exempt from Part II of the protocol, please specify.

The list of languages identified under Section I.B. has not been modified or expanded. The project does not meet the exemption criteria set forth under Part II of the MEPA EJ Public Involvement Protocol.

II. Potential Effects on EJ Populations

A. If an EJ population has been identified using the EJ Maps Viewer within 1 mile of the project site, describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

The proposed Project will not adversely impact EJ populations. Rather, the proposed improvements to infrastructure will serve the nearby EJ populations and will therefore provide a net benefit. In addition, the proposed Project is not anticipated to impact air quality, and the project does not exceed ENF or mandatory EIR thresholds for air, solid and hazardous waste, wastewater, or sewage sludge treatment and disposal. Refer to Sections 4.12 and 4.13 for further discussion of potential effects of the Project on EJ populations.

B. If an EJ population has been identified using the EJ Maps Viewer within 5 miles of the project site, will the project: (i) meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b):
☐Yes
☒No

or (ii) generate 150 or more new average daily trips (adt) of diesel vehicle traffic, excluding public transit trips, over a duration of 1 year or more.
☐Yes
☒No

C. If you answered "Yes" to either question in Section II.B., describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

III. Public Involvement Activities

A. Provide a description of activities conducted prior to filing to promote public involvement by EJ populations, in accordance with Part II of the MEPA EJ Public Involvement Protocol. In particular:

1. If advance notification was provided under Part II.A., attach a copy of the Environmental Justice Screening Form and provide list of CBOs/tribes contacted (with dates). Copies of email correspondence can be attached in lieu of a separate list.

   These documents are provided in Appendix E. The Environmental Justice Screening Form was sent via electronic mail on June 21, 2022, by Tighe & Bond to all community-based organizations (CBOs) and tribes listed on the EJ Reference List, provided by the MEPA Office on March 30, 2022, as well as abutters to the E131 line within the designated EJ Populations.

   Due to unforeseen delays, filing of the EENF was deferred for greater than 90 days following circulation of the Environmental Justice Screening Form. Per 301 CMR 11.05 (4)(b), advance notification must be provided no earlier than 90 Days prior to filing. In accordance with 301 CMR 11.05(4) and Section II.A of the Public Involvement Protocol NEP recirculated the Environmental Justice Screening Form on December 13, 2022 to fulfill the advance notification requirements for this filing.

2. State how CBOs and tribes were informed of ways to request a community meeting, and if any meeting was requested. If public meetings were held, describe any issues of concern that were raised at such meetings, and any steps taken (including modifications to the project design) to address such concerns.

   As noted above, CBOs and tribes were notified of the project via email on June 21, 2022 and were notified again December 13th 2022. The Environmental Justice Screening Form included the website address to access project details online, contact information for a point-person on this project, and information pertaining to the virtual public meetings hosted by NEP.

   NEP hosted a virtual public hearing on August 10, 2022, information pertaining to this hearing was advertised in the Berkshire Eagle and The Recorder and was also provided on the EJ Screening Form, no participants attended the hearing.

3. If the project is exempt from Part II of the protocol, please specify.

Not applicable – the project is not exempt from Part II of the protocol.

B. Provide below (or attach) a distribution list (if different from the list in Section III.A. above) of CBOs and tribes, or other individuals or entities the Proponent intends to maintain for the notice of the MEPA Site Visit and circulation of other materials and notices during the course of MEPA review.

The EJ Reference List is provided in Appendix E. Further, NEP has established physical repositories for hard copies of project documents at public libraries within each municipality.

C. Describe (or submit as a separate document) the Proponent's plan to maintain the same level of community engagement throughout the MEPA review process, as conducted prior to filing.

As noted above, NEP has developed a public website to host information related to the project scope, updates on the MEPA review process, and an interactive project mapping tool. In addition, NEP intends to update the project repositories with hard copies of pertinent project information as they become available (e.g., copies of the SEIR, MEPA Certificate, etc).

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):

Municipality: Adams	Name: **Berkshire Eagle**	Date: **February 1 2023,**
Municipality: North Adams	Name: **Berkshire Eagle**	Date: **February 1 2023,**
Municipality: Florida	Name: **The Recorder**	Date: **February 1 2023,**
Municipality: Monroe	Name: **The Recorder**	Date **February 1 2023,**

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

SIGNATURES:

Signature of Responsible Officer	Signature of person preparing EENF
1/30/2023 Date	1/30/2023 Date
Michael Tyrrell Name	**Katherine L. Wilkins** Name
National Grid Firm/Agency	**Tighe & Bond, Inc.** Firm/Agency
170 Data Drive Street	**53 Southampton Road** Street
Waltham, MA 02451 Municipality/State/Zip	**Westfield, MA 01085** Municipality/State/Zip
(781) 907-4868 Phone	**(413) 875-1305** Phone

Tighe&Bond

SECTION 1

Section 1
Introduction

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, and Monroe, Massachusetts

Latitude, Longitude: 42.65417, -73.10516[1]

42.75788, -72.93021[2]

Project Proponent: New England Power Company (NEP)

Tighe & Bond has prepared this Expanded Environmental Notification Form (EENF) on behalf of New England Power Company (NEP) for the proposed E131 Asset Condition Refurbishment (ACR) Project (the Project). The existing E131 transmission line (E131 line) is an existing 115 kilovolt (kV) overhead electrical utility that extends from the Harriman #8 Substation in Readsboro, Vermont to the Adams #21 Substation in Adams, Massachusetts, crossing the municipalities of Monroe, Florida, North Adams, and Adams (as shown on the USGS site location maps in Appendix A). The overall Project length is approximately 13 miles; of that, approximately 11.4 miles are within the Commonwealth of Massachusetts. The proposed Project will involve the refurbishment of the existing electrical utility infrastructure, the improvement of existing/historic access roads, and the construction of new access roads where none presently exist. The proposed work will improve the resiliency and reliability of the infrastructure while avoiding, minimizing and mitigating damage to the environment to the maximum extent practicable.

The Project exceeds MEPA impact thresholds requiring an ENF and a mandatory Environmental Impact Report (EIR) (as described below in Section 1.3). In accordance with 301 CMR 11.06(8), NEP is submitting this EENF and requesting that the Secretary allow a Single EIR.

1.1 Project Site

The existing E131 line easement ranges between 200 and 400 feet wide, with the existing line at the approximate center of the easement. For three (3) miles the E131 line is the only line within the easement. In this segment, the actively maintained, cleared width of the right-of-way (ROW) is 100 feet. Where the E131 and J10 lines are collocated within the same easement the current, actively maintained, cleared width of the ROW is 150 feet. The maintained ROW includes uplands, wetlands, perennial and intermittent streams, improved access routes, and improved gravel access roads. The E131 line passes through approximately six miles of Massachusetts Department of Conservation & Recreation (DCR)-owned land in the Monroe, Florida, and Savoy Mountain State Forests. The E131 line traverses through mountainous terrain with steep slopes, rocky outcrops, cliffs, and large boulders. Although it passes through some rural residential areas in Florida and Monroe, the ROW and surrounding areas are generally densely forested. The proposed

[1] Location of the Adams Substation in Adams, Massachusetts.
[2] Location of the Harriman Substation in Readsboro, Vermont.

Project limit of work comprises approximately 463 acres and includes the existing ROW and those areas in which proposed access roads extend off-ROW.

1.2 Project Summary

1.2.1 Project Need and Benefits

Project Need: The E131 line was constructed in 1925. The existing wooden H-frame transmission structures are from its original construction. In 1971, upgrades including reconductoring and shield wire installation were conducted throughout the line. Select replacement structures, replacement and upgraded insulators, and improved grounding were installed in 2004. Currently, the line is comprised primarily of wooden H-frame structures.

Ground line asset conditions inspections, aerial comprehensive inspections, and various other inspections of the E131 line over the past several years have identified deteriorated wood pole assets (woodpecker damage, thin/rotting pole tops, loss of cross-sectional area of the poles, deterioration of wood spar arms, etc.). The loadbreak switches on the Line E131 structures were also noted as poorly operational and in need of replacement.

In addition to the refurbishment work, the existing circuits need to be adapted to provide high speed communications between substations. As such, fiber optic ground wire (OPGW) is proposed to replace the existing shield wire.

Based on the age of the infrastructure, a full refurbishment of the line is proposed to bring the utility into compliance with modern standards. The proposed Project in Massachusetts will include the following:

- Replacement of 151 H frame structures with new steel pole H-frame structures
- Replacement of 6 triple pole structures
- Replacement of three (3) existing steel lattice structures with new steel structures
- Removal of four (4) existing H-frame structures and one (1) lattice structure
- Installation of approximately 24 structures requiring concrete caisson foundations at locations which require greater structural reinforcement
- Installation of micropile foundations at approximately one (1) structure location which requires greater structural reinforcement
- Installation of three (3) new switch gear structures
- Replacement of existing shield wire with OPGW
- Replacement of all insulators and hardware
- Replacement of conductor in four (4) sections for constructability purposes

Due to the age of the line, the complex terrain through which it traverses, and lack of recent broad-scale upgrades, access to and along the ROW is limited, and many portions of the line are currently inaccessible except by foot or utility terrain vehicles. Improvements to existing and the construction of new access routes are required to facilitate the Project. Given the mountainous topography over which the ROW extends, significant road improvements and construction of new roads will be warranted to provide

safe, reliable, and long-term access to structure locations and wire-pulling setups. Approximately five (5) miles of new, permanent access roads will be constructed as part of the proposed Project. The full extent of the Project is shown on the overview figures in Appendix A and in the Environmental Resource (ER) Maps in Appendix B. Photos typical of the Project area are available in Appendix C.

Project Benefits: A strong and reliable electrical transmission and distribution system is vital to the region's safety, security, and economic prosperity. Benefits of the Project includes the following:

- A strengthened transmission system in western New England that offers greater reliability and safety for customers;
- Continued compliance with federal and regional reliability standards and criteria;
- Continued reliable transfer of electricity between Massachusetts and Vermont for mutual benefit; and
- Development of an improved access route network that will facilitate future maintenance work, emergency access and storm response.

1.2.2 Proposed Work Overview

The Project includes various general maintenance and system improvement activities for 160 structures over approximately 11.4 circuit miles. New construction is limited to facilitating access to complete the work and allow for future maintenance. Replacement work will involve the removal of existing wood 3-pole structures, wooden H-frame structures and steel lattice structures and the installation of new steel H-frame, 3- pole and lattice structures within the E131 ROW. Three (3) switch structures will be installed at the junction of the E131 mainline and at the Bear Swamp Tap Line that extends from the E131 line through Florida, Massachusetts to the Bear Swamp Substation in Rowe, Massachusetts. Switch structures are H-frame utility poles that support transmission line switches. Switches allow the transmission line to be sectionalized between substation locations letting operators isolate and locate sections of transmission line when maintenance is needed. Five (5) structures are proposed to be removed (STRs 101, 144, 153, 168, and 180), four of which are located in or within proximity to wetland resource areas or are situated in steep, rocky terrain. Notably, STR 144 is currently situated within the approximate center of an emergent marsh (refer to Page 9 of the ER Maps in Appendix B). Maintenance and repair of these structures is challenging, and their removal facilitates avoidance of future impacts to these sensitive areas for maintenance and emergency repair. Structures scheduled to be removed have been evaluated based on their location along the line and overall structure age and or condition. The heights and slight location changes of adjacent structures ahead or behind will accommodate for the structure removals.

New OPGW will be installed from the Harriman Substation to the Adams Substation, improving regional transmission reliability and electric service.

To facilitate access for the Project and future maintenance and repair work, the Project will include constructing improvements to existing access routes (where available), constructing new access roads where none presently exist, and installing temporary construction matting where access through wetlands and other sensitive resource areas cannot be avoided. As the terrain is rocky and uneven, removal of boulders may be required to ensure safe mat placement and construction. In an effort to reduce road-

building impacts, NEP will utilize established access routes from the adjacent J10 Line and within the E131 ROW where feasible.

Where discernable historic access exists, improvements including minor grading, addition of new gravel, vegetation trimming, and repairs of rutting and potholes are proposed. To create access roads where none presently exist, tree and vegetation removal, grading, and placement of gravel will be required. Non-standard methods to construct level workspaces may include the use of various retaining wall types (such as driven sheet pile, soldier pile and lagging, gabion baskets, and large block gravity retaining walls). The angle of approach and angle of departure for the access roads have been designed to accommodate the transport of 60-foot steel utility pole segments along the access alignments on the bed of a standard (i.e., approximately 52 feet by 8 feet in size) construction flatbed trailer.

1.2.3 Anticipated Construction Schedule

NEP anticipates that construction activities will commence in the second quarter of 2024 and be completed in early 2027. The construction schedule was developed taking into consideration environmental factors, climatic conditions, constructability, and permit approval timelines.

Refer to Section 7 for a detailed description of the construction sequence.

1.2.4 Resource Area Impacts Overview

Resource area impacts have been minimized to the extent practicable. The Project has been designed to maximize Project goals of bolstering critical electrical infrastructure while balancing site constraints, such as the steep, rocky topography, and multiple utility structures within wetland resource areas and habitats of state-listed species. Best Management Practices (BMPs) have been included in the design to further minimize impacts and protect resource areas during construction.

The proposed Project will result in limited discrete, unavoidable temporary and permanent impacts to wetland resource areas including: Bank, Bordering Vegetated Wetlands (BVW), Land Under Water Bodies and Waterways (LUWW), Bordering Land Subject to Flooding (BLSF), Riverfront Area and the 100-foot Buffer Zone. Temporary impacts to BVW and BLSF are due to necessary construction access, staging, and installation of structure foundations where vegetated wetlands and flood prone wetlands currently exist, and replacement structures cannot be sited outside their limits. Permanent impacts are associated with the installation of two culverts; a new switch structure (Structure 79A); the installation of concrete caisson foundations for the replacement of Structures 43, 145, 150 and 169 and the replacement and relocation of Structures 24, 60, 80, 151 and 172 to BVW via direct embed methods. These areas were closely evaluated for alternatives but designs that relocated structures outside of BVW were deemed infeasible. Modifications to existing access, construction of new access, establishment of laydown areas, and installation of work pads will result in temporary and permanent impacts to Riverfront Area and 100-foot Buffer Zone.

Temporary access comprised of construction matting is proposed in sensitive areas including wetlands, BLSF stream spans, and rare species habitats. No new permanent access roads are proposed within BVW, BLSF or within Land Under Water Bodies and Waterways. However, due to the abundance of wetland resource areas along the ROW and the complexity of the terrain, the construction of new or improved access within

Riverfront Area and 100-foot Buffer Zone to BVW is unavoidable. These impacts have been minimized to the extent practicable, while balancing safety and constructability. Approximately 18 acres of construction matting is proposed within the resource areas noted.

Furthermore, it is anticipated that complete avoidance of impacts to three state-listed plant species will not be possible, and the Project will result in a "take" of species as discussed further in Section 5. Rare species reports and information are available in Appendix D of this EENF.

Construction period impacts to wetland resource areas are summarized in Table 1-1 below, and a detailed description and quantification of impacts to wetland resource areas is provided in Section 5 of this Narrative.

TABLE 1-1
Cumulative Construction Period Impact Summary: Wetland Resource Areas

Resource Area	Total Impact	Impact[1] Type	
		Temporary	Permanent
Bank	64 linear feet (lf)	0	64 lf
Bordering Vegetated Wetland (BVW)	617,982 sf	617,322 sf	660 sf
Land Under Water	32 sf	0	32 sf
Bordering Land Subject to Flooding (BLSF)	146 sf	146 sf	0 sf
Riverfront Area (RFA)	177,422 sf	74,451	102,971 sf

[1] Note that impacts located within the limits of Riverfront Area overlap with impacts to BLSF and BVW. Therefore, the total impacts to the Project Site are not equal to the sum of alterations shown in Table 1-1.

1.3 MEPA Jurisdiction

The Project is subject to environmental review pursuant to 301 CMR 11.01(2)(b) because the Project requires state agency action and meets or exceeds one or more review thresholds. The Project meets the following ENF review thresholds:

- Land: 301 CMR 11.03(1)(b)(1) - *Direct alteration of 25 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices*
- Wetlands, Waterways and Tidelands: 301 CMR 11.03(3)(b)(1)(d) - *Alteration of 5,000 or more sf of bordering or isolated vegetated wetlands*

- Wetlands, Waterways and Tidelands: 301 CMR 11.03(3)(b)(1)(f) - *Alteration of one half or more acres of any other wetlands*

The Project meets the following ENF review and Mandatory EIR thresholds:

- Land: 301 CMR 11.03(1)(a)(1) – *Direct alteration of 50 or more acres of land, unless the project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices*
- Wetlands, Waterways and Tidelands: 301 CMR 11.03(3)(a)(1)(a) - *Alteration of one or more acres of salt marsh or bordering vegetating wetlands*
- Environmental Justice: 301 CMR 11.06(7)(b) – *Any project that is located within a Designated Geographic Area around an Environmental Justice Population*

Notice of the Project will be published in the local papers serving the communities within which the project is located: the Berkshire Eagle (Adams, North Adams) and The Recorder (Florida, Monroe) as well as the *Environmental Monitor* on February 8th , 2023.

1.3.1 Request for Single EIR

NEP is filing this EENF in accordance with 301 CMR 11.05(8) and 11.06(8) to provide more extensive and detailed information as part of a request for approval for the submission of a Single EIR. As detailed above, the following ENF and Mandatory EIR thresholds are exceeded by the Project's impacts:

- Land: 301 CMR 11.03(1)(a)(1) – *Direct alteration of 50 or more acres of land, unless the project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices*
- Wetlands, Waterways and Tidelands: 301 CMR 11.03(3)(a)(1)(a) – *Alteration of one or more acres of salt marsh or bordering vegetating wetlands*
- Environmental Justice: 301 CMR 11.06(7)(b) – *Any project that is located within a Designated Geographic Area around an Environmental Justice Population*

NEP respectfully requests approval to prepare and submit a Single EIR addressing the Project's impacts. The Secretary may authorize a project proponent to file a Single EIR if an EENF:

- Describes and analyzes all aspects of the Project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope;
- Provides a detailed baseline in relation to which potential environmental and public health impacts and mitigation measures can be assessed;
- Demonstrates that the planning and design of the Project use all feasible means to avoid potential environmental impacts; and
- For any Project for which an EIR is required in accordance with 301 CMR 11.06(7)(b), describes and analyzes all aspects of the Project that may affect Environmental Justice Populations located in whole or in part within the Designated Geographic Area (DGA) around the Project; describes measures taken to provide meaningful opportunities for public involvement by Environmental Justice Populations prior to filing the expanded ENF, including any changes made to the Project to address concerns raised by or on behalf of Environmental Justice Populations; and provides a detailed baseline in relation to any existing unfair or

inequitable Environmental Burden and related public health consequences impacting Environmental Justice Populations in accordance with 301 CMR 11.07(6)(n)1.

This EENF meets those requirements:

- NEP conducted a comprehensive analysis of alternatives to evaluate feasibility and the best option to meet the Project goals of modernizing critical electrical infrastructure approaching one hundred years old and providing safe, reliable access for construction and future maintenance activities and emergency personnel. As part of this analysis, NEP carefully considered and balanced the environmental impacts, constructability, and electrical infrastructure safety requirements, with an explicit emphasis on minimizing unavoidable environmental impacts and cost and maximizing long-term Project benefits. Descriptions of the alternatives analysis are provided in Section 2 of this narrative. The preferred and proposed design is also described in Section 2. As such, all aspects of the Project and feasible alternatives have been extensively examined and considered.

- The existing Project site conditions, including descriptions of wetland resource areas and results of rare species surveys and archaeological reviews are provided in Section 3 of this EENF. The Project's existing environment has been carefully studied by several subject matter experts to understand detailed baseline conditions, the ways in which various alternatives (and the proposed Project) may impact resource areas, and potential mitigation options. Existing conditions are described in Section 3 and representative photographs of existing conditions are provided in Appendix C.

- Based on the careful alternatives analysis that NEP has conducted, and through additional planning and design, the Project will use all feasible means to avoid and minimize potential environmental impacts. The majority of impacts to BVW and sensitive resource areas are temporary in nature due to the use of BMPs including construction matting within wetland resource areas. In addition, coordination is ongoing with the Massachusetts Natural Heritage and Endangered Species Program (NHESP), the Massachusetts Department of Environmental Protection (MassDEP), and the Massachusetts DCR to avoid and minimize impacts to state-listed species and environmental resources. Detailed descriptions of avoidance and minimization efforts are provided in Section 7.

- Section 4 analyzes impacts of the Project on Environmental Justice populations; describes public involvement measures; and provides the baseline in relation to any existing unfair or inequitable Environmental Burden and related public health consequences impacting Environmental Justice Populations.

Because the Project has considered several alternatives in detail, thoroughly studied baseline conditions, avoided and minimized environmental impacts through Project design and met the requirements for EJ population public involvement and impact analysis, NEP requests that the Secretary approve the issuance of a Single EIR for the Project. The review period for the EENF requesting a Single EIR will be extended to 37 days and Notice of the Project will be published in the *Environmental Monitor.*

1.4 Summary of Anticipated Permits

Table 1-3 contains a list of local, state, and federal agencies from which permits, or other actions are or may be required.

TABLE 1-3
Summary of Anticipated Permits

Agency	Permit, Review, or Approval
Federal	
U.S. Army Corps of Engineers (Corps)	Section 404 Pre-Construction Notification (PCN)
U.S. Environmental Protection Agency (EPA)	National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)
State	
Executive Office of Energy and Environmental Affairs (EEA)	MEPA Review/Certificate of the Secretary
MassDEP	Individual Section 401 Water Quality Certificate
NHESP	Determination of No Adverse Effect / Conservation Management Permit (CMP)
MADCR	Construction Access Permit (CAP)
Massachusetts Historical Commission (MHC)	Project review under M.G.L. c. 9 in accordance with 950 CMR 70-71
Local	
Adams, North Adams, Florida, and Monroe Conservation Commissions	Orders of Conditions[1] per the Massachusetts Wetlands Protection Act (MA WPA)

[1] MA WPA Orders of Conditions are local permits unless and until a superseding Order of Conditions is issued by MassDEP

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SECTION 2

Section 2
Alternatives Analysis

2.1 Introduction

As noted in Section 1, this Project consists of repairs and improvements to existing assets. No new ROW is required for the Project and no new construction is proposed other than for access. Therefore, there are no route alternatives for this Project. This alternatives analysis presents a No Build Alternative and options for selective/targeted maintenance and improvements.

2.2 No Build Alternative

As required by 301 CMR 11.07(6)(f)(2), a No Build alternative must be evaluated to establish a baseline against which the Project can be evaluated. However, in this instance, the No Build alternative does not achieve the Project's goals and benefits. This Project consists of maintenance and improvements to existing assets. If no action is taken, deteriorating structures will pose a safety risk to NEP personnel and members of the public. In addition, if the E131 line is not refurbished, the existing system will remain at risk for failure. Given the asset condition of the existing E131 line and the need to improve high-speed communications between the substations this circuit serves, the No Build Alternative is not considered to be a feasible option.

2.3 Critical Asset Repair Alternative

NEP considered addressing only the most critical asset related issues. However, this would require returning to the E131 line repeatedly over the next several years to complete less critical maintenance and improvement activities and it would not accomplish all of the safety and reliability needs for the E131 line. Specifically, this alternative was not selected due to the following:

- Repeated construction with and impacts to DCR State Forest lands;
- Repeated impacts to BVW and other environmental resources and rare species habitat;
- Concerns with asset reliability;
- Increased cost and inefficiency of repeatedly revisiting the same ROW within a short timespan; and
- Failure to meet the need for improving the reliability of the existing communications between the substations served by the circuit.

2.4 Preferred Alternative: Comprehensive Refurbishment (Proposed)

The Preferred Alternative, i.e., the proposed Project, presents a comprehensive refurbishment of the E131 line with the appropriate access, replacement of existing structures, and the replacement of the existing shield wire with OPGW. Providing an

efficient means of addressing asset condition concerns and allowing high speed communications between substations addresses the need without repeated impacts to wetland resource areas, rare species habitat, and public open space. Therefore, this full-scale refurbishment meets all Project objectives and reduces long-term environmental impacts.

2.5 Conclusion

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) minimizes environmental impacts, and D) provides a cost-effective solution to customers. As described above, alternatives, including a No Build Alternative, were initially considered to meet the identified need. The No Build Alternative was rejected because it would not address safety, asset reliability and repair requirements. Partial refurbishment options would require supplemental projects to adequately reinforce the E131 line over the next decade and require repeated access and impacts to sensitive resource areas.

As such, the Preferred Alternative has been deemed to best address the Project's identified need with the least impact to the natural and human environment in the most cost-effective manner.

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SECTION 3

Section 3
Land Use

This section describes existing land use within the vicinity of the Project and presents potential asset refurbishment related impacts during construction and operation. Existing land use conditions in the area were assessed based on direct observations made during site visits and a review of publicly available Massachusetts Geographic Information System (MassGIS) data layers including aerial photographs. As shown on mapping in Appendix B, the following land uses are present in the Project Site:

- Deciduous and evergreen forests
- Vegetated wetlands
- Grasslands
- Electric utility facilities (Adams Substation, transmission and distribution lines)
- Residential properties
- State parkland (open space)
- Public roadways

3.1 Existing Conditions

3.1.1 Land Use

The total land area of the E131 ROW is approximately 454 acres (not all will be impacted). The ROW been historically disturbed from the construction and maintenance of the existing structures and facilities within the ROW, including past repairs, upgrades, and routine cyclical vegetation maintenance. Using current MassGIS data layers, land use characteristics were evaluated for the existing ROW and a 300-foot buffer on either side of the ROW. Table 3-1 summarizes the MassGIS land use information for the ROW and adjacent uses within 300-feet of the ROW edge.

TABLE 3-1
Land Use Types Within the E131 Row and 300-foot Buffer

Land Use Type	Acres Within ROW	% Within ROW	Acres Within 300ft Buffer	% Within 300ft Buffer
Mixed Use	0	0%	2.04	0%
Residential	113.78	21%	248.89	25%
Commercial	0	0%	0	0%
Industrial	45.7	9%	9.84	1%
Forest Property/Open Space[1]	170	32%	251.4	25%
Agricultural/Horticultural	31.28	6%	82.7	8%
State Forest Land	166.12	31%	401.97	40%
Transportation	7.05	1%	11.23	1%
Total Acres[2]	**533.9**	-	**1008.07**	-

[1]Non-State Forest, Forest Property

TABLE 3-1
Land Use Types Within the E131 Row and 300-foot Buffer

Land Use Type	Acres Within ROW	% Within ROW	Acres Within 300ft Buffer	% Within 300ft Buffer

[2]Land use types overlap therefore, the sum total of land use type areas will not equal the total acreage within the ROW

As presented in Table 3-1 the surrounding land use is primarily characterized by undeveloped private and publicly owned forested lands in North Adams, Adams, Florida and Monroe. Although the landscape surrounding the E131 line is predominantly undeveloped, minor portions of the ROW intersect residential properties. GIS figures showing the Project location and surrounding area are provided in Appendix A. ER maps depicting current (and proposed) site features are provided in Appendix B. Site photographs are provided in Appendix C.

3.1.2 DCR State Forests

As mentioned in previous sections, portions of the E131 line traverse State-owned lands, including the Monroe, Florida, and Savoy Mountain State Forests. These areas offer opportunities to hike, camp, canoe or kayak, fish, snowmobile, and other recreational activities to local residents and visitors. Several multi-use trails intersect the existing ROW and proposed locations of new access roads. The portions of the transmission line located within DCR properties are described in Table 3-2, below.

TABLE 3-2
Project Areas Within DCR Properties

DCR Property	Parcel Number(s)	Municipality	ROW Segment	ROW Segment Length
Monroe State Forest	017-001	Florida	Entire ROW from STR 67 to STR 75	0.58 miles
	190/401-0037	Monroe	Entire ROW from STR 52 to STR 62	0.78 miles
Florida State Forest	024-002	Florida	Entire ROW from STR 107 to STR 119	0.68 miles
Savoy Mountain State Forest	027-012	Florida	Entire ROW from STR 134 to STR 146	0.86 miles
	16-0-1	North Adams	Entire ROW from STR 147 to STR 151	0.33 miles
	004/241.0-0000-0001.0	Adams	Entire ROW from STR 152 to STR 162	0.59 miles

The Project has been designed to utilize existing access within NEP easements wherever feasible, however, coordination with DCR (currently ongoing) will be required for improving existing access and constructing new access roads within State Forest lands. As is discussed in more detail in Sections 3.2.3.1 and 3.2.32 due to the complex, steep, and rocky terrain, proposed access routes were selected based on constructability, feasibility, and safety. In many areas, the most reasonable access routes are existing two-track "trails". These "trails" largely consist of maintained snowmobile tracks, which are nearly as wide as a typical motor vehicle roadway in some areas, historic forestry/logging roads, and farm roads. Routes used for recreational purposes will be temporarily closed during active construction for safety reasons. NEP has been in coordination with DCR on

multiple occasion during the planning and survey phases of the Project. A detailed presentation that focused on the proposed access improvements was given during a virtual meeting held on May 5, 2022. NEP will continue to regularly coordinate with this stakeholder.

3.2 Land Use Impacts

As detailed in Sections 1 and 2, the proposed Project was selected to meet the identified refurbishment needs and minimize permanent impacts to environmental resources without recurring impacts to wetland resource areas, rare species habitat, and public open space. The majority of new land alteration will occur as a result of the construction of new access roads and the modification of pre-existing access roads as necessary to facilitate the refurbishment effort. Where practicable, the use of existing access roads and routes has been prioritized to reduce new alterations.

Proposed replacement activities include the removal of existing 3-pole structures, wooden H-frame structures and steel lattice structures and the installation of new steel H-frame, 3-pole and lattice structures. Replacement activities will include moving many of the structures to new locations within the limits of the existing easement. Additional maintenance work includes the installation of new shield wiring, replacement of insulators and associated hardware, and installation of OPGW along the entire length of the line. Concrete caisson foundations will be installed at 24 structure locations, a micropile foundation system will be installed at one (1) structure location, and pad foundations will be installed at three (3) structure locations; the remaining structures will be installed via direct embed methods.

The means and methods of construction and the potential impacts and alterations associated with construction activities are detailed in the following sections.

3.2.1 Proposed Vegetation Removal

NEP retains a large easement but only 125 to 150 feet has been subject to periodic maintenance. NEP is not planning to expand the existing maintained ROW limits except at some limited and discrete areas as required for the safe replacement of structures, placement of work pads, access roads and for future operation of the line within required safety clearances. Prior to construction vegetation removal within the proposed limits of disturbance will include routine mowing as well as trimming of low-growth vegetation within the maintained ROW and removal of vegetation in off-ROW areas where access is required. Approximately 86 acres of vegetation impact is proposed Project-wide.

As noted, tree removal is necessary to facilitate the construction of off-ROW access roads. Out of the approximately 86 acres of vegetation impact, approximately 17.6 acres of trees will be removed. Once these trees are removed, NEP will continue to maintain these access roads as part of their routine maintenance of the transmission line.

3.2.2 Work Pads

A stable, relatively flat surface is necessary to accommodate the removal of existing structures and installation of new structures and their appurtenant features. Typically, work pads are sized at approximately 100 feet wide by 100 feet long to provide sufficient space for equipment, staging, and structure components. Work pads will be developed by placing trap rock underlain by geotextile fabric. Permanent work pad construction is

proposed in upland areas (i.e., beyond the limits of wetland resource areas). Given the steep and rocky terrain, grading and the establishment of retaining walls at select locations will be required to provide a safe workspace. As shown in Appendix B, temporary work pads formed from construction matting will be utilized to the maximum extent practicable in wetland resource areas.

For the reasons described above, the proposed work will require both temporary and permanent work pads to accommodate the refurbishment effort. In aggregate, the establishment of work and pull pads will result in the disturbance of approximately 22.35 acres. Following construction, work pads will be stabilized and remain for future maintenance and pull pads will be reclaimed, reseeded, and stabilized.

3.2.2.1 Pull Pads

Pull pads are a variant of work pad designed specifically to accommodate wire stringing equipment. Wire stringing set-up sites generally occur at dead end structures and angle points in the transmission line and will require a relatively flat and stable, 100-foot by 80-foot surface. Once staged, the wire stringing equipment is used to pull the conductor and/or static wire from a wire reel on the ground and through stringing blocks attached to the structures until the desired tension and sag conditions are met. All pull pads will be temporary and restored *in situ* following completion. To minimize impacts pull pads in wetland resource areas will be composed of construction matting.

In instances where there are large river crossings or large wetlands, alternate means may be assessed for stringing the pilot ropes and wire to avoid and/or minimize crossing resource areas. In some instances, helicopters may be necessary for line stringing and 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.

3.2.3 Access Road Development

Safe and reliable access is essential in order to facilitate the completion of the proposed project. As such, alterations resulting from the construction and modification of new and existing access roads are unavoidable. Furthermore, NEP has carefully assessed Project site constraints and found that the Project site is extremely constrained due to the complexity of the terrain, existing transmission and distribution structures, wetland resource areas and stream crossings.

The terrain through which the existing E131 line traverses is steep, rocky, and rugged; vegetation removal and significant grading will be required to develop permanent access roads. These impacts are unavoidable and necessary for safe access to the ROW by construction, maintenance, and emergency vehicles. NEP has carefully assessed how to meet the access needs for the Project while mitigating potential impacts and minimizing permanent impacts to environmental resource areas.

Throughout the design process NEP has undergone extensive analysis of the viable access road alignments and routes required to support the Project effort. Where possible, access roads and new disturbances have been contained to within the existing E131 and J10 easements. In some cases, however, steep and rocky terrain, waterbodies and other site-specific constraints make down ROW access impossible, infeasible or unsafe (Refer to the ER Maps, Appendix B). In such cases access roads need to be sited outside of the existing ROW. When access roads have been sited outside of the ROW, existing roads, historically

developed routes and motorized recreation trails have been utilized to the extent feasible. In the cases where new access, outside of the ROW and outside of discernable, pre-existing roads and routes has been proposed, it is generally due to the absence of existing routes coupled with high levels of variability in the surrounding terrain that constrain access from elsewhere.

Through these assessments, NEP determined that the development of permanent access roads in upland areas coupled with temporary access routes in wetland areas would best minimize and mitigate impacts to wetland resource areas while ensuring necessary, safe, long-term access for future maintenance work and emergency repairs along the transmission line. Furthermore, in areas where the proposed roads are located within DCR-owned land, the roads provide the additional benefit of use by both DCR personnel and recreational users such as snowmobilers and hikers. Temporary construction matting will be used to provide access through BVW areas.

Access road development is comprised of three elements:

- Improvements to existing, discernable historical access routes
- Construction of new access roads where none presently exist
- Placement of temporary construction matting to access areas within or near wetland resource areas

Portions of the E131 ROW are accessible, or have been historically accessed, via existing routes, "trails" or other discernable pathways. These routes vary in quality and generally require some degree of improvement to ensure safe and reliable access by construction vehicles and to conform with NEP's Environmental Guidance (EG-303NE) on Access, Maintenance and Construction Best Management Practices (Appendix F). Discernable historical access routes have been categorized into two "types" for improvement purposes:

- Type R: May require repairing existing stable sub-base, filling of potholes, ruts, and eroded areas. Additional gravel may be required, though no widening is needed.
- Type S: Existing roads which potentially require widening via the addition of stone to achieve a 16-foot standard width. Grading is limited to those areas that require widening.

The construction of new access roads will require grading by either cut or fill, and placement and compaction of imported gravel. NEP has established a standard 16-foot width for access roads, as described in EG-303NE (Appendix F). New access routes are categorized into two "types" for the purpose of the proposed Project:

- Type 1: NEP standard road, 16 feet wide. Cap existing stable sub-base, add stone per NEP specifications.
- Types 2 – 5: Engineered Road per NEP standards; see site-specific drawings (Appendix B).

Stormwater management features such as swales, stone check dams, water bars, or other similar measures will be installed as necessary based on the access road design. These measures are intended to reduce adverse impacts from stormwater flows, maintain the longevity of the roads, and reduce overall maintenance needs. New access roads were sited within the existing ROW to the extent feasible, however, due to existing site

constraints (e.g., steep slopes, rocky outcrops, proximity to wetland resource areas), some access routes are sited beyond the ROW boundaries (refer to Appendix B). All new access roads (including those which extend beyond the ROW) will be maintained by NEP.

Temporary construction matting will be placed in locations where access is required to cross wetland resource areas. As the terrain throughout the easement is rocky, uneven, and steep, the relocation of boulders may be warranted to ensure safe mat placement. Relocated boulders will remain on-site (i.e., within the existing easement). The use of construction mats minimizes the need to remove vegetation beneath the access way and reduces the degree of soil disturbance and rutting in soft soils. Typical construction mats used by NEP are comprised of wooden timbers bolted together into 4-foot by 16-foot sections, wooden lattice mats, or composite mats.

Although construction mats displace the weight load of equipment, depressional grooves or furrows (i.e., rutting) in the wetland soil may still result. It is important to note that rutting is not the normal circumstance that results from the use of construction mats. The extent of this temporary impact is a direct function of many factors, including but not limited to soil texture; moisture content; type of construction mat; and time of year. If the rutting is greater than approximately six inches deep, these areas will be re-graded (or back-bladed) so as to re-establish the preexisting topography and maintain existing wetland hydrology. NEP will work with each community's conservation commission or authorized representative (i.e., conservation agent), as well as the USACE, to ensure that the area is in compliance with all performance standards in all applicable wetlands regulations as well as each Order of Conditions. Refer to EG-303NE in Appendix F for additional details.

Access road construction will be carried out in compliance with the conditions and approvals of the appropriate federal, state and local regulatory agencies, including the NHESP and MHC. Exposed soils on access roads will be wetted and stabilized, as necessary, to suppress dust generation. Crushed stone aprons 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. Approximately 789,053 sf of temporary construction matting is anticipated for this Project.

Table 3-3 summarizes the quantities of proposed access route types in linear feet (lf).

TABLE 3-3
Summary of Proposed Access Routes

Type	Quantity (lf)
Improvements to Existing Access	
Type R (Refresh)	13,120
Type S (Refresh and Widen)	12,270
New Permanent Access	
Types 1 - 5	26,927
Temporary Construction Matting	
Construction Matting	10,698

3.2.3.1 Access Within DCR Properties

NEP understands that a Construction Access Permit (CAP) will be required prior to improving existing access and constructing new access roads within State lands. As previously noted, NEP has been in coordination with DCR on multiple occasion during the planning and survey phases of the Project. A detailed presentation that focused on the proposed access improvements was given during a virtual meeting held on May 5, 2022.

As discussed in Section 3.1.2, the existing ROW traverses the Monroe, Florida, and Savoy Mountain State Forests. These properties are owned, maintained, and managed by DCR. Currently, there are approximately 109,912 sf (2.5 acres) of discernable historical access roads within the existing ROW, and approximately 138,549 sf (3.2 acres) located off-ROW. Within State Forest land the proposed Project will involve the construction of approximately 1,076,044 square feet (245.7 acres) of new, permanent access roads within the ROW boundaries and approximately 165,387 square feet (3.8 acres) of off-ROW access.

As noted in Section 3.2.3, wetland areas will be crossed using temporary construction matting. Table 3-4 summarizes anticipated impacts by access road type and Table 3-5 summarizes impacts by MA WPA resource area type within the boundaries of DCR-owned properties.

TABLE 3-4
Summary Project Impacts Within DCR Properties

Activity	Quantity			
	On-ROW		Off-ROW	
Adams: Savoy Mountain State Forest	**SF**	**LF**	**SF**	**LF**
Type R Access Road (Refresh)	14,082 sf	830	974	61
Type S Access Road (Refresh and Widen)	1,423	11,884	0	0
Type 1-5 Access Road (Permanent)	190,144	2,335	14,028	876
Matting (Temporary)	24,036	1,506	886	55
North Adams: Savoy Mountain State Forest				
Type R Access Road (Refresh)	41,850	2,615	8,051	453
Type S Access Road (Refresh and Widen)	0	0	0	0
Type 1-5 Access Road (Permanent)	51,842	3,240	12,970	810
Matting (Temporary)	28,820	1,801	2,031	131
Florida: Florida State Forest				
Type R Access Road (Refresh)	32,653	2,041	46,089	2,881
Type S Access Road (Refresh and Widen)	19,904	1,244	41,704	2,606
Type 1-5 Access Road (Permanent)	544,116	3,401	35,383	2,211
Matting (Temporary)	104,075	6,504	296	19
Monroe: Monroe State Forest				
Type R Access Road (Refresh)	0	0	0	0
Type S Access Road (Refresh and Widen)	0	0	41,732	2,608

TABLE 3-4
Summary Project Impacts Within DCR Properties

Activity	Quantity			
	On-ROW		Off-ROW	
Type 1-5 Access Road (Permanent)	289,942	18,065	103,006	6,438
Matting (Temporary)	13,129	821	2,081	130

Table 3-5
Summary of Project Impacts to MA WPA Wetland Resource Areas Within DCR Properties

State Forest	Impacts	
	Temporary	Permanent
Savoy Mountain State Forest		
Bank	0	0
Bordering Vegetated Wetland	118,886 sf	211 sf
Bordering Land Subject to Flooding	0	0
Riverfront Area	14,871 sf	0
Florida State Forest		
Bank	0	0
Bordering Vegetated Wetland	38,060 sf	0
Bordering Land Subject to Flooding	0	0
Riverfront Area	0	0
Monroe State Forest		
Bank	0	0
Bordering Vegetated Wetland	18,407 sf	306 sf
Bordering Land Subject to Flooding	0	0
Riverfront Area	3,581	64,571 sf

Due to the complex, steep, and rocky terrain, present throughout much of the ROW, down ROW access routes alone cannot provide sufficient, safe, and reliable access to the full Project area. Section 3.2.3.2 provides an overview of representative off ROW access roads including photos of existing conditions along proposed road alignments, down right of way access constraints and proposed access route improvements.

3.2.3.2 Representative Off ROW Access Within DCR Properties

Off ROW access roads have been designed to utilize existing off ROW access routes and "trails" to the maximum extent feasible. Proposed access roads generally follow the existing alignment of maintained snowmobile trails, historic logging roads, agricultural roads and recreational foot paths. These routes have been selected to minimize impacts associated with the construction of new off ROW access and in response to site specific challenges associated with the constructability of safe access routes across steep and

complex terrain. Below are some representative examples of the access improvements proposed within DCR properties and reviewed with DCR at the May 5, 2022 virtual meeting.

Structure 161 Access: Savoy Mountain State Forest

Image 1: STR 161 Access Road (Type 1-5) Savoy Mountain State Forest

The proposed access road to STR 161 spans approximately 150 feet along a previously disturbed route which ranges from 10 to 12 feet in width. The proposed road connects the J10 and E131 ROWs and provides the only viable access to STR 161, which is located on a steep slope and surrounded on three sides by a bordering vegetated wetland. A photo of existing conditions along the access route, (Image 1) is included for reference.

Proposed improvements to the STR 161 access road include grading, widening and the addition of imported stone and gravel as needed to create a stable, safe erosion resistant surface. Due to this access road's proximity to a BVW much of the route will be accessed using temporary construction matting further reducing permanent impacts associated with road construction.

Image 2: STR 159 Access Road (Type 1-5) Savoy Mountain State Forest

Structure 159 Access: Savoy Mountain State Forest

Proposed access to STR 159 spans approximately 600 lf and connects STR 69 on the J10 ROW to STR 159 on the E131 ROW. The proposed access road will provide down ROW access to STRs 160 through 150 which are inaccessible from the east without major grading, and filling required to compensate for the extremely steep and rocky terrain encountered between existing STRs 145 and 146. The access route follows an existing 10-foot wide, two track path used

for outdoor recreation (e.g., hiking and snowmobiling). Proposed improvements to the STR 159 access road include grading, widening from 10 to 16 feet and the addition of imported stone and gravel as needed to create a stable, safe erosion resistant surface. A photo of existing conditions along the access route, (Image 2) is included above for reference.

Structure 150 Access: Savoy Mountain State Forest

Image 3: STR 150 Access Road (Type 1-5) Savoy Mountain State Forest

Proposed access to STR 150 spans approximately 800 lf and connects existing STR 150 to existing STR 149. The STR 150 access road allows for the down ROW access, made accessible by the STR 159 access road to continue to existing STR 146 while avoiding the major grading cutting and filling that would be required to create safe and reliable down ROW access between existing STRs 150 and 149. The access route follows an existing 10-foot wide, two track path used for outdoor recreation (e.g., hiking and snowmobiling). Proposed improvements to the STR 159 access road include grading, widening from 10 to 16 feet and the addition of imported stone and gravel as needed to create a stable, safe erosion resistant surface. A photo of existing conditions along the access route, (Image 3) is provided above.

Structure 58 Access (Raycroft Road Ext): Monroe State Forest

Image 4: STR 58 Access Road (Type S) Monroe State Forest

Proposed access to STR 58 spans approximately 2,500 lf and provides the sole means of access to and from STR 58. Down ROW access to STR 58 is blocked from the west by steep grades (45%-50%) between STR 58 and 59 and from the east by Dunbar Brook which crosses the ROW between STR 57 and 58. The proposed STR 58 access road follows along the existing footprint of Raycroft Road Ext (Refer to Image 4) which is a partially developed road ranging from 10-12 feet in width.

Proposed improvements required to support ACR activities include widening Raycroft Road Ext to 14-16 feet, grading, the addition of imported stone and gravel to create a stable, safe erosion resistant surface and construction matting where needed to protect wetland resource areas.

3.3 Land Use Mitigation Measures

The Project is located within an existing electric utility corridor. New utility pole structures are proposed to be located adjacent to existing structures, where feasible, to minimize new impacts. Vegetation removal will be limited so that the maximum practical visual buffer between residences and the proposed system upgrades are maintained. Overall, the Project is not expected to change or significantly impact land uses within the ROW or areas within 300 feet of the ROW during construction or operation.

Construction-generated noise will be limited by the use of mufflers on all construction 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 has been developed for the Project that includes provisions for periodic Project updates. This Plan will also provide a consistent point of contact for the public.

Construction will generally take place during normal working hours from 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. Prior to the start of construction, NEP will notify any landowners, municipal officials, the local Departments of Public Works, and local 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.

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

NEP will submit a Storm Water Pollution Prevention Plan (SWPPP) for the Project in compliance with the EPA's National Pollutant Discharge Elimination System (NPDES) program under the Storm Water Construction General Permit. The SWPPP establishes a construction period 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 storm water discharges from the Project. The SWPPP clearly identifies parties responsible for monitoring and reporting any activities out of compliance with the SWPPP or other environmental permits or approvals, and for handling extraordinary situations. The SWPPP also establishes that monitoring shall occur until all disturbed areas on the site have been stabilized. In this manner, the potential impacts associated with land disturbance (*e.g.* erosion and sedimentation) will be proactively managed so that impacts can be avoided. See Section 9: Mitigation and Section 61 Findings.

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SECTION 4

Section 4
Environmental Justice

This section reviews the Project's potential impacts on the Environmental Justice (EJ) communities pursuant to Section 58 of Chapter 8 of the Acts of 2021. The assessment has been prepared following the latest MEPA Protocol for Analysis of Impacts on Environmental Justice Populations (hereinafter, "MEPA Protocol for Analysis of EJ Impacts") that addresses and enhances public involvement.

For new projects filed after January 1, 2022, all ENF/EENFs must conform to the requirements set forth in the MEPA Public Involvement Protocol for Environmental Justice (EJ) Populations (the Public Involvement Protocol) and the MEPA Interim Protocol for Analysis of Project Impacts on EJ Populations (the Analysis of Project Impacts). These protocols supplement amendments to the MEPA regulations effective December 24, 2021.

4.1 Avoidance/Minimization to Environmental Justice Populations

Based on the analysis provided in this Section, the Project is unlikely to adversely impact or impose undue burdens upon EJ communities located in the Designated Geographic Area of the Project Site. The operation and maintenance of the transmission line and its associated access roads are not sources of long-term environmental impacts and will not disproportionately impact environmental resources at or near these communities. The E131 line is an existing transmission line that provides necessary power to users throughout the Berkshires; the proposed Project will ultimately provide a net benefit to these communities by increasing the reliability of the line.

4.1.1 Project Location

In accordance with Section I(A) of the Public Involvement Protocol, figures depicting the location of the Project relative to EJ populations as depicted on the EEA Environmental Justice Maps Viewer (the EJ Maps Viewer) are included in this application as Figures 1 and 2 in Appendix E. Figure 1 shows EJ populations within one mile (i.e., the Designated Geographic Area ("DGA")) of the Project, and Figure 2 shows EJ populations within five miles of the Project. Per Section I(A), as this is a linear project along a ROW, these distances were calculated based upon the edge of the ROW in all directions along the entire length of the project.

4.1.1.1 Characteristics of EJ Populations

Per the Massachusetts 2020 Environmental Justice Populations online mapping tool provided by MEPA, the ROW crosses through two EJ populations:

- Income (Block Group 1, Census Tract 9214, North Adams, Berkshire County)
- Income (Block Group 1, Census Tract 401, Monroe, Berkshire County)

The following EJ populations are located within one (1) mile of the Site:

- *Income (Block Group 2, Census Tract 9214, North Adams, Berkshire County)*
- *Income (Block Group 1, Census Tract 401, Rowe, Franklin County)*

- *Income (Block Group 4, Census Tract 9222, Adams, Berkshire County)*

The following EJ populations are located within five (5) miles of the Site:

- *Minority and Income (Block Group 2, Census Tract 9353, Berkshire County, Massachusetts)*
- *Income (Block Group 1, Census Tract 9353, Berkshire County, Massachusetts)*
- *Income (Block Group 2, Census Tract 9213, Berkshire County, Massachusetts)*
- *Income (Block Group 2, Census Tract 9215, Berkshire County, Massachusetts)*
- *Income (Block Group 1, Census Tract 9215, Berkshire County, Massachusetts)*
- *Income (Block Group 2, Census Tract 9221, Berkshire County, Massachusetts)*
- *Income (Block Group 3, Census Tract 9221, Berkshire County, Massachusetts)*
- *Income (Block Group 4, Census Tract 9221, Berkshire County, Massachusetts)*
- *Income (Block Group 1, Census Tract 9213, Berkshire County, Massachusetts)*
- *Income (Block Group 3, Census Tract 9213, Berkshire County, Massachusetts)*
- *Income (Block Group 3, Census Tract 9231, Berkshire County, Massachusetts)*
- *Income (Block Group 2, Census Tract 9223, Berkshire County, Massachusetts)*
- *Income (Block Group 4, Census Tract 9353, Berkshire County, Massachusetts)*
- *Income (Block Group 1, Census Tract 401, Franklin County, Massachusetts)*

According to the "Languages Spoken in Massachusetts" tab on the EJ Maps Viewer, there are no communities identified in which greater than 5 percent of the community speak a language other than English, or who do not identify as speaking English "very well."[3] During the MEPA Pre-Filing Consultation, MEPA Office staff concurred that, because of the results of the EJ Maps Viewer, language translation of Project materials is not necessary for this Project.

4.1.2 Assessment of Existing Unfair or Inequitable Environmental Burden

The Massachusetts Department of Public Health (DPH) Environmental Justice Tool[4] was consulted to evaluate the Vulnerable Health EJ criteria met within Adams, North Adams, Florida, Monroe, and Rowe, Massachusetts. The results of this evaluation are provided in Table 4-1, below. An assessment of the construction-period and post-construction impacts of the proposed project is provided in Section 5. Due to the nature of the project, (i.e., to refurbish an existing transmission utility line), the project cannot be located elsewhere. Alternatives are provided in Section 2. BMPs will be utilized to minimize impacts to the extent practicable; proposed BMPs are provided in Appendix F.

[3] Data for languages spoken was obtained from the American Community Survey 2011-2015 5-year estimates, Table B16001.
[4] https://matracking.ehs.state.ma.us/Environmental-Data/ej-vulnerable-health/environmental-justice.html

TABLE 4-1
Summary of Vulnerable Health Criteria Met by Municipality

Municipality	EJ and Vulnerable Health EJ Criteria Status	Vulnerable Health Topics EJ Criteria Met	Statewide Rates
Adams	Meets three Vulnerable Health EJ Criteria	Heart attack per 10,000	30.8
		Lead poisoning per 1,000	16.1
		Low birth weight rate per 1,000	218.3
North Adams	Meets three Vulnerable Health EJ Criteria	Heart attack per 10,000	26.4
		Lead poisoning per 1,000	16.1
		Low birth weight rate per 1,000	216.8
Florida	None	N/A	N/A
Monroe	Meets at least one Vulnerable Health EJ Criteria	Pediatric asthma ED visits per 10,000	83.1
Rowe	Meets four Vulnerable Health EJ Criteria	Heart attack per 10,000	26.4
		Lead poisoning per 1,000	16.5
		Low birth weight rate per 1,000	216.8
		Pediatric asthma ED visits per 10,000	83.1

NEP identified additional potential sources of pollution within the municipalities in the designated geographic area that could be contributing to the existing unfair or inequitable environmental burden and related public health consequences. Of the five (5) EJ Populations in the designated geographic area, four (4) EJ Populations, within four (4) municipalities were found to have potential sources of pollution. Pollution sources reviewed are summarized below and in Table 4-2.

North Adams

In North Adams, Block Group 1, Census Tract 9214, one (1) power plant identified as a potential pollution. Refer to Table 4-2

- East Street Landfill Solar Field (Power Generation Facility)

In North Adams, Block Group 2, Census Tract 9214, four (4) potential pollution sources were identified. In total there are two (2) Massachusetts Tier II facilities, one (1) Tier I M.G.L. C. 21E Site, one (1) Tier II M.G.L. C. 21E Site and one (1) Toxics Release Inventory Site. Refer to Table 4-2.

- Osterman Propane ("Tier II" toxics use reporting facility)
- Berkshire Gas, North Adams Propane Air Plant ("Tier II" toxics use reporting facility)
- TOG Manufacturing (Toxics Release Inventory Site)

According to NEP's enforcement history analysis there were two (2) facilities that received documented enforcement, including the former North Adams Plaza and an unnamed site

located at Hodges Cross Road in North Adams. The former North Adams Plaza has a history of one (1) enforcement issued in 2009 and the unnamed site has a history of (1) one enforcement issued in 2005.

Adams

In Adams, Block Group 4 Census Tract 9222, no potential pollution sources were identified.

Monroe

In Monroe, Block Group 1, Census Tract 401 one MassDEP public water supplier was identified as a potential pollution source. Refer to Table 4-2.

- Monroe Water District (MassDEP Public Water Suppliers)

Rowe

In Rowe, Block Group 1, Census Tract 401 six (6) potential pollution sources were identified. In total there are three (3) National Pollutant Discharge Elimination System (NPDES) permit points, two (2) power generation facilities (hydroelectric) and one (1) Tier II facility. Refer to Table 4-2.

- TransCanada Sherman STA (NPDES Permit)
- Monroe Wastewater Treatment Facility (NPDES Permit)
- Fife Brook Generating Station (NPDES Permit)
- Bear Swamp Power Company LLC (Power Generation Facility)
- TransCanada Hydro Northeast Inc., (Power Generation Facility)
- Great River Hydro- Sherman Station ("Tier II" toxics use reporting facility)

Table 4-2

Other Potential Sources of Pollution within the Designated Geographic Area

Municipality	EJ Census Tracts	Toxics Release Inventory Site	M.G.L. c. 21E Sites	" Tier II" toxics use reporting facilities	Public Water Supplier	MassDEP public water suppliers	NPDES Permit	Energy Generation and Supply	Total
North Adams	9214, Block Group 1 and 2	**1**	**2**	**2**	0	0	0	**1**	**4**
Adams	9222, Block Group 4	0	0	0	0	0	0	0	**0**
Monroe	0401, Block Group 1	0	0	0	0	**1**	0	0	**1**
Rowe	0401, Block Group 1	0	0	**1**	0	0	**3**	**2**	**6**

The Environmental Protection Agency (EPA) EJ Screening tool was surveyed to determine whether any of the EJ populations within the DGA are subject to environmental burdens as measured at the 80th percentile of statewide averages or higher. Per the EPA EJ

screening tool, no EJ populations within the DGA are subject to undue environmental burdens exceeding the 80th percentile of statewide averages.

The EPA EJ Screening tool was also surveyed to gauge whether any of the EJ populations within the DGA are subject to environmentally related health indicators. The EJ Block Groups 1 and 2, Census Tract 9214 in North Adams currently fall within the 90th to 95th percentiles for asthma cases. As discussed further in Section 4.1.3 the Project will not result in any new sources of air pollution and as such is not anticipated to impose an undue or added burden to existing environmentally related health indicators.

4.1.3 Likely Effects on EJ Populations

The proposed Project is not likely to negatively affect EJ populations located within the DGA. Rather, the proposed improvements to infrastructure will serve the nearby EJ populations as well as the broader community and will therefore provide a net benefit. The proposed Project is not anticipated to impact air quality during or after construction, and the Project does not exceed ENF or mandatory EIR thresholds for air, solid and hazardous waste, wastewater, or sewage sludge treatment and disposal. Additionally:

- The proposed Project is not anticipated to impact flood hazards in the area. Impacts to BLSF are minimal (146 sf) and associated with temporary matting only. Existing STRs 181, 180, 179, and 144, are situated within flood prone Bordering Vegetated Wetlands. STRs 180 and 144 will be removed as part of the Project. STR 179 will be installed using direct embed techniques requiring no foundation and STR 181 will be installed using micropile foundations avoiding permanent concrete foundations. Based on the incorporation of the design measures, the proposed work will not adversely impact the flood storage capacity or attenuation of these areas.
- The Project will not degrade wetland resource areas in or near the EJ areas, and the short-term construction-phase impacts will be minimized using appropriate construction period BMPs as described in this EENF and mitigated through restoration.
- Portions of the existing transmission line and proposed access road locations intersect recreational trails located in DCR-owned Monroe, Florida, and Savoy Mountain State Forests. Access to these trails may be temporarily restricted during construction activities. These restrictions will not disproportionately affect EJ populations. The proposed Project will not result in permanent impacts to public access to State Forests; rather, new access roads constructed within these areas may provide additional access for hikers, snowmobilers, and other outdoor recreationists, at the discretion of DCR.
- The Project will not result in the creation of new sources of air pollution at any location, including near the EJ areas. Construction equipment will use on-road low sulfur diesel fuel and vehicle idling will be limited to the extent practicable.
- Noise impacts are expected to be minimal, as the lands surrounding the E131 ROW are predominantly comprised of undeveloped forested lands. Few residences are within close proximity to the ROW; however, in the limited instances where construction will occur adjacent to residences, NEP will notify landowners prior to the commencement of work. Noise-generating activities will be conducted in accordance with any local and state requirements. These construction impacts are temporary in nature, and the typical day-to-day operation of the line does not generate noise.

Impacts to traffic are not anticipated, as the ROW does not cross densely populated areas and only one high-use roadway (Route 2), and the work areas will be accessed primarily from NEP-owned access routes or minor town roadways. Once on-site, vehicle traffic will be limited to within or in proximity to the ROW. The line does cross over Route 2 in Florida and traffic details will be in place during construction activities in that location. As the line is an un-manned facility, there will be no permanent impacts to traffic patterns or use of existing roadways.

4.1.4 Comparable Impacts on EJ and Non-EJ Populations

The MEPA Protocol for Analysis of EJ Impacts states that "the Proponent should also analyze whether the impacts on the EJ population are greater or less than those on non-EJ populations. The purpose of this analysis is to assess whether the project is adding impacts to an already burdened area in a 'targeted' way that is disproportionate when compared to non-EJ populations." Due to the nature of this project, there is no disproportionate impact on EJ populations within the DGA.

The Project generally minimizes impacts on all populations by refurbishing an existing line within an existing transmission line corridor. Because of this, the Project does not result in any significant long-term environmental or public health impacts for any population, including EJ populations. Impacts from construction are temporary and insignificant. They will not result in any public health impacts to any population. Other impacts, such as temporary impacts to wetlands, do not directly affect any population or affect any populations disproportionately.

4.1.5 Public Involvement

Per 301 CMR 11.05(4) and Section II.A of the Public Involvement Protocol, advance notification of the Project in the form of the Environmental Justice Screening Form was sent via electronic mail on June 21, 2022, by Tighe & Bond to all community-based organizations (CBOs) and tribes listed on the EJ Reference List, provided by the MEPA Office on March 30, 2022[5].

Due to unforeseen delays, filing of the EENF was deferred for greater than 90 days following circulation of the Environmental Justice Screening Form. Per 301 CMR 11.05 (4)(b), advance notification must be provided no earlier than 90 Days prior to filing. In accordance with 301 CMR 11.05(4) and Section II.A of the Public Involvement Protocol NEP recirculated the Environmental Justice Screening Form on December 13th of 2022 so as to fulfill the advance notification requirements for a filing date of January 30, 2023.

A copy of the Environmental Justice Screening Form is provided in Appendix E. Efforts were made to ensure that the Environmental Justice Screening Form avoided unnecessary technical language and legalese and was accessible to readers not familiar with these types of projects.

On December 13, 2022 NEP received a request from the Stockbridge-Munsee Band of Mohicans for an additional copy of the June 21, 2022 Environmental Justice Screening

[5] An initial EJ Reference List was provided by the MEPA Office on January 27, 2022. An updated EJ Reference List was provided by the MEPA Office on March 30, 2022.

Form, and additional information pertaining to the scope of archeological surveys for the proposed ACR project. All requests were responded to in a timely manner.

NEP undertook additional measures to promote community involvement into the MEPA process, consistent with the recommendations in the Public Involvement Protocol. These involvement methods were discussed and supported by the MEPA Office during a Pre-Filing Consultation held on April 14, 2022 and include:

- A public website is available, which provides details of the Project, an interactive mapper, and contact information for review. This website address (https://www.e131project.com) was also provided on the EJ Screening Form.
- Repositories for hard copies of Project materials have been established at public libraries within each of the four municipalities within the Project Site in the Commonwealth of Massachusetts, which will be updated regularly as additional Project documents become available.
- NEP hosted a virtual public hearing on August 10, 2022, information pertaining to this hearing was advertised in the Berkshire Eagle and The Recorder and was also provided on the EJ Screening Form, no participants attended the hearing.

Community member questions and concerns may be directed to (877) 616-E131 (3131) or info@e131project.com.

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SECTION 5

Section 5
Wetlands and Wildlife

5.1 Wetland Resource Areas

NEP identified the wetland resource areas listed below at the Project Site, which are subject to jurisdiction under the MA WPA and its implementing regulations (310 CMR 10.00).

- Inland Bank / Mean Annual High Water (MAHW)
- BVW
- Land Under Water Bodies and Waterways (LUWW)
- BLSF
- Riverfront Area

A summary of resource areas is provided in the following sections. Jurisdictional wetland resource areas and buffer zones are shown on the mapping in Appendix B.

5.1.1 Massachusetts Wetlands Protection Act (MA WPA)

In accordance with 310 CMR 10.02(2)(a)(2), a Notice of Intent is not required for "activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing and lawfully located structure or facility used in the service of the public and used to provide electric, gas, water, sewer, telephone, telegraph and other communication services, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said structure or facility."

Accordingly, Project activities that meet these regulatory requirements are exempt under the Wetlands Protection Act.

Project activities that would likely require a Notice of Intent include the expansion of existing access roads, grading for work pads and culvert installation. Permanent impacts associated with the improvement of access roads, construction work pads and concrete caissons include the 100-foot Buffer Zone, Bank, BVW, LUWW and Riverfront Area. Temporary impacts associated with the proposed work will occur in BVW, Riverfront Area and BLSF. No permanent roads or grading are proposed in BVW or BLSF. No permanent impacts are proposed in BLSF.

Site specific mitigation measures will be implemented to offset temporary and permanent impacts to wetland resource areas as required by the MA WPA and Sections 401 and 404 of the Clean Water Act and related federal and state regulations. NEP anticipates that the final mitigation plan will be developed during the federal, state and local permitting processes. NEP has, however, developed a preliminary mitigation strategy involving the decommissioning, removal and restoration of four structures (101, 144, 153, and 180) located within four separate BVWs. Complete removal of these structures from the E131 line will remove the need for future repeated alterations of the associated resource areas due to the elimination of any future maintenance and entry related impacts at these locations.

5.1.2 Methodology of Wetland Resource Area Delineation

Wetlands and waterways were delineated pursuant to the Clean Water Act (33 U.S.C. §1251 et seq.) and the Massachusetts Wetlands Protection Act (MA WPA) and its implementing regulations at 310 CMR 10.00. Specifically, methodologies in the following manuals and guidance documents were implemented:

- 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987)
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Northcentral and Northeast Region (Version 2.0) (Corps, 2011)
- Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act (MassDEP, 1995)
- Massachusetts Rivers Protection Act (RPA) Regulations (amendment to MA WPA) (MassDEP, 1996)
- Ordinary High-Water Mark (OHWM) Definition at 33 CFR 328.3(e) and Regulatory Guidance Letter: Ordinary High-Water Mark Identification (Corps, 2005)
- Regulatory Guidance Document: Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States (Corps, 2007)

Where jurisdictional wetland resource areas were observed within the Project site, their boundaries were delineated and information regarding vegetation, soils, and hydrology was collected. BVW and MAHW / Ordinary High Water (OHW) boundaries were delineated using plain day-glow pink survey flagging tape. MAHW and OHW within the Project Site are coincident and will be referred to as MAHW/OHW. Each flag location was collected using a Global Positioning System (GPS) unit with sub-meter accuracy. Wetland systems were designated based on a numeric-alpha-numeric nomenclature in which each separate resource area was identified by a different beginning number.

In addition to conducting field investigations, Tighe & Bond reviewed the FEMA Flood Insurance Studies (FISs) and Flood Insurance Rate Maps (FIRMs) for the general areas within the towns of Adams, North Adams, Florida, and Monroe, as well as other publicly available information (e.g., MassGIS).

5.1.3 Inland Bank

As defined at 310 CMR 10.54(2)(a), Inland Bank is the portion of the land surface which normally abuts and confines a water body. Inland Bank is present within the Project site and includes the banks of the following perennial streams:

- Hoosic River
- Staples Brook
- Cold River (identified as White Brook on USGS Quadrangle for North Adams)
- Cascade Brook
- Fife Brook
- Dunbar Brook
- Haley Brook

- Phelps Brook
- Two unnamed perennial streams (between STRs 58 and 59, and STRs 133 and 134)
- One jurisdictional unnamed intermittent stream between STRs 163-166

In all locations, inland Bank was found to be coincident with MAHW/OHW in the vicinity of the Project site. These watercourses were determined to be perennial based on USGS 7.5-minute topographic quadrangle maps for Adams, North Adams, Florida, and Monroe, Massachusetts. Additionally, there are numerous intermittent streams which flow through the Project Site, all of which have associated inland Banks. Stream status was determined utilizing the U.S. Geological Survey (USGS) StreamStats[6] software as per the MA WPA at 310 CMR 10.58(2)(a)(1)(a).

While the exact physical characteristics of inland Bank vary throughout the Project site, Banks were found to be generally well-defined and were identified by the first observable break in slope. Banks were also largely observed to be vegetated with shrubs and limited tree cover.

5.1.4 Bordering Vegetated Wetlands

As defined at 310 CMR 10.55(2)(a), BVW are freshwater wetlands that border on creeks, rivers, streams, ponds, and lakes. BVWs include wet meadows, marshes, swamps, and bogs. The soils of BVWs are saturated and/or inundated such that they support a predominance of wetland indicator plants.

NEP identified and delineated wetlands within the E131 ROW, within close proximity to the ROW boundaries, and in the vicinities of areas identified as potential access routes. Generally, wetlands were found to be consistent throughout the Project Site and are characterized as either Palustrine Emergent (PEM) or Palustrine Scrub-Shrub (PSS) wetlands that range from seasonally to persistently saturated. Dominant vegetation found throughout wetlands at the Project site included sensitive fern (*Onoclea sensibilis;* FACW), red osier dogwood (*Cornus sericea;* FACW), sheep laurel (*Kalmia angustifolia;* FAC), steeplebush (*Spiraea tomentosa;* FACW), cinnamon fern (*Osmunda cinnamomea;* FACW), and deertongue (*Dichanthelium clandestinum*; FACW).

5.1.5 Land Under Water Bodies and Waterways

As defined at 310 CMR 10.56(2), LUWW is the land beneath any creek, river, stream, pond, or lake. Said land may be composed of organic muck or peat, fine sediments, rocks, or bedrock. LUWW within the Project is confined to the watercourses described in Section 5.1.3.

5.1.5.1 Stream Crossings

Stream crossings will be required where access around the waterway is unavoidable. These temporary crossings will span multiple minor intermittent streams; however, one significant span is proposed to cross Haley Brook, located between STRs 53 and 54. Up to 40-foot-long construction mats with a five-foot-deep embedment at either end will be used to temporarily span the banks of Haley Brook, which will provide a clear span of 30 feet. Smaller stream crossings may utilize similar techniques or may be crossed with

[6] http://streamstats.usgs.gov/

conventional wetland construction matting. NEP has established stream crossing standards in EG-303NE, provided in Appendix F.

Two culverts will be required to avoid the potential for flooding associated with an intermittent watercourse located between STRs 165 and 166. The watercourse is approximately 1 foot wide at the proposed locations and installation is expected to impact LUWW and Bank. The culvert installation will be done during the dry season to ensure no flowing water is present in the watercourse during construction. Design will be completed in compliance with 310 CMR, 314 CMR, and the Massachusetts General Permits and all work will be performed in compliance with the EG-303 guidelines and BMPs.

5.1.6 Bordering Land Subject to Flooding

As defined at 310 CMR 10.57(2), BLSF is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds, or lakes. It extends from the banks of these waterways and water bodies; where a BVW occurs, it extends from said wetland.

There is one area of BLSF within the Project site, identified in the following FEMA FIS and FIRM:

> **Southeastern Corner of Work Pad STR 180: Zone A3, Hoosic River**
> According to the FEMA FIS (Community Number 250016, effective February 1, 1983) and FIRM (Community Panel 250016 005 B, effective August 1, 1983), portions of the Project Site are situated within the limits of BLSF, Zone A3, associated with the Hoosic River. Per the FIS flood profile (12P) of the Hoosic River, the 100-year base flood elevation (BFE) ranges from 720.8 to 723.0 feet (NGVD 1929) within this area of BLSF.

The approximate limits of BLSF are shown on the ER Maps in Appendix B.

5.1.7 Riverfront Area

Per 310 CMR 10.58(2), Riverfront Area is the area of land between a river's MAHW line measured horizontally outward from the river (or perennial stream) and a parallel line located 200 feet away. The Riverfront Area does not have a buffer zone but may overlap with other resource areas or their buffer zones.

The watercourses described in Section 5.1.3 are considered perennial under the MA WPA (see Section 5.1.3). In addition, there are unnamed perennial streams located between STRs 58 and 59 and STRs 133 and 134, which are afforded 200-foot Riverfront Areas as depicted in Appendix B. Riverfront Area was determined for each watercourse based upon delineated MAHW lines. Riverfront Area within the Project is predominantly characterized by forested uplands, vegetated wetlands, and the existing utility easement and associated structures.

5.1.8 Buffer Zone

Per 310 CMR 10.04, Buffer Zone is defined as the area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a). The Buffer Zone to inland Bank and BVW is comprised of forested upland areas as well as the existing E131 ROW.

5.1.9 Vernal Pools

One vernal pool was observed within the project area during resource area field delineations. The observed vernal pool is located 80 feet from Monroe Road in Florida MA, approximately mid span between existing Structures 86 and 85. Review of information available through the MassGIS, including aerial photographs, also indicates that a NHESP Certified Vernal Pool (Certified Vernal Pool (CVP) No. 6951) is mapped within the Project area. CVP No. 6951 is located 20 feet north of the intersection of Central Shaft Road and Old Florida Road, which provides access to Structures 141-143. Furthermore, MassGIS also indicates that one NHESP Potential Vernal Pool is located approximately 60 feet northeast of the existing access road which provides access off Monroe Road to Structures 59-70. Refer to the ER Maps in Appendix B for further details.

5.2 Quantification of Impacts to Wetland Resource Areas

The proposed access road improvements are located, to the extent practicable, within the previously disturbed E131 ROW. However, due to steep topography, cliffs, rock outcrops, and other challenging terrain, impacts beyond the limits of the ROW are unavoidable. These access roads must safely accommodate construction, maintenance, and emergency vehicles. As such, their construction will require substantial grading and vegetation removal to maintain NEP design and safety standards for slope gradients. Due to multiple site constraints including the high concentration of existing critical electrical utility infrastructure and presence of wetlands and state-listed plant species, impacts to wetland resource areas are unavoidable. Minimization of impacts and implementation of BMPs to protect resource areas have been included in the design and are further described in Section 7.2. The proposed Project will result in both temporary and permanent impacts to jurisdictional wetland resource areas, as summarized in Table 5-1 below.

TABLE 5-1
Summary of Construction-Period Impacts to Wetland Resource Areas

Resource Area	Impacts[1]		Location	Activity
	Temporary	Permanent		
Bank	0	64 lf	Intermittent stream between STRs 165 and 166	Culvert installation
BVW	617,322 sf	660 sf	Temporary impacts are sitewide. Permanent impacts are located at STRs 24, 43, 60, 79A, 80, 119, 145, 150, 151 and 172	Work pad and laydown area construction, matted access road construction (temp); Gravel apron, transition to concrete caisson bases and direct embedment of STRs within wetlands (perm)
LUWW	0	32 sf	Intermittent stream between STRs 165-166	Culvert installation

BLSF	146 sf	0 sf	STR 180 work pad	Access road construction (temp)
Riverfront[1] Area	74,451sf	102,971 sf	Sitewide	Work pad construction (temp/perm)[2] Access road construction (perm)

[1] Note that impacts located within the limits of Riverfront Area overlap with impacts to BLSF, BVW, and the 100-foot Buffer Zone. Therefore, the total impacts to the Project Site are not equal to the sum of alterations presented in Table 5-1.

[2] Work pads will consist of temporary construction matting within BVW and BLSF and will consist of gravel elsewhere. Where BVW and BLSF overlap with Riverfront Area, these impacts will be temporary; otherwise, work pad construction will be permanent.

Permanent impacts to BVW are in part, due to the replacement of Structures 43, 145, 150 and 169. Design related constraints associated with these structure locations necessitate the transition from directly embedded poles to the use of concrete caisson foundations. This transition is necessary to adequately support the four structures and will reduce the potential for and frequency of future maintenance in these areas. In total, 790 sf of temporary disturbance is expected from installation related excavations around the pole locations. These impacts will be fully restored *in situ* following construction. Approximately 260 sf of permanent fill to BVW is expected to result from the installation of the concrete caisson foundations.

Additional permanent impacts to BVW will result from the relocation and replacement of existing Structures 24, 60, 80, 151 and 172 from the 100-foot Buffer Zone to areas within BVW. Approximately 100 sf of permanent impacts and 230 sf of temporary impacts will occur from the placement of ten (10) 3-foot diameter corrugated metal pipe casings, structure installation and back filling. Temporary impacts will be fully restored *in situ* following construction.

The remaining 300 sf of permanent fill in BVW is associated with the construction of the new switch Structure 79a. Structure 79a will be installed on top of a 300 sf gravel apron necessary to discourage the growth of vegetation around and into the switch. The installation of Structure 79a is also expected to require approximately 200 sf of temporary construction related impacts which will be restored *in situ* following completion.

5.2.1 Wetland Resource Area Impact Avoidance and Mitigation

Due to the location of existing infrastructure within the vicinity of multiple wetland resource areas including Bank, BVW, LUW, BLSF and Riverfront Area, impacts to these resource areas are unavoidable. The Project has been designed to minimize impacts to these jurisdictional resource areas to the extent practicable while providing safe, reliable access roads to support refurbishment, maintenance, and emergency access to the E131 line ROW.

Project-specific mitigation measures will be developed in consultation with the municipal Conservation Commissions, MassDEP, NHESP and other agencies. Wetlands resource area mitigation may align with state-listed species mitigation and may consist of state-listed habitat management on NEP property, offsite mitigation, or other measures.

Four structures are proposed to be removed from the line (Structures 101, 144, 153, and 180) due to their location within or proximity to wetland resource areas. As part of the proposed ACR project, NEP will decommission, remove, and restore the four pole locations. Complete removal of these structures from the E131 alignment will eliminate the need for future repeated entries into the associated resource areas thus eliminating the potential for future maintenance related impacts. NEP intends to use this approach among others to offset the proposed permanent impacts summarized in Table 5-1.

NEP evaluated alternatives (see Section 2) to determine the best option to meet Project goals while minimizing environmental impacts. The proposed Project was selected as the preferred alternative because the design provides a permanent solution that will allow for future access to the E131 line ROW. Impacts will be minimized to the extent practicable through the utilization of BMPs as described in Section 7.

5.2.1.1 Replication Area Construction

NEP proposes to provide appropriate wetland mitigation (in collaborative consultation with local, state, and federal resource agencies) to offset any permanent wetland impacts. While Project information presented herein is thorough with regard to impacts, and many proposed mitigation measures are identified and described, NEP is still evaluating specific details related to wetland mitigation. Permit applications to be submitted to state and federal regulatory agencies will provide the specific mitigation information required for the Project. At the local level, NEP will work with conservation commissions to discuss impacts and proposed mitigation as part of the Massachusetts Wetlands Protection Act (MA WPA) Notice of Intent process. In addition, post construction, NEP will prepare Requests for Certificates of Compliance from each of the Conservation Commissions. These Certificates ensure that wetland resources have been restored to a commission's satisfaction. NEP is committed to developing a mitigation package appropriate to address impacts of the Project. It is anticipated that mitigation will demonstrate no net loss of existing wetland functions values, and statutory interests within the watershed.

Where wetland mitigation is undertaken to offset proposed permanent impacts to BVW, construction will have oversight conducted by qualified environmental professionals. The replication area(s) will be monitored, and corrective actions undertaken as necessary to ensure that within two growing seasons there will be a 70 percent vegetative cover of indigenous wetland plant species. All work will be completed in compliance with applicable permit conditions.

5.3 Rare Species

The Massachusetts Endangered Species Act (MESA) protects areas determined to contain endangered, threatened or species of special concern, and is implemented by NHESP. "Priority Habitats of Rare Species" and "Estimated Habitats of Rare Wildlife" are designated under the MESA Regulations 321 CMR 10.00 and are delineated state-wide in the Massachusetts Natural Heritage Atlas.

NEP consulted the NHESP Operations and Maintenance Plan (OMP; NHESP File No. 20-39684, dated April 6, 2022) shared data, the NHESP Atlas, 15th edition, effective August 1, 2021, and MassGIS online mapping data during the preparation of this EENF. According to these sources, portions of the Project Site are within the limits of mapped Priority Habitats of Rare Species and Estimated Habitat of Rare Wildlife (see ER maps in Appendix B). Based on OMP data, state-listed species have been identified near the Adams

Substation (Adams, MA), along the J10 Line (Adams, North Adams, and Florida, MA), and within the E131 ROW (Adams and Florida, MA).

Table 5-2 summarizes the state-listed species that have been identified by NHESP at or near the Project Site based on NHESP data provided to NEP under the OMP. Copies of the NHESP fact sheets for each species are provided in Appendix D.

TABLE 5-2
Summary of State-Listed Species

Common Name	Scientific Name	Taxonomic Group	State Status
Hairy-Fruited Sedge	*Carex trichocarpa*	Plant	Special Concern
Foxtail Sedge	*Carex alopecoidea*	Plant	Threatened
Longnose Sucker	*Catostromus catostromus*	Fish	Special Concern
Large-Leaved Goldenrod	*Solidago macrophylla*	Plant	Special Concern
Woodland Millet	*Milium effusum*	Plant	Threatened
Bailey's Sedge	*Carex baileyi*	Plant	Threatened
Ski-Tipped Emerald	*Somatochlora elongata*	Dragonfly	Special Concern

5.3.1 State-Listed Plant Survey Results

Botanical surveys were conducted for state-listed plant species along the E131 line ROW and J10 line ROWs in 2017, 2020, 2021 and 2022 by NHESP-approved botanist Mr. Matthew Hickler.

In his Rare Plant Survey Report dated August 19, 2021, Mr. Hickler indicates that instances of Bailey's sedge

(*Carex baileyi*; MA Threatened) were observed within the Project Site, primarily along portions of the J10 Line (Florida, MA). These reports have been submitted to NHESP for their review and approval. In correspondence with Lauren Glorioso, Endangered Species Review Biologist at NHESP, Ms. Glorioso recommended that additional botanical surveys should be conducted to ascertain the prevalence or absence of Bailey's sedge at specified locations at the Project Site.

Additional botanical surveys for Bailey's sedge were completed by Mr. Hickler in 2022 on June 20, June 30 and July 7. In his Rare Plant Survey dated July 2022 Mr. Hickler noted that populations of Bailey's Sedge were observed along a proposed E131 access route on the J10 line between Structures 56 and 59.

In June/July of 2020 and 2022, botanical surveys were conducted in the vicinity of the Adams Substation. Hairy-Fruited Sedge (*Carex trichocarpa*; MA Species of Special Concern) and Foxtail Sedge (*Carex alopecoidea*; MA Threatened) were located within proposed Project footprint in the vicinity of the Adams Substation.

According to recent and historical botanical surveys conducted by Mr. Hickler, no instances of large-leaved goldenrod (*Solidago macrophylla*; MA Species of Special Concern) have been identified on or in proximity to the E131 line ROW. As this species is typically seen

at elevations higher than those at the Project site, it is unlikely that suitable habitat is available at or near the Project site.

5.3.2 Longnose Sucker Habitat Survey Results

The May 8, 2020, longnose sucker breeding habitat survey for Zylonite Ave. Substation Vicinity Hoosic River, Adams, Massachusetts report prepared by Oxbow Associates, Inc. (dated July 29, 2020) stated that the reach of the Hoosic River within the limit of work is likely not a breeding area for longnose sucker but could serve as a migratory corridor for the species. Based on the results of the survey and the lack of in-water work proposed for this Project, NEP does not anticipate any long-term detrimental effects on Longnose Sucker individuals or habitat in this reach of the Hoosic River.

5.4 Quantification of Impacts to State-Listed Rare Species Habitat

Temporary impacts are proposed within mapped Priority and Estimated Habitat. Approximately 72,439 sf (1.67 acres) of impacts are anticipated as a result of proposed work. All anticipated impacts will result from the temporary placement of construction matting for the construction of temporary access roads and work pads as necessary to support construction. As discussed in Section 2.3.3, NEP will prepare and submit a CMP to NHESP for authorization of this work within rare species habitats.

5.4.1 Take Avoidance/Minimization Efforts

As discussed above, the Project Site is located within mapped Massachusetts NHESP *Priority Habitats of Rare Species* and *Estimated Habitats of Rare Wildlife* (Refer to the ER maps in Appendix B). The sections below describe how impacts to state-listed species will be minimized for each species.

The following factors have been considered during the design phase while evaluating options to minimize impacts to state-listed species within the Project Site:

- Mature fruit season of state-listed sedges (i.e., time of year (TOY) restriction)
- Field-identification and mapping of state-listed species
- Location of state-listed species in relation to access road and work pads
- Reduction of limit of work footprint
- Implementation of BMPs to protect habitats and water quality

Project-specific mitigation measures will be developed in consultation with the NHESP and other agencies. Mitigation may consist of state-listed habitat management on NEP property, offsite mitigation, and/or other measures to achieve net benefit for each affected species, in accordance with 321 CMR 10.23.

NEP initiated discussions with NHESP in 2022, and the Project team has and will continue to coordinate impact avoidance and minimization strategies for the Project with that agency. To minimize impacts to rare plant species, temporary construction matting will be used to cross mapped wetlands and rare species habitat. Minimization measures include air bridging and removal of mats between activities on-site. Work will be conducted outside the growing season to the extent practicable, however, work is ultimately

contingent upon the outage schedule. Identified populations of rare plant species will be flagged by an NHESP-approved botanist, and care will be taken to avoid these populations. Rare species areas will be monitored post-construction, per suggestion of NHESP, to evaluate growth habits and work-related impacts.

As the installation of temporary construction matting is required during the growing season, the work will result in a "take" of rare plant species due to the disruption of the natural growth and fruiting cycle of this species. NEP is coordinating with NHESP to prepare a Conservation and Management Plan (CMP) pursuant to the MESA for the proposed Project. Additionally, a MESA Project Review Checklist will be submitted to NHESP for work conducted in rare species habitat.

Ms. Glorioso indicated that impacts to ski-tipped emerald (*Somatochlora elongata*; MA Species of Special Concern) are not anticipated as the proposed project will not include water level manipulation or bank stabilization activities. As such, a "take" of this species is not anticipated.

5.5 Historic and Archaeological Resources

NEP retained The Public Archaeology Laboratory, Inc. (PAL) to undertake a historic and archaeological review of the Project Site. PAL conducted a cultural resource due diligence and archaeological sensitivity assessment of the existing E131 line ROW in October 2019. The cultural resource due diligence included a file review of previously recorded cultural resources in the Project vicinity, a walkover survey, and an archaeological sensitivity assessment of the ROW to provide information about cultural 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. The previous surveys identified eleven (11) aboveground resources and three (3) archaeological sites within the vicinity of the existing E131 line ROW. As part of the cultural resource due diligence, PAL assessed the existing E131 line ROW as having high, moderate, and low archaeological sensitivity. PAL reviewed the proposed Project impact areas and prepared a technical proposal to conduct an intensive (locational) archaeological survey for the Project. PAL submitted a State Archaeologist's Permit application to the MHC on April 1, 2021, and on April 13, 2021, the MHC issued Permit #4081 to PAL to conduct the survey. On April 7, 2022 PAL requested the MHC amend the intensive archaeological survey permit to include access road upgrades and on April 19, 2022, MHC amended the permit.

PAL conducted an intensive (locational) archaeological survey in 2021 at structure replacement work pad locations and performed additional intensive (locational) archaeological survey for access roads in 2022; PAL plans to perform any necessary limited archaeological site examination investigations of archaeological sites that are potentially eligible for listing in the National Register of Historic Places in 2023 when ground conditions are suitable for field investigations. PAL filed a survey report with the MHC and other consulting parties on December 20, 2022. NEP will continue to consult with the MHC, DCR and Native American Tribes throughout the permitting process to avoid minimize or mitigate adverse effects to historic and archaeological resources that may be affected by the Project.

PAL also performed a historic architectural reconnaissance survey in 2022 and submitted a report to the MHC on the results of the survey on December 20, 2022.

5.5.1 Avoidance/Mitigation to Historical/Archaeological Resources

PAL conducted an intensive (locational) archaeological survey in 2021 and 2022 and plans to conduct limited archaeological site examination investigations in 2023 to identify and evaluate historic and archaeological resources throughout the Project corridor, and in advance of an archaeological site avoidance and protection plan. NEP will continue to consult with the MHC and Native American Tribes to avoid, minimize, or mitigate any adverse effects the Project may have on historic and archaeological resources that may be affected by the project.

5.6 Outstanding Resource Waters

The Line E131 ROW crosses over Phelps Brook a tributary to the Phelps Brook Reservoir, a Public Water Supply Watershed that is afforded Outstanding Resource Water (ORW) protection under the Massachusetts Surface Water Quality Standards at 314 CMR 4.00. Identified as Public Water Supply No. 1190000-01S, it encompasses an approximately 534-acre area in Monroe, Massachusetts. STRs 27 to 33 are situated within the Phelps Brook Reservoir area (see pages 46 and 47 of the ER maps in Appendix B), as defined by MassDEP.

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SECTION 6

Section 6
Climate Change Adaption and Resiliency

NEP continues to consider climate change and long-term infrastructure resiliency an important goal in its long-term infrastructure planning. The system upgrades, as proposed are intended to help ensure the longevity and reliability of the region's electrical infrastructure in the face of growing demand and the changing climate. The proposed upgrades to E131 line and access road improvements will weatherize this energy infrastructure and facilitate a high-speed connection between the Harriman and Adams #21 Substations which will improve outage response times and help protect communities from blackouts during severe weather events.

The proposed Project has been designed in alignment with NEP's reliability goals and strategies in the following ways.

- Incorporates new design standards and the latest in design materials;
- Provides needed upgrades to existing electric transmission infrastructure;
- Provides the shortest project delivery time to meet the identified needs;
- Minimizes impacts to natural and social environments, and
- Provides a stronger electrical transmission system, vital to the public's safety, security and economic prosperity.

In accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, NEP consulted the Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards Tool for the Project. A copy of the output report generated by the RMAT tool (RMAT Report) is provided in Appendix H.

6.1 Climate Change Resiliency and RMAT Design Standards

The RMAT Report assessed three "high risk" sectors for the proposed Project: extreme precipitation related to urban flooding, extreme precipitation related to riverine flooding, and extreme heat. These factors are discussed in greater detail in the following sections.

The Massachusetts Sea Level Rise and Coastal Flooding Viewer indicates that no portion of the Project is located within areas affected by projected sea level rise. Additionally, the Project is located beyond the mapped extents of hurricane surge scenarios and FEMA coastal flood zones. Consistent with these data, the RMAT Report has designated the Project as "low risk" with regard to sea level rise/storm surges.

6.1.1 Extreme Precipitation - Urban Flooding, Riverine Flooding

With higher-frequency storms, it is critical that communities are supported by a reliable energy grid. As part of the planning process for this Project, NEP reviewed data from the Resilient MA Climate Change Clearing House for the Commonwealth. This mapping suggests that the projected changes to the precipitation events in the easternmost portions of Adams and North Adams are slightly less than other areas of the state over a 10 to 20-year timeframe. Conversely, the portions of E131 line within the municipalities of Florida and Monroe are within areas of the highest potential change in precipitation

events in the State. Within the Hudson Basin (i.e., the easternmost portions of Adams and North Adams), the projected change in inches of total precipitation over the next 10 to 70 years ranges from 2.63 inches to 5.60 inches. Within the Deerfield Basin (i.e., Monroe and Florida), these estimates range from 3.31 to 6.37 inches.

As noted in Section 5.1.6, there are no permanent impacts to BLSF associated with this project there are three specific locations within the Project Site which are mapped as 100-year flood zones. For reference, these locations are:

- Adams Substation to STR 179: Zone A3, associated with the Hoosic River
- Structures 145 to 143: Zone A, associated with an unnamed tributary to Staples Brook
- Structures 120 to 119: Zone A, spanning the Cold River, nearest Structure (STR 120) is 165 feet west.

As part of this Project, NEP is proposing to remove existing structures from current flood-prone wetland areas. Specifically, STR 144 (see Page 9 of the ER maps in Appendix B) is currently situated within an emergent wetland subject to flooding. This structure will be removed allowing the line to fully span the floodplain, thereby eliminating future impacts to this area from infrastructure work. Other climate adaptation and resiliency strategies include reinforced structure foundations, storm resiliency and mitigation, and site stabilization and re-establishment of natural vegetation.

6.1.2 Extreme Heat

According to the EEA's Climate Change and Adaptation Report (the Report), increasing temperatures could increase energy demands in Massachusetts by 40 percent in 2030. Additionally, the Report indicates that projected increases in temperature can challenge the ability of electric infrastructure to meet peak electricity demands. Repairs and maintenance work may take extended lengths of time, as repair personnel may experience difficulty to work in protective gear in extreme weather events.

NEP has established standards which consider and provide contingencies for extreme weather, such as heavy ice conditions or high temperatures. The Project has been designed to incorporate these standards, and replacement structures will be better equipped to withstand extreme weather. New steel structures and are designed with longevity in mind and are minimally impacted by corrosive environments. Furthermore, the new OPGW will provide a high speed fiber optic connection between the Harriman and Adams #21 Substations. The new connection will alleviate existing communication constraints, improve response time and bolster system wide reliability.

6.2 Greenhouse Gas Emissions

The proposed Project consists of the refurbishment of an existing utility transmission line and construction of access roads necessary to conduct said refurbishment work. No new stationary sources of CO_2 emissions are proposed; the line will operate as it has for nearly a century, as an un-manned overhead electric utility.

Typical construction equipment will be used for construction of the Project. During all upgrade components, NEP will comply with state laws regulating the use of diesel-powered equipment and 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.
- 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.

Due to the Project's *de minimis* greenhouse gas emissions, NEP requests a waiver from the requirements to analyze greenhouse gas emissions in an EIR. As discussed with the MEPA Office in the pre-application meeting, the tree and vegetation removal for the Project falls well below the 50 acre threshold indicated and Greenhouse Gas Emissions Policy and Protocol for "unusually large amounts of land alteration or clearing and forest conversion".

6.3 Noise

NEP anticipates the Project will not result in noise levels of concern to area residents, municipal officials, or other regulatory entities, either during construction or during operation. Construction of the Project will take place along existing transmission line ROWs. 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 refurbished transmission line during normal operations.

6.4 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 (watering of exposed soils and trafficked zones) to suppress dust generation and fugitive dust emissions. Due to the transitory nature of construction activities, air quality in area will not be significantly affected by construction along the ROW. Emissions produced by the operation of construction machinery (nitrogen-oxides [NOx], sulfur oxides [SOx], carbon monoxide [CO], Volatile Organic Compounds [VOCs], and particulate matter [PM]) are short-term and not generally considered significant. Refer to Section 3.3 and EG-303NE for further details.

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

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SECTION 7

Section 7
General Transmission Line Construction Sequence and Procedures

The construction period is anticipated to commence in May 2024 and be complete by the first quarter of 2027.

7.1 General Construction Sequence

The construction schedule was developed taking into consideration environmental factors, climatic conditions, constructability, and permit approval timelines.

Due to outage constraints in the region and NEP's efforts to reduce impacts to the natural environment and effected property owners, Project activities will be completed in stages, as summarized in below.

Overhead transmission line construction will occur in stages, with periods of activity and dormancy, as necessary. Once initiated, work will generally follow the sequence presented below for each phase. However, certain activities may occur simultaneously within one or more phases.

- Re-flag wetlands and other sensitive resources adjacent to work areas and access roads;
- Conduct vegetation management (mowing and tree cutting as necessary);
- Install BMPs(including construction matting);
- Improve or reestablish access roads; maintain as necessary;
- Establish work pads;
- Install new utility poles;
- Install OPGW/Replace shield wires;
- Restore the ROW, as necessary, including revegetation of disturbed areas resulting from the construction process to the greatest practicable extent; and dispose of existing line components; and
- Conduct follow-up inspections, as required.

The following sections provide details for the transmission line construction activities.

- 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 other construction-related BMPs;
- Construction, repair and/or improvement of access routes to existing and proposed work locations;

- Installation of work pads and staging areas;
- Pouring of concrete foundations, caissons, and rebar cages;
- Installation of foundation and construction of new and replacement transmission structures;
- Installation of OPGW;
- Removal of existing structures and associated hardware (to include recycling of used materials and assets); and
- Restoration and stabilization of the ROW.

7.2 General Construction Procedures

The Project will adhere to conventional transmission line maintenance and construction procedures along with any agency requirements. These procedures are documented in NEP Environmental Document (EG-303NE) (Appendix F) which outlines NEP policies for ROW access, maintenance and construction BMPs. By consistently implementing these procedures, NEP establishes performance standards for transmission line construction, including that the work be conducted by trained personnel in a manner that minimizes potential impacts to the environment, adheres to permit conditions, and meets industry standards. This section summarizes NEP policies and addresses Project-specific construction methods. The discussion presumes that all required permits and authorizations will have been issued, and that throughout construction appropriate consideration will be given to Project implementation in a manner consistent with conditions of permits/authorizations and approved mitigation measures.

7.3 Environmental Compliance and Monitoring

Project activities will be overseen by an "Environmental Monitor," a qualified environmental professional designated by NEP who can capably monitor on-site construction conditions in relation to permit and regulatory requirements (see *Section 8: Regulatory Compliance*). In addition, NEP's contractor will designate a Construction Supervisor who will be responsible for daily inspections of work areas during the construction period and will address potential issues related to the environment (e.g., erosion and sedimentation). The Construction Supervisor will be on-site daily to perform required inspections and has "stop work" authority if required due to an observed or reported infraction of the standards and procedures.

Documentation identifying deficiencies of erosion control measures will be forwarded to the Construction Supervisor for implementation of corrective measures. As a proactive approach to ensure compliance with environmental permit requirements, all construction personnel will be briefed on the Project's environmental issues and permit obligations prior to construction. Field staff will also be trained to recognize and respond to changing field conditions as they relate to protecting wetland resource areas and preventing sedimentation and stormwater runoff. Regular progress meetings will be held to reinforce contractor's awareness of these issues.

Professional wildlife scientists and/or botanists will be responsible for monitoring work when activities occur within rare species habitat. Specific functions to be performed by these scientists will be defined during consultation with NHESP.

7.3.1 Re-delineate Wetlands and Sensitive Resources

Wetlands in the Project area have been field verified and delineated and are shown on the ER Maps in Appendix B. Sensitive resources, e.g., rare species habitat and vernal pool habitat, have also been field-identified. Prior to the start of construction, these resources will be rechecked for accuracy and reflagged, as appropriate.

7.3.2 Installation of BMPs and Vegetation Management

Prior to initiating construction, the boundaries of wetlands will be clearly marked to prohibit unauthorized encroachment into wetland areas.

Requirements imposed by Conservation Commissions in their Orders of Conditions will be followed. Special vegetation maintenance methods will be used in wetlands and other environmentally sensitive areas. Care will be taken to minimize the disturbance of soils and potential for Project-related erosion.

Following the ROW vegetation maintenance activities, proper erosion control devices, such as straw bales and siltation fencing, will be installed in accordance with approved plans and permit requirements (e.g., Orders of Conditions), and overseen by NEP's Construction Supervisor. Weekly inspections to evaluate potential erosion and/or sedimentation issues will be conducted, and inspection reports will be submitted until "final stabilization" has been achieved (i.e., 70 percent vegetative cover within the disturbed areas). Photographic documentation will also be collected. The control devices will provide the dual function of mitigating construction-related erosion and sedimentation, as well as serving as a physical boundary to delineate resource areas and to contain construction activities within approved areas.

7.3.3 ROW Vegetation Management

All work will be undertaken in accordance with NEP's Vegetation Management Plan (VMP) that has been approved by the Massachusetts Department of Agriculture. To facilitate construction equipment access along the majority of the ROW and at structure sites, vegetative maintenance (mowing), will be undertaken in select areas, as necessary. This will be done to provide access to proposed structure locations to facilitate safe equipment passage, to provide safe work sites for personnel within the ROW, and to maintain safe and reliable clearances between vegetation and transmission line conductors.

As part of an Integrated Vegetation Management (IVM) program, NEP's professional foresters oversee the uses of mechanical, natural, and herbicides when considering controls to use on the landscape. Vegetation maintenance of the ROW will occur within the limits imposed by the approved VMP. Herbicides will be applied by licensed applicators to select target species. Herbicides are never applied in areas of standing water or within designated protective buffer areas associated with wells, surface waters, and agricultural areas. NEP currently utilizes a four- to five-year vegetation maintenance cycle on its transmission ROWs. NEP's ROW vegetation maintenance practices encourage the growth of low-growing shrubs and other vegetation that provide a degree of natural vegetation control. Vegetation maintenance under and adjacent to the new transmission line will be consistent with current ROW procedures. Vegetation management within sensitive areas, including NHESP-designated Priority Habitat, are outlined in the VMP.

7.3.4 Access Road Establishment and Improvements

The construction of new access roads and the improvement of existing access routes will be necessary before structure replacement or line work can begin.

In planning for site access, consideration was given to avoiding the use of access roads within or adjacent to environmentally sensitive areas to minimize the potential impacts associated with construction activities. Due to the extensive wetlands located in portions of the ROW, access across wetland areas and streams cannot be avoided. Where upland access is not viable, vehicles and equipment will be accommodated by the temporary placement of construction mats. Typically, construction mats consist of timbers or other suitable material bolted together and placed over wetland areas so as to distribute equipment loads and minimize disturbance to the wetland and soil substrates. However, composite matting may also be used where conditions allow. Temporary construction mat access roads will be removed following completion of construction.

Equipment typically used during the installation and maintenance of access roads includes dump trucks used to transport fill materials to work sites and bulldozers, excavators, vibratory rollers, backhoes and graders which will be used to place fill materials or make cuts to achieve the proper access road profile. Throughout the Project, pickup trucks will be used to transport crews and hand-held equipment to work sites. Low-bed trailers will be used to transport tracked and other off-road equipment, which cannot be operated on public roadways to the work site. Refer to Section 3.2.3 for further details regarding access road development and improvements.

7.3.5 Establishment of Work Pads and Staging Areas for Construction

Construction work pads, pull pads and guard structure work pads will support the equipment needed to complete the structure maintenance and improvements. All work areas (refer to ER maps in Appendix B) are located within the existing maintained ROW.

In general, construction work pads and pull pads are conservatively shown as follows:

- Work Pads: 100 feet by 100 feet
- Pull Pads: 100 feet by 80 feet

However, the actual area needed to support equipment will depend on the equipment needs at that particular location, as well as site specific conditions. While grading and/or stabilization may be required within some work pads to provide a level work surface for construction equipment and crews in upland areas (as identified on the E131 ACR ER Maps provided in Appendix B), the majority of the proposed work areas will require mowing only.

NEP designed the Project to avoid permanent impacts to wetland resource areas to the maximum practicable extent. However, since this Project consists of maintenance and improvements to an existing alignment, permanent and temporary impacts could not be avoided. Where impacts to BVW are required for work pads, construction mats will be temporarily placed over wetland areas to distribute equipment loads and minimize disturbance to the wetland and soil substrates. Proposed construction mat locations are shown in the mapping in Appendix B. Temporary construction mats will be removed following completion of construction. Any stabilization material placed in BLSF will also be removed.

Any area identified by NEP's archaeological consultant as a potentially significant archaeological resource will be avoided if safe/practicable alternatives are available.

7.3.6 Installation of Foundations and Replacement of Pole Structures

Equipment typically used during the installation of foundations and the replacement of pole structures includes excavating equipment such as backhoes and excavators, rock drills/augers, cranes, and concrete trucks. The H-frame structures will be installed using the "Direct Embed" construction method, and the triple pole structures will be installed using either direct embed or "Self-Supporting" construction methods including micro-pile and caisson foundations, described as follows.

TABLE 7-1
Summary of Utility Pole Installation Methods

Direct Embed:	The installation of a direct embed structure (e.g., tangent or in-line structures) involves the excavation of a hole, the installation of a vertically placed steel culvert (corrugated pipe), placement of the new pole within the culvert, and backfill of the culvert with stone around the pole. The fill needed for these structures is the backfill required within the culvert above existing surrounding grade. Assuming the average direct embed foundation (i.e., culvert) protrudes approximately 2 feet above surrounding grade, this would result is approximately 20 cubic feet of fill for each pole, or for a two pole (H-Frame structure) approximately 40 cubic feet per structure. The area affected by each foundation, assuming a 42-inch diameter culvert, is approximately 10 square feet, making the area for an H-Frame structure approximately 20 square feet. Guy wires and anchors will be installed as required by code.
Self-Supporting (Caisson Foundations):	The installation of a self-supporting structure (e.g., angle and dead-end structures) involves drilling a vertical subsurface temporary casing shaft (oversized to fit the permanent casing), followed by the installation of the permanent casing within the temporary, the installation of the steel reinforcing cage (tied rebar), the placement of anchor bolt clusters (to attach the structure to the foundation), pouring of concrete to form the foundation within the permanent casing (also called a caisson foundation), backfilling the void between permanent and temporary casing as the temporary casing is removed, bolting the new structure to the foundation, and final grading around the base of the structure. Assuming the average caisson foundation protrudes approximately 2 feet above surrounding grade, each 6-foot diameter caisson would result in approximately 100 cubic feet of fill and approximately 300 cubic feet of fill for a triple pole structure. The area affected is approximately 150 square feet for a triple pole structure (or 50 square feet per pole).

In general, any excavated material will be placed next to the excavation. Steel culvert casings are used to support the sides of excavations. Once the structure has been properly positioned and plumbed within the hole, the excavation will be backfilled with clean three-quarter inch minus gravel and tamped to provide structural integrity. Following the

backfilling operation, any remaining excavation spoils will be spread over upland areas or removed from the site.

Handheld equipment, including shovels and vibratory tampers, are used during the backfilling of foundations and pole structures. Dump trucks are used to remove excavation spoils from the work site if necessary. Cranes are used to erect structures and bucket trucks or a crane with a basket are used to lift the linemen to the aerial work zone. Tracked equipment that cannot be operated on public roadways will be transported to the work site by means of a low-bed trailer.

Dewatering may be necessary during excavations for foundations near wetland areas. No culverts in wetlands are anticipated, but two upland culverts area proposed (at the discretion of the contractor) to avoid the potential for upgradient flooding. At all times dewatering will be performed in compliance with the EG-303NE guidelines and BMPs. If there is adequate vegetation in upland areas to function as a filter medium, the water generally will be discharged to the vegetated land surface. Where vegetation is absent or where slope prohibits, the water will be pumped into a straw bale or silt fence settling basin which will be located in an upland area. The pump intake will not be allowed to rest on the bottom of the excavation throughout dewatering. The basin and all accumulated sediment will be removed following dewatering operations and the area will be seeded and mulched.

7.3.7 OPGW Installation

Following structure upgrades, the OPGW will be replaced by utilizing "Tension Stringing Methods" in accordance with Institute of Electrical and Electronics Engineers ("IEEE") 524 and National Grid Transmission Specifications Document # SP.06.01.301. The wire will be installed in sections varying in length from a single span to two miles or more. The equipment that typically will be used during the conductor and shield wire installation operation includes stringing blocks; a multi-reel rope puller; a single reel hardline puller; a bundle tensioner; conductor reel stands; bulldozers; and cranes.

The wire stringing equipment is used to pull the shield wire through the stringing blocks one phase at a time. First the insulators and stringing blocks will be installed on the structures. Next, the ropes (one per phase and shield wire) will be pulled from structure to structure by either equipment on the ground or with a helicopter. The rope will then be used to pull in the hard line (wire rope) from the puller to the wire reels and the puller will then pull in each shield wire or phase conductor bundle. At no time during installation will the wire be permitted to come into contact with the ground. Once the wire is in place, it will be pulled up to final sag and permanently affixed to the new structures. This process will be repeated for each section of line. During the stringing operation, temporary guard structures or boom trucks with guard attachments will be placed at road and highway crossings, and at crossings of existing utility lines, to ensure public safety and the continued operation of other utility equipment. The location of the temporary guards is shown on General Purpose Plans.

To minimize disturbance to soils and vegetation, existing access roads will be used to the fullest extent possible in the placement of wire stringing equipment and materials. The wire reels and other large material items will be transported to and along the ROW using large trucks and tractor trailers. Pickup trucks will be used to transport work crews and small materials to work sites.

7.3.8 Restoration of the ROW

Restoration efforts will be conducted during and following the construction operations. Construction debris will be removed from the Project site and disposed of properly. 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. Construction work pads will be loamed and seeded where necessary (where grading is proposed and within the RFA). Temporary sedimentation control devices will be removed following the stabilization of disturbed areas; straw bales, straw wattles, or similar may be removed or left in place after the stakes are pulled and the strings cut. Pre-existing drainage patterns, ditches, roads, walls, and fences will be restored to their former condition. Where authorized by property owners, permanent gates and access road blocks will be installed at key locations to inhibit access onto the ROW by unauthorized persons or vehicles.

Wetland restoration areas will be monitored in accordance with applicable agency requirements.

7.4 Construction Traffic and Equipment

7.4.1 Construction Traffic

For the proposed Project, there will be construction-related traffic during the proposed construction period for each phase. Access to the ROW for construction equipment will typically be gained from public roadways crossing the ROW in various locations along the route and adjacent existing off-ROW access roads. Because each of the 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 various vehicle types ranging from pickup trucks to heavy construction equipment.

NEP's contractor will coordinate closely with MassDOT to develop acceptable traffic management plans for work within state highway layouts. NEP will coordinate with local authorities for work on local streets and roads. At locations where construction equipment will be staged in a public way, the contractor will follow a pre-approved work zone traffic control plan. Prior to use of off-ROW access roads, permission will be obtained from private land owners.

7.4.2 Construction Equipment

Table 7-2 lists the equipment that is likely to be utilized during the installation of the new overhead transmission line and to remove the existing structures. The Proponent requires the use of ultra-low sulfur diesel fuel exclusively in its diesel-powered construction equipment. Contractors will be directed to retrofit any diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project with EPA-verified (or equivalent) emission control devices (e.g., oxidation catalysts or other comparable technologies).

TABLE 7-2
Summary of Typical Overhead Transmission Line Construction Equipment

Construction Phase	Typical Equipment/Materials Required
Site Preparation	Pickup and other small trucks Flatbed trucks, brush hogs, bulldozers, bucket trucks for tree canopy trimming, wood chippers Erosion and sediment control devices Equipment for tree trimming and/or cutting
General Activities	Vehicles to transport personnel Side booms, forklifts and cranes to handle materials Trucks to haul sanitary/solid wastes from construction sites Pickup trucks for supplies
Access Roads	Bulldozer or front end loader Excavators Dump trucks for hauling crushed stone or gravel Vibratory rollers Pickup or stake body trucks for culverts, tooling and personnel
Structure Upgrades	Trucks to haul out old hardware (roll off dumpsters) Cranes Trucks with welding equipment to cut steel supports or components Dump trucks to haul smaller components, gravel or spoils Digging equipment such as backhoes or excavators
Installation of New Structures	Bulldozer or front-end loader All terrain vehicles (ATVs) Rubber Tracked carrier (e.g., Morooka) or a skidder Flatbed trucks and tractor trailers for hauling structure components Augers Excavators and backhoes Cranes Bucket trucks Conductor pulling and tensioning rigs Helicopters Large-bore foundation drill rigs for caissons foundations Concrete trucks Pickups and other small trucks
Restoration	Pickup and other small trucks Excavators and backhoes Dump Trucks

7.5 Safety and Public Health Considerations

NEP will construct and maintain the facilities for the proposed Project 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 proposed Project improvements will be designed, constructed, and maintained in accordance with the National Electric Standards Committee (NESC) Standards. 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 (IEEE), the American Society of Civil Engineers (ASCE), the American Concrete Institute (ACI), and the American National Standard Institute (ANSI). Practices which will be used to protect the public during construction will include, but not be limited to, establishing traffic control plans for construction traffic on busy streets to maintain safe driving conditions, restricting public access to potentially hazardous work areas, and use of 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 of potential hazards if climbed or entered. Installation of signs, gates and/or other types of barriers (e.g., large stones) at access points from public roads will notify the public that trespassing on the ROW is prohibited.

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SECTION 8

Section 8
Regulatory Compliance

8.1 Introduction

NEP has incorporated extensive measures into the design to avoid and minimize Project impacts to the greatest practicable extent, and where impacts cannot be avoided, NEP will implement appropriate mitigation. This section provides a general overview of the Project's approach to complying with the jurisdictional regulations of state and federal regulatory review agencies. Specific impact areas were presented previously in Sections 3 and 5, and mitigation measures are addressed in Sections 3, 5 and 7.

8.2 State Regulations

The wetlands and waterways along the ROW are subject to the jurisdiction of Sections 401 and 404 of the federal Clean Water Act (CWA), 33 U.S.C. § 1251 et seq. The CWA establishes the basic federal structure for regulating discharges of pollutants into the Waters of the United States and regulating quality standards for surface waters.

A Section 401 Water Quality Certification is required under the CWA for certain activities in wetlands and waters, but the law gives states the authority to review projects that must obtain federal licenses or permits and that result in a discharge to state waters. The purpose of the Massachusetts Section 401 review is to ensure that a project will comply with state water quality standards and other appropriate requirements of state law. Statutory authority for this certification is stated in the federal Clean Water Act, 33 U.S.C. § 1341, and the Massachusetts Clean Water Act, G.L. c. 21, §26-53. Regulatory authority for this certification is located at 314 CMR 9.00. Water quality standards referenced in the certification are found in 314 CMR 4.00.

This Project requires an Individual Section 401 Water Quality Certification, primarily due to the activities associated with the construction of new access roads. 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 appropriate and practicable measures for avoiding and minimizing impacts to wetland resource areas. The Project's design avoids, minimizes, and mitigates adverse impacts, as described in this section and Sections 3, 5 and 7.

8.2.1 Section 401 Water Quality Certification

NEP will be required to permit the proposed temporary and permanent fill of wetlands under 314 CMR 9.00 and obtain an Individual Water Quality Certificate from MassDEP. The MassDEP 401 program regulates the placement or removal of material within Waters of the US within the Commonwealth.

The proposed E131 Project will require the temporary placement of construction matting in BVW for construction access and work pads totaling over 5,000 sf. Additionally, permanent fill of wetlands, (660 sf), will be required for the installation of a new switch structure (Structure 79A), the installation of concrete caissons within four separate BVWs (Structures 43, 145, 150, and 169) and the replacement/relocation of five (5) Structures from with the 100-foot Buffer Zone to areas within BVW (Structures 24, 60, 80, 151, 172).

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 Sections 3, 5 and 7. The compensatory mitigation package for the Project will comply with applicable state mitigation requirements.

8.2.2 Waterways Permitting

The Project spans one river subject to jurisdiction under the Massachusetts Public Waterfront Act (M.G.L. Chapter 91; "Chapter 91") and its implementing regulations set forth at 310 CMR 9.00. Chapter 91 is administered by MassDEP. However, as described below, the jurisdictional Project-related crossing is exempt from Chapter 91 licensing and permitting requirements per 310 CMR 9.05(3)(g), as demonstrated in the following sections.

8.2.2.1 Jurisdictional Crossings

Per 310 CMR 9.04(1)(e) Chapter 91 geographic jurisdiction includes non-tidal rivers or streams "on which public funds have been expended for stream clearance, channel improvement, or any form of flood control or prevention work… except for any portion of any such river or stream which is **not** normally navigable during any season, by any vessel including canoe, kayak, raft, or rowboat…". All "structures" in these rivers and streams are subject to waterways licensing under 310 CMR 9.05(i). A "structure" is defined at 310 CMR 9.02 as "any man-made object which is intended to remain in place . . . over . . . waterways." Thus, MassDEP typically requires a Chapter 91 License for electric transmission crossings over inland rivers and streams even where there is no physical structure in the stream or river, provided that stream or river is normally navigable during any season by any vessel, unless otherwise subject to jurisdiction per 310 CMR 9.04(1)(a) - (d)).

Per the MassDEP Technical Advisory #WE03-08, *Jurisdiction Under the Public Waterfront Act in Non-tidal Rivers and Streams*, (revised August 10, 2006), one (1) Chapter 91 jurisdictional waterway (Hoosic River) intersects the Project Site. The E131 line currently spans the Hoosic River between existing structures 179 and 178 in Adams (refer to the ER Maps, Page 1, Appendix B)

8.2.2.2 Exempt Crossings

The E131 line over Hoosic River crossing, listed above, is expressly exempt from Chapter 91 in so long as the work is authorized by a final [Wetlands Protection Act] Order of Conditions and meets the following associated standards: it is constructed and maintained in accordance with the National Electrical Safety Code and does not reduce the space available for navigation (310 CMR 9.05(3)(g)).

As described above, the E131 line over Hoosic River crossing is categorically exempt from Chapter 91 licensing because it will require an Order of Conditions from the Adams Conservation Commission. Moreover, the crossing will consist of "overhead wires … constructed and maintained in accordance with the National Electrical Safety Code," as all electrical transmission lines are required to be constructed and maintained in accordance with all applicable legal standards, including the National Electrical Safety Code and 220 CMR 125.00 *Installation and Maintenance of Electric Transmission Lines*. Finally, the Project lines will cross at a height above the waterway surface so that it will not "reduce the space available for navigation.

In summation, the required Order of Conditions for this Project activities located in Adams will fulfill the requirements of 310 CMR 9.05(3)(g) thus exempting the Hoosic River crossing from Chapter 91 licensing requirements.

8.2.2.3 Summary of Compliance with Chapter 91

The Project will meet the applicable standards of the Chapter 91 regulations, including the Standards to Preserve Water-Related Public Rights (310 CMR 9.35), the Standards to Protect Water Dependent Uses (310 CMR 9.36) and Engineering and Construction Standards (310 CMR 9.37). A Registered Professional Engineer (PE) will design and certify the Project; the Project will be constructed and maintained in accordance with the National Electrical Safety Code; the E131 line does not involve fill or structures below the high water mark of any waterbody; and the proposed electrical cables will span over the river at heights that will preserve the existing space available for navigation.

8.2.3 Massachusetts Wetlands Protection Act

The Project will require approvals under the MA WPA and the implementing regulations at 310 CMR 10.00 for caisson installation, access road improvements, and other refurbishment activities in state-wetland resource areas that include Inland Bank, BVW, BLSF and Riverfront Area. Project-related impacts to these resource areas require an official finding of approval by the appropriate jurisdictional authority in the form of an Order of Conditions (OOC) or Determination of Applicability (DoA).

The MA WPA and its regulations are administered by municipal Conservation Commissions and, if superseded, MassDEP. Permit applications (Notices of Intent (NOIs)) will be filed with Conservation Commissions in Adams, North Adams, Florida, and Monroe detailing the proposed asset improvements, 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 the proposed mitigation conform to the performance standards for each affected MA WPA Resource Area.

In the communities with local wetlands bylaws (as of the date of this EENF) the application and hearing process will also address how the Project elements and proposed mitigation measures conform to the requirements of those town bylaws. NEP will coordinate with the Conservation Commissions of these communities such that the final mitigation package appropriately addresses local requirements.

The sections below summarize the Project's compliance with the MA WPA's general performance standards. The mitigation described herein and in the following subsection, Federal Regulations, will be used as the basis for compliance with state and federal wetland law.

8.2.3.1 Consistency of the Project with MA WPA - Limited Project (310 CMR 10.53(3)(d))

As set forth at 310 CMR 10.53(3)(d), the construction, reconstruction, operation and maintenance of underground and overhead public utilities is considered a "Limited Project" that may, under certain circumstances, be permitted without meeting the performance standards. It is within the issuing authority's discretion to consider the magnitude of the alteration and the significance of the project site to the interests identified in the MA WPA; the availability of reasonable alternatives to the proposed activities; the extent to which the adverse impacts are minimized; and the extent to which mitigation measures, including replication or restoration are provided to contribute to the protection of the

interests identified in the MA WPA. In addition, no limited project may be permitted if there will be an adverse impact to specified habitat sites of rare vertebrate or invertebrate species.

The proposed work associated with this Project occurs within an existing ROW. In accordance with the limited project provisions of the MA WPA, the Project may be permitted in accordance with the following conditions as well as any additional conditions deemed necessary by the issuing authority:

- 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 Board;
- Best available measures shall be used to minimize adverse effects during construction; and
- The surface vegetation and contours of the area shall be substantially restored.

An alternatives analysis has been conducted by the Proponent, as described in Section 2. NEP is confident that the proposed Project offers the most reasonable and balanced alternative to addressing the system's needs. Sections 3, 5 and 7 discuss the construction practices utilized to minimize impacts to wetland resource areas as well as practices utilized to ensure areas temporarily impacted by construction are substantially restored. In addition, NEP is committed to working with federal, state and local regulatory agencies to provide an appropriate range of mitigation measures, including, as appropriate, replication of permanent fill impacts; wetland restoration; wetland habitat enhancement and/or permanent land preservation (see Sections 5 and 9).

8.2.3.2 Inland Bank (310 CMR 10.54)

Bank is defined at 310 CMR 10.54(2)(a) as "the portion of the land surface, which normally abuts and confines a water body." Where Inland Bank is encountered within the Project area, the following applicable MA WPA general performance standards apply:

Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on a Bank shall not impair the following:

- the physical stability of the bank;
- the water carrying capacity of the existing channel within the Bank;
- ground water and surface water quality;
- the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries; and
- the capacity of the Bank to provide important wildlife habitat functions.

Permanent alteration of inland Bank will result from the placement of two culverts in a 1-foot wide intermittent stream. The culverts will be installed during the dry season to avoid work in flowing water. The remainder of work in LUW has been avoided through the use of construction mats designed to span smaller streams during construction. Work over larger rivers will be conducted from either side of the waterbody, without the need to impact its banks.

The proposed Project will not impact groundwater or surface water or the capacity of the Banks to provide breeding habitat, escape cover, food for fisheries, or reduce the capacity of the Banks to provide important wildlife habitat functions following completion of the Project.

8.2.3.3 Bordering Vegetated Wetland (310 CMR 10.55)

Bordering Vegetated Wetland (BVW), as defined at 310 CMR 10.55(2)(a) and (c), are "freshwater wetlands that border on creeks, rivers, streams, ponds, and lakes." BVW is prevalent throughout the Project area. Where BVW occurs, the following MA WPA general performance standards apply:

- Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland 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 sf 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 has been designed to avoid or minimize adverse impacts to the extent practicable. However, since these are existing facilities in an existing alignment, temporary and permanent alteration to BVW will occur, including 660 sf of permanent fill. 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. Disturbed areas will be restored to their original condition. All temporary impacts to BVW will be restored *in situ.* To offset permanent impacts to BVW, NEP proposes to provide appropriate wetland mitigation in collaborative consultation with local, state, and federal resource agencies. Refer to Section 5.2.1 for further details.

8.2.3.4 Land Under Water Bodies and Waterways (310 CMR 10.56)

Land Under Water Bodies and Waterways (LUW) is defined at 310 CMR 10.56(2)(a), as "the land beneath any creek, river, stream, pond or lake." The Project crosses jurisdictional LUW at numerous locations during its length. LUW is associated with several perennial and intermittent streams and water bodies within the Project area. Where LUW is encountered, the following applicable MA WPA general performance standards apply:

- Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land Under Water Bodies and Waterways shall not impair the following
    - The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;
    - Ground and surface water quality;
    - The capacity of said land to provide breeding habitat, escape cover and food for fisheries; and
    - The capacity of said land to provide important wildlife habitat functions.

Impact to LUW will be limited to approximately 32 sf of land associated with the installation of two culverts in a 1-foot wide intermittent stream located between Structures 165 and 166. The culverts will be installed during the dry season to avoid work in flowing water. The remainder of work in LUW has been avoided through the use of construction mats designed to span smaller streams during construction. Work over larger rivers will be conducted from either side of the waterbody, without the need to impact its banks.

8.2.3.5 Land Subject to Flooding (310 CMR 10.57)

BLSF as defined at 310 CMR 10.57(2)(a), is "an area with low, flat topography adjacent to, and inundated by, flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs it extends from said wetland"." ILSF as defined by 310 CMR 10.57(2)(b), is "an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches". BLSF is present throughout the Project area. Where BLSF is encountered, the following MA WPA general performance standards apply:

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

- Work within BLSF, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.
- Work in those portions of BLSF found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which a Notice(s) of Intent is filed or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 sf (whichever is less) or land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat function. Additional alternations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

All impacts to BLSF will result from the placement of temporary construction matting along access routes and work pads.

8.2.3.6 Riverfront Area (310 CMR 10.58)

Per 310 10.58(2) Riverfront Area is defined as, "…the area of land between a river's mean annual high water line and a parallel line measured horizontally. The riverfront area may include or overlap other resource areas or their buffer zones. The riverfront area does not have a buffer zone." As noted in Section 5: Wetlands and Wildlife, 10 perennial streams are located within the Project area. Each of these perennial streams has a jurisdictional 200-foot Riverfront Area (RFA). Pursuant to 310 CMR 10.58(4), where this 200-foot RFA occurs within the Project area, the following MA WPA general performance standards apply:

Protection of Other Resource Areas Within RA: To the extent practicable, the Project meets the performance standards for Bank, Bordering Land Subject to Flooding (no net loss of flood storage capacity), and BVW (restoration and mitigation proposed for temporary and permanent impact).

Protection of Rare Species: As discussed in Section 5, the Project Site is located within mapped Massachusetts NHESP *Priority Habitats of Rare Species* and *Estimated Habitats of Rare Wildlife* (see Appendix B). The sections below describe how impacts to state-listed species will be minimized for each species.

The following factors have been considered during the design phase while evaluating options to minimize impacts to state-listed species within the Project Site:

- Mature fruit season of state-listed sedges (i.e., time of year (TOY) restriction)
- Field-identification and mapping of state-listed species
- Location of state-listed species in relation to access road and work pads
- Reduction of limit of work footprint
- Implementation of BMPs to protect habitats and water quality

NEP will mitigate state-listed species impacts through a CMP. Project-specific mitigation measures will be developed in consultation with the NHESP and other agencies. Mitigation may consist of state-listed habitat management on NEP property, offsite mitigation, and/or other measures to achieve net benefit for each affected species, in accordance with 321 CMR 10.23.

Practicable and Substantially Equivalent Economic Alternatives: The WPA general performance standards for RFA require that the applicant prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed Project with less adverse effects on the interests identified in the WPA. Section 2 discusses the alternatives evaluated to minimize impacts to wetland resource areas. This information will be provided as part of the NOIs prepared for the Project.

No Significant Adverse Impact: Impacts are fully described in Section 5 and proposed mitigation measures are addressed in Section 5 and 9. Temporary impacts where necessary for installation of linear site-related utilities are allowed within the Riverfront Area, provided the area is restored to its natural conditions (310 CMR 10.58 (4) (d) 1.a.). Riverfront Area impacts resulting from the proposed Project are primarily temporary land disturbances associated with the placement of construction matting. Work and pull pads within the Riverfront Area will be loamed, seeded and otherwise restored to 'natural' conditions, i.e., existing ROW conditions. Unavoidable permanent impacts include the improvement of existing access routes (expansion and grading) to ensure safe access to existing and proposed structures, and direct installation of replacement structures.

To offset temporary construction impacts, protective measures and BMPs will be in placed to avoid and minimize impacts. The approach for accessing the site, establishing work areas and performing construction activities is discussed in detail in Section 7*: General Transmission Line Construction Procedures*. The proposed Project will not result in a significant adverse impact or impairment or reduce the capacity of the Riverfront Area to provide important wildlife habitat functions.

8.2.3.7 Massachusetts Stormwater Standards

MassDEP applies the Massachusetts Stormwater Management Standards pursuant to the wetlands regulations (310 CMR 10.00) and the water quality regulations (314 CMR 9.00) relating to stormwater. The Stormwater Standards define ten standards for development and redevelopment projects. Minimal impervious surfaces are proposed for the Project. Portions of the Project subject to the Stormwater Management Standards are limited to new caisson foundations.

Although the proposed work is considered to be eligible for limited project status, NEP will meet the stormwater standards to maximum practicable extent. NEP will coordinate with engineers, regulators and local conservation commissions to develop stormwater management plans for these areas, as appropriate.

8.2.4 DCR Construction Access Permit

NEP understands that a Construction Access Permit (CAP) will be required prior to improving existing access and constructing new access roads within State Forest lands. NEP has been in close coordination with DCR.

8.2.5 Massachusetts Endangered Species Act

NEP is coordinating closely with NHESP pursuant to the Massachusetts Endangered Species Act (MG.L. c. 131A, MESA) to avoid impacts to listed species and their habitat, and to provide mitigation for any unavoidable impacts. Although impacts have been avoided and minimized to the maximum practicable extent without compromising the safety of Project construction and future maintenance personnel, a potential "take" is anticipated for some species, and a Conservation and Management Plan (CMP) will likely be required.

NEP is coordinating with NHESP to prepare a CMP pursuant to the MESA for the proposed Project. Additionally, a MESA Project Review Checklist will be submitted to NHESP for work conducted in rare species habitat. NEP will continue to work closely with NHESP to develop a mutually agreed upon protection plan for the state-listed species

8.2.6 Massachusetts Historical Commission

Any projects that require funding, licenses, or permits from any state agency must be reviewed by MHC in compliance with M.G.L. c. 9, §26-27C. This law created the MHC, the office of the State Archaeologist, and the State Register of Historic Places, among other historic preservation programs. It 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 published in Chapter 9, Section 26-27C (950 CMR 70-71). These regulations set up a process that mirrors the federal "Section 106" regulations (see Federal Regulations, below): identification of historic properties; assessment of effect; and consultation among interested parties to avoid, minimize, or mitigate any adverse effects.

NEP does not anticipate that the Project will have any adverse effects on known historic properties. However, if any new significant historic or archaeological resources are identified within the Project impact footprint, NEP will consult with the MHC to avoid, minimize, or mitigate any adverse effects the Project may have on historic properties.

8.2.4 Distribution/Circulation and Public Notice

NEP will circulate copies of this EENF in accordance with 301 CMR 11.16(2) and publish a public notice of Environmental Review in accordance with 301 CMR 11.15(1). A copy of the EENF Circulation and Distribution list and Public Notice is provided in Appendix I.

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SECTION 9

Section 9
Mitigation Overview

9.1 Introduction

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 9-1, below describes NEP's proposed mitigation measures.

Table 9-1
Summary of NEPs Proposed 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 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 cutting 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 (2014-2018), and its policies for ROW access, maintenance and construction BMPs outlined in *EG-303NE.*	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

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
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 F.*	Construction	NEP / Contractor
Access Road Improvements	Contractors to comply with *EG-303NE*.	Construction	Contractor
	Install erosion controls, as identified in the erosion and sediment control plan and specified in *EG-303NE*.	Construction	Contractor
	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 NEP*'s Environmental Guidance Documents (EG-1707 and 1701)* 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

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
	NEP will submit a Stormwater Pollution Prevention Plan (SWPPP) in compliance with USEPA's NPDES program under the Storm water Construction General Permit (CGP). 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
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.	Construction	Contractor
Air Quality	Deploy dust mitigation measures as described in National Grid's *Environmental Guidance Document EG-303NE* (see *Appendix F),* (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
Streams and Rivers	Bridge/span watercourses with temporary construction mats, as necessary, to allow equipment to cross without constraining water flow.	Construction	Contractor
		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* 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

ENVIRONMENTAL PARAMETER / ACTIVITY	SUMMARY OF MITIGATION MEASURES	IMPLEMENTATION SCHEDULE/ PHASE	RESPONSIBLE PARTY
	Compensatory mitigation for permanent BVW fill associated with the Project final plans to be developed in consultation with local conservation commissions and MassDEP.	Construction, long-term	NEP
	Compensatory mitigation which will be determined in consultation with agencies.	long-term	NEP
	The decommissioning, removal and restoration of Structures 101, 144, 153 and 180 (currently located within BVWs) from the line will eliminate the potential for repeated future impacts to the associated wetlands.		
Rare Species	Project activities will adhere to National Grid's approved Operation and Maintenance Plan, approved by the NHESP. Mitigation measures and BMPs to protect identified rare species will be implemented and maintained throughout the Project duration.	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-303.*	Construction/ long-term	NEP
Cultural 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
Public Outreach	Continue to update Project website; monitor the toll-free Project hotline; email construction updates; monitor email inquiry address; direct mail and "leave behinds" (e.g., fliers, brochures).	Design & Construction	NEP
	Municipal briefings, project website, toll-free project hotline and dedicated project email.	Design & Construction	NEP
	Implement Construction Communication Plan.	Construction	NEP

[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.pdf.

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APPENDIX A

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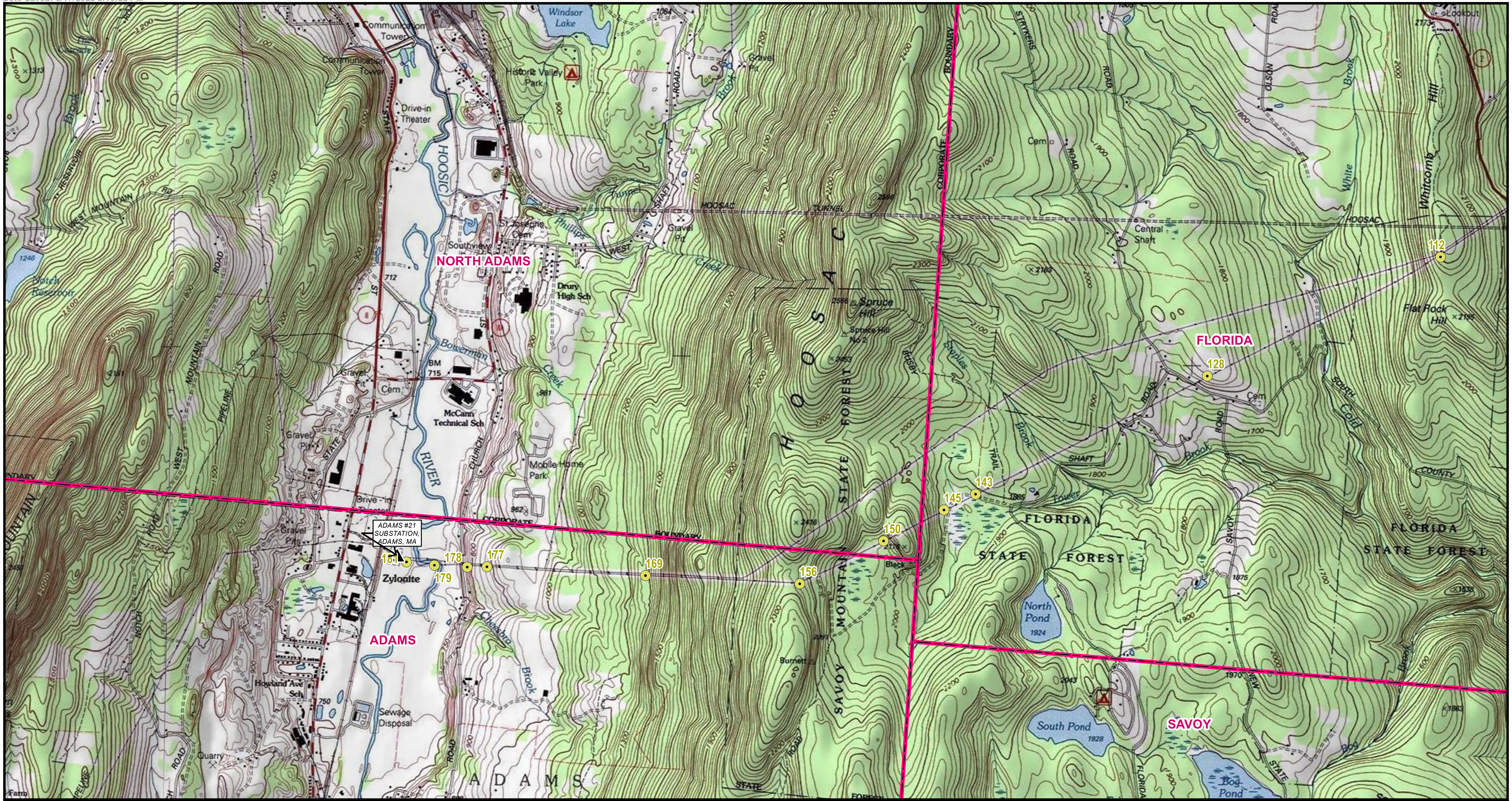

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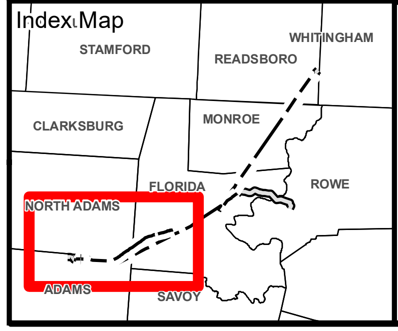

Legend

- Substation
- New Structure
- Municipal Boundary

N

1 inch = 2,000 feet

0 1,000 2,000

Feet

Based on USGS Topographic Map for North Adams, MA Revised 1988. Contour Interval Equals 6 Meters.

LINE E131 – ASSET CONDITION REFURBISHMENT (ACR) PROJECT

Site Location

Page 1 of 4

Basemap: ESRI World Imagery Basemap
Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs. Vermont Center for Geographic Information

The information/data provided in this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation or parcel level analysis. The maps should not be used for construction purposes.

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Tighe&Bond

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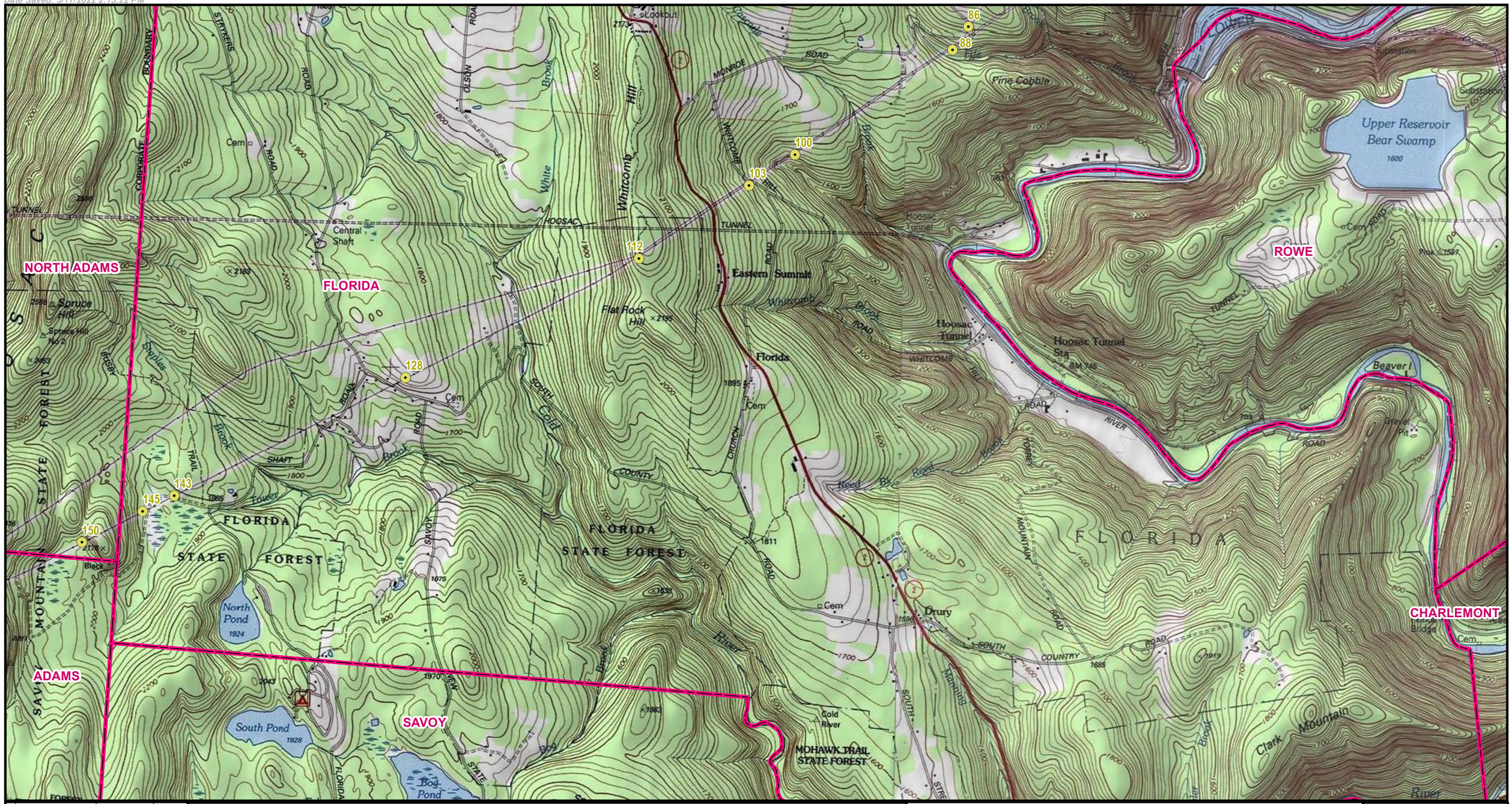

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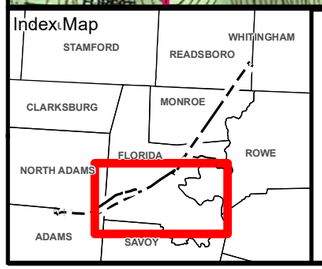

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LINE E131 – ASSET CONDITION REFURBISHMENT (ACR) PROJECT

Site Location

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Index Map

Legend

▲ Substation

⊙ New Structure

▭ Municipal Boundary

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Site Location

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HARRIMAN #8 SUBSTATION, READSBORO, VT

READSBORO

WHITINGHAM

VERMONT

MASSACHUSETTS

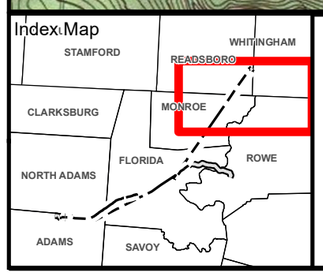
MONROE

ROWE

GREEN MOUNTAIN NATIONAL FOREST

SHERMAN RESERVOIR

1 2 11 20 26 36 43 47



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N

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0 1,000 2,000

Feet

Based on USGS Topographic Map for Rowe, MA Revised 1990 and Readsboro, VT. Contour Interval Equals 6 Meters.

LINE E131 – ASSET CONDITION REFURBISHMENT (ACR) PROJECT

Site Location

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APPENDIX B

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42°44'0"N
42°43'0"N
42°42'0"N
42°41'0"N
42°40'0"N
42°39'0"N

STAMFORD
READSBORO
WHITINGHAM
CLARKSBURG
MONROE
ROWE
NORTH ADAMS
FLORIDA
CHARLEMONT
ADAMS
SAVOY

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

Scale:
1 inch = 4,000 feet
0 2,000 4,000
Feet
(Page Size 11 x 17)

E131 - ASSET CONDITION REFURBISHMENT PROJECT

USGS Site Location Map
Adams, North Adams, Florida, Monroe, Massachusetts
Readsboro, Vermont

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THIS DOCUMENT IS INTENDED FOR GENERAL PLANNING & INFORMATION PURPOSES ONLY. ALL MEASUREMENTS & LOCATIONS ARE APPROXIMATE

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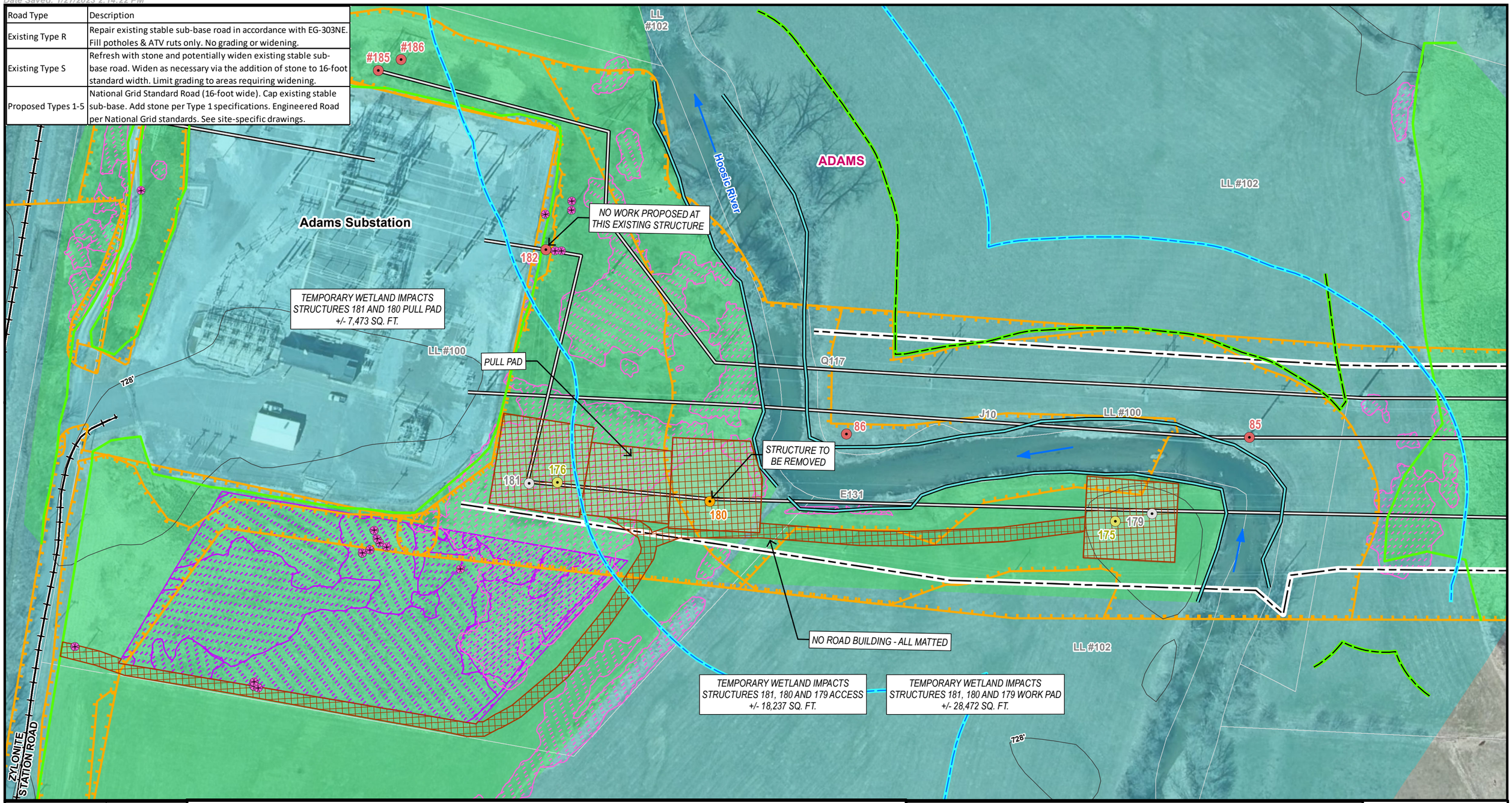
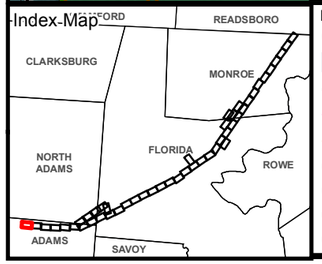


Index-Map



Legend

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N

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0 50 100

Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams, Massachusetts

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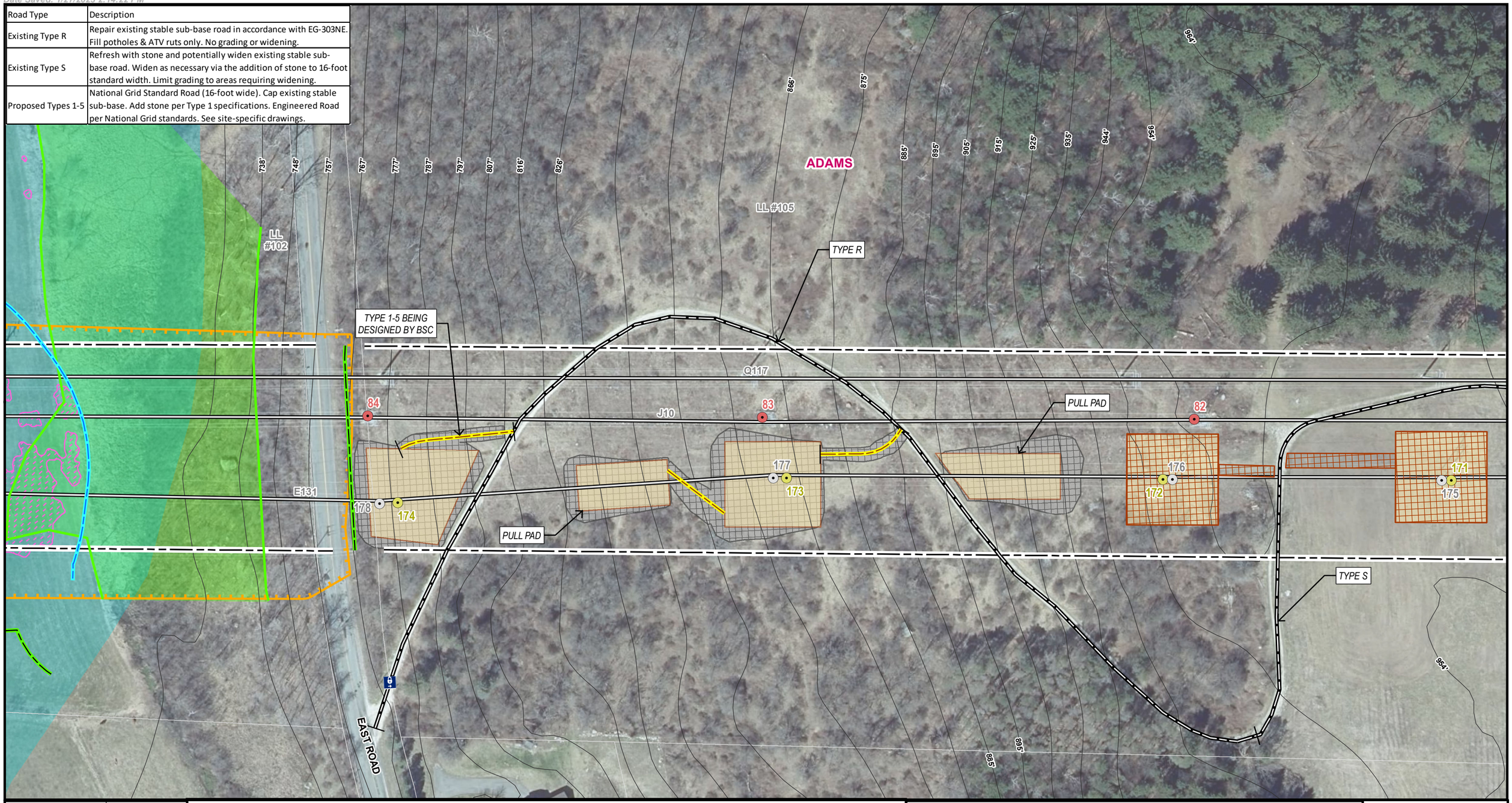

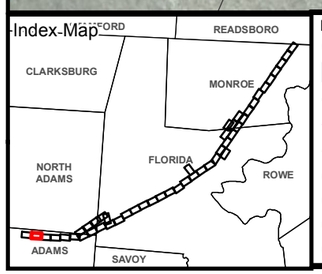

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0 50 100

Feet

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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ADAMS

TEMPORARY WETLAND IMPACTS STRUCTURE 172 ACCESS +/- 578 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 172 WORK PAD +/- 4,642 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

ACCESS FROM EAST ROAD

TYPE S

NOTE: THIS WATERCOURSE WILL BE SPANNED USING APPROPRIATE WATERCOURSE CROSSING TECHNIQUES IN ACCORDANCE WITH THE NATIONAL GRID ACCESS, MAINTENANCE AND CONSTRUCTION BMP DOCUMENT - EG303NE. THE WATERCOURSE IS APPROXIMATELY 6 FEET WIDE AT THE PROPOSED CROSSING LOCATION AS MEASURED ACROSS THE TOP OF OPPOSING BANKS.

Q117 J10 E131 LL #105

81 80 79

171 175 170 174 169 173 172 168

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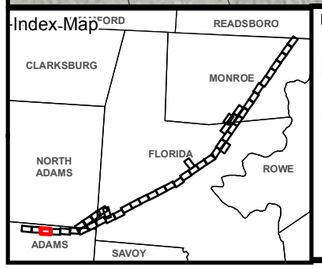
Index-Map



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ADAMS

TEMPORARY WETLAND IMPACTS
STRUCTURE 169 ACCESS
+/- 9,738 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 171 WORK PAD
+/- 1,636 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 169 WORK PAD
+/- 13,076 SQ. FT.

NOTE: THESE WATERCOURSES WILL BE SPANNED USING APPROPRIATE WATERCOURSE CROSSING TECHNIQUES IN ACCORDANCE WITH THE NATIONAL GRID ACCESS, MAINTENANCE AND CONSTRUCTION BMP DOCUMENT - EG303NE. THE WATERCOURSES ARE APPROXIMATELY 4 TO 6 FEET WIDE AT THE PROPOSED CROSSING LOCATIONS AS MEASURED ACROSS THE TOP OF OPPOSING BANKS.

Savoy Mountain State Forest

J10

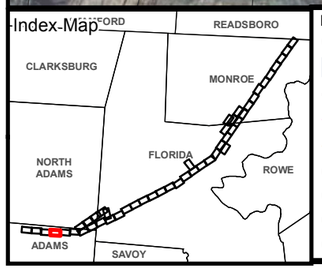
E131

LL #105

77 78 165 166 167 169 170 171

1062' 1129' 1139' 1151' 1161' 1210' 1220' 1230' 1240' 1249' 1259' 1269' 1279' 1299' 1309' 1318' 1328' 1338' 1348' 1358' 1369' 1377'

Index Map



Legend

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- Existing Structure
- Existing Structure to be Replaced
- Existing Structure to be Removed
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N

1 inch = 100 feet

0 50 100

Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams, Massachusetts

Basemap: ESRI World Imagery Basemap
Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
Vermont Center for Geographic Information

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Tighe&Bond

DRAFT

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LL #105

ADAMS

VERY STEEP ROCKY SLOPE

TYPE 1-5 BEING DESIGNED BY BSC

NOTE: THIS WATERCOURSE WILL BE SPANNED USING APPROPRIATE WATERCOURSE CROSSING TECHNIQUES IN ACCORDANCE WITH THE NATIONAL GRID ACCESS, MAINTENANCE AND CONSTRUCTION BMP DOCUMENT - EG303NE. THE WATERCOURSE IS APPROXIMATELY 1 FOOT WIDE AT THE PROPOSED CROSSING LOCATION AS MEASURED ACROSS THE TOP OF OPPOSING BANKS.

STRUCTURE TO BE REMOVED

TYPE 1-5 BEING DESIGNED BY BSC

CULVERT INSTALLATION

TEMPORARY WETLAND IMPACTS STRUCTURE 164 WORK PAD +/- 1,478 SQ. FT.

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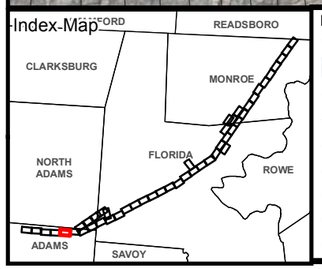

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0 50 100
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DRAFT

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TEMPORARY WETLAND IMPACTS STRUCTURE 162 WORK PAD +/- 625 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 162 ACCESS +/- 591 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 71 ACCESS +/- 1,673 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 161 ACCESS +/- 1,382 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 161 WORK PAD +/- 3,109 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 157 WORK PAD +/- 221 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 158 WORK PAD +/- 127 SQ. FT.

TYPE R

TYPE 1-5 BEING DESIGNED BY BSC

ACCESS TO STRUCTURE 146-160

PULL PAD

Savoy Mountain State Forest

ADAMS

LL #105

LL #101

E131

69 70 71 72 73

160 163 159 162 158 161 157 160 156 159 155 158 154 157

2352' 2342' 2332' 2322' 2312' 2293' 2303' 2273' 2263' 2283' 2253' 2244' 2234' 2224' 2194' 2185' 2175' 2165' 2155' 2145' 2106' 2116' 2125' 2135' 2086' 2096' 1929' 1938' 2283' 2293'

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CLARKSBURG · READSBORO · MONROE · NORTH ADAMS · FLORIDA · ROWE · ADAMS · SAVOY

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Tighe&Bond

DRAFT

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NORTH ADAMS
ADAMS
LL #107
LL #101
Savoy Mountain State Forest
E131

TEMPORARY WETLAND IMPACTS
STRUCTURE 155 WORK PAD
+/- 1,781 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 154 ACCESS
+/- 115 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 153 ACCESS
+/- 1,501 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 152 ACCESS
+/- 1,304 SQ. FT.

STRUCTURE TO
BE REMOVED

PROPOSED TREE
CLEARING AREA

PULL PAD

TYPE 1-5 BEING
DESIGNED BY BSC

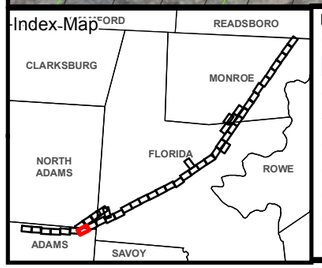
TYPE 1-5 BEING
DESIGNED BY BSC

TEMPORARY WETLAND IMPACTS
STRUCTURE 154 WORK PAD
+/- 2,312 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 153 WORK PAD
+/- 1,069 SQ. FT.

TEMPORARY WETLAND IMPACTS
STRUCTURE 152 WORK PAD
+/- 7,823 SQ. FT.

Index-Map



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Environmental Resources Map

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DRAFT

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TYPE 1-5 BEING DESIGNED BY BSC

Savoy Mountain State Forest

NORTH ADAMS

LL #107

TEMPORARY WETLAND IMPACTS STRUCTURE 151 ACCESS +/- 3,717 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 150 ACCESS +/- 4,598 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 149 ACCESS +/- 3,273 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACTS STRUCTURE 151 WORK PAD +/- 6,646 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 150 WORK PAD +/- 6,788 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 149 WORK PAD +/- 838 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 147 WORK PAD +/- 732 SQ. FT.

STEEP SLOPE COVERED IN BOULDERS AND EXPOSED BEDROCK. NO SUITABLE ACCESS IDENTIFIED.

E131

LL #101

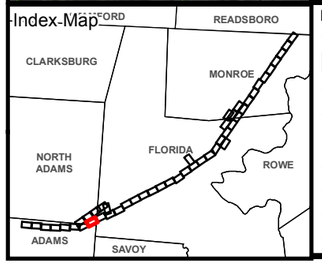
LL #103

ADAMS

FLORIDA

149 151 150 148 149 147 146 148 145 147

Index Map



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0 50 100
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

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TYPE 1-5 BEING DESIGNED BY BSC

FLORIDA

LL #107

LL #103

OLD FLORIDA ROAD

Savoy Mountain State Forest

STEEP SLOPE COVERED IN BOULDERS AND EXPOSED BEDROCK. NO SUITABLE ACCESS IDENTIFIED.

TEMPORARY WETLAND IMPACTS STRUCTURE 145 ACCESS +/- 967 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 142 WORK PAD +/- 6,960 SQ. FT.

E131

144 146

145 143

144

142 143

STRUCTURE TO BE REMOVED

PULL PAD

TEMPORARY WETLAND IMPACTS STRUCTURE 145 PULL PADS +/- 2,726 SQ. FT.

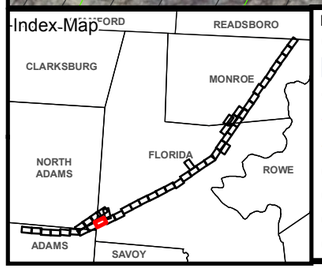
TEMPORARY WETLAND IMPACTS STRUCTURE 145 AND 144 WORK PADS +/- 18,318 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 144 ACCESS +/- 3,109 SQ. FT.

TEMPORARY WETLAND IMPACTS STRUCTURE 143 ACCESS +/- 440 SQ. FT.

2086' 2076' 2066' 2057' 2047' 2037' 2027' 2017' 2007' 1998' 1988' 1978' 1968' 1958' 1948' 1938' 1929' 1919' 1909' 1899' 1889' 1879' 1870' 1909' 1919' 1929' 1936' 1870'

Index-Map



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0 50 100

Feet

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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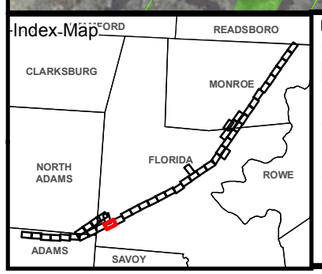

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DRAFT

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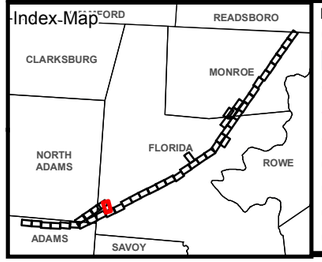

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1 inch = 100 feet
0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 11 of 48

Basemap: ESRI World Imagery Basemap
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Tighe&Bond

DRAFT

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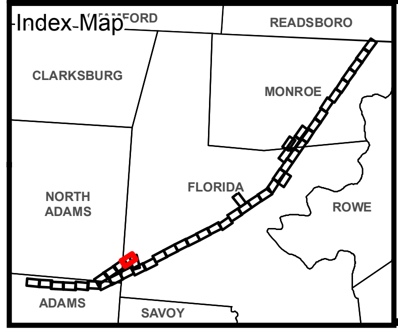
Index Map



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Florida, Massachusetts

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NORTH ADAMS

FLORIDA

LL #107

Savoy Mountain State Forest

LL #103

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TYPE R

TYPE R

TYPE R

60

59

J10

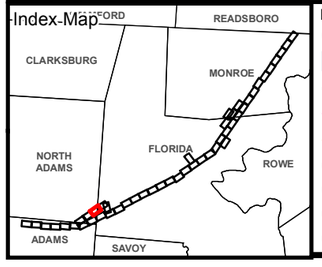
TEMPORARY WETLAND IMPACT STRUCTURE 63 ACCESS +/- 446 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 60 ACCESS +/- 2,541 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 59 ACCESS +/- 619 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 59 ACCESS +/- 2,879 SQ. FT.

Index-Map



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0 50 100

Feet

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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Tighe&Bond

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NORTH ADAMS

Savoy Mountain State Forest

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TYPE R

TYPE R

TYPE R

64

63

62

J10

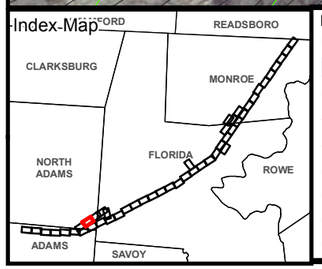
LL #107

TEMPORARY WETLAND IMPACT
STRUCTURE 65 ACCESS
+/- 1,002 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 63 ACCESS
+/- 2,133 SQ. FT.

2273' 2263' 2253' 2244' 2234' 2224' 2214' 2204' 2194' 2185' 2165' 2155' 2145' 2096' 2086' 2076' 2066' 2057' 2047' 2037' 2027' 2135' 2125' 2116' 2106' 2175' 2165' 2145' 2135' 2125' 2116' 2155' 2175' 2185' 2194'

Index-Map



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NORTH ADAMS

ADAMS

Savoy Mountain State Forest

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TYPE R

LL #107

69 68 67 J10 66 65 64

TEMPORARY WETLAND IMPACT STRUCTURE 69 ACCESS +/- 206 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

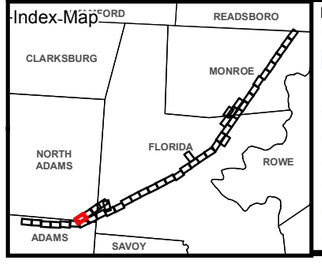
LL #101

ACCESS TO STRUCTURE 146-160

TYPE R

TEMPORARY WETLAND IMPACT STRUCTURE 65 ACCESS +/- 1,002 SQ. FT.

Index Map



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TEMPORARY WETLAND IMPACT STRUCTURE 137 WORK PAD +/- 6,731 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 137 ACCESS +/- 1,958 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 134 WORK PAD +/- 2,662 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 138 WORK PAD +/- 5,744 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 138 ACCESS +/- 3,655 SQ. FT.

LL #103 FLORIDA LL #108 LL #111 LL #109

E131

TYPE S

Savoy Mountain State Forest

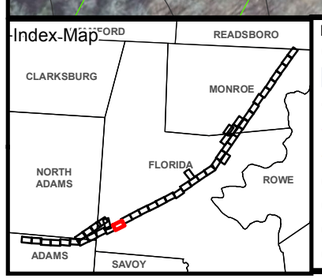
CENTRAL SHAFT ROAD

Staples Brook

138 137 136 135 134 133

1929' 1919' 1909' 1899' 1889' 1879' 1870' 1860' 1850' 1889' 1879' 1860' 1850' 1840' 1830' 1820' 1811' 1801' 1791' 1830' 1820' 1811'

Index-Map



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LL #103
LL #106
FLORIDA
LL #111
LL #108
LL #118
LL #120
LL #122
LL #112
LL #116
LL #117
LL #115
LL #110
LL #113
LL #109
E131
CENTRAL SHAFT ROAD
POIROT ROAD
TYPE R
TYPE R
DRIVEWAY - LANDOWNER APPROVAL FOR ACCESS
TEMPORARY WETLAND IMPACT STRUCTURE 133 WORK PAD +/- 940 SQ. FT.
TEMPORARY WETLAND IMPACT STRUCTURE 131 WORK PAD +/- 7,299 SQ. FT.
TEMPORARY WETLAND IMPACT STRUCTURE 131 ACCESS +/- 144 SQ. FT.
133
132
131
132
131
130
1860'
1850'
1840'
1830'
1820'
1811'
1801'
1781'
1820'
1791'
1781'
1771'
1781'
1791'
1771'
1751'
1742'

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RECORD
READSBORO
CLARKSBURG
MONROE
NORTH ADAMS
FLORIDA
ROWE
ADAMS
SAVOY

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FLORIDA

LL #120
LL #122
1781'
LL #123
LL #126
LL #125
LL #124
LL #115
LL #114
LL #121

TEMPORARY WETLAND IMPACT STRUCTURE 130 WORK PAD +/- 9,203 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 127 WORK PAD +/- 105 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 126 WORK PAD +/- 6,732 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

PULL PAD

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURE 130 ACCESS +/- 1,778 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 128 ACCESS +/- 641 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 126 ACCESS +/- 3,253 SQ. FT.

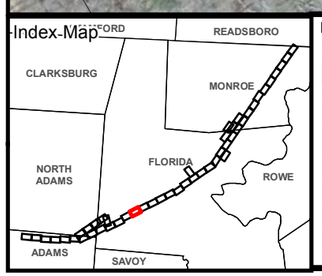
1889'
1879'
1860'
1850'
1840'
1820'
1811'
1801'
1771'
1761'
1742'
1732'
1840'
1830'

129 130
128 129
128 127
127 126
126 125

E131

SOUTH COUNTY ROAD

Index-Map



Legend

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- Existing Structure to be Removed
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0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts

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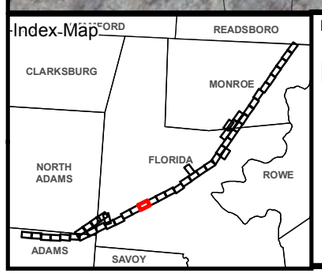

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FLORIDA

LL #130

LL #128

LL #129

LL #119

J10

E131

Cold River

TEMPORARY WETLAND IMPACT
STRUCTURE 121 WORK PAD
+/- 347 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 120 WORK PAD
+/- 10,032 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 119 WORK PAD
+/- 6,408 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 118 WORK PAD
+/- 10,032 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 120 ACCESS
+/- 2,071 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 119 ACCESS
+/- 4,043 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 118 ACCESS
+/- 5,730 SQ. FT.

Florida State Forest

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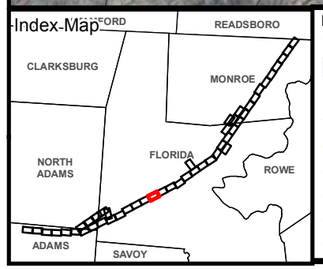

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FLORIDA

LL #129

J10

E131

LL #119

Florida State Forest

TEMPORARY WETLAND IMPACT STRUCTURE 117 WORK PAD +/- 10,032 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 116 WORK PAD +/- 9,331 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 114 WORK PAD +/- 5,812 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 117 ACCESS +/- 4,466 SQ. FT.

ACCESS FROM ROUTE 2

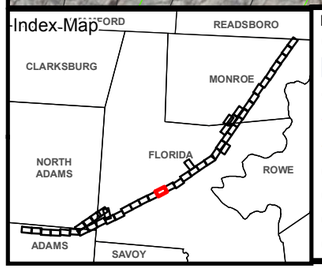
TEMPORARY WETLAND IMPACT STRUCTURE 116 ACCESS +/- 3,801 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

39 38 116 117 115 116 115 114 113 114 112

1781' 1791' 1801' 1811' 1820' 1830' 1840' 1850' 1860' 1870' 1879' 1889' 1899' 1909' 1919' 1929' 1938' 1948' 1958' 1968' 1978' 1988' 1998' 2007' 2017' 2027' 2037' 2047' 2057' 2066' 2076' 2086' 2096' 2106' 2116' 2125'

Index Map



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0 50 100

Feet

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
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DRAFT

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FLORIDA
Florida State Forest
LL #119
LL #136
E131
J10
TYPE R
TYPE S
TYPE 1-5 BEING DESIGNED BY BSC
34
35
36
37
108
109
110
111
112
113
2037'
2135'
2145'
2155'
2165'
2175'
2185'
2194'
2204'
2214'
2224'
2234'
2125'
2116'
2106'
2096'
2086'
2076'
2066'
2057'
2047'

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HANCOCK
READSBORO
CLARKSBURG
MONROE
NORTH ADAMS
FLORIDA
ROWE
ADAMS
SAVOY

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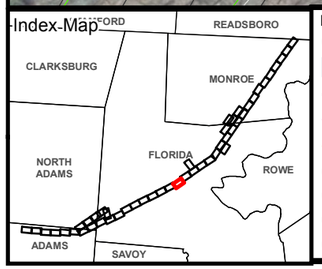

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
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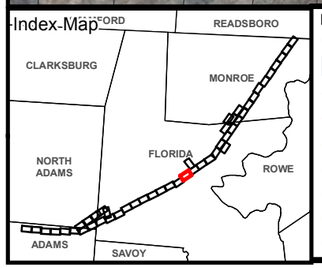

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DRAFT

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OFF ROW ACCESS ROUTE. COORDINATION WITH LANDOWNERS NECESSARY FOR ACCESS.

FLORIDA

LL #140

LL #139

LL #144

LL #145

LL #148

LL #141

LL #137

Cascade Brook

E131

J10

25 26 27 28

96 97 98 99 100

TYPE 1-5 BEING DESIGNED BY BSC

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT
STRUCTURE 96 ACCESS
+/- 2,367 SQ. FT.

1673' 1663' 1653' 1643' 1633' 1624' 1614' 1604' 1594' 1584' 1574' 1564' 1555' 1545' 1535' 1525' 1515' 1505' 1496' 1486' 1476' 1466' 1456' 1446'

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RECORD READSBORO CLARKSBURG MONROE NORTH ADAMS FLORIDA ROWE ADAMS SAVOY

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0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts

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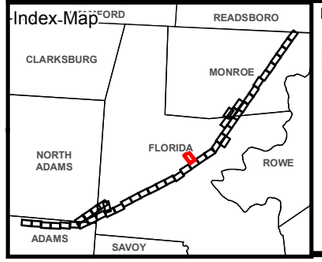

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Environmental Resources Map

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FLORIDA

LL #145

LL #148

LL #149

LL #147

LL #137

LL #146

GREER ROAD

Cascade Brook

E131

J10

TEMPORARY WETLAND IMPACT
STRUCTURE 94 WORK PAD
+/- 9,854 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 93 WORK PAD
+/- 9,001 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 95 ACCESS
+/- 7,996 SQ. FT

TYPE R

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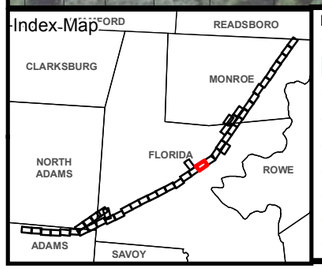

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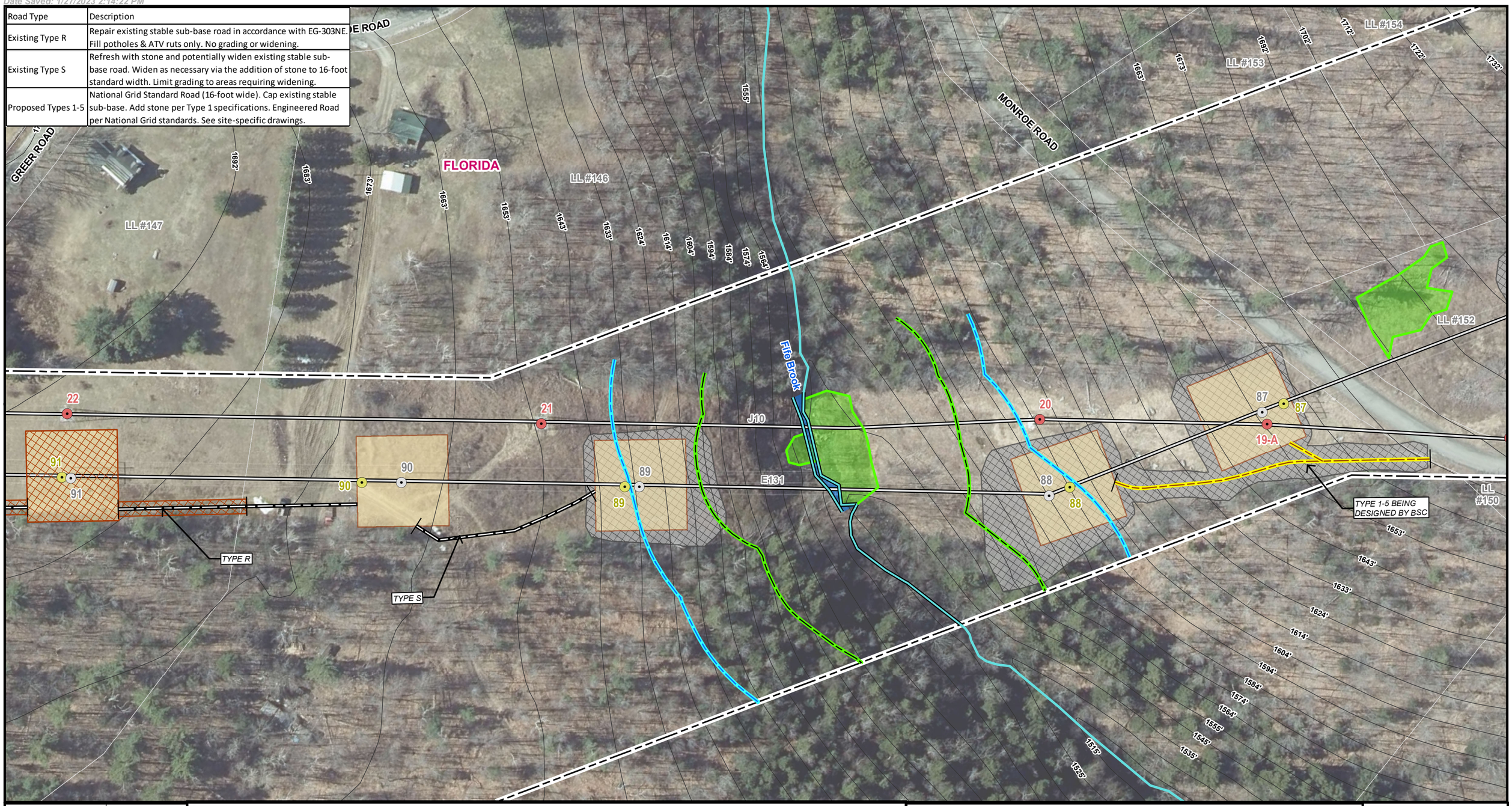
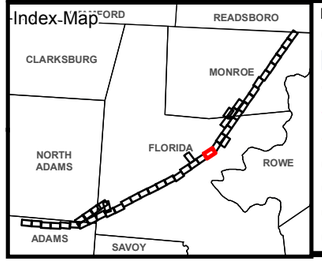


Index Map



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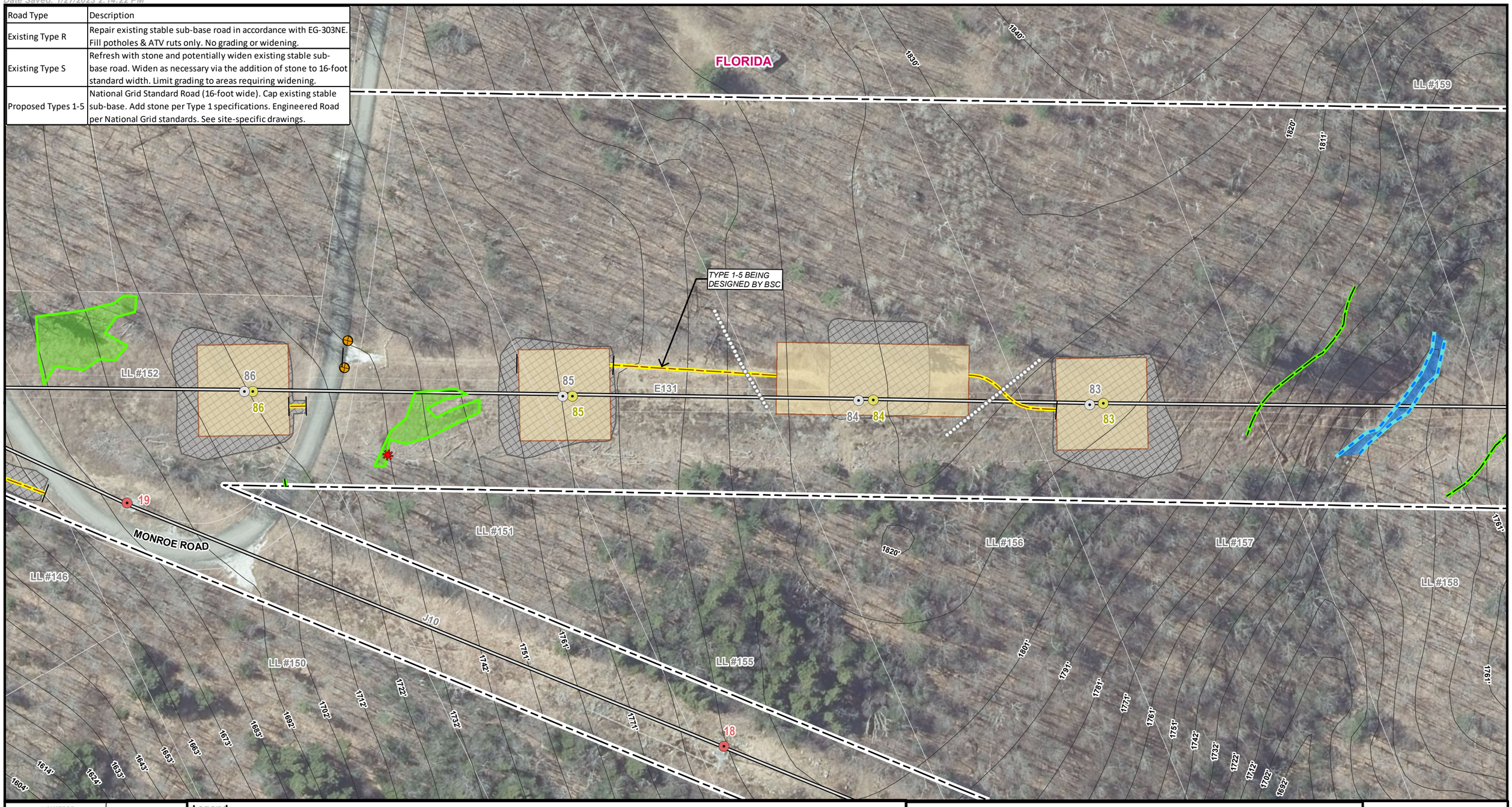

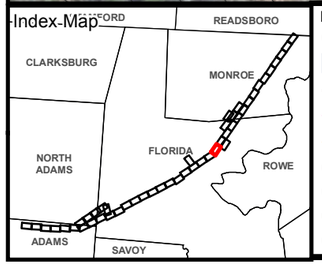

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FLORIDA

LL #159 LL #163 LL #162 LL #160 LL #161 LL #164

2017' 2027' 2037' 2047' 2057'

TEMPORARY WETLAND IMPACT STRUCTURES 79A PULL PAD +/- 1,643 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURES 80 AND 79 PULL PAD +/- 5,362 SQ. FT.

PULL PAD

TYPE 1-5 BEING DESIGNED BY BSC

82 81A 82 27 27 81 81 26A 26B E131 80 79A 80 79 79 78 78 E131

TYPE R

TEMPORARY WETLAND IMPACT STRUCTURES 80 WORK PAD +/- 4,460 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURES 79 WORK PAD +/- 4,782 SQ. FT.

LL #158 LL #104 LL #157 LL #161 Monroe State Forest

1742' 1751' 1761' 1771' 1781' 1732' 1879' 1889' 1899' 1909' 1919' 1938' 1948' 1958' 1968' 1978' 1988' 1998' 2007'

MONROE ROAD

PULL PAD

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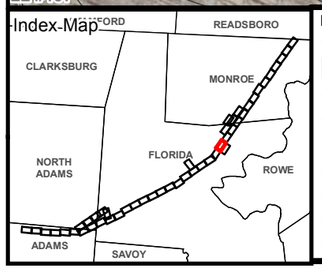

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PULL PAD
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J10
E131
MONROE ROAD
LL #158
LL #159
LL #157
LL #156
LL #104
LL #104.5
LL #161
Monroe State Forest
FLORIDA
1594'
1604'
1614'
1624'
1633'
1643'
1653'
1663'
1673'
1683'
1692'
1702'
1712'
1722'
1732'
1742'
1751'
1761'
1771'
1781'
1791'
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1870'
1879'
1919'
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NORTH ADAMS
FLORIDA
ROWE
ADAMS
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LL #164
LL #161
FLORIDA
MONROE ROAD
Monroe State Forest
E131
TYPE S MONROE ROAD
TYPE 1-5 BEING DESIGNED BY BSC
APPROXIMATELY 15-FOOT DROP OFF NORTHEAST OF MONROE ROAD ACROSS THE ENTIRE RIGHT-OF-WAY
TYPE 1-5 BEING DESIGNED BY BSC
ACCESS CONTINUE PAGE 34 (MONROE RO

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DRAFT

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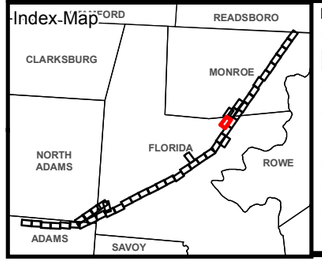
Index Map



Legend

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- Gate
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1 inch = 100 feet
0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts

Basemap: ESRI World Imagery Basemap
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DRAFT

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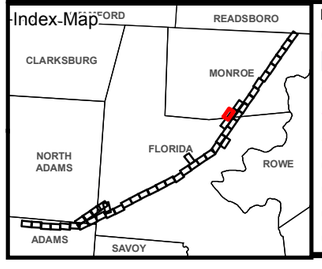
MONROE
SOUTH ROAD
TYPE S
ACCESS TO STRUCTURES 59-70
Monroe State Forest
LL #165
ACCESS TO STRUCTURES 59-70
MONROE ROAD
LL #161
FLORIDA
2057'
2047'
2037'
2027'
2017'
2007'
1998'
1988'
1978'
1968'
1958'
1948'
1938'
1929'
1919'
1909'

Index-Map


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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida/Monroe, Massachusetts

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Tighe&Bond

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Date Saved: 1/27/2023 2:14:22 PM

DRAFT

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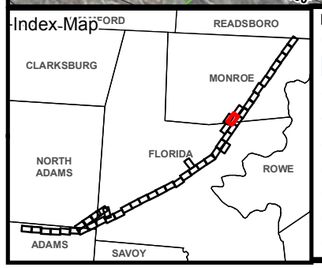
Index-Map



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0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida/Monroe, Massachusetts

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nationalgrid
Tighe&Bond

DRAFT

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ACCESS FROM SOUTH ROAD

ACCESS TO STRUCTURE 56

MONROE

TEMPORARY WETLAND IMPACT
STRUCTURE 58 ACCESS
+/- 2,081 SQ. FT.

Monroe State Forest

LL #165

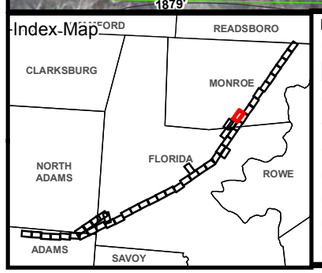
TYPE 1-5 BEING DESIGNED BY BSC

1702' 1692' 1683' 1673' 1663' 1653' 1643' 1633' 1624' 1614' 1604' 1594' 1584' 1574' 1564' 1555' 1545' 1535' 1525' 1515' 1505' 1496' 1486' 1476' 1466'

1732' 1742' 1751' 1761' 1771' 1781' 1791' 1801' 1811' 1820' 1830' 1840' 1860' 1870' 1879'

1712' 1722'

Index-Map



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0 50 100
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

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nationalgrid
Tighe&Bond

DRAFT

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FLORIDA

TEMPORARY WETLAND IMPACT
STRUCTURE 71 ACCESS
+/- 1,034 SQ. FT.

STEEP SLOPE COVERED IN BOULDERS.
SUITABLE ACCESS WAS NOT IDENTIFIED.

Smith Brook

ACCESS FROM
SOUTH ROAD
(PAGE 34)

TYPE 1-5 BEING
DESIGNED BY BSC

TYPE 1-5 BEING
DESIGNED BY BSC

ACCESS CONTINUED FROM
PAGE 34
(MONROE ROAD)

Monroe State Forest

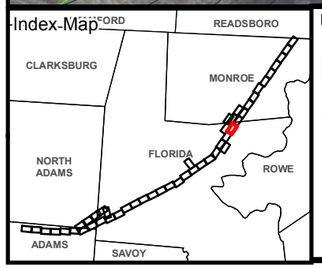
LL #161

E131

72 72 71 71 70 70 69 69

1879' 1870' 1860' 1850' 1840' 1830' 1820' 1811' 1801' 1791' 1781' 1771' 1761' 1751' 1742' 1732' 1722' 1712' 1702' 1692' 1683' 1673' 1663' 1653' 1643' 1633' 1624' 1614' 1604' 1594' 1584' 1574' 1564'

Index-Map



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0 50 100
Feet

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 37 of 48

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DRAFT

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MONROE

LL #165

LL #166

LL #161

Monroe State Forest

FLORIDA

ACCESS FROM SOUTH ROAD (PAGE 34)

ACCESS FROM SOUTH ROAD TO RAYCROFT ROAD EXTENSION (PAGE 34)

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURE 68 AND 67 PULL PAD +/- 2,164 SQ. FT.

PULL PAD

TEMPORARY WETLAND IMPACT STRUCTURE 65 ACCESS +/- 1,044 SQ. FT.

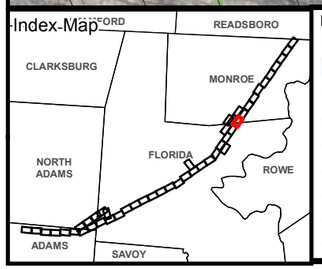
TEMPORARY WETLAND IMPACT STRUCTURE 65 WORK PAD +/- 850 SQ. FT.

E131

68 67 67 66 66 65 65 64 64 63

1938' 1929' 1919' 1889' 1879' 1870' 1899' 1899' 1811' 1801' 1840' 1860' 1879' 1771' 1791' 1820' 1830' 1870'

Index-Map



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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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Florida/Monroe, Massachusetts
Page 38 of 48

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DRAFT

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MONROE

Monroe State Forest

TYPE 1-5 BEING DESIGNED BY BSC

ACCESS FROM SOUTH ROAD (MAP SHEET 34) TO STRUCTURE 58

TEMPORARY WETLAND IMPACT STRUCTURER 62 WORK PAD +/- 544 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURER 60 WORK PAD +/- 403 SQ. FT.

E131

LL #166

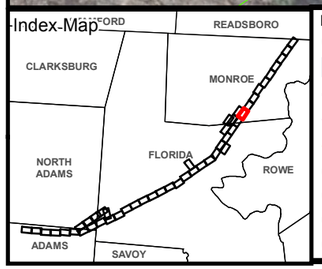
TEMPORARY WETLAND IMPACT STRUCTURER 63 ACCESS +/- 1,594 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURER 62 WORK PAD +/- 654 SQ. FT.

LL #165

TYPE 1-5 BEING DESIGNED BY BSC

Index Map



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0 50 100

Feet

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MONROE

LL #165

Monroe State Forest

Dunbar Brook

E131

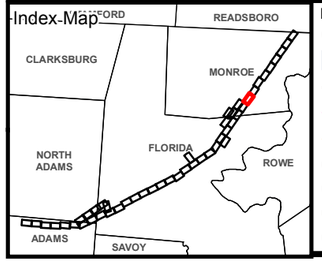
TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT
STRUCTURE 56 ACCESS
+/- 880 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

SLEEVES IN ALL CONDUCTORS

Index-Map



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*Indicates Layers Set to Transparency

1 inch = 100 feet
0 50 100
Feet

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts

Basemap: ESRI World Imagery Basemap
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nationalgrid
Tighe&Bond

DRAFT

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MONROE

Monroe State Forest

LL #165

LL #169

NOTE: THIS WATERCOURSE WILL BE SPANNED USING APPROPRIATE WATERCOURSE CROSSING TECHNIQUES IN ACCORDANCE WITH THE NATIONAL GRID ACCESS, MAINTENANCE AND CONSTRUCTION BMP DOCUMENT - EG303NE. THE WATERCOURSE IS APPROXIMATELY 10 FEET WIDE AT THE PROPOSED CROSSING LOCATION AS MEASURED ACROSS THE TOP OF OPPOSING BANKS.

TEMPORARY WETLAND IMPACT STRUCTURE 53 WORK PAD +/- 4,045 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 52 WORK PAD +/- 4,966 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

Haley Brook

E131

STEEP SLOPES ON EACH SIDE OF A WIDE RAVINE

TEMPORARY WETLAND IMPACT STRUCTURE 55 ACCESS +/- 165 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 54 ACCESS +/- 347 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

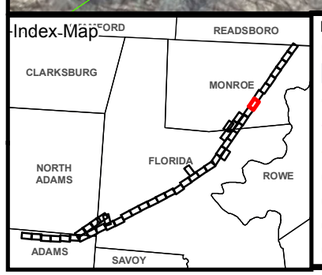
ACCESS FROM GORE ROAD

55 54 53 52

1614' 1604' 1594' 1584' 1574' 1564' 1554' 1545' 1535' 1525' 1515' 1505' 1496' 1486' 1476' 1466' 1456' 1446' 1437'

1524' 1533' 1543' 1553' 1563' 1573' 1583' 1592' 1702' 1712' 1722' 1732' 1742' 1751' 1761' 1771' 1781' 1791' 1801' 1811' 1820'

Index-Map



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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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nationalgrid
Tighe&Bond

DRAFT

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LL #169

MONROE

LL #165

TEMPORARY WETLAND IMPACT STRUCTURE 48 WORK PAD +/- 2,844 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 47 WORK PAD +/- 10,017 SQ. FT.

ACCESS FROM GORE ROAD

TYPE 1-5 BEING DESIGNED BY BSC

SLEEVES IN BOTH SHIELD WIRES

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURE 48 ACCESS +/- 3,270 SQ. FT.

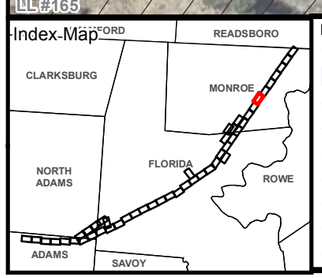
TEMPORARY WETLAND IMPACT STRUCTURE 47 ACCESS +/- 4,426 SQ. FT.

E131

51 51 50 50 49 49 48 48 47 47

1742' 1751' 1761' 1771' 1781' 1791' 1801' 1811' 1820' 1830' 1840' 1850' 1860' 1870' 1879' 1889' 1899' 1909' 1919' 1929' 1939' 1909' 1919'

Index-Map



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Tighe&Bond

DRAFT

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MONROE

LL #167

LL #169

LL #168

LL #167

TEMPORARY WETLAND IMPACT STRUCTURE 47 ACCESS +/- 4,426 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 46 WORK PAD +/- 1,340 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURE 44 WORK PAD +/- 1,437 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 43 WORK PAD +/- 9,743 SQ. FT.

TYPE R

GORE ROAD

TEMPORARY WETLAND IMPACT STRUCTURE 47 ACCESS +/- 1,296 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 44 ACCESS +/- 104 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 44 AND 43 PULL PAD +/- 5,534 SQ. FT.

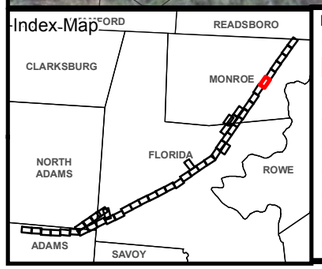
TEMPORARY WETLAND IMPACT STRUCTURE 43 AND 42 PULL PAD +/- 5,153 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 43 ACCESS +/- 5,413 SQ. FT.

E131

1909'
1899'
1978'
1968'
1958'
1948'
1938'
1889'
1879'
1870'
1860'
1850'
1830'
1820'

Index Map



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DRAFT

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MONROE

LL #171

LL #167

TEMPORARY WETLAND IMPACT STRUCTURE 42 WORK PAD +/- 10,016 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 40 WORK PAD +/- 5,947 SQ. FT.

TYPE S

E131

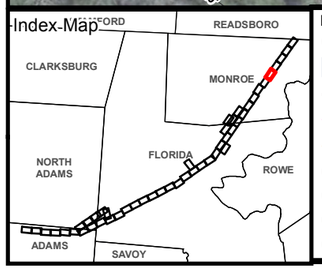
TEMPORARY WETLAND IMPACT STRUCTURE 42 ACCESS +/- 3,776 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 41 ACCESS +/- 4,391 SQ. FT.

TEMPORARY WETLAND IMPA STRUCTURE 40 ACCESS +/- 389 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 39 ACCESS +/- 1,988 SQ. FT.

Index Map



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Tighe&Bond

DRAFT

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MONROE

LL #172

LL #173

LL #171

LL #174

E131

TYPE S

TEMPORARY WETLAND IMPACT
STRUCTURE 38 WORK PAD
+/- 3,964 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 37 WORK PAD
+/- 4,842 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 36 WORK PAD
+/- 9,973 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 35 WORK PAD
+/- 9,005 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 38 ACCESS
+/- 4,788 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 37 ACCESS
+/- 5,489 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 36 ACCESS
+/- 4,473 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 35 ACCESS
+/- 3,138 SQ. FT.

38 38 37 37 36 36 35 35

1968' 1958' 1948' 1938' 1923' 1919' 1958' 1948' 1938' 1909' 1899' 1889' 1879' 1870' 1870'

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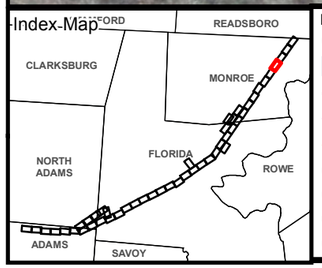

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Tighe&Bond

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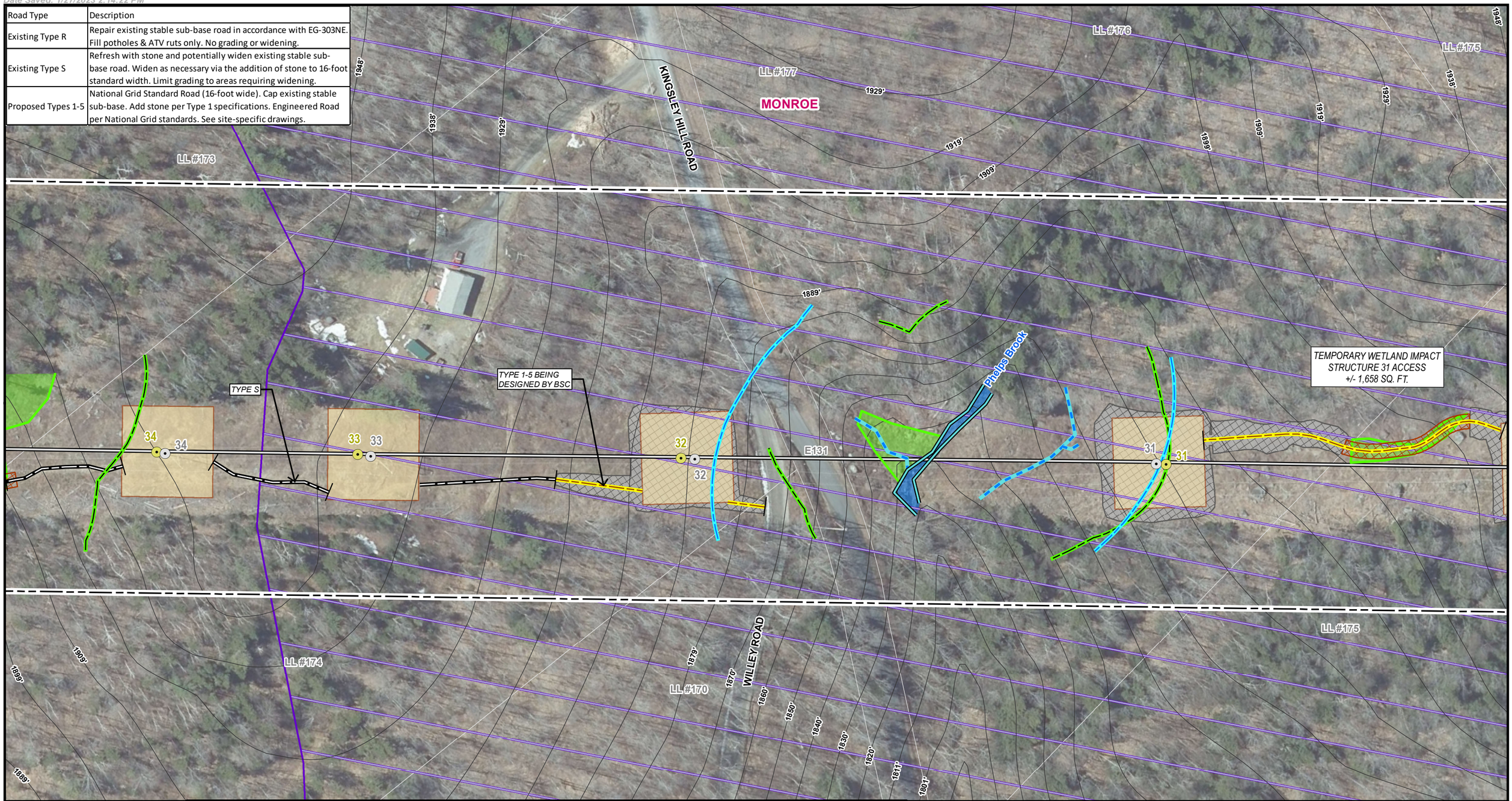

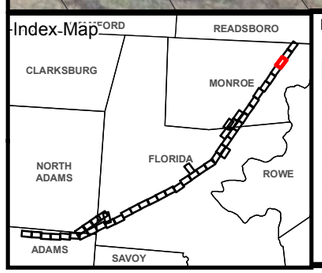

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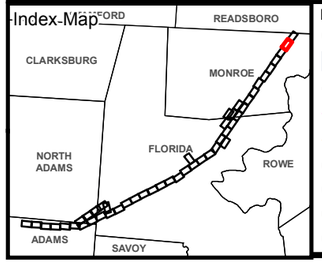
MONROE
LL #176
LL #178
LL #179
LL #181
LL #175
E131
MAIN ROAD
TOWER ROAD
PULL PAD
TYPE 1-5 BEING DESIGNED BY BSC
TEMPORARY WETLAND IMPACT STRUCTURE 29 ACCESS +/- 497 SQ. FT.
TEMPORARY WETLAND IMPACT STRUCTURE 30 WORK PAD +/- 316 SQ. FT.
TEMPORARY WETLAND IMPACT STRUCTURE 29 WORK PAD +/- 3,529 SQ. FT.
TEMPORARY WETLAND IMPACT STRUCTURE 27 WORK PAD +/- 1,016 SQ. FT.
1978'
1988'
1998'
2007'
2017'
2027'
2037'
1879'
1870'
1860'
1889'
1899'
1909'
1919'
1929'
1938'
1948'
1978'
30
29
28
27
26

Index-Map


Legend

- Culvert
- Gate
- Delineated Vernal Pool
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools
- Existing Structure
- Existing Structure to be Replaced
- Existing Structure to be Removed
- Proposed Structure
- Transmission Centerline
- 10 ft Contours
- Approximate ROW
- Railroad
- Proposed Access
- Existing Access
- Electric Fence
- Fence
- Guard Rail
- Stone Wall
- Retaining Wall
- 50-foot Buffer Zone
- 50-foot Riparian Buffer
- 100-foot Buffer Zone
- 100-foot Riparian Buffer
- 200-foot Riverfront Area
- Hydrologic Connection
- Stream (Non-Jurisdictional)
- Intermittent Stream
- Mean High Water
- Delineated Wetland Boundary
- Delineated Wetland Area*
- Wetland Area (Not Delineated)*
- 100 Year Flood Zone
- Delineated Watercourse Area*
- Work Area - Work Pad*
- Proposed Matting
- Area of Critical Environmental Concern (ACEC)
- Deer Wintering Areas
- Surface Water Source Protection Areas
- Ground Water Source Protection Areas
- RTE Species & Significant Communities
- Stream Span
- Uncommon Species and Other Features
- Natural Areas
- Potentially Contaminated Sites
- NHESP 2021 Rare Species Data
- Delineated Vernal Pool*
- Mitigation Area
- Rare Plant Species
- MassDEP Oil and/or Hazardus Material Site (Chapter 21E)
- MassDEP Oil and/or Hazardous Material Site with AUL
- Rare Plant Species Area
- Proposed Tree Clearing Area
- DCR/State Owned Land
- Approximate Parcel Boundary
- Municipal Boundary
- Limits of Disturbance*

1 inch = 100 feet
0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts

Basemap: ESRI World Imagery Basemap
Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.
Vermont Center for Geographic Information

Parcels downloaded from MassGIS:
Adams (FY20), North Adams (FY18), Florida (FY18), and Monroe (FY18).

nationalgrid
Tighe&Bond

DRAFT

Road Type	Description
Existing Type R	Repair existing stable sub-base road in accordance with EG-303NE. Fill potholes & ATV ruts only. No grading or widening.
Existing Type S	Refresh with stone and potentially widen existing stable sub-base road. Widen as necessary via the addition of stone to 16-foot standard width. Limit grading to areas requiring widening.
Proposed Types 1-5	National Grid Standard Road (16-foot wide). Cap existing stable sub-base. Add stone per Type 1 specifications. Engineered Road per National Grid standards. See site-specific drawings.

MONROE
READSBORO
SHIPPEE RD
LL #181
LL #182
LL #184
LL #179
LL #183
LL #180
LL #175
E131
MAIN ROAD
2057'
2047'
2037'
2027'
2017'
2007'
1998'
1988'
1978'
1968'
1948'
1958'
1949'
1938'
1928'
1918'
1908'

TEMPORARY WETLAND IMPACT STRUCTURE 26 WORK PAD +/- 188 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 25 WORK PAD +/- 458 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 24 WORK PAD +/- 813 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 23 WORK PAD +/- 425 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

TYPE 1-5 BEING DESIGNED BY BSC

TEMPORARY WETLAND IMPACT STRUCTURE 26 ACCESS +/- 840 SQ. FT.

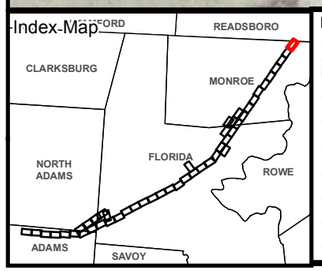
TEMPORARY WETLAND IMPACT STRUCTURE 26 AND 25 PULL PAD +/- 4,328 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 25 ACCESS +/- 2,806 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 22 ACCESS +/- 1,120 SQ. FT.

26 26
25 25
24 24
23 23 23
22 22

Index Map



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- Municipal Boundary
- Limits of Disturbance*

1 inch = 100 feet
0 50 100
Feet

Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts/Readsboro, Vermont

Basemap: ESRI World Imagery Basemap
Data source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs, Vermont Center for Geographic Information

Parcels downloaded from MassGIS: Adams (FY20), North Adams (FY18), Florida (FY18), and Monroe (FY18).

The information/data provided in this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation or parcel level analysis. The maps should not be used for construction purposes.

nationalgrid
Tighe&Bond

APPENDIX C

Photographic Log

Client: New England Power Company d/b/a National Grid (NEP) **Job Number:** N-5068-105
Site: Line E131 Asset Condition Refurbishment (ACR) Project

Photograph No.: 1	**Direction Taken:** Northeast
Description: Representative view of existing conditions at the Adams Substation in Adams, Massachusetts. The Line E131 right-of-way (ROW) extends northeast from the substation to Readsboro, Vermont.	

Photograph No.: 2	**Direction Taken:** Southeast
Description: The Line E131 ROW is characterized primarily by scrub-shrub vegetation, rocky outcrops, and steep slopes. Lands adjacent to the ROW primarily consist of undeveloped forests.	

Photographic Log

Client: New England Power Company d/b/a National Grid (NEP) **Job Number:** N-5068-105
Site: Line E131 Asset Condition Refurbishment (ACR) Project

Photograph No.: 3	**Direction Taken:** West
Description: The topography is highly variable throughout the Line E131 ROW. Minimal access is available for construction, maintenance, or emergency response.	

Photograph No.: 4	**Direction Taken:** West
Description: Rocky outcrops and ledges are challenging to navigate with typical construction vehicles. Off-ROW access routes are needed in some areas.	

Photographic Log

Client: New England Power Company d/b/a National Grid (NEP) **Job Number:** N-5068-105
Site: Line E131 Asset Condition Refurbishment (ACR) Project

Photograph No.: 5	**Direction Taken:** Northeast
Description: Wooden H-frame structures, such as those pictured, are proposed to be replaced with new, steel structures. The current structures have outlived their useful lives and must be upgraded.	

Photograph No.: 6	**Direction Taken:** Southeast
Description: Five structures are scheduled to be removed, including STR 144 (indicated by the yellow arrow). This particular structure is situated within an emergent wetland prone to flooding.	

Photographic Log

Client: New England Power Company d/b/a National Grid (NEP) **Job Number:** N-5068-105
Site: Line E131 Asset Condition Refurbishment (ACR) Project

Photograph No.: 7	**Direction Taken:** Northeast
Description: Due to the complexity of the terrain (including steep, boulder-strewn slopes as shown), significant grading and road-building work is needed to facilitate the proposed refurbishment work.	

Photograph No.: 8	**Direction Taken:** Northeast
Description: Impacts to wetland resource areas and rare species habitats will be minimized by use of temporary construction timber matting for construction vehicle access, staging, and laydown.	

APPENDIX D

Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

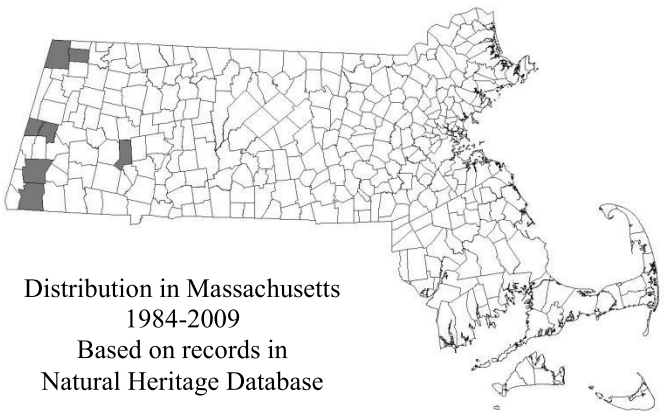
Massachusetts Division of Fisheries & Wildlife

Foxtail Sedge
Carex alopecoidea
Tuck.

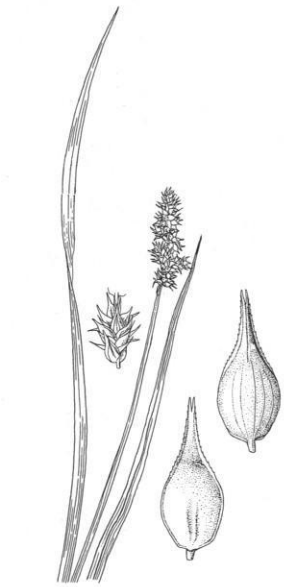
State Status: **Threatened**
Federal Status: **None**

GENERAL DESCRIPTION: Foxtail Sedge, a member of the Sedge family (Cyperaceae), is a perennial, herbaceous, grass-like plant found in calcareous wet meadows of river floodplains. It is a densely tufted, stout but soft, plant that is 4 to 8 dm (1-2.5 ft.) tall with fruiting stems that are usually shorter than the thin, soft leaves.

AIDS TO IDENTIFICATION: To positively identify the Foxtail Sedge and other members of the genus *Carex*, a technical manual should be consulted. Species in this genus have tiny, wind-pollinated flowers that are borne in spikes. Each flower is unisexual, and is closely subtended by small, flat scales that sometimes conceal the flowers. The staminate (i.e., pollen-bearing) flowers are subtended by a single scale. The pistillate (i.e., ovule-bearing) flowers are subtended by two scales, an outer flat scale ("pistillate scale") and an inner, sac-like scale, called a "perigynium," that encloses the flower, and later, the fruit. If the perigynium tapers or contracts to a tip, it is described as a "beak."



Distribution in Massachusetts
1984-2009
Based on records in
Natural Heritage Database



Holmgren, N.H. et al. *Illustrated Companion to Gleason and Cronquist's Manual*. New York Botanical Garden, 1998.

The Foxtail Sedge belongs to a group of *Carex* species (section *Vulpinae*), that usually have congested spikes (several small spikes clustered together), spongy or "corky" tissue at the perigynium bases, and tapered (vs. abruptly contracted) perigynium beaks. In the Foxtail Sedge, the congested spikes are thick-cylindric to lance-shaped. Perigynia are flat, rounded at the base, and gradually tapered at the tip into a rough beak. They become wholly or partly brown at maturity, with 2 to 3 veins on the convex outer face, and no veins on the flat inner face. The achenes (tiny, hard fruits) are lenticular (lens-shaped) and fill only part of the perigynia. The leaf sheaths are unusual in that they are red-dotted.

SIMILAR SPECIES: Species that could be confused with the Foxtail Sedge in wet meadows and floodplains of Massachusetts include the Fox Sedge (*Carex*

vulpinoidea), Wrinkle-sheathed Sedge (*C. stipata*), and Smooth-sheathed Sedge (*C. laevivaginata*). The widespread *C. vulpinoidea* and *C. stipata* have "corrugated" or wrinkled leaf sheaths, unlike the smooth sheaths of the Foxtail Sedge. *Carex laevivaginata* also has smooth sheaths; however, they are not red-dotted as in the Foxtail Sedge. The Thin-leaved Sedge (*C. cephaloidea*) resembles the Foxtail Sedge; however it is typically found in rich woods, and has corrugated leaf sheaths.

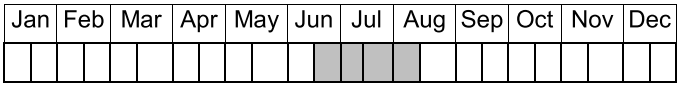
HABITAT: Foxtail Sedge grows in floodplain meadows and thickets, generally in alkaline alluvial soils. In Massachusetts, Foxtail Sedge is typically found with other sedges, grasses, and herbs in open swales within floodplain forests. Associated species include Ostrich Fern (*Matteuccia struthiopteris*), Sensitive Fern (*Onoclea sensibilis*), False Hellebore (*Veratrum viride*), False Nettle (*Boehmeria cylindrica*), Clearweed (*Pilea pumila*), Rice Cut-grass (*Leersia oryzoides*), bedstraws (*Galium* spp.), Jumpseed (*Polygonum virginianum*), Reed Canary Grass (*Phalaris arundinacea*), and various sedges, including Hairy-Fruited Sedge (*C. trichocarpa*, a state Threatened species), and Fox Sedge (*C. vulpinoidea*). Associated floodplain forest trees include Silver Maple (*Acer saccharinum*), Basswood (*Tilia americanum*), and American Elm (*Ulmus americana*).

RANGE: The documented range of Foxtail Sedge extends from Quebec and Maine west to Michigan and Minnesota and south to New Jersey, Indiana, and Iowa.

POPULATION STATUS IN MASSACHUSETTS: Foxtail Sedge is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. There are ten current stations (discovered or relocated since 1984) of Foxtail Sedge in the Commonwealth. They occur in seven towns in Berkshire and Hampshire counties along the Hoosic, Housatonic, and Westfield Rivers.

MANAGEMENT RECOMMENDATIONS: As for many rare species, exact needs for management of Foxtail Sedge are not known. The following comments are based primarily on observations of populations in Massachusetts. Loss of natural floodplain habitat appears to be a major cause of rarity in Massachusetts. In order to maintain the existing native populations and to prevent Foxtail Sedge's extirpation from the Commonwealth, it is critical that its habitat remain intact. Known populations of Foxtail Sedge in Massachusetts occur along rivers and streams that experience periodic flooding. The disturbance of seasonal flooding may be necessary to perpetuate Foxtail Sedge populations by limiting shrub growth and maintaining an open community structure. Any alteration of stream or river hydrology should be avoided in areas where foxtail sedge occurs. Control of invasive plant species, often common in river floodplains, is another management concern.

MATURE PERIGYNIA PRESENT:



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A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Natural Heritage & Endangered Species Program

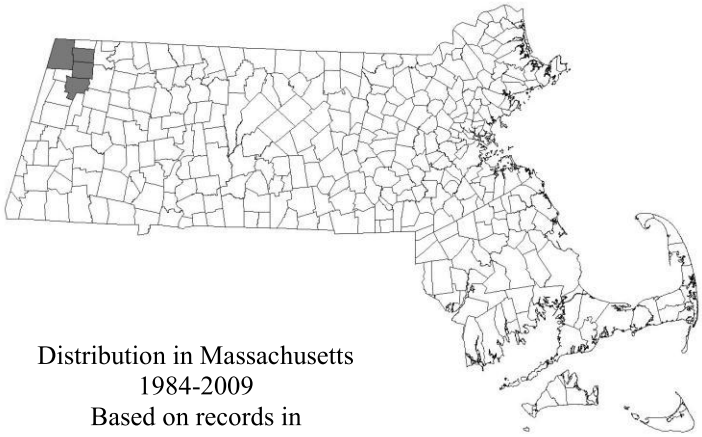
www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Hairy-fruited Sedge
Carex trichocarpa
Muhl. *ex* Willd.

State Status: **Special Concern**
Federal Status: **None**

GENERAL DESCRIPTION: Hairy-fruited Sedge is a slender, dark blue-green, grass-like plant in the Sedge family (Cyperaceae). This tall, fairly robust sedge grows in loose clumps from 6 to 12 dm (1 3/4 - 4 1/4 ft.) in height. The principal leaves are 4-8 mm (4/25 - 8/25 in.) wide and have hairless sheaths (the lowermost, stem-enveloping portions of the leaves). Each sheath is marked by a red stripe at its top. Hairy-fruited Sedge generally has three male, or staminate, spikes and from two to four female, or pistillate, spikes (clusters of stalkless flowers.) Leaf-like bracts grow out from under these spikes and overtop them. The light brown scales (small, dry, scale-like structures) of the pistillate flowers are marked with light green down the middle and are about one-half as long to as long as the sac-like structures, known as perigynia, that enclose the female reproductive parts. The 6-10 mm (6/25-10/25 in.) long, hairy perigynia are topped by a short, hairy beak (slender protuberance). Hairy-fruited Sedge's fruits mature from early June through early July.



Distribution in Massachusetts
1984-2009
Based on records in
Natural Heritage Database

Photos by Karro Frost

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

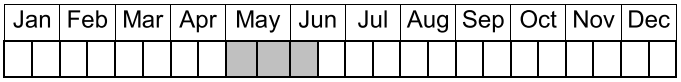
SIMILAR SPECIES: Both Schweinitz's Sedge (*Carex schweinitzii*) and Retrorse Sedge (*C. retrorsa*) have been found growing with Hairy-fruited Sedge in Massachusetts. However, unlike Hairy-fruited Sedge, Retrorse Sedge has hairless perigynia. Schweinitz's Sedge is generally much shorter than Hairy-fruited Sedge, growing only to 7 dm (2 1/3 ft.)

HABITAT: In New England, Hairy-fruited Sedge occurs in calcareous meadows and swales, especially near rivers. Massachusetts habitats include the edges of floodplain forests and swamps, wet meadows, edges of marshes and ponds and marshy swales. All these habitats are adjacent to or near a river. Plant species associated with Hairy-fruited Sedge include Silky Dogwood (*Cornus amomum*), Cattail (*Typha latifolia*), Reed Canary Grass (*Phalaris arundinacea*), Retrorse Sedge (*Carex retrorsa*), and various other species of sedge (including *Carex* spp. and *Eleocharis* spp.). Schweinitz's Sedge (*Carex schweinitzii*) is a rare Massachusetts plant associated with Hairy-fruited Sedge.

RANGE: The documented range of Hairy-fruited Sedge extends from Quebec to Vermont, Ontario and Minnesota, south to Delaware, North Carolina, Ohio, Indiana, Illinois and southeastern Missouri.

THREATS: Reasons for the plant's rarity in Massachusetts include habitat destruction.

MATURE PERIGYNIA PRESENT:



Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

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Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

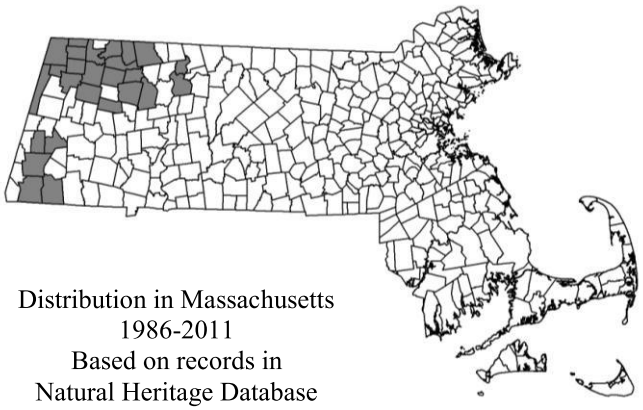
Massachusetts Division of Fisheries & Wildlife

Longnose Sucker
Catostomus catostomus

State Status: **Special Concern**
Federal Status: **None**

GENERAL DESCRIPTION: Longnose Suckers are torpedo-shaped fish with a snout that extends beyond the subterminal mouth. They can grow to over 500 mm (~20 in.); however in New England they are generally smaller. They are silvery-gray to yellowish in color and sometimes have darker blotches or saddles along their sides. During the breeding season they will have a red lateral stripe and tubercles (pimple-like bumps) on their head and fins.

SIMILAR SPECIES: Longnose Suckers and White Suckers (*Catostomus commersoni*) can be easily confused. Longnose Suckers have finer scales and have 85 lateral line scales, compared to 75 for White Suckers. The lateral line pores can sometimes be easily seen in the Longnose Sucker whereas in the White Sucker the pores are not visible. In the Longnose Sucker, the lower lips look like two square flaps, whereas in the White Sucker the lower lips are more tapered.



Distribution in Massachusetts
1986-2011
Based on records in
Natural Heritage Database

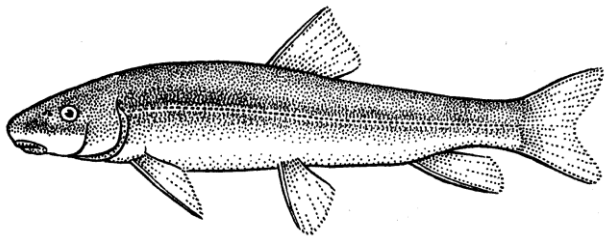


Illustration by Laszlo Meszoly, from Hartel et al. 2002.
Inland Fishes of Massachusetts.

HABITAT: In Massachusetts, Longnose Suckers are found mainly in cool upper sections of streams and rivers with rocky substrates. They are only found in the western part of the State, specifically in the Deerfield, Housatonic, Hoosic, and Westfield watersheds. In other parts of their range they are found in lakes and have been found as deep as 600 ft.

LIFE HISTORY: Longnose Suckers reach maturity at around 5 to 7 years of age, or 130-400 mm (~5 to ~16 in.) in length. They can live up to 20 years and can spawn multiple times during their life. Upstream spawning migrations occur from mid-April through July. They may migrate many kilometers to reach spawning grounds. Their peak spawning activity is relatively short lasting, between 5 and 10 days, and only occurs during daylight hours. Spawning occurs in areas that have moderate to fast stream currents and gravel substrates. Longnose Suckers do not build nests but release adhesive, sinking eggs and show no territoriality.

Young-of-the-year can be found in midwater feeding on plankton. Adult Longnose Suckers feed primarily on benthic invertebrates, specifically *Gammarus, Daphnia*, and a variety of insect larvae as well as algae. Longnose Suckers are vulnerable to predation during spawning by

a variety of animals, such as Northern Pike, Black Bears and other mammals, and Ospreys.

THREATS: Habitat alteration is a major threat especially through erosion and sedimentation, flow alterations, and increased water temperatures. This species relies on clean, well oxygenated gravel substrates for their eggs to develop and all of these threats can severely decrease their reproductive success. In addition, dams can prevent their migration to preferred spawning habitats.

BREEDING SEASON:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Large-leaved Goldenrod
Solidago macrophylla
Banks ex Pursh

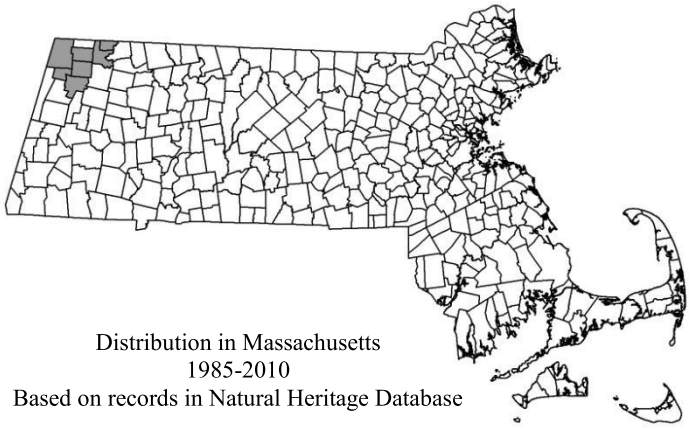
State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: Large-leaved Goldenrod is a 30 to 80 cm (1-2.5 ft.) tall, perennial herbaceous plant in the Asteraceae or Daisy family. The lower leaf blades are large, 3 to 15 cm (1.2-6 in.) long, sharply toothed, oval shaped, and taper abruptly to the leafstalk. Basal leaves are likewise toothed but are also tufted, situated on long stalks and usually persistent long after their appearance in late spring. Flowers are golden-yellow and form a narrow, club-shaped elongate inflorescence. Each flower head is large compared to other goldenrods, comprised of many small florets, and rests on a very short stalk. The dry fruits (achenes) are smooth and about 4 to 5 mm long. Flowering season is late July-September.

SIMILAR SPECIES: Cut-leaved Goldenrod (*Solidago arguta)* resembles Large-leaved Goldenrod but the former has a more arching or elm-like inflorescence. It inhabits rocky woodlands generally at lower elevations than Large-leaved Goldenrod.

HABITAT IN MASSACHUSETTS: This species is found at higher elevations in cool woods with in filtered light or full sun along roadsides and trails, in thickets, clearings and open summits, and in damp woods with an open understory. Some sites have short, stunted trees. The plants largely occur in canopy openings on shallow, stony soil in High elevation Spruce-Fir Forests or a Spruce – Fir- Northern Hardwoods Forests. The overhead or nearby canopy usually includes Balsam Fir (*Abies balsamea*), Red Spruce (*Picea rubens*), Yellow Birch (*Betula alleghaniensis*), Heart-leaved birch (*B.*

Large-leaved Goldenrod. Photo: Jonathan Coddington. Illustration: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 3: 385.



Distribution in Massachusetts
1985-2010
Based on records in Natural Heritage Database

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

cordifolia), Black Cherry (*Prunus serotina*), American Beech (*Fagus grandifolia*), and Red and Sugar Maples *(Acer rubrum* and *A. saccharum*), with American Mountain-ash (*Sorbus americana*), Striped Maple (*A. pensylvanica*), Mountain Maple (*A. spicatum*), Bartram's Shadbush (*Amelanchier bartramiana*), Hobblebush (*Viburnum lantanoides*) and blackberries (*Rubus* spp.). The associated herbaceous layer can include Hay-scented Fern (*Dennstaedtia punctilobula*), Mountain Woodfern (*Dryopteris campyloptera*), Intermediate Woodfern (*D. intermedia*), Christmas Fern (*Polystichum acrostichoides*), *Lycopodium* spp., Wood sorrel (*Oxalis acetosella*), Canada Mayflower (*Maianthemum canadense*), Whorled Wood-aster (*Oclemena acuminata*), Yellow Clintonia (*Clintonia borealis*) and various graminoids such as Common Hairgrass (*Deschampsia flexuosa*), Woodland Millet (*Millium effusum*), and Stalked Sedge (*Carex debilis*).

RANGE: Large-leaved Goldenrod is a northern species found from Newfoundland to Ontario, south to the Green Mountains, Adirondacks, northern Berkshire Plateau, Mt. Greylock, and one historical record from Massachusetts near the Notch in the Holyoke Range. NatureServe ranks Large-leaved Goldenrod as G5, Globally Secure. It is not listed as rare in any other state or province.

POPULATION STATUS IN MASSACHUSETTS: Large-leaved Goldenrod is listed under the Massachusetts Endangered Species Act as a Species of Special Concern. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. It is currently known from Berkshire and Franklin Counties and is historically known from Hampshire County. In Massachusetts, Large-leaved Goldenrod is at the southern limit of its range which, in part, accounts for its rarity. The lack of high elevations, coupled with our relatively high summer temperatures, may also be contributing factors to its rarity.

MANAGEMENT AND THREATS: Several of the known populations are along trails or access roads to summits and ridges, others are on summits. Widening of trails and erosion and soil disturbance are potential threats, as is mowing trail edges during the growing season. Any trail maintenance should be done with knowledge of the plant locations. Clearing followed by dense regrowth are threats on summits and along road accesses for wind towers and other summit development. Impacts of opening canopies such as drying of the soil, invasion by other species and too much sun exposure are threats. Habitat conditions can be kept suitable for populations by maintaining open areas of filtered sunlight below a sparse canopy. Rare plant locations that receive heavy recreational use should be carefully monitored for plant damage or soil disturbance; trails can sometimes be re-routed to protect population.

All active management of rare plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Updated 2015

Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

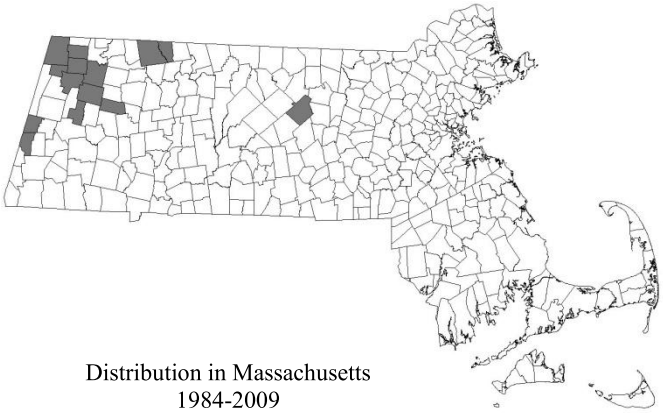
Massachusetts Division of Fisheries & Wildlife

Woodland Millet
Milium effusum
L.

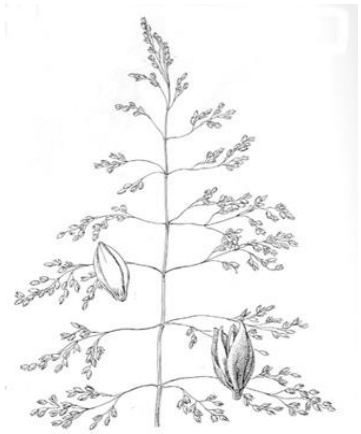
State Status: **Threatened**
Federal Status: **None**

DESCRIPTION: *Milium effusum* is a perennial woodland grass. It has a smooth, somewhat succulent, slender stem that grows 3 ½-5 feet (1-1.5 m.) tall. The leaf blades are generally 4-8 inches (10-20 cm.) long and ½-1/2 inches (8-15 mm.) wide. The panicle (flowering part) is sparse-looking, 4-8 inches long with branches which extend outward and carry dropping spikelets. *Milium effusum* is notable for its delicate pastel green color and whitish bloom on the stem. Spikelets can be found from late May to September.

HABITAT IN MASSACHUSETTS: Woodland-millet is typically found on steep slopes in rich, mesic forest communities with calcareous soils. Its microhabitat often includes the drier, rocky upper slopes of the woodland. Commonly associated species include *Fagus grandifolia* (Beech), *Acer saccharum* (Sugar Maple), *Betula papyrifera* (White Birch), *Solidago macrophylla* (Broad-leaved Goldenrod), *Allium tricoccum* (Wild Leek), and *Carex platyphylla* (Broad-leaved Sedge).



Distribution in Massachusetts
1984-2009
Based on records in Natural Heritage Database



Holmgren, Noel H. 1998. *The Illustrated Companion to Gleason and Cronquist's Manual*. The New York Botanical Garden.

RANGE: Woodland-millet is distributed from Nova Scotia and Quebec west to Minnesota and south to West Virginia and Illinois.

POPULATION STATUS: Woodland-millet is currently considered Threatened in Massachusetts. It has probably never been very abundant in Massachusetts and its rarity is in part related to the relatively few steeply sloped mesic forest communities in the state. Except for one, all populations are small, scattered, and vulnerable to disturbance. Twenty-two current occurrences have been documented (1984 to present), and two historical occurrences (prior to 1984) have been recorded.

Updated 2019

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

Natural Heritage & Endangered Species Program

www.mass.gov/nhesp

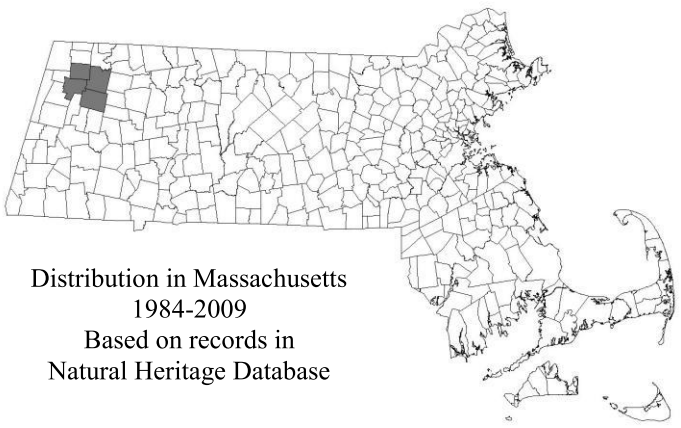
Massachusetts Division of Fisheries & Wildlife

Bailey's Sedge
Carex baileyi
Britton

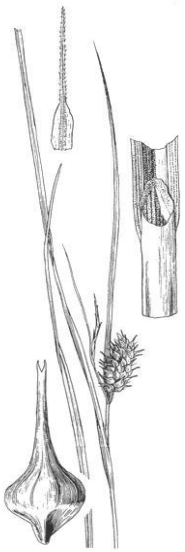
State Status: **Threatened**
Federal Status: **None**

GENERAL DESCRIPTION: Bailey's Sedge, a member of the Sedge family (Cyperaceae), is a perennial, herbaceous, grass-like plant of freshwater wetlands and moist woodlands. It was named in honor of botanist Liberty Hyde Bailey (1858-1954). It occurs in dense clumps, often in association with other wetland sedges and grasses under a forest canopy with some filtered light.

AIDS TO IDENTIFICATION: To positively identify Bailey's Sedge and other members of the genus *Carex*, a technical manual should be consulted. Species in this genus have tiny, wind-pollinated flowers that are borne in spikes. Each flower is unisexual, and is closely subtended by small, flat scales that largely conceal the flowers. The staminate (*i.e.*, pollen-bearing) flowers are subtended by a single scale. The pistillate (*i.e.*, ovule-bearing) flowers are subtended by two scales, an outer flat scale ("pistillate scale") and an inner, sac-like scale, called a "perigynium," that encloses the flower, and later, the fruit.



Distribution in Massachusetts
1984-2009
Based on records in
Natural Heritage Database



Holmgren, Noel H. *The Illustrated Companion to Gleason and Cronquist's Manual*. NY Botanical Garden. 1998.

Bailey's Sedge grows in clumps of many sharply-angled stems 8 to 28 inches (20 – 70 cm) tall with a purplish-red base. It belongs to a group of sedges called Section *Vesicariae*, which all have three-sided achenes topped by a bony, persistent style, and have at least slightly inflated perigynia. Bailey's Sedge is unique within this group in its combination of long-awned pistillate scales and very long perigynium beaks (analogous to the neck of a vase), which exceeds the length of the true perigynium bodies (analogous to the bottom portion of a vase). Leaves are 4 to 8 inches (10-20 cm) long and quite narrow (0.1-0.2 in., 2-4 mm).

SIMILAR SPECIES: Bailey's Sedge closely resembles the much more common Sallow Sedge, *Carex lurida*, which is found in similar habitat. However, the beak length relative to the perigynium body length in the Sallow Sedge is shorter than that of Bailey's Sedge; *i.e.*, typically only half to almost as long as the body of the perigynium. The Sallow Sedge is also usually taller, up

to 3.5 feet (1.1 m), with heavier, more robust stems and broader leaves, typically 0.2 to 0.3 inches (4-7 mm) wide. The pistillate spike in the Sallow Sedge is 0.6 to 0.8 inches (1.4-2.0 cm) in diameter, wider than that in Bailey's Sedge.

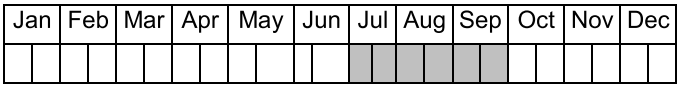
HABITAT: In general, this species is found in swampy areas, including sedge meadows, seeps, ditches, and shrub wetlands. Specific habitats in Massachusetts include a wet ditch, a wooded roadside, a rut in an abandoned woods road, a steep stream bank, a wooded swamp, and a wet, shrubby woodland. Herbaceous species observed in association with Bailey's Sedge include mannagrass (*Glyceria* spp.), New York Fern (*Thelypteris noveboracensis*), Rough-stemmed Goldenrod (*Solidago rugosa*), Whorled Wood Aster (*Eurybia divaricata*), Turtlehead (*Chelone glabra*), Joe-Pye-Weed (*Eupatorium maculatum*) and Rough Bedstraw (*Galium asprellum*). Woody species observed with Bailey's Sedge include Sugar Maple (*Acer saccharum*), Black Birch (*Betula lenta*), Yellow Birch (*Betula alleghaniensis*), Balsam Fir (*Abies balsamea*), Red Spruce (*Picea rubens*), Witch Hazel (*Hamamelis virginiana*) and several species of willow (*Salix* spp.).

RANGE: Bailey's Sedge is restricted to the Appalachian region of North America. It extends from southern Ontario and southwestern Quebec southward to North Carolina and Tennessee in the south.

POPULATION STATUS IN MASSACHUSETTS: Bailey's Sedge is listed under the Massachusetts Endangered Species Act as Threatened. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. Only eleven current stations are known for Bailey's Sedge in Massachusetts, all in the vicinity of the Hoosac Range in Berkshire County. Bailey's Sedge is also listed as rare in the states of New Hampshire, Maine (historic), and Connecticut (believed extirpated).

MANAGEMENT RECOMMENDATIONS: Little is known about the specific requirements of Bailey's Sedge, but observations of existing populations suggest it may be tolerant of moderate disturbance. Nevertheless, drastic alteration of soils, hydrology or the forest canopy may have negative impacts on a population. Selective thinning of the forest canopy to prevent excess shading may improve the health of populations although the results of such manipulations should be monitored closely.

MATURE PERIGYNIA PRESENT:



Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

Natural Heritage & Endangered Species Program

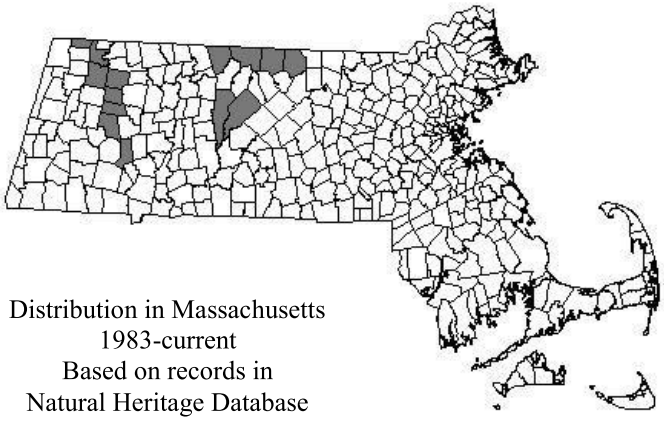
www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Ski-tipped Emerald
Somatochlora elongata

State Status: **Special Concern**
Federal Status: **None**

DESCRIPTION: The Ski-tipped Emerald (*Somatochlora elongata*) is a large, slender insect of the order Odonata, suborder Anisoptera (the dragonflies), family Corduliidae (the emeralds). Most emeralds of the genus *Somatochlora* are large and dark with at least some iridescent green coloration, brilliant green eyes in the mature adults (brown in young individuals), and moderate pubescence (hairiness), especially on the thorax. The Ski-tipped Emerald is distinctive among the *Somatochlora* of Massachusetts in its thoracic markings which consist of an anterior stripe and a posterior spot on each side of the thorax. The thorax overall is of a bronzy brown color with metallic green highlights throughout. The face is yellow with two dark brown cross bands, with the forehead (frons) a shimmering metallic green. The large eyes, which meet at a seam on the top of the head, are brilliant green in mature adults. The long and slender abdomen is most narrow at the base, widening to segment 5 (dragonflies and damselflies have 10 abdominal segments) and then narrowing slightly towards the distal end. The abdomen is black with a metallic green luster. The wings of this species are transparent and, as in all dragonflies and damselflies supported by a dense system of dark veins.



Distribution in Massachusetts
1983-current
Based on records in
Natural Heritage Database

Adult male Ski-tipped Emeralds range from 2 to 2.2 inches (52 to 56 mm) in length. Females measure 2.3 to 2.4 inches (58 to 62 mm) in length. Although the females tend to be larger, male and female Ski-tipped Emeralds are similar in coloration and body form.

SIMILAR SPECIES: Ski-tipped Emeralds can be easily distinguished from other species of the genus *Somatochlora* in Massachusetts by the distinct stripe and spot on each side of the thorax as described above. No other *Somatochlora* in Massachusetts shows these markings. The shape of the males terminal abdominal appendages (as shown in Walker and Corbet (1975) and Needham et al. (2000)) and the female's large triangle-shaped vulvar lamina (as shown in Walker and Corbet (1975) and Needham et al. (2000)) are the best way to determine definitively this and many species of dragonflies. A magnifying lens or microscope is needed to observe characters of these structures. Williamson's

Emerald (*Somatochlora williamsoni*) is the species most similar to the Ski-tipped Emerald. Although it has the same body shape and general coloration, this species has two indistinct stripes (rather than a stripe and a spot) on each side of the thorax and distinctive terminal abdominal appendages and vulvar lamina (as shown in Walker and Corbet (1975) and Needham et al. (2000)).

The nymphs can be distinguished by characteristics of the tibia and femora and by the size and shape of the lateral spines on the abdomen as per the keys in Needham et al. (2000) and Soltesz (1996).

HABITAT: In Massachusetts, the Ski-tipped Emerald has been found inhabiting small to medium-sized streams. Such streams may have a moderate or very sluggish flow and dense or little emergent vegetation. At several sites, Ski-tipped Emeralds have been found patrolling and ovipositing at the swelling of streams created in part by beaver dams. Elsewhere in its range, the Ski-tipped Emerald is said to occasionally inhabit highly vegetated ponds, though flowing waters appear to be a characteristic of normal Ski-tipped Emerald habitat.

LIFE-HISTORY/BEHAVIOR: This species flies throughout July and most of August.

Although little has been published about the life cycle of the Ski-tipped Emerald in particular, information documented for other species is most likely applicable. Like damselflies, dragonflies have two distinct life stages. The first stage is an aquatic larval stage (nymph) and in the second stage the dragonfly is an active flying adult.

Dragonfly nymphs are voracious predators, feeding on just about any animal of appropriate size, including a wide variety of aquatic insects, small fish, and tadpoles. Nymphs undergo several molts until the final stage of development, the emergence from the nymph to adult stage. The nymph of the Ski-tipped Emerald crawls up onto emergent vegetation, exposed banks, or even tree trunks that line the streams they inhabit, to emerge. When the nymph reaches a secure substrate, the adult begins to push itself out of the exoskeleton, head and thorax first and then the abdomen. Immediately following emergence, the adult is very compacted, especially the wings and abdomen. As soon as the abdomen and wings are fully expanded, the adult takes its first flight. This maiden flight usually carries the individuals up into surrounding forest or other areas away from water, where they spend several days maturing and feeding and are somewhat protected from predation and inclement weather. Ski-tipped Emeralds can be found in fields and forest clearings, which they patrol in search of small aerial insects, such as flies and mosquitoes, on which they feed. When not feeding, Ski-tipped Emeralds rest hanging vertically from the branches of bushes and trees. The adult coloration is acquired and the dragonfly becomes sexually mature before returning to the breeding habitat to initiate mating.

Breeding in Massachusetts probably occurs from mid-July through August, as in other regions where this species occurs. Males patrol up and down the stream along the banks, usually no more than two feet above the surface of the water, in search of females. The joined pair quickly flies off into the surrounding upland habitat to mate.

Following mating, oviposition (egg laying) occurs. Females of the genus *Somatochlora* oviposit alone and deposit their eggs directly into the substrate by tapping the tip of the abdomen on its surface. Ski-tipped Emeralds have a fairly unusual method of oviposition. Females will cruise low and erratically around a small area near the bank of the stream, intermittently tapping the surface of the water and the surface of bank (which is often covered with mosses). They tap the bank and then the water, going back and forth continuously. The reasons for this type of oviposition are unclear, though some believe that the female is depositing her eggs in the bank of the stream and then going to the water to wash any debris that she might have picked up from the bank off her abdomen. In Massachusetts, females of the Ski-tipped Emerald have been seen ovipositing in the quiet recesses of backwashes, though elsewhere they have been found ovipositing in sections of rapids of streams.

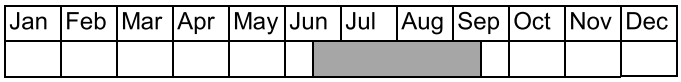
RANGE: The Ski-tipped Emerald is distributed from the Maritime Provinces west to Ontario and south to Minnesota, Michigan, and Pennsylvania, and sparsely through Appalachian Mountains of North Carolina and Georgia. In New England, this species is found in Maine, New Hampshire, Vermont, and Massachusetts.

POPULATION STATUS IN MASSACHUSETTS: The Ski-tipped Emerald is listed as a Species of Special Concern in Massachusetts. As with all species listed in

Massachusetts, individuals of the species are protected from take (picking, collecting, killing, etc…) and sale under the Massachusetts Endangered Species Act. The species is known from several sites in western Massachusetts and can be quite numerous at some of these sites. Recent field work has shown this species to be relatively more common than previously believed, particularly in western portions of the state, and further work may turn up more sites where suitable habitat is available.

MANAGEMENT RECOMMENDATIONS: As for many rare species, exact needs for management of the Ski-tipped Emerald are not known. As an inhabitant of streams, Ski-tipped Emerald is vulnerable to habitat alteration such as damming and altering of flowage, along with many other aquatic impacts such as chemical pollution and salt run-off from roadways. Overuse of streams for recreation (fishing, swimming, etc.) could cause problems if left unchecked. Such activities should be monitored and controlled if necessary. Another important part of preserving this and other species of dragonflies is the maintenance of suitable upland habitat that is essential for the life cycle of Ski-tipped Emerald and other dragonflies. Dragonflies need natural uplands where they are protected and can mature and feed before returning to breed.

Ski-tipped Emerald Flight Period



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APPENDIX E

EJ Reference List - Provided by MEPA Office on March 30, 2022

Statewide Environmental Justice Community Based Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Ben	Hellerstein	MA State Director	617-747-4368	ben@environmentmassachusetts.org	Environment Massachusetts
Cindy	Luppi	New England Director	617-338-8131 x208	cluppi@cleanwater.org	Clean Water Action
Deb	Pasternak	Director, MA Chapter	617-423-5775	deb.pasternak@sierraclub.org	Sierra Club MA
Elvis	Mendez	Organizing Director	508 904-5359	elvis@n2nma.org	Neighbor to Neighbor
Heather	Clish	Director of Conservation & Recreation Policy	(617) 523-0655	hclish@outdoors.org	Appalachian Mountain Club
Heidi	Ricci	Director of Policy	Not Provided	hricci@massaudubon.org	Mass Audubon
Julia	Blatt	Executive Director	(617) 714-4272	juliablatt@massriversalliance.org	Mass Rivers Alliance
Kelly	Boling	MA & RI State Director	(617) 367-6200	kelly.boling@tpl.org	The Trust for Public Land
Kerry	Bowie	Board President	Not Provided	kerry@msaadapartners.com	Browning the GreenSpace
Nancy	Goodman	Vice President for Policy	Not Provided	ngoodman@environmentalleague.org	Environmental League of MA
Pat	Stanton	Project Manager	Not Provided	pstanton@e4thefuture.org	E4TheFuture
Rob	Moir	Executive Director	Not Provided	rob@oceanriver.org	Ocean River Institute
Robb	Johnson	Executive Director	(978) 443-2233	robb@massland.org	Mass Land Trust Coalition
Sarah	Dooling	Executive Director	Not Provided	sarah@massclimateaction.net	Mass Climate Action Network (MCAN)
Staci	Rubin	Senior Attorney	617 350-0990	srubin@clf.org	Conservation Law Foundation
Sylvia	Broude	Executive Director	617 292-4821	sylvia@communityactionworks.org	Community Action Works
Tali	Smookler	Organizing Director	508 308-9261	tsmookler@uumassaction.org	Unitarian Universalist Mass Action Network
Winston	Vaughan	Director of Climate Solutions	Not Provided	wvaughan@hcwh.org	Healthcare without Harm

Indigenous Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Alma	Gordon	President	Not Provided	tribalcouncil@chappaquiddick-wampanoag.org	Chappaquiddick Tribe of the Wampanoag Nation
Cheryll	Toney Holley	Chair	774-317-9138	crwritings@aol.com	Nipmuc Nation (Hassanamisco Nipmucs)
John	Peters, Jr.	Executive Director	617-573-1292	john.peters@mass.gov	Massachusetts Commission on Indian Affairs (MCIA)
Kenneth	White	Council Chairman	508-347-7829	acw1213@verizon.net	Chaubunagungamaug Nipmuck Indian Council
Melissa	Ferretti	Chair	(508) 304-5023	melissa@herringpondtribe.org	Herring Pond Wampanoag Tribe
Patricia	D. Rocker	Council Chair	Not Provided	rockerpatriciad@verizon.net	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan
Raquel	Halsey	Executive Director	(617) 232-0343	rhalsey@naicob.org	North American Indian Center of Boston
Cora	Pierce	Not Provided	Not Provided	Coradot@yahooe.com	Pocassett Wampanoag Tribe
Elizabth	Soloman	Not Provided	Not Provided	Solomon.Elizabeth.e@gmail.om	Massachusetts Tribe at Ponkapoag

Federally Recognized Tribes

First	Last	Title	Phone	Email	Affiliation
Bettina	Washington	Tribal Historic Preservation Officer	508-560-9014	thpo@wampanoagtribe-nsn.gov	Wampanoag Tribe of Gay Head (Aquinnah)
Bonney	Hartley	Historic Preservation Manager	413-884-6048	bonney.hartley@mohican-nsn.gov	Stockbridge-Munsee Tribe
Brian	Weeden	Chair	774-413-0520	Brian.Weeden@mwtribe-nsn.gov	Mashpee Wampanoag Tribe

Local Community Based Organizations

First Name	Last Name	Title	Service Area	Telephone / Email	Organization
Jane	Winn	Executive Director	Adams, Alford, Becket, Cheshire, Clarksburg, Dalton, Egermont, Florida, Great Barrington, Hancock, Hinsdale, Lanesborough, Lee, Lenox, Monterey, Mount Washington, New Ashford, New Marlborough, North Adams, Otis, Peru, Pittsfield, Richmond, Sandisfield, Savoy, Sheffield, Stockbridge, Tyringham, Washington, West Stockbridge, Williamstown, Windsor	413-464-9402 / team@thebeatnews.org	Berkshire Environmental Action Team
Sarita	Hudson	Director Programs & Development	Adams, Alford, Becket, Cheshire, Clarksburg, Dalton, Egermont, Florida, Great Barrington, Hancock, Hinsdale, Lanesborough, Lee, Lenox, Monterey, Mount Washington, New Ashford, New Marlborough, North Adams, Otis, Peru, Pittsfield, Richmond, Sandisfield, Savoy, Sheffield, Stockbridge, Tyringham, Washington, West Stockbridge, Williamstown, Windsor	413 794-7739 / shudson@publichealthwm.org	Public Health Institute of Western Mass

Environmental Justice Screening Form

Project Name	E131 Asset Condition Refurbishment Project: "E131 ACR Project"
Anticipated Date of MEPA Filing	January, 2023
Proponent Name	New England Power Company (NEP)
Contact Information (e.g., consultant)	Mike Tyrrell, National Grid (603) 316-4469 (michael.tyrrell@nationalgrid.com) or Katy Wilkins, Tighe & Bond, Inc. (413) 875-1305 (klwilkins@tighebond.com)
Public website for project or other physical location where project materials can be obtained (if available)	https://www.E131project.com
Municipality and Zip Code for Project(if known)	Adams (01220), North Adams (01247), Monroe (01247), and Florida (01247), Massachusetts
Project Type* (list all that apply)	Refurbish Existing Overhead Transmission Line
Is the project site within a mapped 100-year FEMA flood plain? Y/N/yetunknown	Yes, in short segments of Right-of-Way scattered along the project length
Estimated GHG emissions of conditioned spaces if known (clickhere for GHG Estimation tool)	Not applicable – No buildings are proposed as part of this project.

Project Description

1. Provide a brief project description, including overall size of the project site and square footage of proposed buildings and structures if known.

The E131 ACR Project is an existing 115 kV overhead transmission line that is approximately 12.3 miles long and extends from Adams, MA to Readsboro, VT. Owned and operated by NEP, the E131 transmission line provides electricity for the Towns of Adams, North Adams, Florida, and Monroe, Massachusetts. The length in Massachusetts is approximately 11.4 miles. Constructed in 1925, the E131 infrastructure (structures, wiring, foundations, etc.) is outdated and requires upgrades to be able to continue to provide reliable power to these Towns. Refurbishing the line will involve replacing the structures and upgrading transmission line components, including the installation of optical ground wire (OPGW). OPGW serves a dual purpose by providing the necessary electrical grounding in the event of lightning strikes with the additional feature of enabling telecommunication along the transmission lines and between substations. This telecommunication is critical for identifying problems, such as damage to the infrastructure from storm events or storm related outages. It will enable NEP to respond quickly to any problems along this line. Since the area where the Project is located is remote, NEP will need to build new access roads for trucks and equipment to travel along the line to complete the upgrades and provide long-term, safe access for future maintenance.

2. List anticipated MEPA review thresholds (301 CMR 11.03) (if known)

ENF Review:

- Wetlands, Waterways and Tidelands 301 CMR 11.03(3)(b)(1)(d) - Alteration of 5,000 or more sf of bordering or isolated vegetated wetlands
- Wetlands, Waterways and Tidelands 301 CMR 11.03(3)(b)(1)(f) – Alteration of ½ or more acres of any other wetlands
- Land 301 CMR 11.03(1)(b)(1) - Direct alteration of 25 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices

ENF and Mandatory EIR:

- 301 CMR 11.03(1)(a)(1) – Land: Direct alteration of 50 or more acres of land, unless the Project is consistent with an approved conservation farm plan or forest cutting plan or other similar generally accepted agricultural or forestry practices
- 301 CMR 11.03(3)(a)(1)(a) - Wetlands, Waterways and Tidelands: Alteration of one or more acres of salt marsh or bordering vegetating wetlands
- 301 CMR 11.06(7)(b) - Environmental Justice: The Secretary shall require an EIR for any Project that is located within a Designated Geographic Area around an Environmental Justice Population.

3. List all anticipated state, local and federal permits needed for the project (if known)

Agency	Permit, Review, or Approval
Federal	
US Army Corps of Engineers (the Corps)	Section 404 Pre-Construction Notification; consultations under Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act
US Environmental Protection Agency (EPA)	National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)
State	
Executive Office of Energy and Environmental Affairs (EEA)	MEPA Review/Certificate of the Secretary
Massachusetts Department of Environmental Protection (MassDEP)	Individual Section 401 Water Quality Certificate
Massachusetts Natural Heritage and Endangered Species Program (NHESP)	Determination of No Adverse Effect / Conservation Management Permit
Massachusetts Department of Conservation and Recreation (DCR)	Construction Access Permit
Massachusetts Historical Commission (MHC)	Consultation under M.G.L. c. 9 in accordance with 950 CMR 70-71
Local	
Adams, North Adams, Florida, and Monroe Conservation Commissions	Orders of Conditions per the Massachusetts Wetlands Protection Act (MA WPA)

4. Identify EJ populations and characteristics (Minority, Income, English Isolation) within 5 miles of project site (can attach map from EJ Maps Viewer in lieu of narrative)

See **Attachment A** for figures depicting EJ populations within one and five miles of the Project Site.

The Designated Geographic Area for this Project is one mile from transmission line corridor. The following EJ populations are located within one mile of the Project Site:

- Income (Block Group 1, Census Tract 9214, North Adams, Berkshire County)
- Income (Block Group 2, Census Tract 9214, North Adams, Berkshire County)
- Income (Block Group 4, Census Tract 9222, Adams, Berkshire County)
- Income (Block Group 1, Census Tract 401, Monroe, Berkshire County)
- Income (Block Group 1, Census Tract 401, Rowe, Franklin County)

5. Identify any municipality or census tract meeting the definition of "vulnerable health EJ criteria"in the DPH EJ Tool located in whole or in part within a 1 mile radius of the project site

Municipality	EJ and Vulnerable Health EJ Criteria Status	Vulnerable Health Topics EJ Criteria Met	Statewide Rates Per 1,000
Adams	Meets at least one Vulnerable Health EJ Criteria	Heart attack per 10,000	30.8
		Lead poisoning per 1,000	16.1
		Low birth weight rate per 1,000	218.3
Florida	None	None	N/A
Monroe	Meets at least one Vulnerable Health EJ Criteria	Pediatric asthma ED visits per 10,000	83.1
North Adams	Meets at least one Vulnerable Health EJ Criteria	Heart attack per 10,000	26.4
		Lead poisoning per 1,000	16.1
		Low birth weight rate per 1,000	216.8
Rowe	Meets at least one Vulnerable Health EJ Criteria	Heart attack per 10,000	26.4
		Lead poisoning per 1,000	16.5
		Low birth weight rate per 1,000	216.8
		Pediatric asthma ED visits per 10,000	83.1

6. Identify potential short-term and long-term environmental and public health impacts that may affect EJ Populations and any anticipated mitigation

Of the four EJ census tracts within one mile of the existing right-of-way (ROW), only two census tracts are directly crossed by the ROW. These EJ populations are within the Towns of North Adams (Block Group 1, Census Tract 9214) and Monroe (Block Group 1, Census Tract 401). In the vicinity of the existing ROW, these census tracts are largely unpopulated (e.g., characterized by undeveloped forest). In the North Adams census tract, there is a singular residential community located approximately 750 feet north of the existing ROW. Within the Monroe census tract, there are approximately two residential dwellings located within 100 feet of the existing ROW.

Air Quality:

Construction-period activities, such as grading, road building, vehicle travel, and other earth-disturbing work may result in a temporary increase in airborne dust. Dust control measures (e.g., wetting soils with water) and Best Management Practices (BMPs) will be implemented to minimize airborne dust to the extent feasible. Disturbed soils will be stabilized and revegetated once the work is completed. In addition, diesel-powered equipment is required to use ultra-low sulfur diesel fuel. Any diesel-powered non-road construction equipment rated 50-horsepower or more that will be used on the Project for 30 days or more will be required to install emission control devices. The impacts from these activities will be minimal and are not anticipated to cause impacts to public health.

Water Quality:

The Project will incorporate protective and preventative measures to minimize impacts to water quality. The existing ROW traverses through many wetland areas and crosses streams and rivers. As such, work within wetlands is unavoidable. Wetlands and other sensitive areas will be protected using timber construction mats. Timber mats are comprised of wooden beams, bolted together, and are typically 4 ft wide by 16 ft long. They are laid temporarily on top of the ground and vegetation. These mats allow heavy machines and vehicles to cross sensitive areas without damaging the soil or roots of vegetation. They are also placed in a manner that does not affect the flow of water in streams. The mats will be removed when work in the area is completed. Impacts to public water supply sources will be negligible and temporary and are not anticipated to cause impacts to public health.

Land Protection and Open Space:

The Project crosses through several State Forests, owned and maintained by the Massachusetts Department of Conservation and Recreation (DCR). The Monroe EJ census tract includes portions of the Monroe State Forest. NEP is actively coordinating with DCR on this project to ensure impacts to natural resources, public access, and recreational opportunities are not negatively impacted.

Potential temporary impacts include short-term access restrictions to recreational trails which will be used by construction vehicles to access the ROW. As sections of the ROW are located within areas used for conservation and recreational purposes, these impacts cannot be avoided. Restrictions will be limited to construction-phase only and will be reopened to public access upon completion of work. Given the multiple options for public access and recreational opportunities in the area, these limited and temporary closures are not anticipated to cause impacts to public health.

The improved access will result in long-term benefits. While intended primarily for use by NEP, maintenance, and emergency services personnel, portions of the proposed gravel access roads will intersect existing recreational trails in Monroe State Forest. Upon completion of the project, these new roads will be available to the Department of Conservation & Recreation for the management of additional recreational uses such as hiking and snowmobiling.

Noise:

The areas through which the Project passes consist primarily of sparsely populated land. As noted above, the ROW intersects very few residential areas in Monroe and is approximately 750 feet from one residential community in North Adams. Otherwise, the project is surrounded by unpopulated tracts of land. Noise impacts associated with construction-period activities are temporary in nature and expected to be minimal. Where construction will occur adjacent to

residences, NEP will notify landowners prior to the commencement of work. Noise-generating activities will be conducted in accordance with any local and state requirements. As the lands surrounding the Project are largely unpopulated, noise impacts on EJ populations are expected to be minimal and are not anticipated to cause impacts to public health.

Traffic:
Significant impacts to traffic are not anticipated for this project, as the Project does not cross densely populated areas or high-use roadways. The work areas will be accessed primarily from NEP-owned access routes or minor town roadways. Once on-site, vehicle traffic will be limited to within or in proximity to the ROW. As the line is an un-manned facility, there will be no permanent impacts to traffic patterns or use of existing roadways and no impacts to public health are anticipated from traffic.

7. Identify project benefits, including "Environmental Benefits" as defined in 301 CMR 11.02, that may improve environmental conditions or public health of the EJ population

Potential "Environmental Benefits" include the following:

- Increased resiliency of the overall transmission line. By installing improved foundations and more robust structures, this infrastructure will be better suited to withstand strong winds and storm events. The E131 transmission line was originally constructed in 1925. The transmission line has had performance issues, including occasional power outages. The replacement of the aging structures will enhance the resiliency of the -transmission line against the impacts of climate change. The proposed upgrades will protect communities from prolonged power outages due to aging infrastructure and inadequate access during storm events.
- The installation of optical ground wire will allow better communication between stations, resulting in shorter response times during storm-related emergencies and outages, which will increase public safety.
- In close coordination with DCR, increased access to recreational trails (where appropriate), due to the construction of new gravel roads within State Forests, which will interconnect with existing roads and trails.

Other benefits of this project that are not expressly included under the definition of "Environmental Benefits" consist of the following:

- Continued reliable transmission of electricity between Massachusetts and Vermont for mutual benefit.
- Reduced overall disturbance to adjacent landowners, wetland resource areas, and rare species habitat by performing the work efficiently and effectively. This will greatly reduce the likelihood of multiple repeat projects over the next 10 years, resulting in minimal environmental impact.

8. Describe how the community can request a meeting to discuss the project, and how the community can request oral language interpretation services at the meeting. Specify how to request other accommodations, including meetings after business hours and at locations nearpublic transportation.

Communities and members of the public can access information related to the project in the following ways:

- A public website, hosted at the following web address: www.E131project.com
- A virtual public meeting hosted by NEP
    - Recipients of this screening form will receive information related to this meeting via email
    - Abutters to the E131 Line right-of-way within the designated EJ Populations will receive information related to this meeting via direct mail
    - Notification of this virtual meeting will be posted in the local newspapers of each municipality prior to the meeting date
- Hard copies of project materials will be made available at municipal libraries
- If you have additional questions, please contact (877) 616-E131 (3131) or email us at info@E131project.com

Recipients of this form include organizations on the EJ Reference List provided by Massachusetts Executive Office of Energy and Environmental Affairs per the Public Involvement Protocol. In addition, notice of the virtual public meeting will be sent to Town Administrators and Landowners and/or Tenants of properties within an EJ Community that is crossed by the E131 ACR Project right-of-way.

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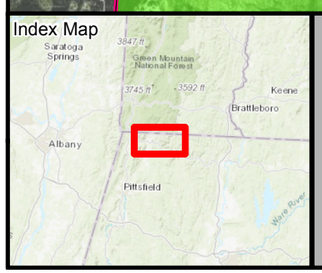
POWNAL
STAMFORD
READSBORO
WHITINGHAM
WILLIAMSTOWN
VERMONT
MASSACHUSETTS
CLARKSBURG
HEATH
MONROE
ROWE
LINE E131
NORTH ADAMS
FLORIDA
CHARLEMONT
ADAMS
SAVOY

Index Map



Legend

- Approximate ROW
- State Boundary
- Municipal Boundary
- Environmental Justice
- 1-Mile Buffer

N

1 inch = 5,500 feet
0 2,900 5,800
Feet

**Indicates Layers Set to Transparency*

LINE E131 – ASSET CONDITION REFURBISHMENT (ACR) PROJECT

Environmental Justice Areas
1 Mile Buffer

Figure 1

Basemap: ESRI World Imagery
Basemap
EJ data: downloaded from MassGIS (2020)

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Tighe&Bond

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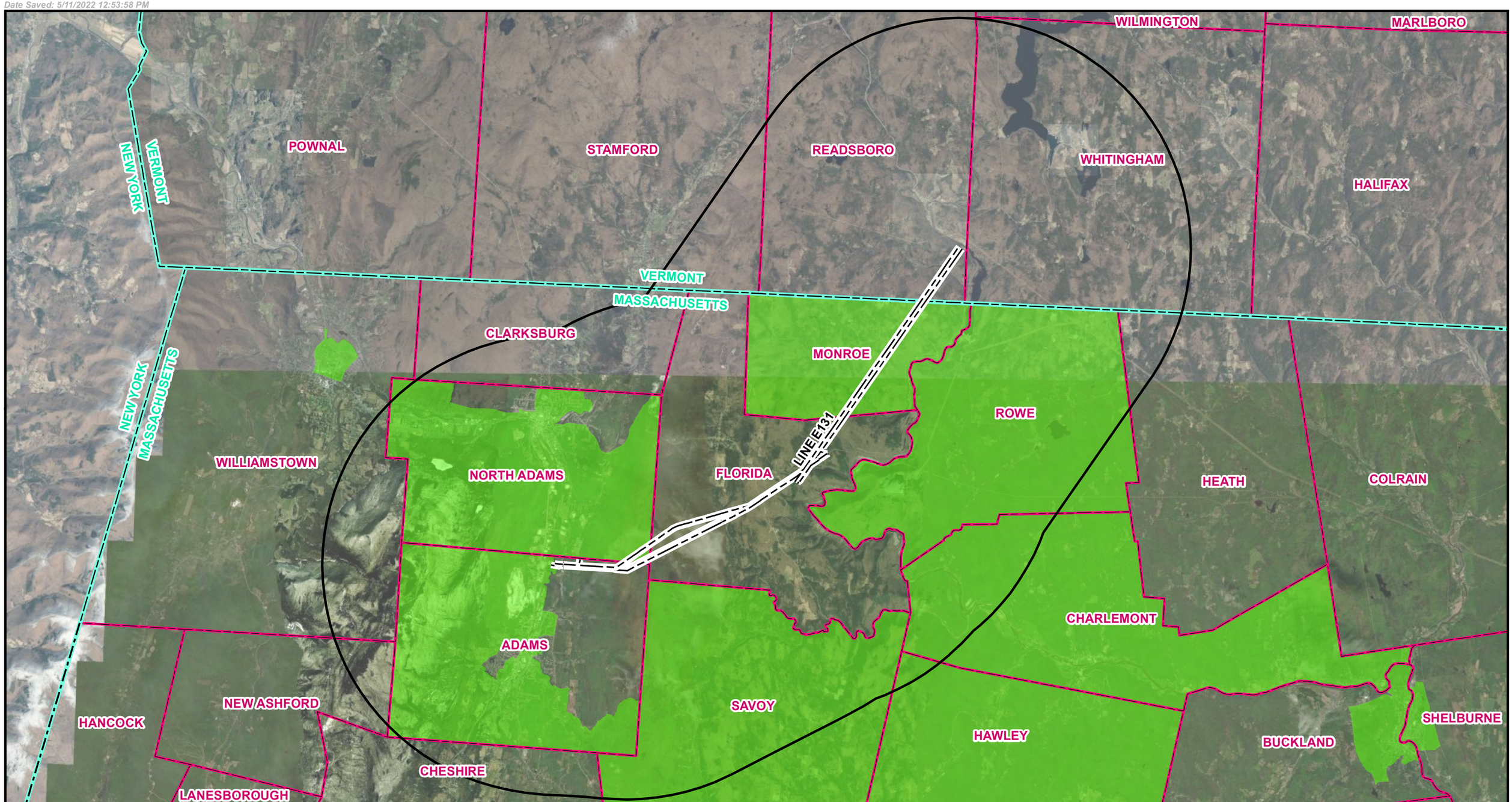
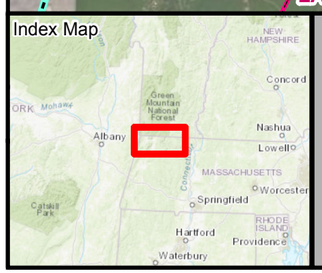


Index Map



Legend

- Approximate ROW
- State Boundary
- Municipal Boundary
- Environmental Justice
- 5 Mile Buffer

N

1 inch = 10,500 feet

0 5,400 10,800

Feet

**Indicates Layers Set to Transparency*

LINE E131 – ASSET CONDITION REFURBISHMENT (ACR) PROJECT

Environmental Justice Areas
5 Mile Buffer

Figure 2

Basemap: ESRI World Imagery
Basemap

nationalgrid
Tighe&Bond

Tighe&Bond

APPENDIX F

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.

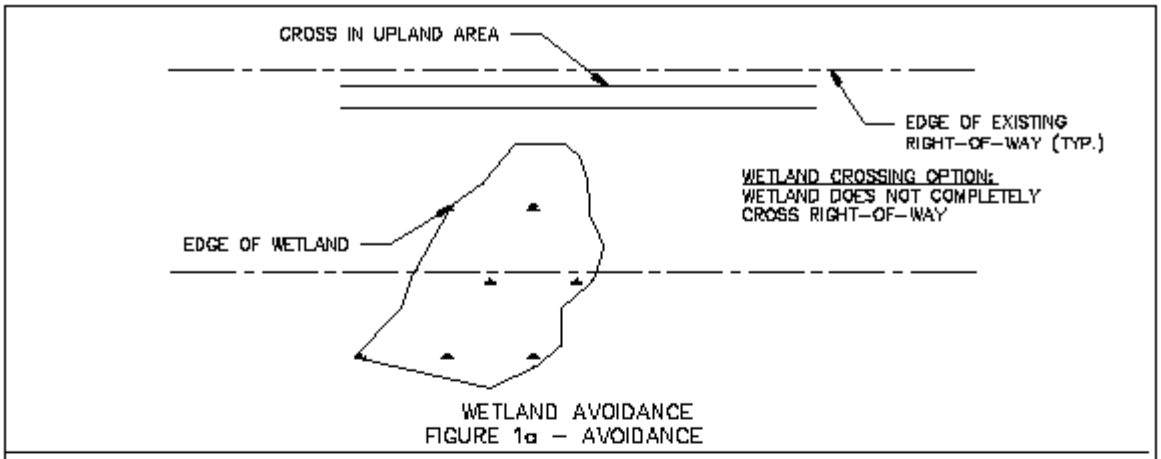
All new construction and maintenance projects shall follow clear and enforceable environmental performance standards, which is the purpose for which these BMPs have been compiled.

1.1 Avoidance and Minimization

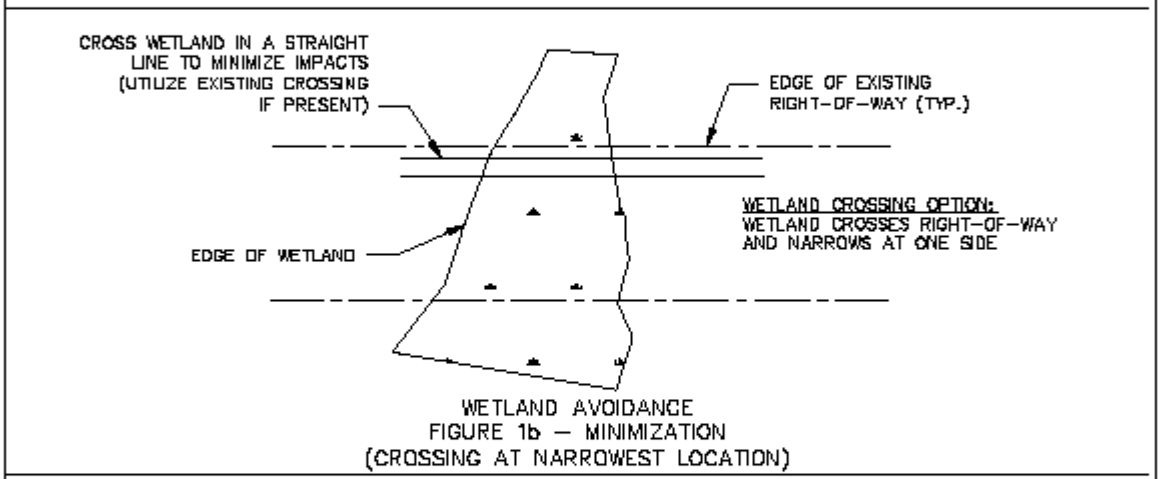
Measures shall always be taken to avoid impacts to wetlands, waterways, rare species habitats, known below and above ground historical/archeological resources and other environmentally sensitive areas. If avoidance is not possible, then measures shall be taken to minimize the extent of impacts. Alternate 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.

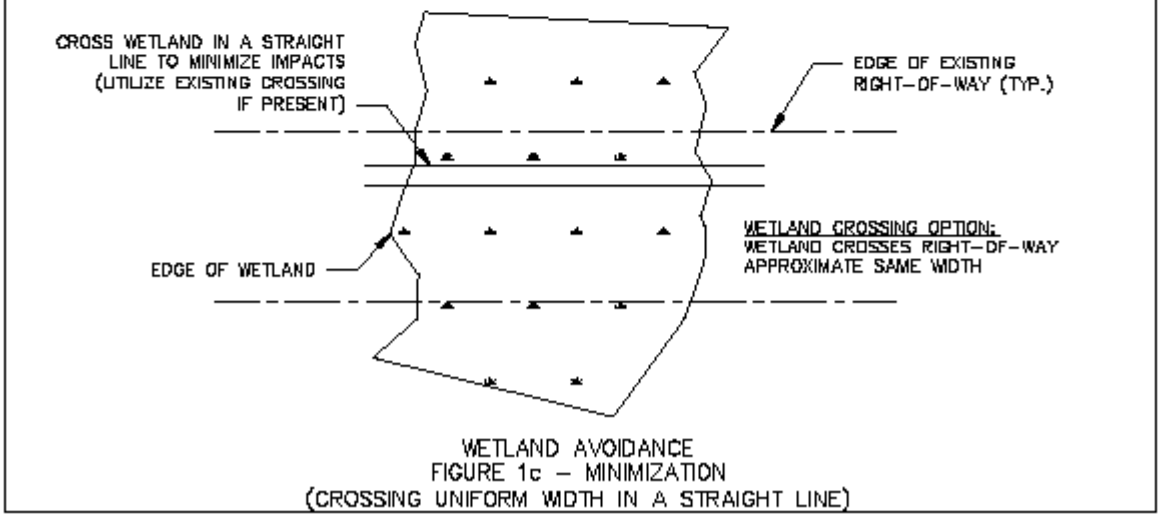
- Avoid and minimize stream crossings.
- Minimize the width of typical access roads through wetlands to a maximum width of 16 feet.
- Conduct work manually (without using motorized equipment) in wetlands, wherever possible.
- Use construction mats in wetlands to minimize soil disturbance and rutting 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)

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

Appendix 4 – BMPs

See EG303NE_Form1 for a list of BMPS

See EG303NE_Form2 for BMP details

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 G

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

PERMIT TO CONDUCT ARCHAEOLOGICAL FIELD INVESTIGATION

Permit Number 4081 Date of Issue April 13, 2021

Expiration Date April 13, 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 Company Line E131 Refurbishment,
Adams, North Adams, Florida, & Monroe

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

Public Archaeology Laboratory

April 1, 2021

Brona Simon
State Historic Preservation Officer
State Archaeologist
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: New England Power Company – Line E131 Asset Condition Refurbishment Project
Adams, Florida, Monroe, Massachusetts and Readsboro, Vermont
Project Notification Form, Due Diligence, and Intensive (Locational) Archaeological Survey Proposal
PAL #3846.01

Dear Ms. Simon:

On behalf of New England Power Company (NEP), enclosed please find a Project Notification Form (PNF) and a Cultural Resources Due Diligence Report prepared by The Public Archaeology Laboratory, Inc. (PAL) for the proposed Line E131 Asset Condition Refurbishment Project.

Also enclosed is an application for a permit to conduct an Intensive (Locational) Archaeological Survey. The Project area is located on the Adams, Rowe, Stamford, and Readsboro USGS Topographic maps. We would like to begin investigations as soon as possible. Thank you in advance for your time and attention to this matter.

If you have any questions or require additional information, please do not hesitate to contact Ora Elquist, Principal Investigator, or Gregory R. Dubell, Energy Projects Manager, at your convenience.

Sincerely,

Deborah C. Cox, RPA
President

Enclosures

cc: Michael Tyrrell, NEP (w/ encl. – via email)
Katy L. Wilkins, Tighe & Bond (w/encl. – via email)
Bettina Washington, Wampanoag Tribe of Gay Head (Aquinnah) (w/encl. – via email)
Mark Andrews, Wampanoag Tribe of Gay Head (Aquinnah) (w/encl. – via email)
David Weeden, Mashpee Wampanoag Tribe (w/encl. – via email)
Nathan Allison, Stockbridge-Munsee Community Band of Mohican Indians (w/encl. – via email)
John Brown, III, Narragansett Indian Tribe (w/encl. – via email)
Cora Peirce, Narragansett Indian Tribe (w/encl. – via email)
Ellen Berkland, Massachusetts DCR (w/encl. – via email)

950 CMR: DEPARTMENT OF THE STATE SECRETARY

APPENDIX B
COMMONWEALTH OF MASSACHUSETTS

SECRETARY OF STATE: MASSACHUSETTS HISTORICAL COMMISSION

PERMIT APPLICATION: ARCHAEOLOGICAL FIELD INVESTIGATION

A. General Information

Pursuant to Section 27C of Chapter 9 of the General Laws and according to the regulations outlined in 950 CMR 70.00, a permit to conduct a field investigation is hereby requested.

1. Name(s): Ora Elquist

2. Institution: The Public Archaeology Laboratory, Inc.

   Address: 26 Main Street
   Pawtucket, Rhode Island 02860

3. Project Location: Line E131 Asset Condition Refurbishment Project
   see attached proposal

4. Town(s): Adams, North Adams, Florida, and Monroe

5. Attach a copy of a USGS quadrangle with the project area clearly marked.

   see attached

6. Property Owner(s): New England Power Company

7. The applicant affirms that the owner has been notified and has agreed that the applicant may perform the proposed field investigation.

8. The proposed field investigation is for a(n):

   a. Reconnaissance Survey
   b. Intensive Survey
   c. Site Examination
   d. Data Recovery

B. Professional Qualifications

1. Attach a personnel chart and project schedule as described in 950 CMR 70.11 (b).

   a. Personnel

   Principal Investigator(s): Ora Elquist

   Project Archaeologist: John Campbell

   Field Crew: TBD

   b. Schedule

   Fieldwork: May-June 2021

   Laboratory: July 2021

   Report: August-September 2021

2. Include copies of curriculum vitae of key personnel (unless already on file with the State Archaeologist).

C. Research Design

1. Attach a narrative description of the proposed Research Design according to the requirements of 950 CMR 70.11.

2. The Applicant agrees to perform the field investigations according to the standards outlined in 950 CMR 70.13.

3. The Applicant agrees to submit a Summary Report, prepared according to the standards outlined in 950 CMR 70.14 by:

4. The specimens recovered during performance of the proposed field investigation will be curated at:

   The Public Archaeology Laboratory, Inc.
   26 Main Street
   Pawtucket, Rhode Island 02860

SIGNATURE _____ DATE April 1, 2021

APPLICANT (S)

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: New England Power Company (NEP) Line E131 Asset Condition Refurbishment Project

Location / Address: Existing NEP cross country right-of-way (ROW)

City / Town: Adams, Florida, Monroe, Massachusetts
Readsboro, Vermont

Project Proponent

Name: New England Power Company

Address: 40 Sylvan Road

City/Town/Zip/Telephone: Waltham, Massachusetts 02451

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name:	Type of License or funding (specify)
U.S. Army Corps of Engineers	Section 404 Clean Water Act – MA Programmatic General Permit
U.S. Environmental Protection Agency	Construction General Permit e-Notice of Intent
Massachusetts DCR	Construction Access Permit
MassDEP	Individual Water Quality Certification (Potential)
Natural Heritage Endangered Species Program (NHESP)	Conservation & Management Permit

Project Description (narrative):

New England Power Company is planning the refurbishment of Line E131 along NEP's existing ROW from Adams, Massachusetts to Readsboro, Vermont. The Project includes the removal and replacement of wooden structures with steel structures; minor and major grading of work pads; grounding repairs; and filling and widening with stone of existing access roads. The Project is still in development and proposed conditions plans are not yet available. Once Project plans are available, NEP will provide them to the MHC and other interested stakeholders for review.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

No, demolition is not proposed as part of the project facilities as proposed.

Does the project include rehabilitation of any existing building? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

No, rehabilation of existing buildings is not proposed as part of the refurbishment work.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

New construction will involve replacement of existing structures that have reached the end of their useful life, in addition to the maintainence of existing and construction of new access roads. Work will occur within an existing, maintained electric transmission line ROW.

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

Review of files maintained at MHC and PAL indicate that there several previously-recorded archaeological sites and historic architectural properties in the vicinity of the proposed project area. See attached Cultural Resources Due Diligence Report and State Archaeologist's permit application prepared by The Public Archaeology Laboratory, Inc. (PAL).

What is the total acreage of the project area? ***N/A – 12.2-mile, 150 to 225-ft wide NEP ROW***

Woodland	acres	Productive Resources:	
Wetland	acres	Agriculture	acres
Floodplain	acres	Forestry	acres
Open Space	acres	Mining	acres
Developed	acres	Total Project Acreage	acres

What is the acreage of the proposed new construction? TBD

What is the present land use of the project area?

Existing cross country electrical transmission line ROW.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

See attached.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submiting this form Gregory R. Dubel Date: 4/1/21

Name: The Public Archaeology Laboratory, Inc.

Address: 26 Main Street

City / Town: Pawtucket, Rhode Island 02860

Telephone: 401-728-8780

REGULATORY AUTHORITY

930CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St.1988, c.254.

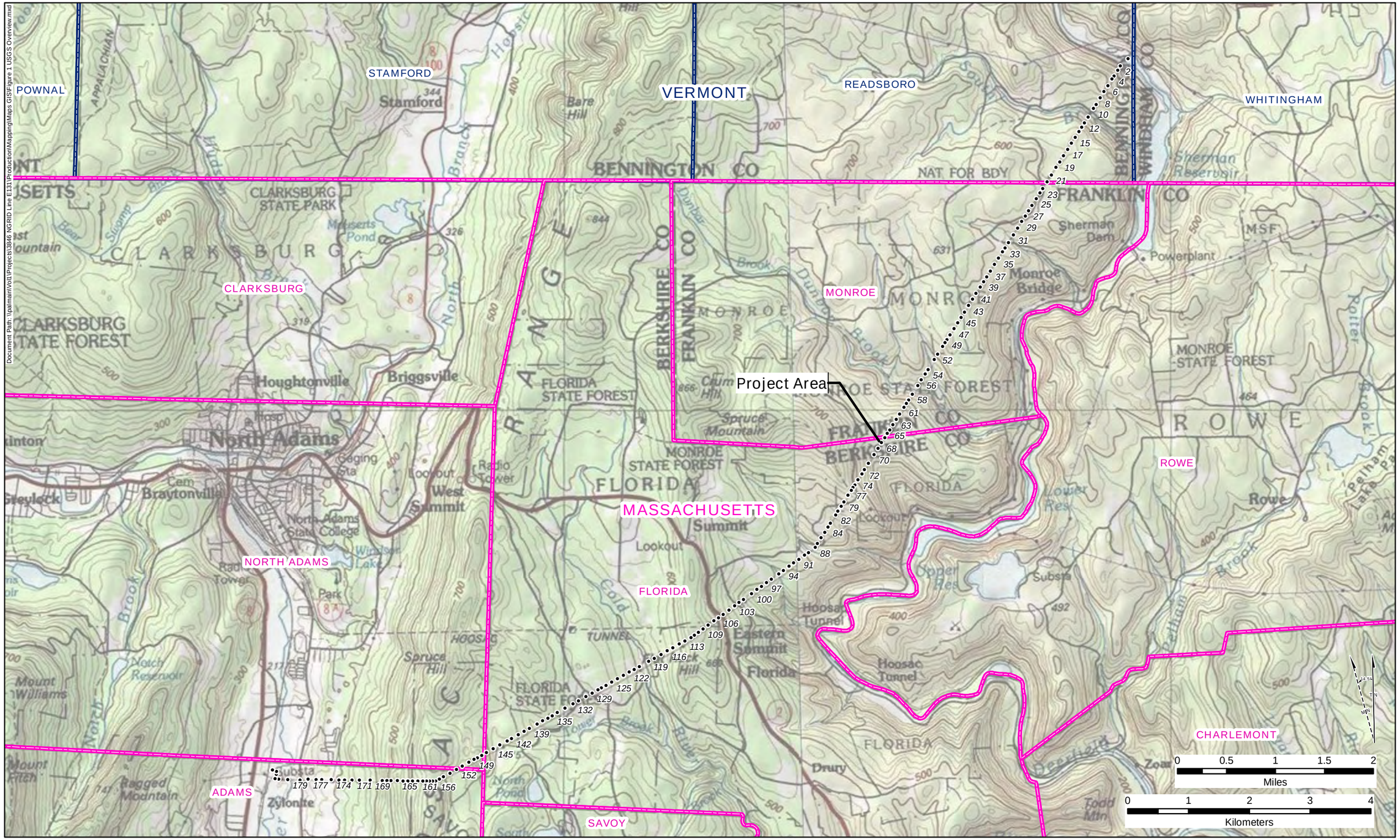


Figure 1. Location of the National Grid Line E131 Structure Replacement Project on the North Adams, Rowe, Stamford, and Readsboro USGS topographic quadrangles.

Tighe&Bond

APPENDIX H

RMAT Climate Resilience Design Standards Tool Project Report

Line E131 ACR Project
Date Created: 2/4/2022 4:29:18 PM Created By: christinapacella [Download]

Project Summary

Link to Project

Estimated Construction Cost: $50057000.00
End of Life Year: 4102
Project within mapped Environmental Justice population: Yes

Ecosystem Benefits	Scores
Project Score	Low
Exposure	**Scores**
Sea Level Rise/Storm Surge	Not Exposed
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	High Exposure
Extreme Heat	High Exposure

Asset Summary

Number of Assets: 2

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
115 kV Electric Transmission Line	Low Risk	High Risk	High Risk	High Risk
Gravel access roads	Low Risk	High Risk	High Risk	High Risk

Project Outputs

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
115 kV Electric Transmission Line					
Gravel access roads					
Extreme Precipitation					
115 kV Electric Transmission Line	2070			100-yr (1%)	Tier 3
Gravel access roads	2070			100-yr (1%)	Tier 3
Extreme Heat					
115 kV Electric Transmission Line	2070		90th		Tier 3
Gravel access roads	2070		90th		Tier 3

Scoring Rationale - Exposure

Sea Level Rise/Storm Surge

This project received a "Not Exposed" because of the following:

- Not located within the predicted mean high water shoreline by 2030
- No historic coastal flooding at project site
- Not located within the Massachusetts Coast Flood Risk Model (MC-FRM)

Extreme Precipitation - Urban Flooding

This project received a "High Exposure" because of the following:

- Historic flooding at the project site
- Increased impervious area
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- Existing impervious area of the project site is less than 10%

Extreme Precipitation - Riverine Flooding

This project received a "High Exposure" because of the following:

- Project site has a history of riverine flooding
- Part of the project is within a mapped FEMA floodplain, outside of the Massachusetts Coast Flood Risk Model (MC-FRM)
- Part of the project is within 100ft of a waterbody
- Project is not likely susceptible to riverine erosion

Extreme Heat

This project received a "High Exposure" because of the following:

- 30+ days increase in days over 90 deg. F within project's useful life
- Increased impervious area
- Existing trees are being removed as part of the proposed project
- Existing impervious area of the project site is less than 10%
- Located within 100 ft of existing water body

Scoring Rationale - Asset Risk Scoring

Asset - 115 kV Electric Transmission Line
Primary asset criticality factors influencing risk ratings for this asset:

- Asset must be operable at all times, even during natural hazard event
- Greater than 100,000 people would be directly affected by the loss/inoperability of the asset
- The infrastructure is located in an environmental justice community, and/or does provide services to vulnerable populations
- Inoperability of the asset would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses
- Cost to replace is between $30 million and $100 million
- Spills and/or releases of hazardous materials would be relatively easy to clean up

Asset - Gravel access roads
Primary asset criticality factors influencing risk ratings for this asset:

- Asset must be operable at all times, even during natural hazard event
- Greater than 100,000 people would be directly affected by the loss/inoperability of the asset
- The infrastructure is located in an environmental justice community, and/or does provide services to vulnerable populations
- Inoperability of the asset would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses
- Inoperability is likely to significantly impact other facilities, assets, or buildings and will likely affect their ability to operate
- There are no hazardous materials in the asset

Project Design Standards Output

Asset: 115 kV Electric Transmission Line — Infrastructure

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Tidal Benchmarks: No
Stillwater Elevation: No
Design Flood Elevation (DFE): No
Wave Heights: No
Duration of Flooding: No
Design Flood Velocity: No
Wave Forces: No
Scour or Erosion: No

Extreme Precipitation — High Risk

Target Planning Horizon: 2070
Return Period: 100-yr (1%)

Applicable Design Criteria

Tiered Methodology: Tier 3 (Link)

Total Precipitation Depth for 24-hour Design Storms: Yes
Peak Intensity for 24-hour Design Storms: Yes
Riverine Peak Discharge: Yes
Riverine Peak Flood Elevation: Yes
Duration of Flooding for Design Storm: Yes
Flood Pathways: Yes

Extreme Heat — High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3 (Link)

Annual/Summer/Winter Average Temperature: Yes
Heat Index: Yes
Days Per Year With Max Temperature > 95°F: Yes
Days Per Year With Max Temperature > 90°F: Yes
Days Per Year With Max Temperature < 32°F: Yes
Number of Heat Waves Per Year: Yes
Average Heat Wave Duration (Days): Yes
Cooling Degree Days (Base = 65°F): No
Heating Degree Days (Base = 65°F): No
Growing Degree Days: No

Asset: Gravel access roads — Infrastructure

Sea Level Rise/Storm Surge — Low Risk

Applicable Design Criteria

Tidal Benchmarks: No
Stillwater Elevation: No
Design Flood Elevation (DFE): No
Wave Heights: No
Duration of Flooding: No
Design Flood Velocity: No
Wave Forces: No
Scour or Erosion: No

Extreme Precipitation — High Risk

Target Planning Horizon: 2070
Return Period: 100-yr (1%)

Applicable Design Criteria

Tiered Methodology: Tier 3 (Link)

Total Precipitation Depth for 24-hour Design Storms: Yes
Peak Intensity for 24-hour Design Storms: Yes
Riverine Peak Discharge: Yes
Riverine Peak Flood Elevation: Yes
Duration of Flooding for Design Storm: Yes
Flood Pathways: Yes

Extreme Heat — High Risk

Target Planning Horizon: 2070
Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3 (Link)

Annual/Summer/Winter Average Temperature: Yes
Heat Index: Yes

Days Per Year With Max Temperature > 95°F: Yes
Days Per Year With Max Temperature > 90°F: Yes
Days Per Year With Max Temperature < 32°F: Yes
Number of Heat Waves Per Year: Yes
Average Heat Wave Duration (Days): Yes
Cooling Degree Days (Base = 65°F): No
Heating Degree Days (Base = 65°F): No
Growing Degree Days: No

Project Inputs

Core Project Information

Name:	Line E131 ACR Project
Given the expected useful life of the project, through what year do you estimate the project to last (i.e. before a major reconstruction/renovation)?	4102
Location of Project:	Adams, Florida, Monroe, N. Adams
Estimated Capital Cost:	$50,057,000
Who is the Submitting Entity?	Private Other Tighe & Bond, Inc. Katy Wilkins (KLWilkins@tighebond.com)
Is this project being submitted as part of a state grant application?	No
Which grant program?	
What stage are you in your project lifecycle?	Design
Is climate resiliency a core objective of this project?	No
Is this project being submitted as part of the state capital planning process?	No
Is this project being submitted as part of a regulatory review process or permitting?	Yes
Brief Project Description:	The proposed line rebuild project will include the reconstruction of the main line with 115kV steel structures. This will involve replacing 176 structures along the approximate 13-mile stretch of utility Line E131 ROW. Five structures are proposed to be removed. Approximately 24 concrete caisson foundations are proposed at locations which require greater structural reinforcement. All shield wiring will be replaced with optical ground wire (OPGW), and all insulators and hardware will be replaced. To facilitate the proposed replacement project, new access roads and improvements to existing access roads will be constructed. Given the mountainous topography over which the ROW traverses, significant road-building and grading will be warranted to provide safe, reliable access to various structure locations and wire pulling setups. In addition, the proposed access road improvements will provide future access for regular maintenance including forestry management and overhead line work or during emergency events. Temporary access is required in sensitive areas including wetlands, stream spans, or rare species habitats.
Project Submission Comments:	

Project Ecosystem Benefits

Factors Influencing Output

- ✓ Project protects fisheries, wildlife, and plant habitat
- ✓ Project provides recreation

Factors to Improve Output

- ✓ Incorporate nature-based solutions that may reduce storm damage
- ✓ Incorporate green infrastructure to filter stormwater
- ✓ Identify opportunities to prevent pollutants from impacting ecosystems

Is the primary purpose of this project ecological restoration?

No

Project Benefits

Provides flood protection through nature-based solutions	No
Reduces storm damage	Maybe
Recharges groundwater	No
Protects public water supply	No
Filters stormwater using green infrastructure	Maybe
Improves water quality	No
Promotes decarbonization	No
Enables carbon sequestration	No
Provides oxygen production	No
Improves air quality	No
Prevents pollution	Maybe

Remediates existing sources of pollution	No
Protects fisheries, wildlife, and plant habitat	Yes
Protects land containing shellfish	No
Provides pollinator habitat	No
Provides recreation	Yes
Provides cultural resources/education	No

Project Climate Exposure

Is the primary purpose of this project ecological restoration?	No
Does the project site have a history of coastal flooding?	No
Does the project site have a history of flooding during extreme precipitation events (unrelated to water/sewer damages)?	Yes
Does the project site have a history of riverine flooding?	Yes
Does the project result in a net increase in impervious area of the site?	Yes
Are existing trees being removed as part of the proposed project?	Yes

Project Assets

Asset: 115 kV Electric Transmission Line
Asset Type: Utility Infrastructure
Asset Sub-Type: Energy (electric, gas, petroleum, renewable)
Construction Type: Major Repair/Retrofit
Construction Year: 2026
Useful Life: 2076

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure must be accessible/operable at all times, even during natural hazard event.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Greater than 100,000 people

Identify if the infrastructure is located within an environmental justice community or provides services to vulnerable populations.
The infrastructure is located in an environmental justice community, and/or provides some services to vulnerable populations (services are not available elsewhere to same population)

Will the infrastructure reduce the risk of flooding?
No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
Spills and/or releases of hazardous materials are expected with relatively easy cleanup

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate

If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Between $30 million and $100 million

Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected

If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist

What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Loss of confidence in government agency

Asset: Gravel access roads
Asset Type: Utility Infrastructure
Asset Sub-Type: Other Utility
Construction Type: New Construction
Construction Year: 2026
Useful Life: 2060

Identify the length of time the asset can be inaccessible/inoperable without significant consequences.
Infrastructure must be accessible/operable at all times, even during natural hazard event.

Identify the geographic area directly affected by permanent loss or significant inoperability of the infrastructure.
Impacts would be regional (more than one municipality and/or surrounding region)

Identify the population directly served that would be affected by the permanent loss or significant inoperability of the infrastructure.
Greater than 100,000 people

Identify if the infrastructure is located within an environmental justice community or provides services to vulnerable populations.
The infrastructure is located in an environmental justice community, and/or provides some services to vulnerable populations (services are not available elsewhere to same population)

Will the infrastructure reduce the risk of flooding?
No

If the infrastructure became inoperable for longer than acceptable in Question 1, how, if at all, would it be expected to impact people's health and safety?
Inoperability of the infrastructure would result in moderate or severe injuries or moderate or severe impacts to chronic illnesses

If there are hazardous materials in your infrastructure, what are the extents of impacts related to spills/releases of these materials?
There are no hazardous materials in the infrastructure
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts on other facilities, assets, and/or infrastructure?
Significant – Inoperability is likely to impact other facilities, assets, or buildings and result in cascading impacts that will likely affect their ability to operate
If the infrastructure was damaged beyond repair, how much would it approximately cost to replace?
Less than $10 million
Does the infrastructure function as an evacuation route during emergencies? This question only applies to roadway projects.
No
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the environmental impacts related to natural resources?
No impact on surrounding natural resources is expected
If the infrastructure became inoperable for longer than acceptable in Question 1, what are the impacts to government services (i.e. the infrastructure is not able to serve or operate its intended users or function)?
Loss of infrastructure may reduce the ability to maintain some government services, while a majority of services will still exist
What are the impacts to loss of confidence in government resulting from loss of infrastructure functionality (i.e. the infrastructure asset is not able to serve or operate its intended users or function)?
Loss of confidence in government agency

Report Comments

N/A

APPENDIX I

EJ Reference List - Provided by MEPA Office on November 21, 2022

Statewide Environmental Justice Community Based Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Julia	Blatt	Executive Director	(617) 714-4272	danielledolan@massriversalliance.org juliablatt@massriversalliance.org	Mass Rivers Alliance
Elvis	Mendez	Associate Director	508-505-6748	elvis@n2nma.org	Neighbor to Neighbor
Ben	Hellerstein	MA State Director	617-747-4368	ben@environmentmassachusetts.org	Environment Massachusetts
Claire	B.W. Muller	Movement Building Director	508 308-9261	claire@uumassaction.org	Unitarian Universalist Mass Action Network
Cindy	Luppi	New England Director	617-338-8131 x208	cluppi@cleanwater.org	Clean Water Action
Deb	Pasternak	Director, MA Chapter	617-423-5775	deb.pasternak@sierraclub.org	Sierra Club MA
Heather	Clish	Director of Conservation & Recreation Policy	(617) 523-0655	hclish@outdoors.org	Appalachian Mountain Club
Heidi	Ricci	Director of Policy	Not Provided	hricci@massaudubon.org	Mass Audubon
Kelly	Boling	MA & RI State Director	(617) 367-6200	kelly.boling@tpl.org	The Trust for Public Land
Kerry	Bowie	Board President	Not Provided	kerry@msaadapartners.com	Browning the GreenSpace
Nancy	Goodman	Vice President for Policy	Not Provided	ngoodman@environmentalleague.org	Environmental League of MA
Rob	Moir	Executive Director	Not Provided	rob@oceanriver.org	Ocean River Institute
Robb	Johnson	Executive Director	(978) 443-2233	robb@massland.org	Mass Land Trust Coalition
Staci	Rubin	Senior Attorney	617 350-0990	srubin@clf.org	Conservation Law Foundation
Sylvia	Broude	Executive Director	617 292-4821	sylvia@communityactionworks.org	Community Action Works

Indigenous Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Alma	Gordon	President	Not Provided	tribalcouncil@chappaquiddickwampanoag.org	Chappaquiddick Tribe of the Wampanoag Nation
Cheryll	Toney Holley	Chair	774-317-9138	crwritings@aol.com	Nipmuc Nation (Hassanamisco Nipmucs)
John	Peters, Jr.	Executive Director	617-573-1292	john.peters@mass.gov	Massachusetts Commission on Indian Affairs (MCIA)
Kenneth	White	Council Chairman	508-347-7829	acw1213@verizon.net	Chaubunagungamaug Nipmuck Indian Council
Melissa	Ferretti	Chair	(508) 304-5023	melissa@herringpondtribe.org	Herring Pond Wampanoag Tribe
Patricia	D. Rocker	Council Chair	Not Provided	rockerpatriciad@verizon.net	Chappaquiddick Tribe of the Wampanoag Nation, Whale Clan
Raquel	Halsey	Executive Director	(617) 232-0343	rhalsey@naicob.org	North American Indian Center of Boston
Cora	Pierce	Not Provided	Not Provided	Coradot@yahoo.com	Pocassett Wampanoag Tribe
Elizabth	Soloman	Not Provided	Not Provided	Solomon.Elizabeth@gmail.com	Massachusetts Tribe at Ponkapoag

Federally Recognized Tribes

First	Last	Title	Phone	Email	Affiliation
Bettina	Washington	Tribal Historic Preservation Officer	508-560-9014	thpo@wampanoagtribe-nsn.gov	Wampanoag Tribe of Gay Head (Aquinnah)
Stockbridge-Munsee Tribe		Historic Preservation Manager	413-884-6048	THPO@Mohican-nsn.gov	Stockbridge-Munsee Tribe
Brian	Weeden	Chair	774-413-0520	Brian.Weeden@mwtribe-nsn.gov	Mashpee Wampanoag Tribe

Local Organizations

First Name	Last Name	Title	Phone Number	Email	Affiliation
Jane	Winn	Executive Director	413-464-9402	team@thebeatnews.org	Berkshire Environmental Action Team

Addressee	Email	No. of Copies
Secretary Bethany A. Card Executive Office of Energy and Environmental Affairs Attn. MEPA Office 100 Cambridge Street, Suite 900 Boston, MA 02114	MEPA@Mass.gov	1[1]
MassDEP/Commissioner's Office One Winter Street Boston, MA 02108	helena.boccadoro@mass.gov	1[1]
MassDEP/Western Regional Office Attn: MEPA Coordinator State House West – 4th Floor 436 Dwight Street Springfield, MA 01103	kathleen.fournier@mass.gov	1[1]
Massachusetts Dept. of Transportation Public/Private Development Unit 10 Park Plaza Suite #4150 Boston, MA 02116	MassDOTPPDU@dot.state.ma.us	1[1]
Massachusetts Dept. of Transportation - District #1 Attn: MEPA Coordinator 270 Main Street Lenox, MA 02140	patrick.tierney@dot.state.ma.us	1[1]
Massachusetts Historical Commission The MA Archives Building 220 Morrissey Boulevard Boston, MA 02125	--	1[2]
Berkshire Regional Planning Commission 1 Fenn Street #201 Pittsfield, MA 01201	mprovencher@berkshireplanning.org tmatuszko@berkshireplanning.org OfficeAssistant@berkshireplanning.org	1[1]
Franklin Regional Council of Governments 12 Olive Street, Suite 2 Greenfield, MA 01301	info@frcog.org KMacPhee@frcog.org PSloan@frcog.org	2[1,2]
Attn: Adams Board of Selectmen Adams Town Hall 8 Front Street 2nd Floor Adams, MA 01220	bhantman@town.adams.ma.us choyt@town.adams.ma.us	2[1,2]

Addressee	Email	No. of Copies
Attn: Adams Planning Board Adams Town Hall 8 Front Street Adams, MA 01220	imoore@town.adams.ma.us	2[1,2]
Attn: Adams Conservation Commission Adams Town Hall 8 Front Street Adams, MA 01220	imoore@town.adams.ma.us	2[1,2]
Attn: Adams Board of Health Adams Town Hall 8 Front Street Adams, MA 01220	mderose@town.adams.ma.us drhoads@town.adams.ma.us	2[1,2]
Attn: North Adams Planning Board 10 Main Street North Adams, MA 01247	planningboard@northadams-ma.gov	1[1]
Attn: North Adams Conservation Commission 10 Main Street North Adams, MA 01247	conservationcommission@northadams-ma.gov	1[1]
Attn: North Adams Board of Health 10 Main Street North Adams, MA 01247	health@northadams-ma.gov	1[1]
Attn: Florida Selectboard 379 Mohawk Trail Drury, MA 01343	townhall.floridamass@gmail.com	1[1]
Attn: Florida Planning Board 379 Mohawk Trail Drury, MA 01343	townhall.floridamass@gmail.com	1[1]
Attn: Florida Conservation Commission 379 Mohawk Trail Drury, MA 01343	townhall.floridamass@gmail.com	1[1]
Attn: Florida Board of Health 379 Mohawk Trail Drury, MA 01343	townhall.floridamass@gmail.com	1[1]

Addressee	Email	No. of Copies
Attn: Monroe Board of Selectmen Monroe Town Hall 3C School Street Monroe Bridge, MA 01350	monroe01350@yahoo.com	1[1,2]
Attn: Monroe Conservation Commission 3C School Street PO Box 59 Monroe, MA 01350	monroe01350@yahoo.com	1[1,2]
Department of Agricultural Resources Attn: MEPA Coordinator 138 Memorial Avenue, Suite 42 West Springfield, MA 01089	barbara.hopson@mass.gov	1[1]
Natural Heritage and Endangered Species Program Massachusetts Division of Fisheries & Wildlife 1 Rabbit Hill Road Westborough, MA 01581	melany.cheeseman@mass.gov emily.holt@mass.gov	1[1]
Hoosic River Watershed Association	akawczak@yahoo.com	1[1]
Massachusetts Department of Conservation & Recreation Attn: MEPA Coordinator 251 Causeway St. Suite 600 Boston MA 02114	andy.backman@mass.gov	1[1]
Energy Facilities Siting Board Attn: MEPA Coordinator One South Station Boston, MA 02110	andrew.greene@mass.gov geneen.bartley@mass.gov	1[1]
Department of Energy Resources Attn: MEPA Coordinator 100 Cambridge Street, 10th floor Boston, MA 02114	paul.ormond@mass.gov brendan.place@mass.gov	1[1]

[1] Copy of EENF to be sent electronically.

[2] Hard copy of EENF to be sent via mail.

This circulation list has been prepared in accordance with 301 CMR 11.16(2) and is based on the Electronic Circulation List (Revised: February 1, 2022).

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs

MEPA Office

100 Cambridge St., Suite 900
Boston, MA 02114
Telephone 617-626-1020

PUBLIC NOTICE OF ENVIRONMENTAL REVIEW

PROJECT: E131 Asset Condition Refurbishment Project

LOCATION: Adams, North Adams, Florida, and Monroe Massachusetts

PROPONENT: New England Power Company (NEP)

The undersigned is submitting an Environmental Notification Form ("ENF") to the Secretary of Energy & Environmental Affairs on or before

Katherine Wilkins _____ *(January 30, 2023)*

This will initiate review of the above project pursuant to the Massachusetts Environmental Policy Act ("MEPA," M.G.L. c. 30, ss. 61-62L). Copies of the ENF may be obtained from:

- Katherine L. Wilkins at KLWilkins@tighebond.com or at 413 875 1305

Electronic copies of the ENF are also being sent to the Conservation Commission and Planning Board of Adams, North Adams, Florida and Monroe Massachusetts

The Secretary of Energy & Environmental Affairs will publish notice of the ENF in the Environmental Monitor, receive public comments on the project, and then decide if an Environmental Impact Report is required. A site visit and/or remote consultation session on the project may also be scheduled. All persons wishing to comment on the project, or to be notified of a site visit and/or remote consultation session, should email MEPA@mass.gov or the MEPA analyst listed in the Environmental Monitor. Requests for language translation or other accommodations should be directed to the same email address. Mail correspondence should be directed to the Secretary of Energy & Environmental Affairs, 100 Cambridge St., Suite 900, Boston, Massachusetts 02114, Attention: MEPA Office, referencing the above project.

By New England Power Company (NEP)

PUBLIC NOTICE OF ENVIRONMENTAL REVIEW

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LOCATION: Adams, North Adams, Florida, and Monroe Massachusetts
PROPONENT: New England Power Company (NEP)

The undersigned is submitting an Environmental Notification Form ("ENF") to the Secretary of Energy & Environmental Affairs on or before (January 31, 2023)
Katherine L. Wilkins

This will initiate review of the above project pursuant to the Massachusetts Environmental Policy Act ("MEPA," M.G.L. c. 30, ss. 61-62L). Copies of the ENF may be obtained from:

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By New England Power Company (NEP)

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By New England Power Company (NEP)

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