



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

DRAFT ENVIRONMENTAL IMPACT REPORT

New England Power Company (NEP)

October 2023

Tighe&Bond

N-5068105A-04
October 31, 2023

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: **Draft Environmental Impact Report (DEIR)
E131 Asset Condition Refurbishment (ACR) Project
Adams, North Adams, Florida, and Monroe, Massachusetts
EEA #16663**

Dear Secretary Tepper:

On behalf of New England Power Company (NEP), Tighe & Bond is submitting this Draft Environmental Impact Report (DEIR) for the E131 ACR Project (the Project), which spans four municipalities in Massachusetts: Adams, North Adams, Florida, and Monroe. The proposed project includes upgrades to the existing electrical utility infrastructure and construction of 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.

NEP previously filed an Expanded Environmental Notification Form (EENF) with request for Single EIR for the project, which was noticed in the February 8, 2023, edition of the *Environmental Monitor*. A meeting with MEPA took place on February 27, 2023. A Certificate of the Secretary of Energy and Environmental Affairs on the EENF was issued on March 17, 2023, that denied the request for Single EIR and requests the filing of a Draft and Final EIR.

This DEIR has been developed following the Certificate on the EENF to provide new and updated information on existing and proposed conditions developed in response to the Certificate, describe changes to the proposed project, identify potential impacts and mitigation measures, respond to comments received during the review period, and present draft Section 61 findings for each State Agency that will issue permits for the project. The proponent will continue to communicate with the regulators as required permits are pursued.

Along with this submission, copies of the DEIR are being distributed concurrently to the attached Distribution List. The DEIR is being submitted for publication in the November 8, 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 List



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 E131 ACR Fact Sheet

 E131 ACR Wood Program Mailer

F E131 Carbon Accounting

G National Grid EG-303NE BMP Manual

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¹ Copy of DEIR to be sent electronically.

² Hard copy of DEIR to be sent via mail.

This distribution list has been prepared in accordance with 301 CMR 11.16(3) and is based on the MEPA Distribution List (Revised: October 17, 2023).

List of Acronyms

Acronym	Description
AADT	Average Annual Daily Traffic
ACEC	Areas of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACI	American Concrete Institute
ACR	Asset Condition Refurbishment
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
Bank	Inland Bank
BESS	Battery Energy Storage Systems
BLSF	Bordering Land Subject to Flooding
BMPs	Best Management Practices
BSC	Build Support Connect
BVW	Bordering Vegetated Wetland
CAP	Construction Access Permit
CFR	Coldwater Fisheries Resources
CGP	Construction General Permit
CMP	Conservation Management Plan
CMR	Common Massachusetts Regulation
CR	Conservation Restriction
CVP	Certified Vernal Pool
CWA	Clean Water Act
DCR	Massachusetts Department of Conservation and Recreation
DEIR	Draft Environmental Impact Report
DER	Distributed Energy Resources
DFW/WMA	Division of Fisheries and Wildlife/ Wildlife Management Areas
DGA	Designated Geographic Area
DPH	Massachusetts Department of Health
DPU	Department of Public Utilities
DPW	Department of Public Works
EEA	Executive Office of Energy and Environmental Affairs
EENF	Expanded Environmental Notification Form
EFI	National Grid Environmental Field Issue
EFSB	Energy Facilities Siting Board
EG	Environmental Guidance
EIR	Environmental Impact Report
EJ	Environmental Justice
EPA	United States Environmental Protection Agency

Acronym	Description
ESA	Endangered Species Act
ESCs	Erosion and Sediment Controls
FEMA	Federal Emergency Management Act
GHG	Greenhouse Gas
GIS	Geographical Information Systems
IEEE	Institute of Electrical and Electronic Engineers
ILSF	Isolated Land Subject to Flooding
ISCP	Invasive Species Control Plan
ISO-NE	Independent System Operator – New England
IVW	Isolated Vegetated Wetland
IWPAs	Interim Wellhead Protection Areas
km	Kilometer
kV	Kilovolt
LUWW	Land Under Water Bodies and Waterways
MA DFG	Massachusetts Department of Fish and Game
MA WPA	Massachusetts Wetlands Protection Act
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MCCA	Massachusetts Climate Change Assessment
MCP	Massachusetts Contingency Plan
MEPA	Massachusetts Environmental Policy Act
MESA	Massachusetts Endangered Species Act
MHC	Massachusetts Historical Commission
MV	Megavolt
MVA	Mega Volt Amp
MVP	Municipal Vulnerability Preparedness
NEP	New England Power Company d/b/a National Grid (also referred to as the Company)
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NESHAP	National Emission Standards for Hazardous Pollutants
NHESP	Natural Heritage and Endangered Species
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OMP	Operations and Maintenance Plan
OOC	Order of Conditions
OPGW	Optical Ground Wires

Acronym	Description
ORWs	Outstanding Resource Waters
PCN	Pre-Construction Notification
PEM	Palustrine Emergent
PFO	Palustrine Forested
PH	Priority Habitat
PSS	Palustrine Scrub Shrub
PV	Photovoltaic
PVP	Potential Vernal Pool
RA	Riverfront Area
RAO	Response Action Outcome
RMAT	Resilient Massachusetts Action Team
ROW	Right-of-Way
RTN	Release Tracking Number
SEIR	Single Environmental Impact Review
SHMCAP	Massachusetts State Hazard Mitigation and Climate Adaptation Plan
SHPO	State Historic Preservation Offices
EFSB	Energy Facilities Siting Board
SMP	Stormwater Management Permit
ISO-NE	Independent System Operator – New England
SWCA	SWCA Environmental Consultants
SWPA	Surface Water Protection Area
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
TMP	Traffic Management Plan
TOY	Time-of-Year
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USFWS IPaC	United States Fish and Wildlife Service Information for Planning and Consultation
USGS	United States Geological Survey
VELCO	Vermont Electric Power Company
VMP	Vegetation Management Plan
WHE	Wildlife Habitat Evaluations
WPA	Wellhead Protection Areas
WQC	Water Quality Certificate

Section 1

Project Overview

1.1 Introduction

Project Name: E131 Asset Condition Refurbishment (ACR) Project
Project Location: Adams, North Adams, Florida, and Monroe, Massachusetts
Latitude, Longitude: 42.65417, -73.10516¹
42.75788, -72.93021²
Project Proponent: New England Power Company (NEP)

Tighe & Bond has prepared this Draft Environmental Impact Report (DEIR) on behalf of New England Power Company (NEP) in response to the March 17, 2023 Certificate of the Secretary of Energy and Environmental Affairs (Certificate) on the Expanded Environmental Notification From (EENF) for the E131 Asset Condition Refurbishment Project (E131 ACR or Project) (EEA no. 16663). The DEIR addresses the Scope outlined in the Certificate, responds to comments received during the EENF review period as required per the Massachusetts Environmental Policy Act (MEPA) (M.G.L. c. 30 §§ 61-62I) and MEPA regulations (301 CMR 11.00), and was prepared in accordance with the general guidelines for outline and content found in Section 11.07 of the MEPA regulations. A copy of the Certificate is provided in Appendix A.

NEP is proposing the refurbishment of the existing 115 kilovolt (kV) E131 overhead electrical transmission line that extends from the Harriman #8 Substation in Readsboro, Vermont to the Adams #21 Substation in Adams, Massachusetts, crossing the Massachusetts municipalities of Monroe, Florida, North Adams, and Adams (as shown on the USGS site location maps in Appendix B). The overall Project length is approximately 13 miles; of that, approximately 11.4 miles are within Massachusetts.

The information presented in the EENF is incorporated herein by reference. A glossary of acronyms and technical terms is located at the beginning of this document. Appendices A through G include relevant supplemental information, including figures and plans, the annotated response to comment letters, and the DEIR circulation list.

1.2 Project Description

The Project description and scope of work is generally unchanged from the EENF. Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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 E131 line 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

¹ Location of the Adams Substation in Adams, Massachusetts.

² Location of the Harriman Substation in Readsboro, Vermont.

high speed communications between substations. As such, optical 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- Replacement of 151 H frame structures with new steel pole H-frame structures
- Replacement of 6 three-pole structures
- Replacement of three (3) existing steel lattice structures with new steel H-frame structures
- Removal of four (4) existing H-frame structures and one (1) lattice structure from the transmission line alignment
- Installation of concrete caisson foundations at 24 of the structures in 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 wire in four (4) sections

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 the existing and the construction of new access routes are required to facilitate the Project.

1.2.1 Summary of Existing Conditions

The Project is located entirely within existing E131 ROW easement corridor held in fee or easement by NEP. The total land area of the ROW Easement in Massachusetts is approximately 454 acres. The existing ROW is currently used for electric utility operations for overhead electrical transmission and, as such, contains an extensive network of existing utility structures. Existing unpaved access extends throughout a limited portion of the ROW, along with some off-ROW access routes.

Adjacent land uses include agricultural, recreational state forest, and limited rural residential development. 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.

The Project ROW is generally comprised of mountainous terrain. Most of the upland within the maintained portion of the ROW consists of closed-scrub and open meadow communities interspersed with an herbaceous pioneering community. Where

undeveloped, the vegetative community occupying the edge of the ROW is best characterized as typical southern New England transitional upland forest.

Wetlands, Waterways and Water Resources are discussed in Section 6 and depicted in the Environmental Mapping provided in Appendix A. Wetland Resource Areas identified within the Project area include the following:

- Inland Bank / Mean Annual High Water (MAHW)
- Bordering Vegetated Wetlands (BVW)
- Land Under Water Bodies and Waterways (LUWW)
- Bordering Land Subject to Flooding (BLSF)
- Riverfront Area

All watercourses that the Project crosses are currently spanned by NEP's existing overhead transmission lines. None of the rivers crossed by the Project are designated as a National Wild and Scenic River pursuant to the National Wild and Scenic Rivers Act (16 U.S.C. 1271-1287).

The results of the United States Fish and Wildlife Service Information for Planning and Consultation (USFWS IPaC) determined that two federally listed species may be present within the Project area. One species is a threatened mammal, and the other species is a candidate insect. Additionally, based on Natural Heritage and Endangered Species Program (NHESP) data layers, the Project route contains habitat for seven state-listed species (five plants, one fish, and one invertebrate), along portions of the Project route in Adams, North Adams, and Florida. Specific species are not identified herein at the agency's request. For more information, please refer to Section 5: Rare Species.

Cultural resources in the Project area have been identified and evaluated, as described in the EENF (Section 6), and in Section 8 of this DEIR. Consultation is ongoing with state archeologists and tribal communities.

The ROW crosses one state roadway that is managed by the Massachusetts Department of Transportation (MassDOT). NEP anticipates requiring access from the state highway along the ROW at one access point of Route 2 in Florida, MA. The Project's impacts relative to MassDOT are associated with the installation of new overhead OPGW across the state highway by a non-municipal utility and temporary access off a state highway. Please refer to Section 14.3.5 for additional information.

One site with a Release Tracking Number ("RTN") was identified along the Project route, at the Adams Substation. An RTN indicates there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan ("MCP") 310 CMR 40.0000. No soil disturbance is proposed within this area. Please refer to Section 13 for additional information

1.2.2 Summary of Proposed Conditions

The proposed conditions are consistent with the existing use of the Project area as an active electrical transmission utility ROW. The Project involves the removal of the existing H-frame and lattice towers and replacement primarily with steel H-frame structures and updated equipment. The new structures will be galvanized steel, single circuit, primarily H-frame structures, ranging in height between 60 and 100 feet based on location and

terrain. NEP will replace the existing shield wire with OPGW, which will increase the reliability and capacity of the existing line and improve communication between the Adams and Harriman Substations.

Vegetation on the existing ROW will continue to be maintained as prescribed by NEP's Vegetation Management Plan (VMP) to prevent the growth of tall woody species that could interfere with reliable operation of the transmission line. This is critical to retain reliability and provide unrestricted access to the ROW and structures for construction, maintenance, and operation of the line. During construction, general vegetation management practices typically include mowing and hand-cutting, tree pruning and removal, and wood disposal and management within the areas of proposed work.

Within the Project ROWs, mowing or other vegetation management is required prior to the start of construction to provide access to the proposed structure locations, to facilitate safe vehicular and equipment passage, and to provide safe work sites for personnel. Mowing will be completed primarily by mechanical means. Small trees and shrubs will be mowed as necessary with the intent of preserving root systems to the extent practical. Where the Project route crosses streams and brooks, any necessary vegetation mowing along the stream bank will be minimized to the extent practicable to reduce disturbance of soils and the potential for construction-related erosion. Vegetation management and tree removals are discussed further in Section 4.

NEP will establish the physical access and work pads required to construct, inspect, and maintain the rebuilt line through improvements to the existing or historic access routes, temporary placement of construction mats, and construction of new access where necessary. Existing and proposed access is shown on the ER Mapping in Appendix B. The majority of the access proposed is within the ROW, but there are new access routes being constructed off-ROW and will be used per NEP's agreements with individual property owners. Access travel widths are generally 12 to 16 feet, but the constructed footprint may be wider in some locations to accommodate grading and stormwater best management practices ("BMPs"), such as swales, stone check dams, water bars, or other similar measures. Post-construction, NEP will continue to maintain access to facilitate operation and future maintenance of the E131 line.

1.2.3 Summary of Project Impacts

The E131 ROW is approximately 11.4 miles long within Massachusetts. The ROW easement varies in size from 200-400 feet wide. The E131 line runs parallel to two other transmission line circuits, the Q117 line and the J10 line, for short stretches of the line. Within the ROW easement there is a cleared and actively maintained portion of the ROW. The maintained portion of the E131 easement varies from 125-150 feet wide. The multi-circuit ROW is the reason for the varied maintained ROW widths, with more lines needing a wider area of clearance. Although work is taking place along 11.4 miles of ROW and at each of the existing transmission line structures, the overall disturbance and construction activities will not take up the entire area of the maintained ROW or easement. The E131 Project does not propose to clear the currently unmaintained portions of the easement to widen the existing ROW. The limited impact outside of the maintained limits of ROW are only for those necessary to facilitate access or the construction of work pads.

Impacts associated with the Project are outlined in Table 1-1.

TABLE 1-1
Summary of Project Impacts

Impact Area	Size	Activity
Land Alteration	62.5	Access roads and work pads
Tree Removal	11.3 Acres	Access roads and work pads
Vegetated Wetlands	599,115 sf	Temporary Construction Matting for Access Roads and Work Pads
	660 sf	Structure installation
Other Wetlands (Riverfront Area, BLSF, LUWW)	163,100 sf	Temporary Construction Matting for Access Roads and Work Pads
Rare Species	4.5 acres	Temporary Construction Matting for Access Roads and Work Pads

No impacts are proposed to Vernal Pools, Land Under Water and Waterways, or inland Bank.

1.2.4 Project Schedule

A summary of the major Project elements and their corresponding target milestone dates is provided in Table 1-2 below.

TABLE 1-2
Anticipated Project Schedule

Project Component	Estimated Start Date	Estimated End Date
Access Route Construction, Reestablishment, and Improvements	August 2024	December 2025
Rebuild Existing Line	January 2025	August 2027
ROW Restoration Where Required	June 2027	October 2027

1.2.5 Project Cost

NEP estimates that the total cost of rebuilding the existing E131 line with associated access development across all of Massachusetts and Vermont is approximately \$139.3 million. This estimate is provided with an assumed accuracy level of -25%/+50%. Based on the line length alone, NEP estimates that approximately \$122.9 million of this cost will be incurred in Massachusetts.

1.3 Project Need and Benefits

NEP is committed to completing the required system improvements to address the poor asset condition, mitigate potential risks of electrical failure, and to provide long-term reliable delivery of electrical service and maintenance of the E131 transmission line.

1.3.1 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. Based on the age of the infrastructure, a full refurbishment of the line is proposed to bring the utility into compliance with modern standards.

Ground line asset condition 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 load break switches on the E131 line 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 the substations.

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 the existing and the construction of new access routes are required to facilitate the Project and long-term maintenance. 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 in the Environmental Resource (ER) Maps in Appendix B.

1.3.2 Project Benefits

The Project will improve transmission system infrastructure and comply with comprehensive regional plans for improving electric transmission reliability and safety in New England. Benefits of the Project include the following:

- Increased resiliency of the Existing Lines and Tap Lines. By installing improved foundations, more robust structures and OPGW, the proposed infrastructure will be better suited to withstand strong winds and storm events.
- The installation of OPGW will allow better communication between the substations, resulting in improved response time during storm-related emergencies and outages, which will improve public safety.
- Designing to comprehensively meet current and future needs reduces the frequency of disturbance to wetland resource areas, rare species habitat and adjacent landowners over time by reducing the likelihood of multiple repeat projects, thereby reducing environmental impacts and costs to NEP customers.

- Continued compliance with federal and regional reliability standards and criteria.
- Continued reliable transfer of electricity between Massachusetts and Vermont for mutual benefit.
- Development of an improved access route network that will facilitate future maintenance work, emergency access and storm response.

NEP is actively taking steps to ensure that its system remains ready to meet critical challenges related to increased electric use and need, and refurbishing aging infrastructure helps to accomplish this goal.

1.4 MEPA History and Scope of DEIR

The Project is subject to environmental review pursuant to 301 CMR 11.01(2)(b) because the Project requires one or more state agency action and meets or exceeds one or more review thresholds. Table 1-3 below outlines the threshold triggered by the Project pursuant to 301 CMR 11.03.

TABLE 1-3

MEPA Thresholds Triggered by the E131 ACR Project

MEPA EIR Thresholds	
301 CMR 11.03(1)(a)(1)	Land: <i>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</i>
301 CMR 11.03(3)(a)(1)(a)	Wetlands, Waterways, and Tidelands: <i>Alteration of one or more acres of salt marsh or bordering vegetating wetlands</i>
301 CMR 11.06(7)(b)	Environmental Justice: <i>Any Project that is located within a Designated Geographic Area around an Environmental Justice Population</i>
MEPA ENF Thresholds	
301 CMR 11.03(1)(b)(1)	Land: <i>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</i>
301 CMR 11.03(3)(b)(1)(d)	Wetlands, Waterways and Tidelands: <i>Alteration of 5,000 or more sf of bordering or isolated vegetated wetlands</i>
301 CMR 11.03(3)(b)(1)(f)	Wetlands, Waterways and Tidelands: <i>Alteration of one half or more acres of any other wetlands</i>

NEP submitted the EENF with request for Single EIR (in accordance with 301 CMR 11.06(8)) to MEPA on January 31, 2023, and it was publicly noticed in the February 8, 2023 publication of the Environmental Monitor.

The Secretary's Certificate was issued on March 17, 2023. The Certificate denied the request for Single EIR and requested the preparation of a Draft and Final EIR.

This DEIR submittal addresses the Scope outlined in the EENF Certificate and the requirements of 301 CMR 11.07. In accordance with the Secretary's Certificate and 301 CMR 11.16 of the MEPA regulations, the DEIR will be circulated to those who commented on the EENF, state and local agencies from which permits or approvals will be required, and the public libraries in Adams, North Adams, Florida, and Monroe. Please refer to the DEIR Circulation List presented prior to the narrative.

1.5 Project Changes Since the EENF

Planning and design of a utility project is a dynamic process involving a balance of environmental, regulatory, and engineering considerations. The Project's design standard parameters are unchanged since the EENF, but reassessment of impact areas has resulted in changes to impact numbers and Project sequencing. These modifications and updates do not significantly alter the analyses and conclusions provided in the EENF.

NEP has designed the Project to avoid environmental impacts to the maximum extent practicable and as the Project design has progressed, the extent of proposed tree removal has been minimized and the potential impacts to resource areas have been generally reduced. An updated ER Map set is provided in Appendix B.

1.5.1 Land Alteration/Tree Removal Impacts

Land Alteration

Since the EENF, NEP has evaluated the access routes proposed on and off ROW. One access road located within the Monroe State Forest, off ROW access road to Structures 67 and 68, was re-assessed and deemed not required to access the line, as access was feasible east and west of the structures from other routes. Improvement to this, an approximately one-mile-long access route, has been removed from the scope of work and land alteration impacts numbers, resulting in a decrease of 1.06 acres of land disturbance at this location.

Tree Removal

Since the EENF, NEP has refined its assessment of tree removal locations. Factors such as existing open access routes, width of tree removal needed, assessment of proposed tree removal between routes, and site visits to confirm tree density were all evaluated to reduce the overall tree removal area from 17.6 acres as proposed in the EENF to 11.3 acres throughout the Project in Massachusetts. Refer to Section 4 for more information about NEP's updated analysis of tree removal needs. The Environmental Resources Maps in Appendix B show areas of proposed tree removal along the ROW to facilitate the installation of access and work pads.

1.5.2 Wetland Resources

Since the EENF, NEP reevaluated the need for the previously proposed permanent culverts located near Structure 165. Upon further evaluation to reduce impacts to wetland resource areas, specifically inland Bank and Land Under Water and Waterways, the culverts have been removed from the Project scope. The intermittent stream channels will be

temporarily spanned with construction matting during construction for access along the ROW.

1.5.3 NHESP Rare Species Habitat

Since the EENF, NEP has been in communication with NHESP during initial regulatory review to assess potential areas to avoid, minimize, and mitigate impacts to rare species. Particular attention has been paid to the rare species habitat located within proximity to the Adams Substation in Adams, MA. The NEP project team coordinated with NHESP to create a phased matting plan for work in this area. Construction matting in the area of the Adams Substation will be placed outside the growing season for the known rare species. If any additional matting is needed during the growing season to facilitate OPGW installation, matting will only be in place for a maximum of four (4) consecutive weeks. Coordination and NHESP review of the submitted MESA Project Checklist is ongoing, but based on current discussions with NHESP, although impacts will be avoided and minimized to the maximum extent practicable, without compromising the safety of Project construction and future maintenance personnel, a “take” is anticipated for one protected species. NEP will continue to work closely with NHESP throughout the MESA process, including continued coordination and the preparation of a Conservation Management Plan (CMP) for the species that will experience a “take”.

1.6 Updated Status of Project Permits

Table 1-4 contains a list of local, state, and federal agencies from which permits are required along with the current status of each for the Project.

TABLE 1-4
Permitting Status Updates Since EENF Submission

Agency	Permit, Review, Approval	Status
Federal		
U.S. Army Corps of Engineers (Corps)	Section 404 Pre-Construction Notification (PCN), Section 106, Section 7	Filed July 2023; review and consultation in progress
U.S. Environmental Protection Agency (EPA)	National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)	To be filed at least 14 days prior to start of construction
State		
Executive Office of Energy and Environmental Affairs (EEA)	MEPA Review/Certificate of the Secretary	Filed EENF January 2023 (EEA 16663), Certificate issued March 2023
MassDEP	Individual Section 401 Water Quality Certificate	Filed June 2023, under review
NHESP	Massachusetts Endangered Species Act (MESA) Determination of Take of No Take, Conservation Management Permit (CMP) (in needed)	Project Checklist filed April 2023, consultation with NHESP ongoing
MADCR	Construction Access Permit (CAP)	In progress – Consultation with DCR is ongoing

Massachusetts Historical Commission (MHC)	Project review under M.G.L. c. 9 in accordance with 950 CMR 70-71	Consultation with MHC is ongoing
MassDOT	Permit to Access State Highway/Non-Municipal Utility Permits for crossing over of state roads with utility lines	Coordination initiated in July 2023 with District 1
Local		
Adams, North Adams, Florida, and Monroe Conservation Commissions	Orders of Conditions ¹ per the Massachusetts Wetlands Protection Act (MA WPA)	Winter 2023/2024

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

Section 2 Alternatives

2.1 Introduction

The Secretary's Certificate on the EENF notes that the DEIR should include an expanded alternatives analysis that demonstrates the Project is taking all feasible measures to avoid and minimize environmental impacts to wetland resource areas and mapped habitat, as well as tree removal, which is consistent with requirements pursuant to all applicable regulations (i.e., WPA, WQC, MESA, M.G.L. c. 3, s. 5A, etc.).

As noted in Section 1.2, this Project consists of repairs and improvements to existing assets. No new or expanded ROW is required for the Project and no new utility construction is proposed, other than for access and work pads to facilitate the replacement of existing structures and long-term maintenance, emergency access and storm response. Therefore, there are no route alternatives for this Project. This expanded alternative analysis presents a No Build Alternative and options for selective/targeted maintenance and improvements.

NEP conducted a comprehensive alternatives analysis to compare feasible alternatives that meet the Project need. The alternatives were evaluated based on environmental impact, cost, reliability, construction feasibility, long-term benefit, and compliance with Independent System Operator-New England (ISO-NE) and the National Electric Safety Code (NESC).

The Alternatives Analysis presented in the EENF (Section 2) considered the following alternatives for the Project:

- No Build Alternative;
- Critical Asset Repair Alternative; and
- Comprehensive Refurbishment Alternative (the Project).

Since the EENF filing and in response to the Secretary's Certificate on the EENF, NEP has evaluated additional alternatives that would meet the Project need, including a Reduced Build/Impact Alternative and an alternative that would represent the maximum build out (Maximum Build Out Alternative) irrespective of environmental and land use impacts. As indicated in Section 1, since the EENF filing, the area of proposed tree removal has been reduced from 17.6 acres to 11.3 acres. It should be noted that no tree removal is located within vegetated wetlands, and therefore, will not result in a conversion or loss of wetlands. Additionally, impacts to mapped habitat have been avoided and reduced based on consultations to date with NHESP.

After completing this expanded alternative analysis, NEP determined that the proposed Project (Comprehensive Refurbishment Alternative), as further discussed in Section 2.6, is the alternative that best meets the identified project need given the existing Project site constraints while avoiding and minimizing environmental impacts to wetland resource areas, mapped habitat, and tree removal to the maximum extent practicable. A summary of the alternatives considered is provided in Table 2-2.

The proposed Project is designed to avoid impacts to wetland resource areas when possible. However, due to the alignment of the existing transmission line infrastructure and the nature of the Project (asset condition refurbishment) impacts to jurisdictional wetland resources cannot be entirely avoided under any alternative discussed here. Primary impacts to wetland resources are associated with the placement of construction mats for access roads to and along the E131 ROW and will be temporary.

The Project ROW is extremely constrained due to the complexity of the terrain, existing transmission and distribution structures, and wetland resource areas, including stream crossings.

When available, existing access has been utilized. As a result, the majority of access road construction will involve the improvement of existing or historically used roadways and off-road trails. New access roads, access roads that currently do not exist within the ROW or are merely a walking trail width, have been designed to provide ingress and egress safely and reliably along the E131 ROW while avoiding impacts to jurisdictional wetland resource areas to the extent practicable.

Two alternatives were evaluated to minimize new off-ROW access impacts: 1) eliminating off-ROW access by staying within the ROW and 2) because some off-ROW access is necessary, choosing off-ROW access that minimizes impacts. Discussion regarding the analysis of off-ROW access alternatives is provided in Section 2.4.2.

A summary of Project site-specific alternatives is presented below.

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 need. 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 does not meet the objectives of NEP and the alternative is not under further consideration.

2.3 Critical Asset Repair Alternative

NEP considered addressing only the most critical asset related issues. This alternative would involve construction of access roads and work pads to select critical infrastructure within the ROW only. However, this would require returning to the E131 line repeatedly over several years, to complete maintenance and improvements. This alternative was not selected due to the following:

- Total impacts over time are expected to substantially exceed the impacts of the Projects due to the need to repeatedly mobilize to complete portions of the work resulting in repetitive impacts to:
 - DCR State Forest lands;
 - BVW and other environmental resources

- rare species habitat;
- Quantity of asset-related concerns (i.e. there are too many structures in poor condition and in need of replacement to phase the work);
- Inefficiency financially and logistically of revisiting the same ROW within a short timespan; and
- Failure to improve the reliability through improved communications between the substations. (i.e., access to all the structures is needed to install overhead communication lines).

Furthermore, due to access-related constraints, this alternative would likely not allow for the beneficial removal of Structures 101, 144, 153, 168 and 180. If the full ACR replacement was not taking place, it would not allow for the adjustment of span lengths through the replacement of adjacent structures to allow for these structures to be removed from the alignment and within wetland resource areas. Complete removal of these structures from the E131 alignment will eliminate the need for future repeated entries into the associated wetland resource areas, thus eliminating the potential for future maintenance related impacts. If only critical assets are replaced, repeated access through wetland resource areas will be needed season after season to address structures as they become the more critical asset within the ROW. This alternative would repeatedly impact the same resources over and over, depending on the structures replaced, and essentially increase overall impact to wetland resources areas along the ROW instead of having the impact take place once.

It has been NEP's experience that vegetated wetlands and streams are able to be restored *in situ* post construction mat removal after one to two growing seasons. If these wetlands are continually disturbed that regrowth and restoration time is extended and potentially hindered. Coupled with the need to access portions of the ROW that contain state listed rare, threatened, and endangered plant species that could be negatively impacted from repeated cover during the growing season. Also, only addressing critical asset repairs along the ROW would not allow for the complete installation of the overhead communication lines needed for the existing substations to effectively communicate outage issues and other efficiency needs. Access to all the structures is needed to run the new communication wires and connect to the existing structures.

2.4 Reduced Build/Impact Alternative

The Reduced Build/Impact alternative is comprised of Project site-specific impact considerations required in 310 CMR 10.00 and 314 CMR 9.00 that provide fewer environmental impacts. As noted above in Section 2.1, NEP maintains that the proposed Project (Comprehensive Refurbishment Alternative) is the alternative that best meets the identified project need given the existing Project site constraints while avoiding and minimizing environmental impacts to wetland resource areas, mapped habitat, and tree removal to the maximum extent practicable. Nevertheless, in an effort to further reduce impacts, NEP evaluated the potential to eliminate or minimize off-ROW access road construction and to relocate, forego or otherwise alter the proposed installation of new switch Structure 79A to reduce the Project's permanent impacts to vegetated wetlands.

2.4.1 Off-ROW Access Road Elimination

NEP considered eliminating off-ROW access roads with an emphasis on down-ROW access, to potentially reduce current tree removal locations; however, down-ROW access within this steep terrain will require clearing existing vegetation from edge to edge of the ROW in numerous locations and the construction of extensive switchbacks within and outside the existing cleared limits of ROW and would require additional stream crossings (e.g., Dunbar Brook) that are currently avoided by the Preferred Alternative. Extensive road building practices required within the ROW make this infeasible from a construction and safety standpoint due to the grades required for safe vehicle travel. The challenging terrain within the ROW would require extensive construction efforts and disturbance, if it was deemed at all feasible for safe construction and use for access to be created completely within the ROW. In most cases due to the topographic constraints down-ROW access would require additional tree removal outside of the maintained ROW, would provide more intense grading for access road development, and require longer construction duration than the preferred alternative.

Although working within the ROW reduces impacts to adjacent property and existing DCR access routes, it would not eliminate them given the ROW constraints. Further, it does not reduce the overall impacts to land development, sensitive resource areas, open space land, or construction timelines.

Before the EENF submission, NEP evaluated existing off-ROW access routes to avoid constructing new off ROW access roads that would require extensive environmental impacts including tree removal, grading, and wetland matting. Based on our review it was determined that staying within the existing cleared limits of ROW was not safe or practicable in multiple instances due to the presence of ledge, which led to grading considerations, and the steep terrain, which led to safety and equipment access considerations.

2.4.2 Analysis of Off-ROW Access Alternatives

Given that down-ROW access was deemed not practical in particular areas, NEP reviewed options for accessing structures from off ROW. There are a limited number of off-ROW access roads. These existing off-ROW access routes were either the only feasible option or the option with the fewest environmental impacts. Feasibility was based on the overall grade of the slopes and presence of rock outcrops and/or ledge. The selected off-ROW access routes will be as narrow as feasible to allow the required equipment to access the structures and ensure they are viable long-term access roads that allow for stormwater BMPs. Table 2-1 outlines the proposed off-ROW access routes and alternative routes considered.

TABLE 2-1
Off-ROW Access Route Analysis

Location	Map Sheet #	Road Type/Proposed Activity	Alternatives Assessment	DCR Property (Yes/No)
Zylonite Station Road to STR 179/180/181	1	Matted Access	<ul style="list-style-type: none"> No access feasible through the substation due to substation equipment constraints and wire clearance height for equipment. 	No

TABLE 2-1
Off-ROW Access Route Analysis

Location	Map Sheet #	Road Type/Proposed Activity	Alternatives Assessment	DCR Property (Yes/No)
			<ul style="list-style-type: none"> Access from the North of substation impacts same wetlands and rare species habitat more than proposed. 	
East Road to STR 176	2	Existing access / minor overtopping proposed	<ul style="list-style-type: none"> Access is not feasible from East Road within the ROW due to slope. 	No
STR 173 to STR 171	3 & 4	Existing access / minor overtopping proposed	<ul style="list-style-type: none"> Access within the ROW would increase impacts to vegetated wetlands. 	No
STR 170 to STR 169	4	Existing access route / matting proposed	<ul style="list-style-type: none"> Access within the ROW was deemed not feasible due to the slope and stone present between STR 170 and 169. 	No
STR 168 to 163	5	Type 1-5 Access Road proposed / grading, gravel, tree removal/Access Road impacts were minimized by using a 12-foot-wide travel width and reduced grading where feasible.	<ul style="list-style-type: none"> Access within the ROW was deemed not feasible due to very steep slope and stone outcrop from STR 169 and the potential need for grading and permanent impacts within the wetland at STR 169. Access was not feasible to stay within the ROW limits due to steep slopes along the ROW and safety concerns for construction equipment. 	No
NEP's J10 Line to STR 161	6	Existing access route/Widening 10-foot path to 12 feet of graveled way for construction vehicles (cranes, concrete trucks, rock-hammers, pole trucks). Additional 2-foot shoulders on either side added for water runoff to avoid damage to road surface from rain and rutting.	<ul style="list-style-type: none"> Access within the ROW was not deemed feasible from STRs 162 or 160 due to steep slopes and bedrock outcrop. Additional wetland and land disturbance impacts would be required if not accessing STR using the proposed access route. 	Yes
NEP's J10 Line to STRs 159/158	6	Existing access route/Widening 10-foot path to 12 feet of graveled way for construction	<ul style="list-style-type: none"> Access within the ROW was not deemed feasible from the east or west due to steep slopes and 	Yes

TABLE 2-1
Off-ROW Access Route Analysis

Location	Map Sheet #	Road Type/Proposed Activity	Alternatives Assessment	DCR Property (Yes/No)
		vehicles (cranes, concrete trucks, rock-hammers, pole trucks). Additional 2-foot shoulders on either side added for water runoff to avoid damage to road surface from rain and rutting. Some tree removal is required.	bedrock outcrops. Additional wetland and land disturbance impacts would be required if not accessing STRs using the proposed access route.	
STR 150 to STR 149	8	Existing access route/Widening 10-foot path to 12 feet of graveled way for construction vehicles (cranes, concrete trucks, rock-hammers, pole trucks). Temporary construction matting in wetlands. Some tree removal is required.	<ul style="list-style-type: none"> Access within the ROW was not deemed feasible due to steep slopes between STR 150 and 149. Additional ground disturbance would be required to traverse the steep slope and could potentially extend into the uncleared portion of the ROW. 	Yes
Old Florida Road to STR 145	9	Developed access route 14-16-foot wide / Some tree removal, access grading, gravel, and wetland matting required.	<ul style="list-style-type: none"> Access within the ROW was not deemed feasible from the west due to steep slopes and additional wetland impacts. Access with the ROW to the STRs from the east would require extensive wetland matting across the deep marsh wetland from STR 144 to 145 that was deemed not necessary given the presence of Old Florida Road. 	Yes
Busby Trail – Central Shaft Road to NEP’s J10 Line	10 - 12	Existing, developed access route 16-20-foot wide / Some wetland matting required.	<ul style="list-style-type: none"> Access route is necessary to get to NEP’s J10 Line ROW to access western extent of the E131 Line ROW due to steep slopes and bedrock along the E131 ROW. No other existing access routes existing to the J10 ROW and new routes would need to be cut 	

TABLE 2-1
Off-ROW Access Route Analysis

Location	Map Sheet #	Road Type/Proposed Activity	Alternatives Assessment	DCR Property (Yes/No)
			through undisturbed sections of forest.	
Central Shaft Road to STR 135	16	Existing access route 12-14-ft wide / Some minor overtopping to fill holes and limited tree trimming proposed.	<ul style="list-style-type: none"> Access within the ROW was not preferred from the west or east which would require crossing Staples Brook or unnamed perennial stream. A new access route would need to be created to get to STRs 134-138 with additional wetland impacts. 	Yes
Route 2 to STR 108	23	Existing Access Route 12-14-foot wide / Some minor overtopping to fill holes and limited tree trimming proposed.	<ul style="list-style-type: none"> Access from Route 2 within the ROW was not deemed feasible due to a steep slope to the ROW along with sight-line safety concerns. Access from the west would require crossing the Cold River, which would increase environmental impacts. 	Yes
Monroe Road to STRs 96-100	25-26	Existing undeveloped access route / limited access developed proposed and timber matting will be placed to reduce impacts as necessary.	<ul style="list-style-type: none"> Access from Whitcomb Hill Road along ROW was deemed not feasible due to the very steep slope to a deep valley and crossing of two intermittent streams. Grading and ground disturbance would increase to provide a safe travel route for equipment. Access from the east would require crossing the Cascade Brook, which would increase environmental and land disturbance impacts. 	No
South Road to STRs 67/68	34, 35, 38	Existing 12-16-foot-wide access route / No work is proposed.	<ul style="list-style-type: none"> Previously proposed access improvements at this location were eliminated after further review. 	Yes

TABLE 2-1
Off-ROW Access Route Analysis

Location	Map Sheet #	Road Type/Proposed Activity	Alternatives Assessment	DCR Property (Yes/No)
South Road (aka Raycroft Road) to STR 64	34, 35, 38	Existing 12-16-foot-wide access route / Some minor overtopping to fill holes and limited tree trimming and removal proposed.	<ul style="list-style-type: none"> Access along and within the ROW is constrained by crossing either Smith Brook to the west or Dunbar Brook to the east. Either option would require impacts to wetlands and waterways and extensive grading and tree removal within the uncleared portions of the ROW to construct access. 	Yes
South Road to STR 58	34, 35, 36, 39, 40	Semi developed trail 12-foot wide. Widen access and install graveled way for construction vehicles (cranes, concrete trucks, rock-hammers, pole trucks). Temporary construction matting in wetlands. Tree removal and grading required.	<ul style="list-style-type: none"> Access within the ROW was deemed not feasible due to the extremely steep slope (30% grade) between STR 59 and 58 and Dunbar Brook to the east. Access within the ROW would require extensive grading and additional tree clearing outside of the maintained ROW. A larger construction and engineering effort (grading and 110-foot bridge) would be required to cross Dunbar Brook. 	Yes
Gore Road to STR 46	43	Existing access route 16-20 feet wide / Temporary wetland matting proposed.	<ul style="list-style-type: none"> Access within the ROW is feasible, but not preferred due to the width of the Gore Road and turning radius of equipment and materials. The off-ROW access route provides an additional means of access to the ROW with a wider entrance and exit point. 	No

2.4.3 Switch Structure 79A Design

The currently proposed Project involves the decommissioning and replacement of existing switch Structure 80 with new switch Structure 79A. The installation of new switch Structure 79A comprises the largest single area of proposed permanent wetland impacts (300 sf), as outlined in Table 6-3. As such, NEP considered relocating, forgoing or otherwise altering the proposed installation of new switch Structure 79A to reduce the Project's permanent impacts to vegetated wetlands.

Structure Relocation

As summarized above, switch Structure 79A is proposed to replace the existing switch currently located at Structure 80. The new switch structure location will be approximately 60 feet north and east of the existing switch. Both Structure 80 and proposed Structure 79A are located within the same wetland, which is situated within the E131 ROW and occupies one full span (approximately 400 linear feet) between existing Structures 79 and 80. As such, to relocate 79A outside of the vegetated wetland, it would need to be moved about 300 feet back, towards Structure 78 or about 100 feet ahead, towards Structure 81. Relocating Structure 79A back, towards Structure 78 was found to be infeasible because it would position the switch too far from the Bear Swamp Tap, preventing it from properly functioning. Relocating the new switch structure ahead to Structure 81 was found to be infeasible due to the current location of the existing switch at Structure 80, vertical clearance (ground to conductor) constraints and other constraints associated with the positioning of existing electrical infrastructure.

No Replacement

NEP considered not replacing the existing switch located at Structure 80. This alternative was found to be infeasible because the current switch is composed of outdated technology. The switch, if left in its current condition, is a risk to the health and safety of the crews tasked with operating it. The age of the switch also poses reliability issues that, if left unattended, would undermine the stated goal of the Project, to improve the resiliency and operability of the E131 line.

Alternate Design

The current design for the new switch (79A) involves the installation of a 300-sf gravel apron around the switch structure. The gravel apron is intended to deter woody and herbaceous vegetation from growing up into the switch device. This is necessary because the switch needs to be easily accessible and therefore requires a lower maximum vertical clearance than a standard structure typically would. NEP determined that while foregoing the gravel apron around the structure site would reduce impacts to the vegetated wetland it would also necessitate high frequency vegetation maintenance and cutting to keep the switch device clear and would in turn require repeated reentries and repetitive impacts to the surrounding vegetated wetland. This design alternative was found to be infeasible due to the severity of impacts resulting from repeated wetland mowing, the likelihood of increased wetland benefits resulting from wetland replication rather than on-site restoration and the increased costs that high frequency vegetation maintenance would incur, for little gain.

2.5 Maximum Build Out Alternative

NEP considered a Maximum Build Out alternative that would have entailed developing the access route to the greatest extent feasible without consideration for overall land and sensitive resource areas impacts or cost. This alternative would look to install larger work

pads (150'x150'), creating even more workspace for construction and staging. Access roads would have been designed to be 20-foot wide to better facilitate access of large equipment and continued future access along the ROW. Culverts would be proposed along the access routes to create permanent stream crossings for future ease of access along the ROW. Areas of small wetland crossings would propose to be filled for permanent access and avoid having to add a minor amount of matting along the ROW for continued access. The structure relocations and foundation installations would be designed to benefit conductor reconfiguration and span distances regardless of sensitive resource areas. The maximum build would not restore temporary pull pads to allow for future use should the occasion arise. Additionally, the creation of new access roads would create switchback cuts or grading within the existing easement to make up changes in elevation (greater impacts to forestry and land clearing) instead of using already-created pathways that can be updated to facilitate proposed equipment use. The Preferred Alternative entails fewer impacts to the landscape and sensitive resource areas than a potential Full Build Out alternative and will address the Project need and meet the Project goals of improving electrical system reliability and resilience. This alternative would decrease the likelihood of repeated future disturbance to sensitive resource areas but would cause increased permanent impacts to the environment.

2.6 Comprehensive Refurbishment Alternative (Preferred)

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 comprehensive refurbishment meets all Project objectives and reduces long-term environmental impacts.

Tree removals are required along off-ROW access roads and within the ROW, to provide adequate clearances for the new, higher capacity lines. Note however that tree removals would also be required under all other scenarios. Post-EENF submittal, tree removal associated with on-ROW and off-ROW access has been reduced from 17.6 acres to 11.3 acres. No tree removal is located within vegetated wetlands, and, therefore, will not result in a conversion or loss of wetlands. Permanent access road construction both in-ROW and off-ROW is required for future permanent maintenance. Off-ROW access road locations and design have been minimized to the extent practicable. Access road travel widths have been designed to be the smallest size feasible while creating a suitable surface for necessary equipment and long-term viability of the road and associated stormwater features. By using the existing off-ROW access we avoid additional grading/land disturbance and removing trees within a previously undisturbed access route. Off-ROW access alternatives analyzed for the Project are presented in Section 2.4.2.

When wetland resource areas cannot be avoided without comprising worker safety (e.g., dangerous terrain, steep grades, reliable emergency vehicle access) or without incurring greater environmental impacts elsewhere (e.g., extensive switchbacks, tree cutting, filling, blasting) they will be crossed using temporary construction matting which will be

removed following completion of the Project. The temporary impact will be approximately 599,115 sf over the 11.4 miles of the Project extent.

The remainder of wetland impacts (660 sf) will be permanent and will result from the replacement of existing transmission line Structures 24, 43, 60, 80, 119, 145, 150, 151 and 172, and the installation of a new switch Structure 79A within vegetated wetlands³

Short term temporary impacts from matting and permanent impacts from construction will be higher than Project alternatives. However, long term temporary impacts will be reduced overall (due to reduced frequency of future/repeat visits), while permanent impacts are likely to be similar across all Project alternatives (all structures would need replacing at some time in the near future). As indicated in Section 12.2 work pad size will be reduced/restored within the 200-ft Riverfront Area.

2.7 Conclusion

NEP's overriding goal throughout the planning and design phases of the Project has been to select the alternative that (A) best 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, the proposed Project has been deemed to best address the Project's identified needs with the least impact to the natural and human environment in the most cost-effective manner.

³ Refer to Environmental Resource Map provided in Appendix B for further details.

Table 2-2 Alternatives Analysis Summary - E131 Line ACR Project

Factor Evaluated	No Build	Critical Asset Repair	Reduced Impact	Comprehensive Refurbishment (Preferred)	
			Switch Structure 79A -No Change/Relocation/Design Options	Off-ROW Access Road Elimination/Down-ROW access	
<i>Resource Area Impacts</i>					
<i>Land Alteration/Tree Removal</i>	Impacts reduced: NEP would still need to remove some trees to re-instate safe line clearances. No tree removal would be required in vegetated wetlands.	Impacts somewhat reduced: some tree removals would still be required to re-instate safe line clearances. No tree removal would be required in vegetated wetlands.	The currently proposed project involves the decommissioning and replacement of existing switch Structure 80 with new switch Structure 79A. The switch, if left in its current condition, is a risk to the health and safety of the crews tasked with operating it.	Off-ROW access road elimination may result in an reduction in the current tree removal locations; however, down-ROW access within this steep terrain will require tree removal from edge to edge of the easement in numerous locations and extensive switchbacks within and outside the existing cleared limits of ROW. Extensive road building practices required within the ROW make this infeasible from a construction and safety standpoint due to the grades required for safe vehicle travel.	Tree removals are required along off-ROW access roads and within the ROW, to provide adequate access and workpads sizes. Note however that tree removals would also be required under all other scenarios. No tree removal is proposed in vegetated wetlands. Post EENF submittal, tree removal associated with on-ROW and off-ROW access has been reduced from 17 acres to 11.3 acres. Permanent access road construction both in-ROW and off-ROW is required for future permanent maintenance. Off-ROW access road locations and design have been minimized to the extent practicable.
<i>Wetland Resource Areas</i>	Immediate impacts avoided, but likely to result in repeated future disturbance as deteriorated structures fail at different times. Increased likelihood of emergency repairs, which may result in greater impacts to wetlands, vernal pools, rare species habitat, and archaeological resources, with less opportunity for design and consultation on minimization & mitigation measures.	Short-term impacts somewhat reduced: fewer structure replacements/repairs in wetlands. However, many of the wetland access routes would still be required to reach target structures. Long-term impacts would likely be greater than for the proposed Project, due to the need for repeated access and work areas in wetlands as structures fail.	The installation of new switch Structure 79A comprises the largest single area of proposed permanent wetland impacts (300 sf). NEP considered relocating, forgoing or otherwise altering the proposed installation of new switch Structure 79A to reduce the Project's permanent impacts to vegetated wetlands. Structure relocation outside of the wetland was determined to be infeasible due to positioning related to the Bear Swamp tap or vertical clearance (ground to conductor) as well as other constraints associated with the positioning of existing electrical infrastructure. foregoing the gravel apron around the structure site would reduce impacts to the vegetated wetland it would also necessitate high frequency vegetation maintenance and cutting to keep the switch device clear. This would in turn require repeated reentries and repetitive impacts to the vegetated wetland the structure is located within. This alternative would result in in-situ restoration of the impacted wetland area around the switch structure site rather than wetland replication elsewhere. This design alternative was found to be infeasible due to the severity of impacts resulting from repeated wetland mowing, the likelihood of increased wetland benefits resulting from wetland replication rather than onsite restoration and the increased costs that high frequency vegetation maintenance would incur, for little gain.	This is not a "reduced impact" alternative and will result in increased impacts to wetland resource areas. Additional stream crossings required including bridged crossing at Dunbar Brook	Moderate impacts: short term temporary impacts from matting, and permanent impacts from construction, will be higher than project alternatives. However, long term temporary impacts will be reduced overall (due to reduced frequency of future/repeat visits), while permanent impacts are likely to be similar across all Project alternatives (all structures would need replacing at some time in the near future). Work pad size will be reduced/restored within the 200' RFA.
<i>Vernal Pools</i>		Relative impacts unknown: the exact locations of critical assets were not fully assessed, as this alternative was dismissed early on in screening. It is assumed that some short-term impacts might be avoided, but that this would increase the risk of needing to perform emergency work in vernal pools should a structure fail.	Immediate impacts avoided, but likely to result in repeated future disturbance as deteriorated structures fail at different times. Increased likelihood of emergency repairs, which may result in greater impacts to wetlands, vernal pools, rare species habitat, and archaeological resources, with less opportunity for design and consultation on minimization and mitigation measures.	N/A	
<i>Rare Species</i>		No/little change in impacts: the majority of impacts within rare species habitat are associated with access improvements and tree removals for reinstating safe line clearances.		Similar impacts to the preferred alternative. Some stretches of would need to be developed in areas currently not being impacted as well as habitat adjacent to rare species populations.	
<i>Archaeological Resources</i>		No/little change in impacts: the majority of impacts within archaeologically sensitive areas are associated with access requirements, which would be largely unchanged compared to the proposed Project.		Increased access road development within the ROW would also increase overall ground disturbance from the associated grading and work within the ROW. Additional surveys, impacts to archeological resources, and mitigation measures may be required.	
<i>GHG Emissions</i>	Immediate impacts avoided, but likely that repeated work will be required in future, resulting in similar GHG emissions from equipment and machinery.	Short term impacts would be somewhat reduced (reduced construction activities, reduced tree removals), but long-term impacts may be higher than for the proposed Project, as repeated future disturbance would be likely.	Immediate impacts avoided, but likely that work will be required in future, resulting in similar GHG emissions from equipment and machinery.	Moderate Impacts: Short term impacts from construction will be slightly higher than those of Project alternatives (as complete rebuild of the lines will take longer, involve more equipment, and cover a larger area, than partial repairs or rebuilds). However, long term impacts should be reduced, due to the reduced need for repeated repairs/emergency work.	Moderate Impacts: Short term impacts from construction will be slightly higher than those of Project alternatives (as complete rebuild of the lines will take longer, involve more equipment, and cover a larger area, than partial repairs or rebuilds). However, long term impacts should be reduced, due to the reduced need for repeated repairs/emergency work.
<i>Climate Resilience</i>	Lower system resilience: aged infrastructure is vulnerable to storm damage and does not provide the necessary capacity for interconnecting new renewable energy infrastructure to the grid.	Lower system resilience – aged infrastructure is vulnerable to storm damage and does not provide the necessary capacity for interconnecting new renewable energy infrastructure to the grid.	The age of the switch poses reliability issues that if left unattended would undermine the stated goal of the project, to improve the resiliency and operability of the E131 line.	Improved resilience: the proposed Project will improve structure resilience to storms, lightning strikes, and high winds, and will reduce the risk of outages due to tree falls. The increase in system capacity will provide opportunities for renewable energy projects to interconnect to the grid.	Improved resilience: the proposed Project will improve structure resilience to storms, lightning strikes, and high winds, and will reduce the risk of outages due to tree falls. The increase in system capacity will provide opportunities for renewable energy projects to interconnect to the grid.
<i>Construction Considerations</i>	N/A	Will require traffic management during construction period.	Will require traffic management during construction period.	Will require traffic management during construction period.	Will require traffic management during construction period.
<i>Permitting Complexity</i>	N/A	Significantly less complex than the preferred alternative, as it would not result in impacts that would exceed MEPA, 401, and MESA permitting thresholds if the project scope was reduced for each maintenance event.	Significantly less complex than the preferred alternative.	Similar permitting complexity to the preferred alternative. DCR permitting would be reduced as access would be within the easement limits, but there would potentially be more resource area and land impacts staying within the ROW completely.	Permitting complexity is primarily based on the 12 miles of ROW impacts and avoidance of segmenting the project that would result in greater resource area impacts, construction timelines/duration, and overall utility stability.
<i>Project Need/Goals</i>	While the No-Build Alternative would significantly reduce immediate environmental impacts, it would not meet Project goals of improving electrical system reliability and resilience. The existing aged and deteriorated infrastructure would have an increasingly high risk of failure with time, leading to a higher likelihood of emergency activities being required. This would likely lead to repeated disturbance of resource areas, with less time for design and permitting review to minimize impacts (due to the emergency nature of the work).	The Critical Asset Repair Alternative would only partially address the Project need and would increase the likelihood of repeated future disturbance to sensitive resource areas. While short-term impacts would be reduced, repeated disturbance would lead to greater cumulative impacts, and a greater risk of needing to perform emergency work in the future. Access and tree removals would still be required along much of the ROW.	Construction activities associated with the new switch (79A) involve the installation of a 300 sf gravel apron around the switch structure. The gravel apron is intended to deter woody and herbaceous vegetation from growing up into the switch device. This is necessary because the switch needs to be easily accessible and therefore requires a lower maximum vertical clearance than a standard structure typically would.	Although working within the ROW reduces impacts to adjacent property and existing DCR access routes, it does not reduce the overall impacts to land development, sensitive resource areas, or construction timelines. The ROW has very challenging terrain to work through and sticking to completely within the ROW easement we will need to cut more trees outside of the maintained ROW, provide more intense grading for access road development, and have construction activities take longer than the preferred to develop these routes.	NEP considered a Maximum Build alternative that would have entailed the following: Larger workpads (150'x150'); 20-foot wide access roads; culvert installations at each temporary stream crossing to provide future permanent crossings; structure relocations and foundation installation to benefit conductor reconfiguration and span distances regardless of sensitive resource areas; no restoration of temporary pull pads, and the creation of new access roads or create switchback cuts or grading within existing easement to make up changes in elevation (greater impacts to forestry and land clearing) instead of using already-created pathways that can be updated to facilitate proposed equipment use. The Preferred Alternative entails fewer impacts than the Full Build alternative and will address the Project need and will meet Project goals of improving electrical system reliability and resilience. This alternative would decrease the likelihood of repeated future disturbance to sensitive resource areas.

Section 3

Environmental Justice / Public Health

This section reviews the Project's potential impacts on Environmental Justice (EJ) communities pursuant to Section 58 of Chapter 8 of the Acts of 2021. Projects filed after January 1, 2022, 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), both effective January 1, 2022. These protocols supplement proposed amendments to MEPA regulations at 301 CMR 11.00, promulgated on December 24, 2021.

As indicated in the EENF, there are three within one mile of the Project, which is the Designated Geographic Area (DGA) for the Project.

The factors reviewed in the baseline assessment below appear to show that some of the EJ Populations within the DGA may be impacted by an existing unfair or inequitable environmental burden and related public health consequences experienced as compared to the general population. Based on the *MEPA Interim Protocol for Analysis of EJ Impacts*, any identified EJ population that is located in a municipality or census tract demonstrating "vulnerable health EJ criteria," or an EJ population immediately surrounding a project location that has a "High" risk rating in the RMAT tool for sea level rise/storm surge or extreme precipitation (urban or riverine flooding), is highly likely to be impacted by an unfair or inequitable environmental burden. However, the environmental and public health impact from the Project will not likely result in a disproportionate adverse effect on EJ Populations within the DGA and the potential impacts and consequences from the Project will not alter the effects of climate change on EJ Populations within the DGA.

An updated RMAT Design Standards Tool Output Report is provided in Appendix D. "High" risk ratings for extreme precipitation (urban and riverine flooding) could be an indicator of elevated climate risks for EJ populations in the vicinity of the Project Site. Pursuant to the MEPA protocol, we note that the "high" risk rating for the "extreme heat" parameter should not be used as a definitive indicator of elevated climate risks. NEP has concluded that the Project is unlikely to exacerbate any climate risks identified in the RMAT Tool Report in a manner that affects EJ Populations, including any potential for increased flooding risks. Additionally, the proposed Project is not anticipated to contribute any further GHG emissions, air pollutants, and heat island effects on the EJ Populations nor any other residents within the DGA. The climate change adaptation and resilience analysis is further described in Section 10.

The Project will provide residents with numerous benefits, including more reliable and safe electricity transmission. 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 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.

3.1 Characteristics of Environmental Justice Population

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) were provided in the EENF. 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.

Per the Massachusetts 2020 EJ 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, Franklin 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."⁴

⁴ Data for languages spoken was obtained from the American Community Survey 2011-2015 5-year estimates, Table B16001.

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.

3.2 Public Involvement

This section describes the public involvement activities undertaken prior to the EENF filing (as presented in the EENF) and the additional measures undertaken prior to filing this Draft EIR. As described below, NEP will continue to take steps to meaningfully engage EJ Populations in decision-making for the Project during the remainder of the MEPA review process and continuing throughout subsequent permitting and the construction period.

Initial Public Involvement (Pre-EENF Filing)

NEP conducted initial public involvement, which is documented in the EENF. The measures listed below were discussed and supported by the MEPA Office during a Pre-Filing Consultation held on April 14, 2022. As the Public Involvement Protocol requires NEP to maintain the same level of meaningful outreach and community engagement, a summary of the public involvement activities conducted prior to filing the EENF are as follows:

- 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, 2022⁵.
- 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 was provided in the EENF Appendix E. Efforts were made to ensure that the language used in the Form was understandable to the reader; that is, that 'technical' language was replaced with plain language, and legal jargon was omitted to the extent feasible.
- A public website was established, 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.
- NEP established a Project specific toll-free phone number and email address. The EJ Screening Form indicated that community member questions and concerns may be directed to (877) 616-E131 (3131) or info@e131project.com.

⁵ An initial EJ Reference List was provided by the MEPA Office on January 27, 2022. Updated EJ Reference Lists were provided by the MEPA Office on March 30, 2022, and in June 2023.

- A Project contact form was developed, allowing website visitors to sign up for Project announcements and to contact NEP with any concerns or questions - including translation of Project materials, and more information on public involvement initiatives as well as Project details, including the Wood Program, current activities, and construction schedule.
- 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 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.
- Repositories for hard copies of Project materials were established at public libraries within each of the four municipalities within the Project Site in the Commonwealth of Massachusetts, which will be updated 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 Greenfield Recorder and was also provided on the EJ Screening Form. No participants attended the hearing. A recording of the Virtual Public Meeting is available on the Project website.

NEP maintained a Distribution List of contacts from the EJ Reference List and any additional contacts that were identified during the virtual meetings and public engagement process. Contacts received notifications of the MEPA site visit. No additional information has been submitted or notices have taken place since the initial MEPA review.

Public Involvement After Filing the EENF

In addition to the public outreach conducted before filing the EENF, NEP conducted further public engagement activities prior to filing the DEIR and will continue to conduct further public engagement activities prior to filing the final EIR.

The following public involvement activities were conducted after the EENF filing and prior to this DEIR filing:

- The EJ Reference List is actively maintained for continued engagement. A revised EJ Reference List was obtained for the Project in June 2023.
- The website has been updated and will be maintained throughout the MEPA review process.
 - Once the DEIR is filed and submitted to the MEPA Office, an electronic copy of the DEIR will be uploaded to the website. A targeted notice of the DEIR filing will be sent to all abutters in EJ block groups specifically, as well as other abutters and EJ Reference List participants, including mention of where the DEIR can be reviewed as an online PDF (Project website) or hard copy and how the public can provide comment. The same will be conducted for the FEIR, once completed and filed.

- Visitors to the site can review frequently asked questions (FAQs) as well as download the EENF, the EENF Certificate and watch a recording of the August 10, 2022, Virtual Public Meeting.
- The Project email address has been maintained and monitored throughout the MEPA review process.
- The Project hotline has been and will be maintained throughout the MEPA review process.
- On May 31, 2023, NEP distributed a mailer describing the E131 Project Wood Program. The mailer indicated that wood cleared on private properties will be offered to individual landowners. Excess wood, if any, will be distributed according to the Wood Program which will be finalized before construction. To date, no inquiries have been received.
- On May 26, 2023, NEP distributed a Project Fact Sheet which provided a Project overview, location map, schedule, and contact information/ways to stay informed about the Project.
- In October 2023, NEP plans to distribute a mailer to Project neighbors and to the EJ Reference List. The mailer provides a Project update and provides information on how recipients could request a public meeting regarding the Project.

Planned Future Public Involvement

- Outreach to the public will be communicated in clear, understandable language and in a user-friendly format.
- NEP will conduct additional meetings as requested:
 - NEP will evaluate and implement best communication practices to inform the public about any additional meetings. For instance, similar to the EENF, NEP will publish information about the meeting in local newspapers within municipalities with EJ populations.
 - If interpretation services are requested in advance of meeting dates, NEP will make its best efforts to translate the documents provided to EJ populations and provide any requested interpretation.
- There will be additional opportunities for public involvement and public input into Project design and timing during the subsequent permitting and local review processes. NEP will file an NOI with each municipal Conservation Commission for review under the Wetlands Protection Act and local wetland protection bylaws. Prior to the public hearing, Project abutters will receive notices that provide information on how to attend/participate in the public hearing and how to submit questions in advance of the hearings.
 - Abutters and members of the public will be able to participate in those local hearings.
 - NEP will publish a legal notice in the newspaper of local circulation prior to the public hearing, and the Conservation Commission will post the agenda of the meetings in advance.

- To maximize reach and create alignment with local information sharing processes, NEP will make best efforts to reach affected municipalities to see if they would share the Project website through their own websites and channels.
 - Additional outreach channels, such as Facebook pages/groups and apps like Next Door – which are actively utilized by residents of certain municipalities – are being considered as part of this aligned information sharing effort (as suggested by Public Involvement Protocol best practices, with regard to community-specific media outlets).
- During the construction period, NEP will provide periodic construction updates via written notification and/or email to Project stakeholders, including to the EJ Reference List. Safety notices and signage will be posted regarding any temporary restrictions associated with active construction on or in proximity to existing recreational trails. Updates will be periodically posted on the public website at the same time notifications are sent out.

Response from nearby communities to outreach and engagement opportunities, including EJ communities, has been limited; however, NEP has maintained, and will continue to maintain the same level of outreach and community engagement noted above, during the remainder of the MEPA review process, and continuing throughout subsequent permitting and the construction period.

3.3 Updated Baseline Assessment – Environmental Burden

This section provides an updated baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts.

Initial Assessment

NEP reviewed MA DPH EJ Tool data layers and provided a summary of Vulnerable Health EJ criteria met within Adams, North Adams, Florida, and Monroe, as well as a summary of statewide rates. NEP also identified additional potential sources of pollution within the municipalities in the DGA that could be contributing to an existing unfair or inequitable environmental burden and related public health consequences.

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. 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.

Updated Assessment since EENFProximity of Project Site to EJ Neighborhoods

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 maintained ROW. Within the Monroe census tract, there are approximately two residential dwellings located within 100 feet of the existing maintained ROW. No tree removal is proposed outside of the existing maintained ROW within the distances indicated above/in proximity to EJ residences. Construction activities near these neighborhoods will consist of work within the existing maintained ROW, including the installation of in-ROW access roads, work pads and pull pads, and replacement of existing structures. Work pad installation and access road construction activities will occur within the existing, maintained ROW and will not encroach into existing unmaintained vegetated areas within the ROW.

DPH Tool Data Analysis

NEP consulted the Massachusetts Department of Public Health (MA DPH) EJ Tool to identify whether a municipality within one mile of the Project area (DGA) exhibits “vulnerable health EJ criteria”. This term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. Two of the vulnerable health EJ criteria (heart attack hospitalization and childhood asthma) are tracked on a municipal level, and two (childhood blood lead, and low birth weight) are tracked on a census tract level. The indicators represent populations that have higher-than-average rates of environmentally related community health outcomes.

Within the Project’s DGA, the municipalities of Adams, North Adams, Monroe, and Rowe meet at least one of the four vulnerable health EJ criteria. Table 3-1 below identifies which municipalities within the DGA exceed 110% of the statewide rate for each criteria, along with the applicable five-year range.

TABLE 3-1

DPH Vulnerable Health Criteria Met (by Municipality)

Vulnerable Health EJ Criteria	Adams	North Adams	Monroe	Rowe
Heart Attack Hospitalization Rate	Yes [2013-2017]	Yes [2013-2017]	No	Yes [2013-2017]
Childhood Asthma Rate	No	No	Yes [2013-2017]	Yes [2013-2017]
Childhood Blood Lead Prevalence ¹	Yes [2016-2020]	Yes [2016-2020]	No	No

Low Birth Weight ¹	Yes [2011-2015]	Yes [2011-2015]	No	No
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¹= These vulnerable health criteria are tracked on a census tract level. Please refer to table 3-2 below for additional details for each census tract.

Table 3-2 below summarizes the specific census tracts within each municipality that exhibit “vulnerable health EJ criteria” that are measured to be 110% above state-wide rates.

Table 3-2
DPH Vulnerable Health Criteria Met (by Municipality and Census Tract)

Municipality	Census Tract Number	Health Outcome/ Rate Type	Year Range	City/Town Rate	Statewide Rate	110% Statewide Rate
Adams	N/A	Heart Attack Hospitalization/ Age-Adjusted Rate per 10,000	2013-2017	29.4	26.4	29.1
	25003922100	Childhood Blood Lead/ Prevalence per 1,000 children tested	2016-2020	45.6	15.0	16.5
	25003922200	Childhood Blood Lead/ Prevalence per 1,000 children tested	2016-2020	33.2	15.0	16.5
	25003922200	Low Birth Weight/ Rate per 10,000 Births	2011-2015	441.1	216.8	238.5
North Adams	N/A	Heart Attack Hospitalization/ Age-Adjusted Rate per 10,000	2013-2017	44.2	26.4	29.1
	25003921300	Childhood Blood Lead/ Prevalence per 1,000 children tested	2016-2020	35.1	15.0	16.5
	25003921400	Childhood Blood Lead/ Prevalence per 1,000 children tested	2016-2020	15.5	15.0	16.5
	25003935300	Childhood Blood Lead/ Prevalence per	2016-2020	71.4	15.0	16.5

		1,000 children tested				
	25003935300	Low Birth Weight/ Rate per 10,000 Births	2011-2015	357.1	216.8	238.5
Monroe	Not Shown due to Small Numbers	Childhood Asthma/Age-Specific Rate per 10,000	2013-2017	Not Shown due to Small Numbers	83.1	91.4
Rowe	N/A	Heart Attack Hospitalization/ Age-Adjusted Rate per 10,000	2013-2017	Not Shown due to Small Numbers	26.4	29.1
	N/A	Childhood Asthma/Age-Specific Rate per 10,000	2013-2017	Not Shown due to Small Numbers	83.1	91.4

Based on the *MEPA Interim Protocol for Analysis of EJ Impacts*, any identified EJ population that is located in a municipality or census tract demonstrating “vulnerable health EJ criteria,” is highly likely to be impacted by an existing unfair or inequitable environmental burden.

3.4 Updated Impact Analysis on Environmental Justice Populations

This section provides an updated impact analysis on EJ Populations in accordance with 301 CMR 11.07(6)(n)2 and the *MEPA Interim Protocol for Analysis of EJ Impacts*.

Pursuant to the DEIR scope provided in the EENF Certificate, the updated impact analysis:

- Provides an updated assessment of whether the Project’s impacts may result in disproportionate adverse effects, or increase the risks of climate change, on the identified EJ population, particularly in light of the GHG emissions, air pollutants, and heat island effects that may be associated with large-scale forest clearing activities.
- Considers any loss of open space or recreational opportunities that may affect EJ populations lacking access to such resources.
- Considers any loss of shading or other impacts that may be anticipated for any properties located directly adjacent to tree clearing activities and discusses what mitigation will be provided, if applicable.
- Assesses whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions, and whether existing conditions would be worsened or improved by the Project.

Based on the analysis of Project impacts and benefits below, the Project will not result in any significant adverse effects on EJ populations nor any other residents within the DGA. The Project will provide residents with numerous benefits, including more reliable and safe electricity transmission.

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. Therefore, the DEIR reaffirms that the short-term environmental or public health impacts related to the construction of the Project will be mitigated, and that there are no long-term environmental or public health impacts. The potential impacts (both short-term and long-term) are outlined in the sub-sections below.

Temporary and permanent alterations pre- and post- construction will be mitigated through best management practices. Therefore, construction period activities shall not result in any public health impacts to any population. There are no disproportionate adverse effects or increased risks of climate change to EJ Populations.

Short-Term Impacts

The short-term impacts of the Project and mitigation measures are described in Section 4.1.3 of the EENF. Additionally, mitigation strategies for short-term impacts are proposed and discussed in Section 15.

Long-Term Impacts

Tree Removal

The tree removal designs have been refined since the EENF filing to reduce the total amount of tree removal; updated tree removals are estimated at approximately 11.3 acres compared to 17.6 acres at the time of EENF submission. The revised tree removal designs were analyzed for potential for significant adverse effects on any residents within the DGA, including EJ Populations. No properties abutting the ROW are located directly adjacent to tree clearing activities, and there are no locations along the ROW where all trees between the property and the ROW will be removed. Therefore, shade should be sustained by the trees that will remain. The analysis concluded that the amount of tree removal does not disproportionately impact EJ Populations, nor will it generate any significant adverse effects due to the overall distribution and concentration of tree removal activities throughout the entire DGA.

Proposed tree removal improves storm resilience by reducing outage risk by trees or limbs that may fall due to prolonged periods of flooding, heavy snow and ice, or strong winds. Improvements in access routes further support resiliency by reducing storm restoration response time. The Project's engineering design used structure loading criteria required by the NESC and National Grid Design Loads for Overhead Transmission Structures. The NESC load criteria require consideration of combined ice and wind district loading, extreme wind conditions, and extreme ice with concurrent wind conditions. NEP's standards also include consideration and contingency for heavy load imbalances and heavy ice conditions. By installing improved foundations, more robust structures with improved lightning protection, and higher strength conductor and OPGW, the proposed infrastructure will be better suited to withstand strong winds and storm events. See Section 10, Climate Change Adaptation and Resiliency, for further discussion and assessment of future climate scenarios and measures to adapt the Project to those conditions.

Additionally, an analysis was conducted where the ROW experiences "Hot Spots" - areas that register the 5% Highest Land Surface Temperature Index within their respective Regional Planning Authority regions - according to statewide data by the EEA and the Berkshire Regional Planning Commission. There are a small number of locations along the ROW in North Adams and Adams that are near or adjacent to both EJ Populations and Hot Spots. Please refer to Appendix E, to review the proposed tree removal in EJ Population block groups and Hot Spots within the one mile DGA utilized in the analysis.

- Portions of the ROW overlap with both a Hot Spot and an EJ population in Adams, Rowe and Monroe but no tree removal activities will be conducted at those locations.
- In Florida, there are no areas of proposed tree removal within both a Hot Spot and EJ Population.
- In Adams, one Hot Spot overlaps with one EJ population; no tree removal will occur in the existing Hot Spot and approximately 0.02 acres of trees will be removed within approximately 1,915 feet from the Hot Spot in forested areas within the ROW.
- There is one location in Adams with a Hot Spot along the ROW within about 100 feet of an EJ Population, but no tree removal activities will be conducted there. The closest tree removal is approximately 3,618 feet away.
- In Monroe, a Hot Spot overlaps with one EJ Population; no tree removal will occur at that location, but approximately 0.06 acres of trees will be removed approximately 5,300 feet away in forested areas, and approximately 0.08 acres of trees will be removed approximately 7,150 feet away in forested areas.
- In Rowe, a Hot Spot overlaps with one EJ Population; no tree removal will occur at that location, but approximately 0.20 acres of trees will be removed approximately 4,300 feet away in forested areas (that are located in Florida).

The analysis demonstrated that tree removal activities that will occur near EJ populations will be as minimal as those occurring along the whole ROW, and that there will be no disproportionate impact to EJ Populations.

Since much of the land adjacent to the ROW is forested, the tree removal design represents an overall negligible impact on canopy cover.

Lastly, NEP is currently reviewing opportunities to donate cleared trees (that abutters and residents do not wish to keep on their own properties for personal use) for use as firewood and as milled lumber, per processing (and coordination) with DCR and Massachusetts Community Wood Banks.

Loss of Open Space, Loss of Recreational Opportunities

The E131 line passes through three state forests maintained by DCR. There are two (2) EJ Populations within the Project ROW, Block Group 1, Census Tract 401, located within the DCR Monroe State Forest, and Block Group 1, Census Tract 9214 within the Savoy Mountain State Forest. Both state forests have access routes and trails for public use. 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, including members of EJ Populations, at the discretion of DCR.

Risk of Flooding

As discussed in Section 10, the proposed Project is not anticipated to impact flood hazards in the area. The scope of the Project includes the construction of gravel access and work areas which are considered pervious. Stormwater BMPs included in the design serve to control stormwater runoff to protect against erosion and washouts of the constructed access areas. The Project is not anticipated to significantly change the hydrology of the watersheds along the ROW. New impervious area is limited to the foundations of certain structures and is considered negligible compared to the overall area of the Project.

Impacts to BLSF are minimal (3,230 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 these design measures, the proposed work will not adversely impact the flood storage capacity or attenuation of these areas. Additional information regarding flooding risk under future climate conditions, and whether existing conditions would be worsened or improved by the Project, is provided in Section 10.

Based on the above conclusions, the scope of the Project does not pose an increase to flooding risk.

Air Pollution Sources

The Project will not result in the creation of new sources of significant 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.

Wetland Resource Areas/Water Quality

The Project will not degrade wetland resource areas in or near EJ Populations, and the short-term construction-phase impacts will be minimized using appropriate construction period BMPs as described in this DEIR and mitigated through restoration.

Noise

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 in-ROW construction will occur adjacent to residences in Monroe and North Adams, 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.

Traffic/Transportation

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.

3.4.1 Conclusion

The analysis concludes that while there *may be* an existing *unfair or inequitable burden* experienced by some of the EJ Populations within the DGA, the Project will not create any disproportionate adverse effect and will not materially exacerbate any existing unfair or inequitable environmental or public health burden impacting the EJ population nor any other residents within the DGA.

The DEIR reaffirms that the short-term environmental or public health impacts of the Project will be mitigated, and that there are no long-term environmental or public health impacts. The Project generally minimizes impacts on all populations by refurbishing an existing transmission line with 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 populations, including EJ Populations. Temporary and permanent impacts from pre- and post- construction will be mitigated through best management practices. Therefore, construction period activities will not result in any adverse or public health impacts to any population.

The Project will provide residents with numerous benefits, including more reliable and safe electricity transmission.

3.5 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.

The Project will not result in any significant adverse effects on EJ populations nor any other residents within the DGA. The Project will provide residents with numerous benefits, including more reliable and safe electricity.

3.6 Project Benefits

The Project provides benefits to both EJ Populations and non-EJ Populations. Those benefits include:

- Increased reliability of the overall transmission line. By installing improved foundations and more robust structures, this infrastructure will be better suited to withstand storm events and are less prone to experiencing line outages. The new overhead lines will be larger which will allow more electricity to flow during times of high usage, such as extreme heat events, which are anticipated to increase in frequency due to climate change.
- The installation of OPGW will allow better communication between substations, resulting in improved response time during storm-related emergencies and outages, which will increase public safety.
- In anticipation of 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 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 over time by planning for the future and reducing the likelihood of multiple repeat projects, thereby reducing environmental impacts, and reducing costs to NEP’s customers. Addressing the climate change crisis requires a major expansion of renewable energy and the infrastructure necessary to support and deliver that energy. NEP is actively taking steps to ensure that its system is ready to meet this critical challenge. Replacing infrastructure like the E131 line helps to accomplish this goal.

3.7 Avoidance, Minimization, and Mitigation

The DEIR reaffirms that the short-term environmental or public health impacts of the Project will be mitigated, and that there are no long-term environmental or public health impacts. Temporary impacts, permanent impacts and permanent alterations from pre- and post- construction will be mitigated through BMPs described in Section 12. Therefore, construction period activities will not result in any adverse or public health impacts to any population.

Section 4

Land Alteration

This Section addresses comments in the Certificate Scope associated with land alteration within the Project Area. As noted in the EENF, the Project is located within an active transmission line ROW easement that varies in size from 200-400 feet wide. The ROW supports one to three separate utility lines ranging from 69kV to 115 kV. The E131 line runs for approximately 11.4 miles within Massachusetts. Within the larger ROW easement there is a cleared and actively maintained portion of the ROW. The maintained portion of the E131 ROW varies from 150-200 feet wide, depending on if there are multiple circuits running parallel or not within the single ROW. Although work is taking place along 11.4 miles of ROW and at each of the existing transmission line structures, the overall disturbance and construction activities will not take up the entire area of the maintained ROW or easement. Land alteration associated with the Project is associated with the development of access roads and works pads and the conversion of forested land along the edges of the ROW associated with this access and work pad development.

4.1 Summary of Land Alteration

Table 4-1 provides a summary of land alteration impacts associated with the proposed Project.

TABLE 4-1
Summary of Proposed Land Alteration

Impact Type	Size
Tree Clearing ¹	11.3 acres
Existing Access Roads (Type R & S) ²	8.3 acres
New Access Roads (Type 1-5)	28.6 acres
Work Pads and Pull Pads	25.5 acres
Foundations and Structures ³	0.07 acres

¹Impact Area for tree clearing overlaps with areas of access and work pad development.

²Type R&S Roads – Type R = Existing stable subbase and no widening proposed.

Type S = Existing stable subbase, refresh with stone, and potential for widening.

³Impacts from structure installation overlaps in area for work pads

4.2 Land Alteration from Tree Removal

To provide a safe area for construction, future maintenance, and operation, and to ensure the reliability of the E131 line, NEP will remove trees in select locations along the edges of the existing ROW and existing off-ROW access routes to facilitate the development of access roads, work pads, and pull pads for the Project. No tree removal is specifically proposed to just widen the exiting maintained limited of the ROW.

In order to facilitate this development approximately 11.3 acres of trees will need to be removed over the 11.4 miles of ROW in Massachusetts. The areas of tree removal are identified on the ER mapping provided in Appendix B. Areas of tree removal will be developed into gravel work pads, access routes, or graded areas. Areas of pull pads to be removed, approximately 0.4 acres, will be allowed to revegetate naturally providing beneficial edge/early successional habitat.

During the EENF review and issuance of the Certificate, it was brought to NEPs attention that there may be areas of old growth forest within the E131 easement, particularly in the area of the Monroe State Forest. NEP has coordinated with DCR to understand the locations of potential old growth forest, but due to the sensitive nature of the information DCR could not share the exact locations. Based on the general area of potential old growth forest and our proposed work areas we believe areas of potential old growth forest within the E131 area will not be impacted as no tree clearing outside of the maintained width of the ROW is proposed in these locations. NEP has provided (sent in April 2023) all the mapping and shapefiles for the Project to the DCR forester for the area to evaluate the known locations of old growth forest to the proposed work locations.

As noted in Section 1, since the filing of the EENF, NEP has reduced the estimated extent of tree removal from 17.6 acres to 11.3 acres. The reduction in tree clearing was based on a reassessment of proposed clearing widths along existing access routes taking the total width on either side of the existing 10–12-foot route from 10 feet on either side to 5 feet on either side. NEP forestry staff and consultants reviewed proposed areas of tree removal that addressed potential “islands” created from access route creation and reduced the number of areas originally proposed to be cleared. This re-assessment, coupled with field reviews, allowed NEP to determine more precisely where tree removal would be required to ensure conformance with the appropriate vegetation management operating criteria within the ROWs, and where trimming, pruning, or other management techniques would be sufficient. During vegetation management activities, NEP will preserve lower growing shrubs along the ROW and in areas not proposed to be developed for access or work pads. Where work areas and access are required in wetlands, NEP will not mow or trim herbaceous vegetation and preserve shrubs and woody vegetation, except in cases where more robust woody vegetation will impede matting placement. No tree removal is proposed within vegetated wetlands.

4.3 Land Alteration from Construction Activities

NEP requires safe and reliable access to each transmission structure for equipment and crews to clear and grade the work areas, create a stable work platform, install structures, and string the overhead wires. In order to achieve this, some new within-ROW and off-ROW permanent impacts are required, including the re-establishment/improvement of access, and creation of permanent work areas.

Access Improvements within-ROW

Environmental and construction planning specialists with NEP have carefully evaluated access routes to ensure that necessary safety and accessibility factors are considered and impacts to sensitive resources are avoided, where practicable, and minimized where impacts are unavoidable. NEP will establish the physical access required to construct, inspect, and maintain the E131 line through improvement of existing or historic accessways, temporary placement of construction mats, and construction of new access

where necessary. Existing and proposed access routes are shown on the ER mapping in Appendix B.

Access routes are categorized as Type R and S existing access to be maintained or designed Type 1-5 routes as shown on the ER mapping in Appendix B, respectively. Designed Roads range from relatively flat to steep or challenging terrain where erosion of the constructed gravel access could be a risk. Designed Roads have been optimized to minimize cut/fill to the extent feasible and consider management of stormwater runoff including construction of stormwater BMPs, as appropriate.

Where access currently exists, the travel lane is generally 8-feet wide (or less). Access for construction vehicles anticipated for the Project will generally require a 12 -foot wide travel lane, but the constructed footprint may be wider in some locations to accommodate side slopes and stormwater management features such as swales, stone check dams, water bars, or other BMP measures.

Off-ROW Access Construction

Where access to structures cannot be obtained on ROW due to challenging terrain or avoidance of environmentally sensitive areas, select off-ROW locations are proposed. Existing access routes will be utilized in ways that avoid or minimize disturbance to wetland resources to the extent feasible, to follow the existing contours of the land as closely as possible, and where practicable, to avoid severe slopes. Consistent with within-ROW access routes, off-ROW access routes will generally be 12-feet, but the extent of earthwork associated with access construction may be wider in some locations to accommodate grading and stormwater BMPs.

NEP plans to upgrade several existing off-ROW access routes but is not planning to construct completely new off-ROW access routes to the ROW. While off-ROW access will be designed in coordination with the property owners, most will be constructed of gravel, construction mats, or a combination thereof depending on site specific conditions.

Construction of Work Areas and Staging/Laydown Areas

As stated in the EENF, work pads will be placed at structures where work is proposed. Work pads are necessary to accommodate the removal of existing structures, installation of new or replacement structures and their appurtenant features. Similarly, pull pads are being used to install select sections of new conductor, but primarily for OPGW. Pull pads are necessary to stage equipment being used to install new conductor and OPGW by pulling it from one structure to the next (see Appendix B: ER mapping).

Work pad development will depend upon site topography and existing conditions at each structure location. Where site topography and stability of existing ground allows, work areas will be overlain with gravel and minimal grading. Where topography is steeper or the ground surface is unstable, work areas will require grading and the placement of stone (gravel) to provide a stable work surface. Within BVW or IVW no grading will be conducted, and temporary matting will be placed to create a stable and safe work surface. Where construction matting is placed in BVW, RA or BLSF, this will be removed once construction is complete. Outside of sensitive wetland resource areas, work areas will remain in place to provide permanent work platforms for future maintenance/emergency work. In total, 62.5 acres of land will be impacted through the construction of permanent work pads.

Installation of Foundations and Structures

Rebuilding the existing E131 line requires replacing primarily wood H-frame structures, and some steel lattice towers, with engineered steel H-frame structures. The new structures will be self-supporting (direct embedded) or supported by concrete caisson foundations. Alternative foundation types such as helical piles, steel vibratory caisson foundations, or micro pile foundations may be utilized if warranted by site conditions or other factors. Section 12 of the DEIR describes the construction methods and impacts associated with structure installations.

Within Massachusetts, the existing lines consist of a total of approximately 159 structures within the existing ROW extending from the Vermont/Massachusetts border to Adams Substation.

4.4 Avoidance, Minimization, and Mitigation

The Project design reflects NEP's significant efforts first to avoid and then to minimize adverse impacts to the land surrounding the Project site to the extent practicable. For example, NEP located the Project entirely within an existing ROW. Where feasible, the new foundations have been located to avoid adverse impacts. Also, the proposed design locates proposed structures in proximity to existing structures, whenever feasible; places proposed structures so that the transmission wires span several resource areas; clears vegetation only where necessary for safe operation; and utilizes existing/upland roadways for construction purposes. Overall, the Project is not expected to change or significantly impact land uses within the ROW or areas within 300-ft of the ROW during construction or operation as it is an existing transmission line.

Vegetation along the ROW, and particularly in sensitive areas, will be preserved to the extent feasible. No vegetation clearing outside the work envelope is proposed and will be sustained as is during construction.

Access construction and improvements will be carried out in compliance with the conditions and approvals of the appropriate federal, state, and local regulatory agencies. Dust suppression measures, such as the use of water trucks to spray access surfaces, will be implemented as required to minimize fugitive dust from construction vehicle travel along the ROW. Crushed stone aprons/tracking pads will be used at access entrances to public roadways as needed to minimize the migration of soils off-site from construction equipment. Additionally, stormwater BMPs will be installed as necessary as part of the access construction and improvement phase of the Project. These BMPs will reduce adverse impacts from stormwater flows, maintain the longevity of the access routes, and reduce overall maintenance needs.

NEP will submit a SWPPP for the Project in compliance with the EPA's NPDES program under the Stormwater CGP. 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 stormwater 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 defines monitoring to occur until disturbed areas on the site have been stabilized using standard BMPs. 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.

Section 5

Rare Species

5.1 Background

The Project ROW contains Priority/Estimated Habitat for seven NHESP state-listed species, consisting of five plants, one invertebrate, and one fish species. Of the five plant species, only three species are of concern based on the location of proposed activities and consultation with NHESP. NEP regularly maintains the upland portions of these Priority/Estimated habitats within the ROW, per the approved NHESP VMP⁶ and the OMP⁷. The three species of concern are all facultative wet to obligate species that are located in vegetated wetlands.

Temporary impacts are proposed within these areas of mapped Priority and Estimated Habitat. Approximately 4.5 acres of impacts (access routes, work pads, matting) are located within mapped habitat based on available NHESP data layers. Of that, 1.67 acres of proposed work will directly impact species based on and identified through consultation with NHESP and botanical surveys within the proposed Project area. All anticipated impacts (1.65 acres) to species actually present within the Project area will result from the temporary placement of construction matting for the construction of temporary access roads and work pads as necessary to support construction.

5.2 NHESP Consultation since EENF

NEP initiated pre-consultation discussions with NHESP for the Project on February 9, 2022, 2022 and November 11, 2022, which were prior to when the EENF for the Project was submitted in January 2023. Since introducing the Project to NHESP, NEP has maintained on-going discussions with the Agency regarding the type and extent of impacts that will occur in mapped Priority Habitats. Discussion with NHESP is ongoing regarding the effects of these impacts on listed wildlife. NEP submitted a MESA Project Checklist to NHESP on April 17, 2023. NEP met again with NHESP post checklist submission to review potential mitigation measures for impacts around the Adams Substation. NEP coordinated internally and with NHESP to develop a phased matting plan for the area of concern, focusing impacts outside of the growing season. A final determination from the MESA Checklist review was received on October 26, 2023 (NHESP File No 23-1106). Based on NHESP review of the proposed project they have determined the proposed project will result in a

⁶ NEP has historically cooperated with state Natural Heritage programs to protect known sites where Endangered, Threatened, and Special Concern species (state-listed species) are known to occur. NEP recognizes the importance of the MESA, M.G.L. c. 131A, and its significance to right-of-way vegetation management and complies with all applicable portions of this act and the regulations promulgated there under. 321 CMR 10.14, MESA regulations, Part II Exemptions and 333 CMR 11.04(3) (a-c) exempts utility rights-of-way vegetation management from the permit process provided that the management is carried out in accordance with a VMP approved in writing by the NHESP prior to the commencement of work. NEP and contract personnel follow the appropriate vegetation management treatment methods within these sensitive areas, taking all practical means and measures to modify right-of-way vegetation management procedures to avoid damage to state-listed species and their habitat.

⁷ NEP implements an annual OMP, reviewed and approved by NHESP. NEP performs all maintenance work in accordance with the MESA regulations (321 CMR 10.14(7)), which exempts certain Projects and activities from review that include "routine operation and maintenance are part of an operation and maintenance plan approved by the Division of Fisheries and Wildlife."

Take of one of the three state listed species due to the duration of construction matting. NEP will prepare a CMP for the proposed activities and continue to coordinate avoidance, minimization, and mitigation measures with NHESP.

5.3 Additional Surveys Since EENF

NEP conducted site-specific presence/probable absence surveys in accordance with the *Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines* to determine whether or not an incidental take is reasonably certain to occur. Surveys were conducted by SWCA between July 11 and July 23, 2023. No NLEB calls were confirmed. However, Tricolored Bat calls were confirmed at 6 of the 39 detector locations. The Tricolored Bat is a State-listed endangered species in Massachusetts, and the U.S. Fish and Wildlife Service announced a proposal to list the Tricolored Bat as endangered under the Endangered Species Act in 2022. NEP will continue to coordinate with the USFWS and NHESP to avoid a "Take" of Tricolored Bat during construction.

5.4 Impact Avoidance and Minimization Measures

This discussion summarizes the measures that will be implemented to avoid and minimize impacts to state-listed species, including design and the BMPs that will be employed during the construction-phase. These BMPs apply to the permanent upgrades to access routes and work areas, as well as the temporary placement of construction matting. As previously mentioned, post-construction, Project-wide maintenance activities will be conducted under the existing approved OMP and VMP.

The proposed BMPs are compliant with the first two performance standards of eligibility for a MESA permit (321 CMR 10.23(2)(a) &(b)), in which:

1. The applicant has adequately assessed alternatives to both temporary and permanent impacts to State-listed species; and
2. An insignificant portion of the local population would be impacted by the Project or Activity.

Since the proposed activities are being implemented specifically to upgrade existing utility lines in existing ROWs, there are no alternatives for relocating the Project. A no-build alternative would not serve the Project purpose for continuing reliability of the region's electric system. Therefore, avoidance and minimization must be achieved by considering access route alternatives within the ROW, size of work areas, use of temporary construction matting, and construction methods used.

5.4.1 Construction Timing and Restrictions

The following measures construction timing and restrictions will be implemented:

1. Per the OMP, construction mats must be used for equipment access for work activities occurring in wetland habitat where state-listed species are present.
2. Per coordination with NHESP, construction mats will only be placed at the Adams Substation between October 1 and April 1 outside of the growing season of rare plant species.
3. If work is required during the growing season, construction matting will only be in place for a four (4) week maximum timeframe.

5.5 Mitigation/Monitoring

Anticipated mitigation and monitoring needs are based on early discussions with NHESP on the proposed work and species located along the ROW. Based on past experience at this site, we believe post construction monitoring and plant surveys will be required to evaluate the impacts and/or success of these species post mat removal. If, during the post construction monitoring event, it is determined there was a long-term detrimental impact to the species then mitigation will be required. Coordination with NHESP to determine additional measures as well as the plan for post construction monitoring will be completed for the proposed Project.

5.6 Conclusion

NEP is currently consulting with NHESP to meet MESA permitting requirements. All proposed BMPs discussed in the above paragraphs have been approved by NHESP for prior, similar projects, and NEP anticipated that these BMPs will contribute to the Project's avoidance and minimization measures. Based on current discussion with NHESP, although impacts will be avoided and minimized to the maximum extent practicable, without compromising the safety of Project construction and future maintenance personnel, a "take" is anticipated for one protected species. NEP will continue to work closely with NHESP throughout the MESA process, including continued coordination and the preparation of a CMP for the species that will experience a "take".

Section 6

Wetlands and Waterways

This chapter addresses elements of the Scope related to wetlands, waterways, and other water resources.

6.1 Updated Wetland Impact Assessment

The majority of impacts to wetland resource areas are temporary alteration that will result from the placement of construction matting for access and work pads. Overall, NEP anticipates temporary alterations to wetland resource areas to be moderate during construction and insignificant over the long-term. Temporary alterations are anticipated within BVW, Isolated Vegetated Wetlands (IVW), inland Bank, and RA. Permanent impacts within BVW include fill associated with structure installation and removal. NEP is not proposing to construct permanent access or work pads within BVW, IVW, inland Bank and LUWW but is proposing some permanent alterations in RA, and Buffer Zone associated with proposed grading and other access improvements.

A summary of impacts to state and locally jurisdictional resource areas is presented in Table 6-1. This is followed by a break-down of these impacts by municipality in Table 6-2 and by permanent impact type in Table 6-3. These impacts will result from the construction practices and procedures outlined in Section 12. Details of NEP's efforts to provide avoidance, minimization, and mitigation measures are provided in the following sections.

TABLE 6-1
Summary of Impacts to Resource Areas

Impact Type	Activity	Impact Area (SF) ¹					
		BVW	Bank	LUWW	BLSF	200-foot RA	100-ft Buffer Zone
Temporary Alteration	Construction Matting	599,115	0	0	3,230	22,970	237,175
Permanent Alteration	Access/Work pad Improvement & Structure Replacement	660	0	0	0	125,420	703,180

¹Note these impacts are not additive within each column. Impact types vary by ROW and overlap in areas of the Project.

TABLE 6-2

Cumulative BVW Impacts by Municipality

Municipality	Total Permanent Impact (SF)*	Total Temporary Alteration (SF)
Adams	85	125,075
North Adams	85	34,305
Florida	385	271,185
Monroe	105	168,550
Total Acres	660	599,115

*Due to alteration associated with structure installation.

TABLE 6-3

Summary of Proposed Permanent Fill Locations

STR #	Town	Map Page #	Impact Type	Size (SF)
24	Monroe	35	Replacement Pole located in wetland – direct embed (43" diameter x2)	20 sf
43	Monroe	30	Direct Embed pole located in wetland – transition to concrete caisson (6.4' diameter x2)	65 sf
60	Monroe	26	Replacement Pole located in wetland – direct embed (43" diameter x2)	20 sf
79A	Florida	22	Switch gear installation – permanent stone apron (10x30)	300 sf
80	Florida	22	Replacement Pole located in wetland – direct embed (43" diameter x2)	20 sf
145	Florida	8	Replacement pole located in wetland – concrete caisson (6.4' diameter x2)	65 sf
150	North Adams	7	Direct Embed pole located in wetland – transition to concrete caisson (6' diameter x2)	65 sf
151	North Adams	7	Replacement Pole located in wetland – direct embed (43" diameter x2)	20 sf
169	Adams	3	Replacement pole located in wetland – concrete caisson (6.4' diameter x2)	65 sf
172	Adams	2	Replacement Pole located in wetland – direct embed (43" diameter x2)	20 sf
Total				660 sf

Vernal Pools

On September 6, 2023, a Tighe & Bond Wetland Scientist visited the Site to evaluate and delineate each certified and potential Vernal Pool identified on MassGIS as well as those identified by Tighe & Bond during resource area delineations along the ROW. The

jurisdictional status of these areas was evaluated relative to local, state, and federal criteria. Certified Vernal Pools were delineated in accordance with the definition set forth at 314 CMR 9.02. Potential Vernal Pools were evaluated in conformance with MassWildlife's "Guidelines for the Certification of Vernal Pool Habitat" and "Guidance on the Field Identification of Vernal Pools When Dry."

Two Certified and one Potential Vernal Pool were delineated and have been identified within the E131 Line easement. Detailed descriptions of existing conditions at each Vernal Pool at the time of evaluation will be provided to MassDEP as they review the Section 401 Water Quality Certification application. No impacts to Certified or Potential Vernal Pools are anticipated as a result of the proposed Project.

6.2 Avoidance, Minimization, and Mitigation

Throughout the planning and preliminary design process, NEP has incorporated measures to avoid and minimize potential wetland impacts to the greatest extent possible. Whenever feasible, NEP sited proposed structures in proximity to the existing structures being removed or has relocated structures from wetlands into upland areas. NEP will use existing ROW access routes wherever possible and is proposing upgrades in upland portions of wetland resource areas (Riverfront Area, BLSF) only where required to meet the requirements of construction vehicles and equipment that will be used to construct the Project. Using delineation and survey data, NEP designed access and work areas to avoid the most sensitive wetland resource areas throughout the ROW wherever possible. Specifically, NEP has planned wetland crossings to take place within existing previously disturbed routes (previously matted or disturbed via ATV use) to reduce impacts to previously undisturbed wetlands and rare species habitat. As the Project design evolved, the engineering team coordinated with environmental and construction team members to refine construction techniques to further reduce impacts. Avoidance and mitigation measures associated with Project work in wetland and waterway resources are detailed below.

6.2.1 Best Management Practices

Wetland Crossings

When crossing or working in wetland resource areas and the 100-Foot Buffer Zone, NEP will undertake the measures described below, as appropriate, to minimize wetland impacts:

- Install, inspect, and maintain temporary soil erosion and sediment (E&S) controls and other applicable construction BMPs around work in or adjacent to wetlands. E&S controls are installed to minimize the potential for erosion and sedimentation, mark the limits of wetlands, and restrict crew access, as appropriate.
- Install temporary construction matting for access across wetlands to reduce soil disturbance, vegetation loss, and protect water quality, where necessary.
- Restore wetlands, after refurbishment, to pre-construction configurations and contours to the extent practicable.
 - If the rutting from temporary construction matting is greater than approximately six inches deep, these areas will be restored to reestablish existing topography and maintain existing wetland hydrology.

- Comply with the conditions of local, state, and federal permit conditions related to wetlands.
- Avoid or minimize access through wetlands to the extent practicable. Where access must be improved or developed (such as in Riverfront Area, BLSF or the Buffer Zone), the access would be designed, where practical, so as not to interfere with surface water flow or the functions of the wetland.
- Refuel construction equipment (apart from equipment that cannot practically be moved) 100 feet or more from a wetland (e.g., a dewatering pump). If refueling must occur within a wetland, secondary containment will be provided.
- Store petroleum products over 100 feet from a wetland or waterway.
- Restore structure work sites in, and temporary access ways through wetlands following the completion of line installation activities.
- Prior to moving to other work locations, remove plant matter, soil, or other harmful material from equipment and construction matting when working at the sites containing invasive species.
- During structure replacement, any excavated material will be temporarily stockpiled next to the excavation; however, this material will not be placed directly into resource areas. If the stockpile is near wetlands, it will be enclosed by staked straw bales or other erosion controls. Additional controls, such as watertight mud boxes will be considered for saturated stockpile management in work areas in wetlands (i.e., placed on construction mats) where sediment-laden runoff would pose an issue for the surrounding wetland. Following the backfilling operations, excess soil will be spread over unregulated upland areas or removed from the site in accordance with NEP policy.

Stream Crossings

NEP is proposing to span perennial and intermittent streams with temporary construction matting, or equivalent, where access is required across streams. Impacts to inland Bank associated with these spanned crossings will be minimal if at all as mats should span the limits of inland Bank. Please refer to NEP's BMP details in Appendix G for a depiction of typical construction mat placement, anchoring, and water spans. Mats will be removed as soon as construction is complete, and any disturbance (for example, loss of vegetation due to shading, or ground disturbance from mat placement/recovery), will be restored and stabilized. If vegetation cover has been impacted, the area will be seeded with an appropriate wetland conservation seed mix and monitored until restored to pre-construction conditions.

Coldwater Fisheries Resources (CFRs)

There are 10 streams that have been designated by the Massachusetts DFW as significant Cold Water Fisheries Resources (CFRs). These are: Hoosic River, Hathaway Brook, Staples Brook, Cold River, White Brook, Cascade Brook, Fife Brook, Dunbar Brook, Haley Brook, and Phelps Brook.

No streams designated as CFRs will have their flow velocity, water depth or width, substrate characteristics or bank integrity permanently altered as a result of the proposed work. It will be necessary to remove tall woody vegetation in the ROW that may be a

hazard or safety concern. At access crossings where mat bridges will be installed, woody vegetation will be cut at the ground surface, and roots would be left in place. Once the mats are removed, native shrub species will revegetate the stream banks. Since the majority of access crossings are narrow (16-ft), only a small length of stream will experience short-term changes in shading resulting from the shrub removal and mat placement. CFRs will be spanned with construction mats and will experience the same light reduction as other stream crossings. BMPs will be employed in areas adjacent to CFR streams to minimize the potential for sedimentation from erosion and dewatering activities and to reduce the potential for accidental spills of fuels and lubricants to reach the CFR streams. Specific design requirements will ensure that bridge matting spans do not cause stream banks to collapse or destabilize, and that vegetation and disturbed soils are fully restored.

Riverfront Area

When working within RA, NEP will implement appropriate BMPs, including sediment and erosion controls, to ensure that the adjacent and overlapping resource areas are protected. Sediment and erosion controls will be installed around work areas, or between work areas and adjacent vegetated wetland resource areas, to minimize the potential for run-off. Sediment and erosion controls will also perform the secondary function of marking the limit of work. Controls will be regularly inspected and maintained until the site has reached final stabilization.

If necessary, any areas where vegetation has been impacted will be seeded with an appropriate wetland seed mix (if natural regeneration is not sufficient to restore vegetation cover). Over time, RA will return to scrub-shrub habitat or another non-forested habitat and in the short term may also include active seeding with either an annual ryegrass or conservation seed mix and straw mulch.

6.2.2 In Situ Restoration of Temporary Wetland Impacts

NEP will provide mitigation for temporary wetland impacts via in-situ restoration. Restoration measures will include restoration of the soil surface (addressing rutting resulting from mat placement), post-mat-removal inspections, seeding and mulching, removal of erosion controls, invasive species control, and post-restoration inspections.

Construction Mat Removal

Once construction mats are removed, environmental monitors will inspect wetlands for buildup of soil or other materials that may have fallen through the construction matted access/work area. Environmental monitors will inspect wetland crossings carefully as mat removal is occurring to ensure any materials on top of the mats are properly removed and disposed of outside of wetland resource areas. The environmental monitor will conduct a follow up inspection within five business days of construction mat removal.

Restoration of Soil Surface

Although construction mats displace the weight of equipment, depressional grooves (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; soil saturation levels; and time of year. If the rutting is greater than approximately six inches deep, NEP will carefully re-grade or back-blade these areas to

reestablish pre-existing topography and maintain existing wetland hydrology and seed bed.

Seeding and Mulching

Where root and seed stock are absent within disturbed sites, NEP will stabilize these areas by applying a regionally appropriate seed mix and mulching with straw to reduce erosion and visual impact as soon as possible following completion of work at the site. Seed mixes for RA or Buffer Zone would be different than seed mixes for vegetated wetlands. Wetland areas where adequate root and seed stock are absent will be seeded using a regionally approved wetland native seed mix. Seed mixes will meet NEP specifications for weed-free requirements.

Removal of Erosion Controls

Following restoration and stabilization of soil surfaces, NEP will remove erosion control barriers. NEP will remove and dispose of strings and stakes from straw bales. Crews will break up and lightly scatter straw bales as mulch. Siltation fencing, strings, and stakes will be removed and disposed of as ordinary waste. Wattles will be cut open, the mesh removed, and the wattle material spread as a soil stabilization measure. Where required based on grades and soil disturbance, NEP will leave erosion controls in place until suitable vegetation is established, as required by EG-303 and NPDES Construction General Permit, to prevent erosion into downgradient resource areas.

Post-Restoration Inspections

The environmental monitor will inspect restored areas within 90 calendar days following restoration, during the growing season, to ensure there are no noticeable adverse effects to the plant community, soil characteristics, and micro-topography. Environmental monitors will monitor for the presence of non-indigenous invasive species where the wetlands were not dominated by such invasive(s) prior to construction. Should the environmental monitor observe adverse effects, NEP will perform additional corrective actions, such as hand grading, seeding, or mulching. NEP will work with each community's Conservation Commission or authorized representative (i.e., Agent), as well as MassDEP and the USACE to ensure observed restoration complies with all performance standards in applicable wetlands regulations, permits, as well as each municipal Order of Conditions.

Invasive Species Control

During construction, construction mats will be certified clean of plant material prior to installation. Immediately upon removal of construction matting, and again following final restoration, the footprint of work areas within wetland resource areas will be inspected for the presence of non-indigenous invasive vegetation not previously observed within each wetland. During the 60-day post-restoration inspection period, should any such invasive vegetation be encountered during inspections, the following controls will be implemented by the environmental monitor, NEP, and/or their contractors:

- Young plants that may have become established during Project construction will be pulled by hand or dug up if the plant is not too big and the infestation is limited in areal coverage. Hand pulling or digging may be effective on small, very young plants or for a single specimen, but is not effective or practical once a stand becomes established. Crews will only remove vegetation by hand if the entire plant, including the root mass, can be easily removed with limited alteration to wetland soils.

Depending on the species, the extent of colonization, location, the presence of other non-invasive plants, the sensitivity of an area, and other factors, glyphosate or other appropriate herbicide applications may be sprayed or applied by a wicking device. Any herbicide application will be conducted by a Massachusetts licensed herbicide applicator in accordance with the applicable regulations.

6.2.3 Compensatory Mitigation for Permanent Wetland Loss

Wherever possible, NEP has attempted to avoid or minimize wetland impacts, in accordance with the MA Inland Wetland Replication Guidelines. Measures including minimizing the size of work areas within wetlands, moving work pads to reduce wetland impacts, and adjusting pole replacement locations to avoid wetland areas, were implemented to reduce the area of wetland impacts as far as practicably possible. However, in some areas, wetland impacts are unavoidable.

To mitigate unavoidable loss of wetlands associated with structure and switch gear ground grid installation in BVW, NEP will work with the USACE, the MassDEP, and local Conservation Commissions to develop compensatory mitigation plans. Specific details were developed for the installation of a 700-sf wetland replication area near Structure 81 and provided to MassDEP for review under Section 401. MassDEP provided initial consultation and noted the replication area should be sited outside of the maintained portion of the ROW. An alternative replication area was identified near Wetland 125 within the utility easement, but outside of the maintained portion of the ROW. Specific details will be provided later to MassDEP pending further development of mitigation plan discussions with regulators.

6.3 Chapter 91 Compliance

Based on comments received from MassDEP on the EENF (dated 3/10/23), NEP has consulted further with MassDEP on the applicable Chapter 91 requirements for the Project. As noted in Section 5 of the EENF, there are 11 perennial streams and one jurisdictional intermittent stream located within the E131 ROW. The channels are generally well defined with vegetated banks consisting primarily of shrubs and limited tree cover. Many of the streams are located within deep ravines along the ROW. The E131 was built in 1925 and has not been substantially altered since that time. As such, the existing line is exempt from licensing under 310 CMR 9.05(3)(c) and (f). The proposed work at each of the crossings is maintenance work on an existing utility line that will not reduce the height of lowest electric cable, will not alter the alignment of the crossing or otherwise affect navigability or other Chapter 91 interests. As such, the work is exempt from further Chapter 91 approvals under the maintenance provisions of 910 CMR 9.05(3)(a) and 910 CMR 9.22(1).

Section 7 Transportation

7.1 State Highway Access

The proposed Project will require temporary use of Route 2 in the Town of Florida for construction access, which will at times require temporary construction signage, presence of safety vehicles, and temporary traffic flow alterations during portions of construction.

As requested in the Certificate, NEP continues to coordinate with MassDOT District 1. A DOT Access Permit is required for the Project for the Route 2 crossing and is discussed in DEIR narrative Section 14.3.5. NEP has reached out to MassDOT District 1 to determine the jurisdiction and permitting requirements brought up in the MassDOT comment letter issued on March 10, 2023. It was determined that Route 8 in this area is not under MassDOT jurisdiction, and the section of roadway noted in the letter is under municipal jurisdiction.

NEP's access from Route 2 will be coordinated with MassDOT and local officials. The aerial crossing and temporary driveway access will require temporary construction signage and flaggers on Route 2 at certain times of construction. Required safety vehicles and temporary traffic flow alteration will be required for the OPWG pulling activities.

Intermittent construction-related traffic will occur over the entire construction period. Traffic will be intermittent, and variable based on the phase of the Project. Construction equipment will typically gain access to the Project route from public roadways crossing the ROW in various locations. Because each of the construction tasks will occur at different times and locations over the course of construction, traffic will consist of vehicle types ranging from pick-up trucks to heavy construction equipment.

NEP's contractors will coordinate closely with state transportation authorities 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 must be staged in a public way, the contractors will follow a pre-approved work zone traffic control plan. Further traffic information is provided in *Section 9.3*. NEP will notify affected landowners in advance of any use of off-ROW access and will work on a case-by-case basis with any abutting landowners that express concern.

7.2 Avoidance, Minimization, Mitigation

To avoid impacts to transportation along Route 2 during construction, a traffic management plan will be developed and implemented over the duration of the Project. During active construction in the areas requiring access from Route 2, signage and flaggers will be utilized. Temporary lane closures will only be required during equipment mobilization and de-mobilization and during the pull of OPGW over Route 2.

NEP will work to avoid long term impacts to construction flow by phasing work throughout the ROW and providing notice, via message boards, stationed along the roadway before lane closures or extended periods of construction at this location.

Section 8

Historic and Archaeological Resources

8.1 Background

The EENF, in Section 5.5, presented an overview of the cultural resources due diligence conducted by Public Archaeology Laboratory, Inc. (PAL) on the Project. In October 2019 PAL conducted a due diligence review and documented known historic and archaeological sites within and in proximity to the Project ROW. The analysis included a review of the State Historic Preservation Office (“SHPO”) site files for archaeological sites and aboveground resources. 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 one-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 that 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 developed an archaeological site avoidance and protection plan (ASAPP) and provided associated documentation to MHC, Native American Tribes, and DCR on 7/11/2023. The DCR Staff Archaeologist responded on 7/13/23, communicating that they had no substantive comments on the ASAPP, and requested that NEP continue to coordinate with DCR’s Operations and Construction Access Permits staff within DCR managed portions of the Project. As part of the ASAPP, PAL submitted a technical proposal to the MHC, USACE, and Tribes to perform limited archaeological mitigation for proposed impact areas within significant archaeological sites. The MHC responded on 9/7/23, amending PAL’s permit to perform the limited archaeological mitigation. PAL plans to perform the limited archaeological mitigation fieldwork in the 2nd quarter of 2024 when ground conditions are suitable. NEP continues to coordinate with the USACE regarding the Section 106 review of the Project and the USACE’s consultation with the MHC and Native American Tribes regarding implementation of the ASAPP.

8.2 Section 106 and Tribal Consultation

Section 106 of the National Historic Preservation Act of 1966 (“NHPA” or “Section 106”) requires that federal undertakings include consultation with interested parties that might be affected by the Project. The lead federal agency is obligated to identify and engage with consulting parties. This includes the SHPO, Native American tribes, local

governments, and other individuals and organizations with a demonstrated interest in the Project area.

The Project will be subject to review under Section 106 of the National Historic Preservation Act ("Section 106") and will require a permit from the USACE. The Project will also be subject to review by the MHC under G.L. c. 9, §§ 26–27C. NEP will coordinate with the USACE and MHC to incorporate avoidance and/or minimization measures as needed to avoid adverse effects to potential NHPA-eligible or -listed cultural resources. As part of the USACE Section 404 permit review, and pursuant to Section 106, the USACE will also consult with federally recognized Native American Indian tribes that express an interest in the cultural resources that may be affected by the Project.

NEP will continue to coordinate with PAL, in consultation with MHC and the USACE, to identify historic, archaeological, or cultural resources prior to construction and to avoid, minimize, or mitigate impacts to cultural and historic resources. As indicated above, PAL developed an ASAPP and plans to perform limited archaeological mitigation in consultation with MHC, USACE, Tribes, and DCR. NEP will implement measures outlined in the ASAPP to protect significant archaeological resources during construction and will adhere to procedures to handle unanticipated discoveries during construction as part of the Post Review Discoveries Plan.

8.3 Avoidance, Minimization, and Mitigation

The Project route is located within established ROWs associated with the existing utility line. For the majority of the Project route, the proposed work areas are not expected to impact the existing viewshed from abutting above-ground resources.

Details on NEP's cultural avoidance and protection measures were included in Appendix G of the DEIR (BMPs – EG-303NE). Measures employed within historically/archaeologically sensitive areas include:

- The use of construction fence to mark sensitive areas for crews to avoid.
- Demarcation of sensitive areas on site maps and plans, with accompanying on-site training for crews working in proximity to these areas.
- Restrictions on site grading within/adjacent to sensitive areas.
- Cataloging and reporting of any unexpected archaeological finds to MHC and/or tribes. In such an event, construction work within the sensitive area would cease until further advice has been provided by MHC and/or the tribes.
- Detailed procedures to be followed in the event of discovering human remains or burial sites.

During Project design, NEP carefully considered the location of stone walls (as well as other sensitive resource areas), and made every effort to avoid, minimize, or mitigate impacts to stone walls. Mitigation measures for stone walls are described below, in order of priority:

1. Stone walls within Project work areas will be identified on mapping (provided to crews/contractors) and flagged/demarked in the field.
2. Wherever possible, access routes will be configured to avoid stone walls. Work areas will be sized and orientated to avoid walls, as far as practicably possible.

3. Where a stone wall must be crossed for access and/or work areas, NEP's first choice will be to bridge the stone wall using construction mats. Mats will be stacked on either side of the wall, allowing the passage of equipment over the wall, without causing disturbance to the stones.
4. Where bridging is not possible (due to the height of the wall, or site topography/ground conditions), NEP may need to temporarily dismantle the stone wall. If this is necessary, NEP will conduct the following:
 - a. The stone wall will be flagged in the field and the Project team will be notified that a site visit is required to review the wall.
 - b. A site visit with the Project Environmental Scientist, Property Legal Representative, and/or Cultural/Historical Consultant will be conducted. This team will assess the feasibility of dismantling and re-assembling the wall, as well as any further permitting or permissions which would be required.
 - c. 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 (e.g., the southern side of the 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 markers) 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.
 - d. Once appropriate documentation has been submitted, the wall will be dismantled. Stones from the wall shall be removed from the work area and temporarily stored nearby, away from any sensitive environmental or cultural resource areas.
 - e. 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.
 - f. Once construction and access in the area has been completed, the wall shall be rebuilt to pre-dismantled conditions or better. If the rebuilt stone wall cannot be placed in its previous alignment, 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.*

By employing the above measures, NEP will substantially avoid, minimize, or mitigate impacts to stone walls. Please refer to EG-303NE for further details of stone wall protection and avoidance.

NEP is committed to the protection of cultural and archaeological resources within its ROWs. NEP shall continue to coordinate with the MHC, tribes, and DCR Staff Archaeologist to avoid archaeological and other cultural resources. If this is not practicable, NEP shall work with the federal and state agencies and the tribes to develop appropriate strategies to address impacts.

Section 9

Open Space

9.1 DCR Open Space Parcels

Portions of the E131 line traverse DCR-managed state forests, 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 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 these state forests are described in Table 9-1, below.

TABLE 9-1

Project Areas Within DCR-managed state forests

DCR Property	Parcel Number(s)	Municipality	ROW Segment	ROW Segment Length	Area of Impact (acres)
Monroe State Forest	017-001	Florida	Entire ROW from STR 67 to STR 75	0.58 miles	15.4
	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	5.1
Savoy Mountain State Forest	027-012	Florida	Entire ROW from STR 134 to STR 146	0.86 miles	15.3
	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	

Old Growth Forest

In March 2023, NEP initiated consultation with the DCR Bureau of Forestry regarding old growth forest within the Monroe State Forest. DCR indicated that the agency tries to protect data describing the locations of old growth forest and to limit depicting them in public-facing documents while balancing the need for mapping it in Project documentation. DCR requested that NEP provide data/shapefiles depicting the location of proposed work as depicted in the Environmental Resource Maps provided in the EENF. DCR indicated that maps would be prepared for staff and leadership review regarding old grown forest resources. NEP also noted that, since the filing of the EENF, proposed improvements to an existing access road within Monroe State Forest to Structures 67 and 68 had been eliminated. The access road will be utilized in its existing condition. Preliminary indications are that the Project will not impact old growth forest. DCR subsequently confirmed that a DCR team comprising various programs is working its way through the

review of the Project area. DCR forestry staff met on site in April 2023 to review the proposed Project area.

NEP will work closely with DCR to ensure the safety of trail users, and to minimize Project impacts to trail access, and has proposed memorializing this through a Construction Access Permit. NEP is also actively engaged with DCR and the General Counsel office at EEA on the Article 97 issues by DCR and making progress towards a resolution.

9.2 Proposed Access Road Improvement Locations

Below in Table 9-2 NEP outlines the proposed Project impacts located within DCR-managed state forests. Road types R and S will involve refreshing existing access roads with new gravel and no grading or widening is proposed. In areas of access road types 1-5 there is varying level of grading and access improvement due to topography and needs for construction equipment. All access roads will have a final drivable width of 12-feet.

TABLE 9-2

Proposed access road impacts within DCR-managed state forests

	On ROW	Off ROW
Adams: Savoy Mountain State Forest	SF	SF
Type R Access Road (Refresh)	1,3812	724,974
Type S Access Road (Refresh and Widen)	0	0
Type 1-5 Access Road (Permanent)	94,647	14,025
Matting (Temporary)	25,515	1,058
North Adams Savoy Mountain State Forest		
Type R Access Road (Refresh)	37,669	5,781
Type S Access Road (Refresh and Widen)	0	0
Type 1-5 Access Road (Permanent)	24,076	12,962
Matting (Temporary)	30,637	2,033
Florida: Savoy Mountain State Forest & Florida State Forest		
Type R Access Road (Refresh)	22,104	35,053
Type S Access Road (Refresh and Widen)	23,606	37,860
Type 1-5 Access Road (Permanent)	287,064	19,241
Matting (Temporary)	107,960	394
Monroe: Monroe State Forest		
Type R Access Road (Refresh)	0	0
Type S Access Road (Refresh and Widen)	0	38,213
Type 1-5 Access Road (Permanent)	195,580	77,759
Matting (Temporary)	14,714	2,081

9.3 Avoidance, Minimization, and Mitigation

The Project design reflects NEP's significant efforts first to avoid and then to minimize adverse impacts to the land surrounding the Project site within DCR parkland to the extent practicable. An analysis of off-ROW access alternatives is presented above in Section 2.4.2.

Additionally, since the EENF, NEP has evaluated the access routes proposed on- and off-ROW and determined one of the off-ROW routes was redundant. The off-ROW access road located within the Monroe State Forest to Structures 67 and 68, was reassessed and deemed not required to access the line, as access was feasible east and west of the structures from other routes. Improvement to this approximately one-mile-long access route has been removed from the scope of work and land alteration within the park reduced by 1.06 acres.

Along with a review of the proposed access routes NEP refined its assessment of tree clearing locations. Factors such as existing open access routes, width of clearing needed, assessment of proposed clearing between routes, and site visits to confirm tree density were all evaluated to reduce the overall tree clearing area from 17.6 acres as proposed in the EENF to 11.3 acres throughout the Project in Massachusetts. Approximately 7 acres of the proposed tree clearing is located within DCR property, which is a reduction of approximately 5 acres since the assessment presented in the EENF.

Section 10

Climate Change Adaptation and Resiliency

NEP is committed to improving the resiliency of its transmission line system to the impacts of climate change. The Project is aligned with priorities in the MA State Hazard Mitigation and Climate Adaptation Plan (“SHMCAP”) and the MA Climate Change Assessment (“MCCA”) to ensure that NEP continues to provide safe and reliable electricity to its customers.

The approximate lifespan of the proposed utility assets (e.g., structures) is 50 years. Therefore, analysis of climate change impacts, adaptation, and resilience, as described in the following sections, will primarily focus on mid-late century (2060-2079) climate change projections.

10.1 Climate Change Risk

NEP consulted the Resilient MA Action Team (“RMAT”) Climate Resilience Design Standards Tool for the Project. A copy of the updated output report generated by the Tool (“RMAT Report”) is provided in Appendix D and has been summarized in TABLE 10-1 below. The Tool assigns climate risks based on three variables: sea level rise and storm surge, extreme precipitation including urban flooding and riverine flooding, and extreme heat. According to the preliminary analysis, the Project is at high risk from extreme precipitation and extreme heat. It is not exposed to sea level rise/storm surge. The RMAT Output report assigned “high exposure” to Extreme Precipitation – Riverine Flooding along the extent of the Project area due to the location’s history of riverine flooding.

TABLE 10-1

RMAT Climate Resilience Design Standards Tool - Project Outputs

Climate Variable	Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge	N/A – Not exposed			
Extreme Precipitation	2070	N/A	50-yr (2%)	Tier 3
Extreme Heat	2070	90th	N/A	Tier 3

The MCCA identifies the most urgent climate impacts that will affect the Commonwealth given projected changes in temperature, precipitation, and sea level rise. In addition to the Project’s risk from extreme precipitation and extreme heat, as identified by the RMAT tool, the MCCA describes extreme weather as a natural hazard which is expected to be exacerbated by future climate change due to temperature change and the moisture holding capacity of the atmosphere. This includes hurricanes, severe winter storms, and strong windstorms.⁸ The MCCA identifies *Damage to Electric Transmission and Utility Distribution Infrastructure associated with heat stress and extreme events* as an urgent impact for the infrastructure sector. By 2070, the annual economic impact of climate change to electric grid infrastructure, primarily additional repair costs, capital costs, and

⁸ MA Executive Office of Energy and Environmental Affairs (2022). Massachusetts Climate Change Assessment. p.15. <https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-ii-statewide-report/download>

operating costs, is expected to be \$17 million for the Greater Connecticut River Valley and \$19.4 million for the Central region of Massachusetts.⁹

10.2 Greenhouse Gas Emissions

Pursuant to the Global Warming Solutions Act (2008), as amended in 2021 by An Act Creating A Next-Generation Roadmap for Massachusetts Climate Policy ("Roadmap"), the Secretary of the EEA has adopted the interim 2025 statewide GHG emissions and the interim 2030 GHG emissions; the emissions limits increased to at least 50% below the 1990 baseline by 2030, at least 75% below the 1990 baseline by 2040, and at least 85% below the 1990 baseline by 2050. The Plan expresses the Commonwealth's vision for a future in which there is minimal reliance on fossil fuels, as well as the Commonwealth's confidence that Massachusetts can help lead the clean energy transition which will mean more well-paying jobs, improved public health, reduced consumer costs, and better quality of life for residents. This Project furthers objectives of the Roadmap as it addresses existing system capacity shortages and increased demand.

NEP has conducted analysis of the Project's potential for GHG emissions as part of the MEPA GHG Protocol. The Project does not have any emissions sources that require analysis under the GHG emission Quantification Protocol. However, the protocol provides the Secretary with discretion, on a case-by-case basis, to require GHG analysis of certain types of other project impacts, including projects that will result in alteration of land greater than 50 acres. 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 in the Greenhouse Gas Emissions Policy and Protocol for "unusually large amounts of land alteration or clearing and forest conversion". However, based on the MEPA DEIR scope, NEP has engaged the services of SWCA to analyze GHG emissions associated with proposed land alteration.

As previously stated, the Project will require:

- The cutting of approximately 11.3 acres of trees located primarily in the existing easement to accommodate construction activities; and

The conversion of approximately 51.64 acres of exposed soil/low growing grass/shrub to a mix of exposed soil, low growing grasses and gravel. SWCA's assessment provides an estimate of the change in GHG emissions brought about by the Project. The estimate considers multiple biophysical and behavioral processes that will have a material effect on the actual Project-related change in GHG emissions. It is acknowledged that the scientific community has studied some processes extensively and so their effects are characterized with a relatively high degree of precision; other processes have been subject to less study and so are characterized with less precision.

Project-related changes in GHG emissions are estimated as a function of three processes.

⁹ MA Executive Office of Energy and Environmental Affairs (2022). Massachusetts Climate Change Assessment. p.65. <https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-ii-statewide-report/download>

1. Some carbon currently sequestered in live biomass, forest soil, dead wood and litter may be released due to vegetation clearing and/or soil disturbance along access roads.
2. The conversion of forest and/or exposed soil/low growing/shrub habitat into exposed soil/low growing grasses/gravel may reduce the rate of future GHG sequestration within the affected footprints.
3. Some GHG will not be emitted because reliability and resiliency of the electricity transmission grid is increased when the Project is implemented.

From a GHG accounting perspective, the Project is likely to bring about the following changes.

1. 3,375 U.S. tons of carbon dioxide equivalents (CO₂e) currently sequestered in live biomass, forest soil, dead wood and litter may be released due to vegetation clearing and/or soil disturbance along access roads.
2. The conversion of vegetated habitat primarily for the purpose of improving access will reduce the rate of future GHG sequestration within the affected footprints, resulting in the Project-related increase of approximately 50 U.S. tons of CO₂e.
3. More than 150 U.S. tons of GHG will likely not be emitted because of Project-related increases in reliability, and Project-related increases in grid resiliency represent an unquantified GHG benefit of the Project.

Thus, the Project is expected to result in no more than a 3,275 U.S. ton increase in CO₂e emissions over its 30-year lifespan.

A summary of the amount of currently sequestered carbon released from the Project footprint as a result of the Project is provided in the Carbon Accounting report in Appendix F. The Project-related release of carbon from the affected footprint is calculated as the product of three inputs: a) leakage adjusted acres; b) carbon at risk of release denominated as U.S. tons per acre; and c) the proportion of at-risk carbon released to the air over 30 years due to the Project.

Leakage Adjusted Acres

NEP is working with landowners, its contractors, local organizations and the State to ensure that.

marketable timber and biomass suitable for use as firewood is utilized. These actions reduce the level of GHG emissions that will actually occur when the forest is disturbed. To determine the actual change in carbon emissions brought about by Project-related forest disturbance, it is necessary to consider if and how people will use the trees felled as a result of the Project. This analysis identifies four potential fates for these trees.

1. Thirty one percent¹⁰ of Project-related forest disturbance is assigned the fate "wood retained by landowners."

¹⁰ NEP has offered landowners the opportunity to retain felled wood for their private use. This analysis conservatively assumes that wood retained by landowners will be used as firewood. The fraction of wood assigned to this fate is based on the preliminary results of NEP's ongoing coordination with landowners affected by the A1/B2 Project during which 8 of 26 landowners who have thus far responded (31 percent) have asked that felled wood be left for their personal use.

2. Wood not retained by landowners may be taken to sawmills (or other commercial wood users) at the discretion of NEP's management contractors. As previously noted, so long as felled wood is used for some useful enterprise, market behavior (i.e., leakage) will offset some of the GHG emissions that would otherwise be associated with the forest disturbance. However, because NEP does not require its contractors to remove marketable wood to sawmills or other commercial wood users, this assessment conservatively assigns this fate to none of the wood felled as a result of the Project.
3. Twenty five percent¹¹ of the Project-related forest disturbance is assigned the fate "donated for use as firewood."
4. Because of NEP's efforts to assure that, to the maximum extent practical, Project-related wood is used in some productive enterprise, only 46 percent of the Project-related forest disturbance is assigned the fate "left in place."

Because 56 percent of the 11.31 forested acres cleared as a result of the Project (6.33 acres) will be used into some productive enterprise, as discussed in Section 2.1.1, a 50 percent forest leakage adjustment implies that, because of NEPs actions, 3.165 acres of forest at some other location that otherwise would have been cleared, will remain forest. As such, the leakage adjusted forested acreage is 8.14.

Grid Reliability and Resiliency

Additionally, Project-related increases in grid reliability and grid resiliency will act to further reduce the level of GHG emissions relative to the maximum potential release. The Project also provides important benefits relative to the Commonwealth's climate change goals. Massachusetts has put in place aggressive energy and transportation decarbonization goals to address the threat of climate change. NEP supports these goals. However, meeting these goals will require substantial electrification of the heating and transportation sectors causing electricity consumption in New England to more than double by 2050. Meeting this additional demand requires not only building-out new electric transmission and distribution infrastructure to support renewable generation within the Commonwealth but also upgrading aging infrastructure like the Project. Without upgrading these systems to ensure long-term reliability, we will not be able to meet the demands of a decarbonized future. The Project is designed to increase E131 reliability by significantly reducing the potential for future power outages and momentary power fluctuations and so acting to reduce GHG emissions associated with the use of backup generators, food waste disposal and damage to machinery and process interruptions ("fixed costs") in industrial and manufacturing operations. The Project would also likely enable a reduced reliance on the use of low carbon intensity electricity such as oil and gas-fired units, and combusted petroleum (including extracting, refining and transporting). It is likely that Project-related reliability increases will prevent the release of at least 150 tons of CO₂e over the Project's 30-year lifespan. If the Project enabled the use of low-carbon-intensity electricity just a few times per year, the Project would be neutral from a GHG accounting perspective.

¹¹ While discussions with firewood donation centers are ongoing, it is likely that the amount of wood donated will be limited by the capacity of these organizations to accept donations. As such, this analysis conservatively assumes only 25 percent of Project-related wood will be donated for use as firewood.

Please refer to SWCA's Carbon Accounting report provided in Appendix F for additional information.

10.3 Climate Resiliency

This Project is part of NEP's efforts to ensure the long-term longevity and reliability of the region's electrical infrastructure in the face of growing demand for electricity and the changing climate. The Project will result in a more climate-ready and resilient transmission system that can withstand more extreme weather events; address existing system capacity shortages and increased demand.

10.3.1 Precipitation Resiliency

Consistent with the guidance from the RMA Tool, the Project will improve resilience to riverine flooding from a 2070 50-year (2%) storm event through design and material selection of foundations and structures that can withstand the effects of flooding. First, the replacement of wooden and steel structures with engineered steel structures will harden the infrastructure, making it more resilient to water damage and decay. The installation of structures reinforced with caisson foundations will also increase infrastructure resiliency, particularly in wetland resource areas increasingly susceptible to inundation. This foundation type, designed for wet environments, coupled with engineered structures, eliminates the need to elevate foundations above any particular base flood elevation as they can withstand inundation.

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.

Proposed tree removal is also intended to improve resiliency to future storm events. Trees pose an additional risk to the resiliency of the existing lines and taps. Trees that are not specifically evolved to withstand prolonged periods of flooding are more prone to weakened stability and decay due to extended root and trunk submersion. Weakened and decayed trees pose a significant risk to utility assets because fallen trees and branches cause power outages, fires, and restrict access. Removing trees located within and along the ROW improves storm resilience by reducing outage risk and improves storm restoration response times. The proposed improvements to the ROW access routes and work pads will create a safer, more reliable network of travel surfaces that can better withstand flooding.

As noted in Section 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.

Impacts to BLSF are minimal (3,230 sf) and associated with temporary matting only. Existing STRs 181, 180, 179, and 144, are situated within flood prone Bordering Vegetated Wetlands. 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. STR 180 will also 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 these design measures, the proposed work will not adversely impact the flood storage capacity or attenuation of these areas. Other climate adaptation and resiliency strategies include storm resiliency and mitigation, and site stabilization and re-establishment of natural vegetation.

The proposed Project is not anticipated to impact flood hazards in the area. The scope of the Project includes the construction of gravel access and work areas which are considered pervious. Stormwater BMPs included in the design serve to control stormwater runoff to protect against erosion and washouts of the constructed access areas; however, the Project is not anticipated to significantly change the hydrology of the watersheds along the ROW. New impervious area is limited to the foundations of certain structures and is considered negligible compared to the overall area of the Project.

The installation of stormwater management features (e.g., stone check dams, water bars, or other similar measures) will be installed as necessary. Civil engineering evaluation and design of the access has been provided for the Project specifically to evaluate drainage patterns following construction of the proposed gravel access in order to reduce potential for erosion and washouts during future storm events, including the 2070 50-year (2%) storm event. Lastly, the refurbishment of the E131 line will reduce the frequency at which future maintenance work and transmission line upgrades are needed. By reducing the likelihood of repeated impacts to environmentally sensitive areas there will be less disturbance to vegetation and soil thereby decreasing the potential of erosion, soil will be able to retain more water, and impacts to banks and wetlands will be reduced due to the use of temporary matting.

10.3.2 Temperature Resiliency

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. Repair and maintenance work may take extended lengths of time, as repair personnel may experience difficulty working 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 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.

10.3.3 Extreme Weather Resiliency

The Project's engineering design used structure loading criteria required by the NESC and National Grid Design Loads for Overhead Transmission Structures. The NESC load criteria require consideration of combined ice and wind district loading, extreme wind conditions, and extreme ice with concurrent wind conditions. NEP's standards also include consideration and contingency for heavy load imbalances and heavy ice conditions. By installing improved foundations, more robust structures with improved lightning protection, and OPGW, the proposed infrastructure will be better suited to withstand strong winds and storm events. The installation of OPGW will allow better communication between substations, resulting in improved response time during storm-related emergencies and outages, which will improve public safety.

Tree removal improves storm resilience by reducing outage risk and improving storm restoration response time. Access improvements drastically improve storm restoration response times. It can take days to locate a single tree-caused outage, clear the tree off wires, and restore the line when there is not safe equipment access during an emergency – this is currently the case for most of the Project's existing lines. Adding gravel and widening access surfaces will provide greater support for maneuverability of utility equipment.

10.4 Municipal Vulnerability Preparedness Program

The Municipal Vulnerability Preparedness Grant Program ("MVP") provides support for Massachusetts municipalities to plan for climate change and implement priority projects to enhance local resiliency. Grant funding allows communities to conduct vulnerability assessments and implement priority resilience building actions. Vulnerability assessments include an analysis of climate related hazards, vulnerabilities and strengths, and opportunities to enhance resiliency via action. Communities become certified as an MVP community after completing the MVP program and are eligible for MVP Action grant funding. Communities work closely with MVP certified providers that are trained to provide technical assistance for the development of vulnerability assessments.

NEP has been involved in the MVP program across the state, including in municipalities where the existing lines are located. By working with communities, NEP has developed key strategies for improving the resiliency of its electrical system to the impacts of climate change. Two municipalities along the ROW have achieved MVP designation. Both identified power outages as a vulnerability in their communities during Community Resilience Building workshops and associated Summary of Findings reports and sought to identify ways to improve power utility resilience. Vulnerability due to high winds, snow and ice loads were common concerns resulting in frequent and/or long duration power outages. While this Project does not address local distribution, transmission line and structure replacements are intended to result in a more reliable and resilient transmission system supporting these communities.

Section 11

Stormwater Management

This section discusses how NEP will manage stormwater during construction and measures to manage stormwater along constructed access that will remain following construction. A discussion of the Stormwater Management Standards is provided in Section 14. Stormwater management BMPs are addressed in Section 12.

11.1 Introduction

Stormwater permitting and approvals will be required for access and work areas (including grading, structure replacement, work pads and pull pads) that will be created along the ROW to support construction. NEP will submit a Notice of Intent ("NOI") to the EPA under the NPDES Stormwater Construction General Permit ("CGP") for Stormwater Discharge from Construction Activities. As required under this program, a construction SWPPP will be developed to ensure that BMPs are implemented during construction to minimize potential for erosion or release of eroded sediments from the ROW.

The SWPPP establishes a construction period contact list, presents a description of the proposed work, and identifies stormwater controls, erosion 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, and for handling extraordinary situations. The SWPPP also defines monitoring to occur until disturbed areas on the site have been stabilized using standard BMPs. Please refer to National Grid's Environmental Guidance ("EG") Document EG-303NE in Appendix G for additional information on procedures and policies implemented during construction to identify and control environmental impacts of activities.

11.2 Stormwater Management during Construction

During construction, stormwater management BMPs will be utilized to prevent erosion of construction areas and adjacent undisturbed land and to prevent sedimentation of wetland resource areas and watercourses. Stormwater management will be accomplished through stabilization and structural control BMPs, as well as good housekeeping practices.

One potential source of stormwater pollution during the construction phase of the Project includes erosion and sedimentation resulting from land disturbing activities. Land disturbing activities associated with the Project include structure replacements, grading of work pads and access improvements. General work activities, such as travel to and from job sites, also have the potential to result in erosion, fugitive dust, and sediment tracking.

Temporary and permanent erosion and sediment controls will be employed to minimize erosion and transport of sediment into wetland and stream resource areas during construction. Proposed sediment control barriers for the Project may include any combination of the following: silt fence, straw wattles, compost wattles, and straw bales. Excess excavated soil will be spread over upland areas outside of applicable wetland buffer zones or other wetland resource areas or removed from the site in accordance with NEP's policies and procedures. Additional controls, such as watertight spin off boxes or geotextile filter fabric, may be used for saturated stockpile management in work areas in wetlands

(e.g., construction mat platforms) where sediment-laden runoff would pose a risk to the surrounding wetland. Temporary filter inserts (e.g., silt sacks) may be installed in catch basins or similar drainage structures as needed. Erosion and sediment control measures will be installed prior to construction and will be maintained through the construction period until final stabilization is achieved. Construction of long-term access that will remain following completion of the Project will be stabilized as it is constructed. Please refer to Section 12.2.2 and EG-303NE in Appendix G for additional information regarding sediment and erosion control BMPs during construction.

Dust controls will be evaluated and implemented as needed throughout the duration of the Project on disturbed soils that are subject to surface dust movement and dust blowing. Water or application of calcium chloride or other NEP approved equivalent in accordance with the manufacturer's guidelines may be used for dust control. During application of water for dust control, care shall be taken to ensure that water does not create runoff or cause erosion.

Structural measures will also be implemented to divert flows away from exposed soils and stockpiled soils or otherwise limit runoff and minimize the discharge of pollutants from the site. Structural measures shall be installed on upland soils. Structural measures include, but are not limited to, temporary diversion swales, water bars, fill berms and sediment traps. Stone tracking pads will also be installed at construction entrances to prevent soil tracking onto public roadways.

Inspection of work areas will occur on a pre-determined schedule until the Project is stabilized, as well as after triggering rainfall or snow melt amounts. 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, 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 and stream resource areas and preventing sedimentation and stormwater runoff. Regular progress meetings will be held to reinforce the contractor's awareness of these issues.

11.3 Post Construction Stormwater Management

Stormwater management practices in the form of permanent drainage swales, plunge pools, splash pads, vegetated filter strips, or other management BMPs may be installed on a case-by-case basis as warranted to ensure stormwater is controlled and risk of erosion mitigated. SWPPP inspections will cease following permanent site stabilization as defined by the applicable federal, state, and local permit requirements and regulations.

Final stabilization is achieved after construction activities are complete. Typically, the following general requirements must be met:

- Adequate vegetative and non-vegetative stabilization is observed at work areas.
- Construction materials, waste and temporary stormwater controls have been removed and properly disposed of.
- Potential pollutants and pollutant-generating activities associated with construction have been removed from the Project area.

NEP will monitor the condition of the roadways annually to ensure they remain viable and compliant with permit conditions.

11.4 Low Impact Development and Integrated Management Practices

Consistent with the SWPPP, areas where soil disturbing activities have occurred will be stabilized with seed and straw mulch to facilitate rapid revegetation. The nature of the Project is relatively low impact compared to typical development considering the use of pervious gravel to construct access along the ROW and the minimal additional impervious area. Where appropriate, NEP has proposed swales, check dams, and plunge pools to control stormwater runoff, promote infiltration, prevent erosion, and minimize changes to the existing hydrology of the ROW. Through promoting infiltration and spreading stormwater flows into vegetated areas of the ROW, the proposed BMPs are consistent with the intent of Low Impact Development (LID) and integrated management practices.

Section 12 Construction

12.1 Introduction

NEP has established procedures that employees accessing and performing construction and maintenance activities on distribution and transmission ROWs must follow. These are collectively referred to as BMPs and are discussed in EG documents such as EG-303 (Appendix G). Consistent implementation ensures that projects are completed in accordance with applicable environmental laws and regulations as well as company policies and compliance objectives. While many procedures were presented in previous chapters relative to specific parameters (e.g., stormwater, wetlands, and rare species), this chapter is intended to provide a comprehensive overview. Project-specific information is integrated into the discussion, where appropriate, but to avoid duplication the reader is encouraged to reference previous chapters of this DEIR for additional detail.

12.2 Construction Phases

Conventional overhead electric transmission line construction techniques will be used to reconstruct the line. Based on similar projects, the proposed construction sequence will generally be completed as follows:

1. Removal of vegetation and ROW mowing in advance of construction.
2. Installation of soil erosion and sediment controls.
3. Construction of access routes and access route improvements.
4. Construction of work pads and staging areas.
5. Installation of foundations and structures.
6. Installation of OPGW and conductor wire.
7. Removal and disposal of existing transmission line components.
8. Restoration and stabilization of the ROW.

During each phase of construction within the ROW there is a potential for impacts to the sensitive environmental resources discussed in previous chapters of this DEIR. The DEIR Plans in Appendix B show the location of access routes and work areas that will require mowing or other improvements prior to the start of work.

12.2.1 Tree Removal and Vegetation Management in Advance of Construction

Within the Project ROW, mowing or other vegetation management will be required prior to the start of construction to provide access to the proposed structure locations, to facilitate safe vehicular and equipment passage, and to provide safe work sites for personnel. Mowing will be completed by mechanical means. Small trees and shrubs will be mowed as necessary with the intent of preserving root systems to the extent practical. Where the Project route crosses streams and brooks, any necessary vegetation mowing along the stream bank will be minimized to the extent practicable to reduce disturbance of soils and the potential for construction-related erosion.

The wood from trees removed within the ROW will be offered to individual landowners, donated to a community wood bank, chipped, and removed from the site or applied to upland areas. In certain environmentally sensitive areas, such as wetland resource areas and buffer zones, it may be necessary and desirable to leave felled trees and/or snags to decompose in place.

Temporary laydown areas will be established along the ROW to serve as locations to load timber, temporarily stage a wood-chipper, and park tree removal vehicles and equipment. Generally, trees to be removed will be cut close to the ground, leaving the stumps and roots in place, which will reduce soil disturbance and erosion. In locations where grading is required for accessibility and structure installation, stumps will be removed.

12.2.2 Installation of Soil Erosion and Sediment Controls

Following vegetation removal activities, erosion, and sediment control BMPs such as straw bales, straw wattles, siltation fencing, compost socks, and/or chip bales will be installed in accordance with National Grid's BMPs and approved plans and permit requirements. Installation of erosion and sediment controls may occur concurrently with installation of work pads, pulling pads, and/or access route construction. The installation of these erosion and sediment control BMPs will be supervised by NEP contractors and reviewed by NEP Construction Supervisors and/or designated environmental monitors. Erosion and sediment controls will be installed between the work site and environmentally sensitive areas such as wetlands, streams, drainage courses, roads, and adjacent properties when work activities will disturb soil and result in the potential for soil erosion and sedimentation. Erosion and sediment control BMPs will function to mitigate construction-related soil erosion and sedimentation and will also serve as a physical boundary to delineate resource areas and to contain construction activities within approved areas. NEP contractors, supervisors, and environmental monitors will regularly monitor installed controls.

In addition to those locations described above, erosion and sediment control BMPs will be installed along the perimeter of identified wetland resource areas prior to the onset of soil disturbance activities to ensure that stockpiles and other disturbed soil areas are confined and do not result in downslope sedimentation of wetland resources. Where structures requiring concrete foundations are located near wetlands, sedimentation controls will be installed to prevent transport of materials to these downgradient resource areas.

12.2.3 Construction and Improvement of Access

In preparation for construction, NEP will establish the physical access required to construct, inspect, and maintain the rebuilt E131 line through improvement of existing or historic accessways, temporary placement of construction mats, and construction of new access where necessary. Existing and proposed access routes are shown on the DEIR Plans in Appendix B.

In order to minimize construction impacts, NEP plans to move construction equipment on the existing ROWs to the maximum extent practicable, and to make use of existing access wherever feasible. However, in many cases, historic access ways will require significant improvements to meet the access requirements for the Project, ranging from a light resurfacing with clean gravel to full re-establishment, including mowing, grading, and addition of stone. Stabilized construction entrances will also need to be installed or refreshed where the ROWs cross public roadways.

In addition, new on- and off-ROW access will be needed for construction, inspection and maintenance of the line. New access routes have been designed to avoid or minimize disturbance to wetland resources to the extent feasible, to follow the existing contours of the land as closely as possible, and where practicable, to avoid severe slopes. Access way travel widths are generally 12 feet, but the constructed footprint may be wider in some locations to accommodate grading and stormwater BMPs, such as swales, stone check dams, water bars, or other similar measures.

Where access to structures cannot be obtained on the ROW due to challenging terrain or avoidance of environmentally sensitive areas, select off-ROW access alignments are proposed. The majority of these off-ROW access routes have been historically utilized for access to the E131 line, but improvements will be required for construction. NEP also plans to construct two new access ways to avoid future operation-related impacts to an extensive wetland system and state highway traffic. While off-ROW access will be designed in coordination with the property owners, most will be constructed of gravel, construction mats, or a combination thereof depending on site-specific conditions.

Where upland access is not available, access across wetlands and streams will be accomplished by the temporary placement of construction mats. The use of construction mats allows for heavy equipment access within wetland areas, minimizes the need to remove vegetation beneath the access way, and helps to reduce the degree of soil disturbance, soil compaction, and rutting in soft wetland soils. Construction mats most often used by NEP are wooden timbers bolted together typically into 4-foot by 16-foot sections. Typically, construction mats are installed on top of the existing vegetation; however, in some instances cutting or mowing woody vegetation may be required. Construction mats will be removed following completion of construction, and areas will be restored to reestablish pre-existing topography and hydrology, as necessary.

Access construction and improvements will be carried out in compliance with the conditions and approvals of the appropriate federal, state, and local regulatory agencies. Dust suppression measures, such as the use of water trucks to spray access surfaces, will be implemented as required to minimize fugitive dust from construction vehicle travel along the ROW. Crushed stone aprons/tracking pads will be used at access entrances to public roadways as needed to minimize the migration of soils off-site from construction equipment. Additionally, stormwater BMPs will be installed as necessary as part of the access construction and improvement phase of the Project. These BMPs will reduce adverse impacts from stormwater flows, maintain the longevity of the access routes, and reduce overall maintenance needs.

12.2.4 Construction of Work Pads and Staging Areas

Work pads will be constructed to provide a safe and level work area for construction equipment to undertake foundation work and structure assembly, and to provide adequate space for the live line construction associated with the Project. Mowing of low growing woody vegetation and brush and grading may be necessary to create a work pad of approximately 100-feet by 100-feet at each proposed structure location. The work pads may be slightly smaller or larger depending on terrain, equipment, and overall site conditions at each structure location. Upland work pads will be constructed by grading and/or adding gravel or crushed stone to provide a stabilized work surface. Within agricultural areas and wetlands, work pads will consist of temporary construction matting placed on top of existing vegetation where feasible. Once construction is complete, some work pad locations (e.g., those located in environmentally sensitive areas, such as

Riverfront Area, floodplain, and potentially rare species habitat) will be stabilized with topsoil and seeded to allow vegetation to re-establish.

Construction of wire stringing and pulling sites will be required at angle points and at dead-end structures to provide a level workspace for equipment and personnel. Upland stringing and pulling sites may require mowing and grading to create a level work surface. Sites in agricultural and sensitive resource areas, such as wetlands and rare species habitat, will consist of construction matting placed on top of vegetation, where feasible. These temporary wire stringing and pulling sites will be stabilized and allowed to revegetate.

Temporary storage areas, staging areas, and laydown areas will also be needed to support construction. NEP and/or their designated contractor(s) will be responsible for selecting these areas and making arrangements with property owners for use of the land during construction. Selected staging areas and contractor laydown areas will typically be previously developed properties, where environmental resources can be avoided.

12.2.5 Installation of Foundations and Structures

Rebuilding the E131 line requires replacing steel and wood pole structures, including H-frame and lattice tower structures, with engineered steel H-frame structures. H-frame and three pole structures will be directly embedded into the ground or set upon reinforced concrete caisson foundations. Alternative foundation types such as micro pile foundations may be utilized, if warranted by site conditions or other factors.

Structures supported by concrete caisson foundations will result in approximately 56 square feet of fill (approximately 72 inches in diameter). Structures installed through direct embedment will result in approximately 14 square feet of fill (approximately 36 inches in diameter). Excavation will be performed using augers or rock drills, and depending on field conditions, backhoes, and excavators.

For direct embedment structures, a corrugated metal pipe will be placed vertically into the hole and backfilled. The annular space between the pole and the steel casing will then be backfilled with crushed stone. Caissons will be constructed by drilling a vertical shaft, installing a steel reinforced bar cage, placing anchor bolts clusters, pouring concrete, and backfilling as needed. The poles will be field assembled and lifted by cranes, then placed on the anchor bolts and into the embedded corrugated metal pipe.

Excavated material will be temporarily stockpiled next to the excavation; however, this material will not be placed directly into wetland resource areas. If a stockpile is in close proximity to wetlands, the excavated material will be enclosed by staked straw bales or other sediment controls. Additional controls, such as watertight spin off boxes or geotextile filter fabric, may be used for saturated stockpile management in work areas in wetlands (e.g., construction mat platforms) where sediment-laden runoff would pose an issue for the surrounding wetland. Excess excavated soil will be spread over upland areas outside of any applicable wetland buffer zones or other wetland resource areas or removed from the site in accordance with NEP's policies and procedures. Dewatering may be required during the foundation installation. Groundwater pumped from an excavation would be discharged to an upland area if there is adequate vegetation to function as a filter medium. Where conditions are not adequate for infiltration, water would be pumped into a sediment filter bag within a straw bale/silt fence corral (basin) located within an upland area. The basin and accumulated sediment would be removed following dewatering operations, and

the area would be restored, as needed. Rock that is encountered during foundation excavation will generally be removed by means of drilling with rock coring augers rather than a standard soil auger. This method allows the same drill rig to be used and maintains a constant diameter hole. However, in some cases, rock hammering and excavation may be used to break up the rock. No blasting is currently anticipated for the Project.

While helicopters can be used in some instances (lighter-lift work related to pulling rope, flying x-braces and insulators, etc.), this will not be feasible for this Project. Access to the proposed structure locations is still required by drill rigs in order to bore holes for dead-end and tangent structures, due to the amount of bedrock/ledge present on-site.

12.2.6 Installation of OPGW

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

Helicopter work is not anticipated at this time but may be considered depending on the work methods proposed by the construction vendors. In the event helicopters are used, NEP would develop Project-specific health and safety plans and hazard analyses in coordination with its contractor(s). NEP would notify municipal officials, fire, and police departments, and affected landowners, particularly those with livestock, in advance of any helicopter work.

12.2.7 Removal and Disposal of Existing Transmission Line Components

After the E131 line structures and equipment have been placed into service, the existing structures will be removed. The majority of the existing structures are comprised of wooden H-frame structures and a few steel lattice towers. Wood pole structures will be removed in their entirety unless the complete removal of the pole will create an adverse impact to environmentally sensitive areas. The resulting holes will be backfilled and thoroughly tamped to minimize settling, then capped with native topsoil and allowed to revegetate. NEP will transport used wood poles to the nearest ROW street crossing that is accessible by truck for subsequent pick up. Treated wood poles will be transported for disposal at a licensed landfill or incinerator. Cross-arms, braces, and other hardware shall be removed from site and disposed of properly. To facilitate removal of steel structures, a hydraulic shear will be used to cut and remove the steel lattice towers supporting the existing lines, and the steel will be salvaged. Conductors and insulators will also be salvaged and any equipment and debris that cannot be recycled will be transported to an appropriate off-site disposal facility. Handling of such materials will be performed in compliance with applicable laws and regulations and in accordance with NEP policy.

12.2.8 Restoration and Stabilization of ROW

Restoration efforts, including removal of construction debris, final grading, and stabilization of disturbed soil, will be completed following construction. Disturbed areas around structure work pads and other graded locations will either be stabilized with a gravel surface or vegetated. Erosion control blankets, or similar, may be used to stabilize the soils in accordance with applicable regulations.

Temporary sediment control BMPs will be removed following the stabilization of disturbed areas. Existing stone walls and fences will be restored in accordance with property owner agreements and applicable local ordinances. Where authorized by property owners, permanent gates and access route blocks will be installed at key locations to restrict access onto the ROW by unauthorized persons or vehicles. Regulated environmental resource areas temporarily or permanently disturbed by construction will be restored or replicated in accordance with applicable permit conditions.

12.3 Construction Traffic and Equipment

12.3.1 Traffic

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

NEP's contractors will coordinate closely with state transportation authorities to develop acceptable traffic management plans for work within the Route 2 state highway layout. NEP will coordinate with local authorities for work on local streets and roads. At locations where construction equipment must be staged in a public way, the contractors will follow a pre-approved work zone traffic control plan. Further traffic information is provided in Section 7. NEP will notify affected landowners in advance of any use of off-ROW access and will work on a case-by-case basis with any abutting landowners that express concern.

12.3.2 Equipment

Table 12-1 lists the equipment that is likely to be required to install the new overhead transmission line and to remove the existing structures. 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 have EPA-verified (or equivalent) emission control BMPs, 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. In addition, vehicle idling will be minimized in accordance with MA' Anti-idling law, M.G.L. c. 90, § 16A, c. 111, §§ 142A – 142M, and 310 CMR 7.11. 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.

TABLE 12-1
Typical Construction Equipment

Construction Phase	Typical Equipment/Materials Required
Site Preparation	Pick-up and other small trucks Flatbed trucks, brush hogs, bulldozers, bucket trucks for tree canopy trimming, wood chippers Erosion and sediment control BMPs 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 Pick-up trucks for supplies
Tree Removal	Mechanized mower Chainsaws Tree handler Feller buncher
Access Routes	Bulldozer or front-end loader Excavators Dump trucks for hauling crushed stone or gravel Vibratory rollers Pick-up 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 back hoes or excavators
Installation of Replacement and New Structures	Bulldozer or front-end loader All-terrain vehicles (ATVs) Tracked carrier (marooka) 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 Pick-ups and other small trucks
Restoration	Pick-ups and other small trucks Excavators and backhoes Skid steer/bulldozer Dump Trucks

12.4 Dewatering

Dewatering may be necessary during excavations for pole structures within or adjacent to wetland areas. Water trucks or fractionation tanks may be used 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 will never be directed into wetlands streams, other sensitive resource areas, catch basins or stormwater BMPs. Dewatering flow will be controlled so that it does not cause scouring or erosion using a dewatering basin, filter sock, or equivalent. If there is adequate vegetation in upland areas to function as a filter medium, the water will be discharged to the vegetated land surface. Where vegetation is absent or where slope prohibits, water will be pumped into a dewatering basin consisting of a filter bag with straw bale or silt fence perimeter controls in NEP- approved areas outside wetland resource areas. During initial installation of the pump intake hose, any slack in the hose will be removed to reduce the chance of the hose setting on the bottom of the excavation. The hose will be frequently monitored and adjusted so that it does not set on the bottom of the excavation throughout dewatering. Dewatering basins will be constructed on level ground and monitored throughout the dewatering process to prevent water from flowing, unfiltered, over the top of the basin walls. The basin and accumulated sediment will be removed following dewatering operations, and the area will be seeded and mulched. Please refer to EG-303 in Appendix G for a more complete description of dewatering procedures and BMPs.

NEP has conducted an initial assessment to determine dewatering locations prior to construction. Dewatering locations are determined based on-site specific conditions and proximity to wetland resource areas. Unless restricted by site conditions, dewatering basins will be placed on level ground in vegetated upland areas. The initial assessment of dewatering locations will be refined after coordination with Conservation Commissions during the local permitting process.

12.5 Concrete Washout

Concrete washouts will be used to manage concrete waste associated with the installation of caisson foundations. Concrete and concrete washout water will not be discharged directly on the ground, in wetlands or waterbodies, or in catch basins or other drainage structures. Where possible, concrete washouts will be located away from wetlands or other sensitive areas. Concrete washout areas will be regularly inspected by an environmental monitor. Please refer to EG-303 in Appendix G for a more complete description and detail of concrete washout procedures.

12.6 Construction and Demolition Air/Noise Pollution

12.6.1 Air Quality

Demolition and construction work will be performed in accordance with applicable sections of the MassDEP Air Pollution Control Regulations at 310 CMR 7.02 and 310 CMR 7.09. Specific air quality mitigation measures include:

- Use of appropriately designed construction entrances and wheel wash facilities as necessary to prevent off-site migration of soils.

- Mechanical street sweeping of construction areas and surrounding streets and sidewalks.
- Removal of demolition and construction waste in covered or enclosed trailers.
- Wetting of exposed soils and stockpiles to prevent dust generation.
- Minimizing stockpiling of materials on-site.
- Turning off construction equipment when not in use and minimizing idling times.
- Minimizing the storage of demolition and construction wastes on site.
- Minimizing the duration that soils are left exposed.

Many of these measures are intended to minimize potential impacts associated with construction activities that may generate fugitive dust, which will result in localized increases in airborne particulate levels. Fugitive dust emissions from construction activities will depend on such factors as the properties of the emitting surfaces (e.g., moisture content and volume of spoils), meteorological variables, and construction practices employed.

Although fugitive dust may be generated during demolition and construction activities, the distance to off-site receptors makes it unlikely that the migration of dust will result in off-site impacts. Nonetheless, the contractor will implement dust control measures during active demolition and construction that will primarily consist of using wetting agents regularly to control and suppress dust that may come from the structure being demolished or the construction materials. The contractor will comply with the National Emission Standards for Hazardous Pollutants ("NESHAP") throughout the duration of the Project.

Site preparations involving construction haul roads, soil stockpiles, and vehicles exiting the Project site have the greatest potential to create fugitive dust. As necessary, haul roads will be routinely misted to suppress dust generation. Soil stockpiles can either be covered or vegetated, depending on how long the stockpile will remain. Dust from construction traffic exiting the Project site onto public roads will be controlled with the use of vehicle tracking pads, which remove soil from the tires of construction vehicles. Paved construction entrances will also be routinely swept by street sweepers to remove accumulated soils. At no time will visible soils be permitted on public streets that could result in fugitive dust issues.

NEP will prepare a SWPPP to comply with the EPA's CGP for stormwater discharges. The SWPPP will implement EPA and MassDEP BMPs for controlling and reducing sediments and dust in stormwater discharges.

In addition, NEP will investigate compliance with MassDEP's Diesel Retrofit Program and the use of ultra-low sulfur diesel in off-road engines. The Diesel Retrofit Program, formerly called the Clear Air Construction Initiative of the Clean Construction Equipment Initiative, originated as an air quality mitigation measure for the Central Artery/Tunnel Project. The program encourages users of diesel construction equipment to install exhaust emission controls such as oxidation catalysts or particulate filters on their diesel engines. While MassDEP requires participation in the Diesel Retrofit Program by municipalities applying for funding under the State Revolving Fund for water and wastewater projects, there is no requirement for participation by other project Proponents. Non-road engines shall be

operated using only ultra-low sulfur diesel ("ULSD") with a sulfur content of no greater than 15 ppm pursuant to 40 CFR 80.510.

Proper emission controls, use of clean fuels, control of truck and equipment idling times, and conducting operations without affect to neighbors' clean air are NEP priorities. NEP requires the use of ultra-low sulfur diesel fuels 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 BMPs (e.g., oxidation catalysts or other comparable technologies).

12.6.2 Noise and Vibration

While intermittent increases in noise levels are expected during construction activities, NEP is committed to minimizing these impacts. Construction-related noise levels will comply with applicable sections of MassDEP's Air Quality Regulations at 310 CMR 7.10, and every reasonable effort will be made to minimize noise impacts from construction activities. Noise mitigation measures include:

- Minimizing the amount of work conducted outside of typical construction hours.
- Ensuring that appropriate mufflers are installed and maintained on construction equipment.
- Ensuring appropriate maintenance and lubrication of construction equipment to provide the quietest performance.
- Turning off construction equipment when not in use and minimizing idling times in compliance with state law (G.L. c. 90, § 161A) and MassDEP regulations (310 CMR 7.11(1)(b)).
- Mitigating the impact of noisy equipment on sensitive locations by using shielding or buffering distance to the extent practical.
- Notifying landowners in advance of construction and providing a point of contact for noise-related questions and concerns.

Although excavation activities may create noticeable vibrations in the immediate vicinity, it is unlikely that these activities will have off-site impacts. Blasting is not expected to be required, but if needed will comply with local, state, and federal regulations, including MassDEP's September 15, 2008, memorandum on "Potential Environmental Contamination from the Use of Perchlorate-Containing Explosive Products" and will be conducted by appropriately licensed blasting companies. Certain construction practices, such as blasting or rock hammering, may result in vibrations extending beyond demarcated construction zones. If these construction activities are required, vibration mitigation measures include:

- Implementation of a proactive system of notification to potentially affected abutters prior to the start of vibration-causing construction practices.
- Monitoring vibration levels at the limits of construction and, if necessary, beyond the construction zone.
- Using alternative construction methods that do not produce as much vibration whenever reasonably possible.

12.7 Construction Best Management Practices

Construction BMPs involve the uniform application of practices and procedures to be implemented throughout the construction phase of the Project which avoid or minimize impacts to environmental resources. Per existing NEP Policy, an Environmental Field Issue (EFI) will be developed for the Project. The EFI provides a single, comprehensive document that outlines permit conditions and requirements for the Project. A copy of the EFI is kept on file at the NEP office and at the site trailer and/or site supervisor's vehicle. The EFI details the scope of the Project, approved access routes, permit deliverables, sensitive areas to be avoided, detailed soil erosion and sedimentation controls, notifications and expiration dates, a list of Project contacts, training requirements/documentation, a copy of EG-303 (see Appendix G), permit application plans, and copies of all permits.

Contractors and environmental monitors will be required to participate in EFI training before beginning work on site. In accordance with a schedule specified in the EFI, regular construction progress meetings will provide the opportunity to reinforce the contractor and crew awareness of these matters.

Section 13 Hazardous Waste

13.1 Massachusetts Contingency Plan

A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the MA Contingency Plan (310 CMR 40.0000). NEP identified one disposal site with an RTN near the Project route. The location of the one disposal site RTN 1-0019242 is described below in Table 13-1. No work is proposed within the Adams Substation and will not disturb the subsurface soils.

TABLE 13-1

Documented RTN located within the E131 ACR Project

RTN	Site Name	Site Address	Municipality	Compliance Status	Compliance Date
1-0012349	Adams Substation	Zylonite Station Road	Adams	PSS with no conditions	April 2017

13.2 Construction BMPs for Hazardous Waste

Hazardous wastes generated will be properly managed in accordance with 310 CMR 30.0000. Hazardous waste, including waste oil, will be managed in accordance with 310 CMR 30.0000, and disposed of at a licensed MassDEP facility. NEP will retain a Licensed Site Professional to review MassDEP's oil and/or hazardous material disposal sites list and associated files periodically throughout the duration of the Project, to determine the current status of existing sites, and if there are any newly listed contaminated sites within or adjacent proposed activities. The MCP details procedures to follow for the parties conducting work in these areas. In particular, in accordance with 310 CMR 40.1070 (2), activities conducted near sites with an Active Use Limitation ("AUL") must be consistent with the obligations and conditions specified within the AUL. In addition, a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction will be presented to workers at the site and enforced. The plan will include (but not be limited to), refueling of machinery, storage of fuels, and potential releases.

NEP as specific procedures for managing hazardous waste and contaminated soils, and NEP's spill response procedures (EG-303, EG-501, EG-502, and EG-1707). If oil and/or hazardous materials are identified within the Project area during the implementation of this Project, notification will be made to MassDEP, if necessary, in accordance with the MCP 310 CMR 40.0000. To prevent impacts from Project related hazardous materials, if refueling and maintenance in the field are necessary, vehicles and equipment will be brought to an access area greater than 100 feet away from sensitive environmental features, and all reasonable environmental precautions will be taken, to the extent practical. A paved area, such as a parking lot or roadway is preferred to minimize the possibility of spill or release to the environment.

13.3 Solid Waste and Recycling

Proposed refurbishment activities will generate solid waste, primarily from the removal of wood structures and sediment and erosion controls. Wood and metal will be segregated from other construction debris and recycled: other debris will be disposed of as non-banned construction waste in accordance with waste facility management regulations at 310 CMR 19.017. Waste will be properly managed and disposed of pursuant to 310 CMR 16.00 and 310 CMR 19.000, including the regulations at 310 CMR 19.017 (waste ban).

Section 14

Regulatory Compliance

14.1 Permit Requirements and Status

The proposed Project will require permitting through various local, state, and federal regulatory programs. Please refer to Table 1-4 in Section 1 for a detailed list of anticipated permits and their current status.

14.2 Agency Interaction since EENF

Coordination with the MEPA Office has been ongoing since NEP submitted the EENF with request for Single EIR in January 2023. Please refer to Section 1.6 for a detailed summary of Agency interactions surrounding the proposed Project.

TABLE 14-1

Agency Consultations Since EENF

Agency	Date(s)	Notes
DCR	3/23/23 4/20/23	Email and phone consultation regarding old growth forest areas
DCR	08/14/23	A virtual meeting was held with DCR to discuss access, easement, and Article 97 issues
USACE	8/9/23	Filed PCN
MHC	7/11/23 9/7/2023	PAL submitted ASAPP to MHC, MHC responded to permit limited archeological mitigation
NHESP	Ongoing	Meetings to discuss Project impacts in more detail, avoidance of important habitat features, species specific Best Management Practices and potential mitigation options.
Mass DEP	6/14/23	Filed 401 WQC Application
EEA Office of General Counsel	Ongoing	Discussions concerning Article 97 issues raised by DCR

14.3 State Permits/Authorizations

14.3.1 Section 401 Water Quality Certification

A 401 Water Quality Certificate application to MassDEP was submitted in June 2023, for review and approval as a "major fill" activity. The application has been placed on administrative hold, pending issuance of a final MEPA Certificate.

314 CMR 9.00 applies to the discharge of dredged or fill material, dredging, and dredged material disposal activities in waters of the United States (WOTUS) within the Commonwealth which require federal licenses or permits, and which are subject to state water quality certification under 33 U.S.C. 1251. 314 CMR 9.01(2). The placement of temporary construction matting within wetland resource areas is subject to 33 U.S.C. 1251 and requires a permit from the United States Army Corps of Engineers (USACE). Portions of the Project sited for the temporary placement of construction matting are also located within mapped priority habitat of State Listed Rare Species. NEP anticipates the issuance

of a Conservation and Management Permit (CMP) for said portions of proposed work. In addition, sections of the proposed work are situated within WOTUS where permanent impacts are proposed.

14.3.1.1 Criteria for the Evaluation of Discharges and Dredged or Fill Material

The E131 ACR Project has been designed to comply with the Department's Water Quality Certification regulations at 314 CMR 9.00 and appropriate and practicable steps have been taken to avoid and minimize potential adverse impacts to jurisdictional resource areas. The Project impacts are almost all temporary and permanent impacts have been avoided to the extent practicable. The Project has worked to also avoid permanent conversion of forested wetlands, with no tree removals proposed in forested wetlands. The Project as designed fully complies with the applicable performance standards for the discharge of dredged or fill materials listed at 314 CMR 9.06. The following provides applicable Water Quality Certificate regulatory criteria (314 CMR 9.06) and the Project's compliance with each:

(1) No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

NEP completed alternatives analyses that included an evaluation of environmental and community impacts, engineering feasibility, and constructability analysis of Project alternatives. There is no practicable alternative to the proposed Project with less adverse impacts as discussed in Section 2. The scope of the alternatives analysis is commensurate with the scale and purpose of the Project and considers the classification, designation, and existing uses of the affected wetlands and waterways. The alternatives consider site specific constraints, existing ROW conditions, and the magnitude of and significance of the benefits of the Project, avoidance and minimization of adverse impacts, and the utilization of Best Management Practices and proper construction sequencing.

(2) No discharge of dredge or fill material shall be permitted unless appropriate and practicable steps have been taken which will avoid and minimize potential adverse impacts to the bordering or isolated vegetated wetland. However, no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species.

(a) For discharges to bordering or isolated vegetated wetlands, such steps shall include a minimum of 1:1 restoration or replication.

Appropriate and practicable steps have been taken to avoid and minimize impacts to wetlands. Despite the extensive avoidance and minimization measures described in Section 6, construction of the Project will result in limited unavoidable impacts to wetlands and water resources within the Project ROW. These impacts are primarily limited to temporary impacts resulting from the placement of construction mats to create work pads and provide access in wetlands, as necessary for construction. Environmental resource areas temporarily disturbed by construction will be restored in accordance with applicable permit conditions. Additionally, the construction, operation and maintenance of the Project will have a minimal impact on waterbodies and water quality. The design of the existing overhead transmission lines avoids direct adverse impacts to resources. Unavoidable permanent impacts to vegetated wetlands will be mitigated at a 1:1 ratio, as described in Section 6.2.3.

NEP is actively coordinating with the NHESP regarding the protected species in the vicinity of the Project and will continue with this consultation in order to minimize or avoid potential adverse effects on rare species. NEP anticipates the Project will require a Conservation and Management Permit as a result of the proposed Project, past work in the area, and in coordination with NHESP.

(3) Except as otherwise provided in 314 CMR 9.06(3), no discharge of dredge or fill material shall be permitted to Outstanding Resource Waters. The discharge of dredged or fill material to an Outstanding Resource Water in association with any activity listed in 314 CMR 9.06(3)(a) through (k) may be permitted without requiring the applicant to obtain a variance in accordance with 314 CMR 9.08 provided the Department determines that the discharge of dredged or fill material may be permitted in accordance with 314 CMR 9.06(1), (2), (4), (5), and (7), and is not identified in 314 CMR 9.06(4) as a discharge of dredged or fill material that requires a variance.

No discharge of fill material to an Outstanding Resource Water (ORW) is proposed per the criteria set forth at 314 CMR 9.06(3)(c) 314 CMR 9.06(3)(f).

(4) The discharge of dredged or fill material into wetlands or waters of the Commonwealth within 400 feet of the high water mark of a Class A surface water (exclusive of tributaries) requires a variance issued by the Department pursuant to 314 CMR 9.08 unless the discharge of dredged or fill material is associated with an activity conducted by a public water system under 310 CMR 22.00: Drinking Water, or by a public agency or authority for the maintenance or repair of existing public roads or railways. The discharge of dredged or fill material to a vernal pool certified by the Division of Fisheries and Wildlife requires a variance pursuant to 314 CMR 9.08.

No discharge within 400 feet of the high water mark of a Class A surface Water is proposed.

(5) No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater for purposes of controlling sedimentation or other pollutant attenuation. Discharge of dredged or fill material may be permitted to manage stormwater for flood control purposes only where there is no practicable alternative and provided that best management practices are implemented to prevent sedimentation or other pollution. No discharge of dredged or fill material is permitted for the impoundment or detention of stormwater in Outstanding Resource Waters for any purpose.

NEP is not proposing to place fill material in wetlands or waterways to impound or detain stormwater.

(6) Except as otherwise provided in 314 CMR 9.06, stormwater discharges shall be provided with best management practices to attenuate pollutants and to provide a setback from the receiving water or wetlands in accordance with the following Stormwater Management Standards as further defined and specified in the Massachusetts Stormwater Handbook.

NEP has designed the Project to comply with the applicable Massachusetts Stormwater Standards to the extent practicable and will be subject to the standards and conditions of the NPDES CGP. During construction, NEP will use soil erosion and sediment control BMPs to manage stormwater and protect sensitive resource areas from stormwater run-off. Specific stormwater management practices, procedures, and BMPs are outlined in Section 12. Please also refer to Appendix G for a presentation of NEP's BMPs.

During construction of improved or new access, NEP will incorporate stormwater management features such as water bars, check dams, and swales to redirect stormwater flows from access into surrounding vegetation. NEP has designed these BMPs to reduce

the potential for adverse impacts such as washouts and erosion due to concentrated stormwater flows.

(7) No discharge of dredge or fill material shall be permitted in the rare circumstances where the activity meets the criteria for evaluation but will result in substantial adverse impacts to the physical, chemical, or biological integrity of surface Waters of the Commonwealth.

The Project has been designed to meet the criteria for evaluation through impact avoidance and minimization measures and the implementation of construction BMPs, including the use of temporary construction mats versus permanent fill in wetland. In addition, during the construction process, NEP will assign an environmental monitor to ensure and report on compliance with all federal, state and local permit requirements and relevant NEP company policies and procedures. As such, the Project is not expected to result in substantial adverse impacts to the physical, chemical, or biological integrity of surface waters of the Commonwealth. Sections 6.2 and 12.8 provide detailed descriptions of the Project impact avoidance and minimization measures.

14.3.2 Massachusetts Wetlands Protection Act

The MA WPA and its regulations are administered by municipal Conservation Commissions and MassDEP. Conservation Commissions are delegated the authority to implement the MA WPA, including issuance of OOCs. MassDEP has the authority to intervene in a project and to act on appeals of the OOCs. NEP will file permit applications (NOIs) with Conservation Commissions in Adams, North Adams, Monroe, and Florida. These NOIs will detail the proposed asset improvements, the short-term and long-term impacts, and the proposed avoidance, minimization, and mitigation measures 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.

A substantial portion of the work for the Project – including, for example, the proposed structure replacements – qualifies under the utility maintenance exemption, which exempts work done “in the course of maintaining, repairing or replacing, but not substantially changing or enlarging, an existing and lawfully located structure or facility used in the service of the public.” The elements of the Project that do not qualify as exempt will meet the requirements for a Limited Project.

14.3.2.1 Consistency with MAWPA Limited Project Provisions

The Project is eligible for “limited project” status, as defined in 310 CMR 10.53(3)(d) because it involves the “*construction, reconstruction, operation and maintenance of underground and overhead public utilities.*” Proposed Project refurbishment activities include the removal and replacement of existing electrical utility structures and overhead lines, and both the reconstruction of existing access and work areas, and the construction of new access in off-ROW within upland resource areas. Maintaining ROW corridors with functional access and work areas is an integral part of the public overhead electrical utility facility – access and work areas are essential for the safe and reliable operation of the lines, performance of inspection and maintenance work, and performance of emergency repairs. As such, all components of the proposed Project meet the definition of “*operation, maintenance, and construction of public utilities*”, because the ROW corridor, access, work areas, and structures are all integral to the overall public utility.

Under the Limited Project provisions, the issuing authority may approve a project that does not satisfy the performance standards for the affected resource areas, although no such project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species (as identified by procedures established under 310 CMR 10.59). Thus, Limited Projects may, under certain circumstances, be permitted without meeting the performance standards for jurisdictional resource areas. While the Project qualifies as a limited project, NEP's policy is to make reasonable efforts to meet applicable performance standards and minimize impacts, and the Project will meet the Limited Project general conditions specified in 310 CMR 10.53(3)(d), as described below.

NEP is currently consulting with the NHESP regarding Project impacts to rare wildlife, and the potential for the Project to result in a "take." At present, it is anticipated that a "take" of rare species can be avoided through the implementation of a CMP, which NEP will submit to NHESP for review, prior to commencing Project activities. The CMP would ensure that the Project meets the "net benefit" criteria required by NHESP.

The Project will meet the other general conditions for a Limited Project as described below:

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

The Project is not a local distribution or connecting line and as such these evaluation criteria are not applicable.

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

Throughout design and permitting, NEP has made extensive efforts to comprehensively assess constructability and minimize adverse effects, wherever practicable. Since the EENF, NEP revised designs to reduce wetlands impacts. Details on impact reduction due to the change in tree removal scope and design scopes are provided in Section 1.5.1. Where impacts cannot be avoided or further minimized, NEP will implement appropriate mitigation. These efforts are referenced throughout this document, particularly in Section 4. Additionally, NEP performs construction and maintenance work in accordance with strict BMP practices and procedures serving to minimize adverse effects during construction, described in EG-303NE (Appendix G).

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

As detailed in Sections 4 and 6, NEP is proposing in situ restoration as a primary means of mitigating construction-phase impacts. In situ restoration measures include stabilizing bare soil surfaces and promoting the regeneration of vegetative cover. Generally, NEP will meet this standard for restoration by applying in situ restoration measures to areas disturbed by construction activities. Specific restoration practices associated with vegetation management and access and work area improvements are provided below.

NEP is proposing vegetation management activities within MA WPA regulated resource areas as part of the Project, including the removal of select trees for access, and along the forested edges of the ROW for line clearance. Mowing and trimming of vegetation is

also required along on and off-ROW access, and within work areas within the maintained ROW. Tree removal within the ROW is limited to "danger trees" that pose either a fall hazard or conductor clearance hazard to the existing and/or proposed lines. Vegetation management practices proposed for the Project, including measures to avoid and minimize impacts to wetlands, are provided in Section 6. When mowing the ROW for construction-phase access, NEP will avoid mowing in wetland areas and instead place matting directly over the existing vegetation. Following construction, NEP anticipates that areas where trees have been removed and areas that have been mowed or trimmed will readily and swiftly re-vegetate from existing root and seed stock. Finally, NEP will implement in situ restoration measures to promote stabilization and revegetation following construction. As such, the ROW will become substantially revegetated following Project construction.

NEP is proposing to improve and/or construct new access to facilitate construction-phase movement of vehicles and machinery and operational access to facilities along the ROW. NEP will additionally construct level work areas at structure locations. NEP is not proposing these access and work areas improvement activities in BVW but will perform some access road expansion and repair within Riverfront Area where existing access and work areas will not meet the operational needs of construction vehicles and equipment and the use of temporary construction matting is not a feasible alternative. Grading will result in both temporary and permanent alteration of the ground surface within Riverfront Area.

Following construction, NEP will restore disturbed and/or altered areas within Riverfront Area through seeding and mulching, and through the installation of permanent stormwater management BMPs where necessary. Along the surface of improved access and work areas in Riverfront Area, NEP will spread loam and seed to promote herbaceous vegetation growth within these areas. Access and work area improvements will improve the accessibility of the ROW for long term operations and maintenance of the rebuilt lines while maintaining the general land use, character, and topography of the ROW relative to the surrounding area. NEP will restore surfaces disturbed by construction and provide stormwater management improvements along access by diverting concentrated flow off of access and into surrounding vegetated areas. As such, the contours of the area will be restored, and the Project will meet this standard.

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

This standard does not apply because no sewer lines are proposed.

In addition to meeting the general performance standards for a Limited Project, NEP has made efforts to conform with the wider performance standards of the MAWPA, wherever possible. Except for the total area of alterations within Riverfront Area, the Project generally meets the performance standards for proposed temporary and permanent alteration of resource areas. The Project's consistency with the specific resource area performance standards is presented in the sections below.

NEP is proposing to construct the Project within the existing E131 ROW. Because of the length of the ROW and the location within remote or largely undeveloped areas, there are numerous wetland resource areas within and crossing the corridor. As an existing electrical transmission utility corridor, the ROW is subject to cyclical vegetation management and the removal of tall woody vegetation incompatible with the overhead lines. The ROW is additionally subject to cyclical and periodic inspection, maintenance, and repair activities

that involve the placement of temporary construction matting at wetland crossings. NEP has designed the Project to avoid or minimize permanent loss or alteration of wetland resource areas to the extent practicable, including in the planning of construction mat access roads and work areas across wetlands. Temporary construction matting required within wetlands for Project construction is not significantly greater than what would be required for standard maintenance and operations of the lines. Thus, while there are numerous wetland crossings along the Project ROW, the "Project Site" is an existing utility corridor, and the proposed Project does not change this use nor the current ability of wetlands on the ROW to provide for the statutory interests of the MAWPA.

The sections below summarize the Project's compliance with the General Performance Standards of the MA WPA.

14.3.2.2 MAWPA Performance Standards Compliance

Bordering Vegetated Wetlands

BVW, as defined by 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. Areas within the ROW delineated as BVW are shown on the ER Maps in Appendix B. Performance standards for BVW are noted below, followed by a discussion of how the Project will satisfy each performance standard.

NEP has designed the Project to avoid and minimize wetland impacts to the maximum extent practicable. The Project will result in approximately 599,115 sf of work within BVW, including 660 sf of permanent impacts resulting from the placement of a gravel apron and transition to concrete caisson foundations within BVW. The Performance Standards for BVW are set forth at 310 CMR 10.55(4).

- (a) Where the presumption set forth in 310 CMR 10.53(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.*

Temporary impacts within BVW will be restored in situ, as described in Section 6.

- (b) 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 5000 square feet of Bordering Vegetated Wetland 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:*

- 1. 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");*

To offset permanent wetland impacts (660 sf) a 700-sf wetland replication area has been proposed within the E131 ROW adjacent to Wetland 125. All temporary impacts will be restored *in situ*.

- 2. the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*

Though the ground water and surface elevation differ among the lost wetland areas, the wetland replacement area will match the ground water and surface elevation of Wetland 125, to which it is adjacent.

3. *The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*

Though the characteristics of the lost wetland areas differ, the replacement area will maintain a configuration with respect to the Bank that is generally similar to the sections of wetlands lost at the site.

4. *the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;*

As an extension of Wetland 125, the wetland replacement area will have an unrestricted hydraulic connection to all water bodies associated with the existing wetland.

5. *the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*

The replacement area will be located immediately adjacent to Wetland 125 and in the general vicinity of the lost wetland areas.

6. *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 Services methods; and*

Soils will be stabilized through mulching as described in Section 4. An Environmental Monitor will inspect restored areas for up to 90 calendar days following restoration to ensure no noticeable adverse effects to the plant community, soil characteristics, and micro-topography are occurring. Annual monitoring reports will be submitted to MassDEP no later than November 30th of each calendar year for a period of two (2) full growing seasons.

7. *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.*

All activities associated with the establishment of the replacement area will maintain compliance with the General Performance Standards, as described in Section 6.2.3.

In the exercise of this discretion, the issuing authority shall consider the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the extent to which adverse impacts can be avoided, the extent to which 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 M.G.L. c. 131, § 40.

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

- 1. said portion has a surface area less than 500 square feet;*
- 2. said portion extends in a distinct linear configuration ("finger-like") into adjacent uplands; and*
- 3. in the judgment of the issuing authority it is not reasonable to scale down, redesign or otherwise change the proposed work so that it could be completed without loss of said wetland.*

NEP proposes wetland replication for all wetland areas permanently lost as a result of the proposed activities.

Appropriate and practicable steps have been taken to avoid and minimize impacts to wetlands, including Land Under Water. Despite the extensive avoidance and minimization measures described above, construction of the Project will result in limited unavoidable impacts to wetlands and water resources within the Project ROW. These impacts are primarily limited to temporary impacts resulting from the placement of construction mats to create work pads and provide access in wetlands, as necessary for construction. Environmental resource areas temporarily disturbed by construction will be restored in accordance with applicable permit conditions. Additionally, the construction, operation and maintenance of the Project will have a minimal impact on waterbodies and water quality. The design of the existing overhead transmission lines avoids direct adverse impacts to resources.

(d) Notwithstanding the provisions of 310 CMR 10.55(4)(a), (b) and (c), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

NEP will continue to coordinate with NHESP pursuant to MESA (M.G.L. c. 131A) and the MAWPA to avoid and minimize impacts to listed species and their habitat, and to provide mitigation for any unavoidable impacts. Based on consultation meetings with NHESP, the Project will likely avoid a "take" for rare species and/or their habitats, provided that certain conditions are met. Please refer to Section 5 for additional details on mitigation proposed in NHESP Priority and Estimated Habitat.

(e) Any proposed work shall not destroy or otherwise impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Environmental Affairs under M.G.L. c.21A § 2(7) and 301 CMR 12.00. 310 CMR 10.55(4)(e):

- 1. supersedes the provisions of 310 CMR 10.55(4)(b) and (c);*
- 2. shall not apply if the presumption set forth at 310 CMR 10.55(3) is overcome;*
- 3. shall not apply to work proposed under 310 CMR 10.53(l); and*

4. *shall not apply to maintenance of stormwater detention, retention, or sedimentation ponds, or to maintenance of stormwater energy dissipation structures, that have been constructed in accordance with a valid order of conditions.*

Not Applicable. No work is proposed within an Area of Critical Environmental Concern.

Bordering Land Subject to Flooding

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". Approximately 3,230 sf of impacts are anticipated within BLSF associated with temporary timber matting. and The Performance Standards for Bordering Land Subject to Flooding are set forth at 310 CMR 10.57(4)(a).

1. *Compensatory flood 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 water during peak flows.*

Compensatory flood storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek.

Impacts to BLSF are temporary impacts associated with repairs to an existing access road (Old Florida Road) shown on Page 10 of the Environmental Resource Map provided in Appendix B. These repairs are minor, will occur exclusively within the existing footprint of the roadway, and will not alter the elevation of the road, and thus do not constitute a loss of flood storage volume.

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

As shown on the ER mapping (Appendix B), the work proposed within BLSF is not in close proximity to the Bank of any river or stream channel and as such is not expected to restrict flows.

3. *Work in those portions of bordering land subject to flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the 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.

The portions of the Project Site within BLSF are located within a maintained utility ROW, active agricultural fields, and an existing access road. The work, which totals less than 5,000 sf, is not anticipated to permanently change the character of BLSF at these locations, nor the existing wildlife habitat functions and values. The habitat present will also be present at the completion of the Project. Any loss of vegetative cover will be temporary in nature. Further, a review in the field and of MassGIS relative to the presence of Certified Vernal Pools or potential vernal pools indicated that neither of these features is present at or near BLSF within the proposed Project Site. As such, the work is not anticipated to impair vernal pool habitat.

Riverfront Area

Approximately 148,330 sf of impacts are proposed within Riverfront Area across the Project Site. This includes 22,970 sf of temporary impacts resulting from construction matting, and 125,420 sf of permanent impacts associated with access road repair, widening, and construction. This section describes how the proposed Project satisfies the Riverfront Area provisions at 310 CMR 10.58 (4).

(a) Protection of Other Resource Areas.

As described in the sections above, the proposed Project meets the performance standards for all other resource areas within the Riverfront Area.

(b) Protection of Rare Species.

Portions of the Project Site are located within NHESP Estimated Habitat of Rare Wildlife. Coordination with NHESP is ongoing, as described in Section 5.

(c) Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.

As described in Section 2, the proposed design was selected after a thorough alternatives analysis which found no substantially equivalent alternative that would result in less adverse effects to resource areas.

(d) No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

1. Within 200 foot riverfront areas, the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater, on a lot recorded on or before October 6, 1997 or lots recorded after October 6, 1997 subject to the restrictions of 310 CMR 10.58(4)(c)2.b.vi., or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

a. At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified in

M.G.L. c. 131 § 40. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other resource area performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural conditions. Proposed work which does not meet the requirement of 310 CMR 10.58(4)(d)1.a. may be allowed only if an applicant demonstrates by a preponderance of evidence from a competent source that an area of undisturbed vegetation with an overall average width of 100 feet will provide equivalent protection of the riverfront area, or that a partial rebuttal of the presumptions of significance is sufficient to justify a lesser area of undisturbed vegetation;

Tree and vegetation clearing will be limited to the maximum extent feasible, and all temporary impacts will be restored to previous conditions. However, due to the locations of existing structures and access roads, the preservation of a 100-foot-wide area of undisturbed vegetation is not possible. Given these limitations, NEP intends to request Limited Project Status regarding this Performance Standard.

b. Stormwater is managed according to standards established by the Department in its Stormwater Policy.

NEP has designed the Project to comply with the applicable Massachusetts Stormwater Standards and will be subject to the standards and conditions of the NPDES CGP. During construction, NEP will use soil erosion and sediment control BMPs to manage stormwater and protect sensitive resource areas from stormwater run-off. Specific stormwater management practices, procedures, and BMPs are outlined in Section 11.

c. Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, the issuing authority may require a wildlife habitat evaluation study under 310 CMR 10.60.

The proposed work is not anticipated to impair the capacity of the Riverfront Area to provide wildlife functions. Temporary impacts will be restored to previous conditions and impacts associated with the repair and widening of existing access roads will result in minimal alteration of habitat within the Riverfront Area. The construction of new access roads through Riverfront Area is unavoidable in order to provide safe and reliable access to the public utility infrastructure and has been minimized to the extent practicable, as discussed in the Alternatives Analysis provided in Section 2. Certified and potential vernal pools within the vicinity of the Project Site have been delineated and will not be impaired as a result of the proposed Project.

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

Erosion and sedimentation controls will be implemented as described in Section 6.

2. Within 25 foot riverfront areas, any proposed work shall cause no significant adverse impact by:

Not applicable. None of the perennial streams within the Project Site are identified in 310 CMR 10.58(2)(d)(3) as having a 25-foot-wide Riverfront Area.

3. Notwithstanding the provisions of 310 CMR 10.58(4)(d)1. or 2., the issuing authority shall allow the construction of a single family house, a septic system if no sewer is available, and a driveway, on a lot recorded before August 7, 1996 where the size or shape of the lot within the riverfront area prevents the construction from meeting the requirements of 310 CMR 10.58(4)(d)1. or 2., provided that:

a. The lot can be developed for such purposes under the applicable provisions of other municipal and state law; and

b. The performance standards of 310 CMR 10.58(4)(d) are met to the maximum extent feasible. In difficult siting situations, the maximum extent of yards around houses should be limited to the area necessary for construction. Except where the lot contains vernal pool habitat or specified habitat sites of rare species, a wildlife habitat evaluation study shall not be required.

Not applicable. The Project does not include the construction described in this performance standard.

4. Notwithstanding the provisions of 310 CMR 10.58(4)(d)1. or 2., the issuing authority may allow the construction of a commercial structure of minimum feasible dimension, on a lot recorded before August 7, 1996 where the size or shape of the lot within the riverfront area prevents the construction from meeting the requirements of 310 CMR 10.58(4)(d)1. or 2., only if:

Not applicable. The Project does not include the construction of a commercial structure.

14.3.3 Massachusetts Stormwater Standards

MassDEP applies the MA Stormwater Management Standards (the "Standards") pursuant to the Wetlands Regulations (310 CMR 10.00) and the Water Quality Regulations (314 CMR 9.00) relating to stormwater. The Standards define ten stormwater management performance standards for development and redevelopment projects. Generally, these standards have not been applied to similar cross-country utility maintenance projects, as the work does not have a substantial impact on watershed hydrology or drainage patterns. The extent to which the Standards apply to the Project will be addressed as part of the WPA and 401 Water Quality permitting processes. NEP will submit an NOI and prepare a SWPPP for the Project in compliance with the EPA's NPDES program under the Stormwater CGP.

NEP will employ BMPs for stormwater management including sediment and erosion controls. During the construction of the Project, stormwater will be managed through the

use of additional stormwater management design features such as swales, water bars, plunge pools, and/or check dams.

14.3.4 MESA – NHESP Conservation Management Permit

Portions of the proposed Project are located within Priority and Estimated Habitats of Rare Species and Wildlife. Accordingly, a MESA Project Review Checklist was submitted to NHESP. NEP continues to coordinate with NHESP and anticipates that the Project will require the development of a Conservation Management Permit.

14.3.5 MassDOT Access Permit

NEP will obtain a MassDOT Permit to Access State Highway/Non-Municipal Utility Permits for crossing over Route 2 with utility lines for the Project. The Project's impacts relative to MassDOT are associated with the installation of a new overhead wire (the OPGW) across state roadways by a non-municipal utility, and construction/improvement of access routes leading from state highways into the ROW. Line installation could temporarily affect traffic flow of the roadway but does not involve physical modifications to the roadway or roadway ROW. Typical performance standards associated with the MassDOT permit include notification 48 hours prior to the beginning of work; submission of MassDOT's standard work notification form; compliance with MassDOT's requirements regarding traffic delays; and the use of police details as specified on the traffic management plans and required by MassDOT. The day of the week and time of day that the work will be performed could vary based on the roadway classification and historical traffic volumes. NEP will prepare and submit a TMP to MassDOT for its review and approval. The Project will comply fully with the performance standards specified in the permit to ensure a safe environment for traffic flow and construction crews in and around the roadways. No long-term roadway impacts are anticipated.

14.3.6 Surface Water Discharge Permit

Surface Water Discharge Permitting is required for a Project proposing to discharge pollutants to surface waters of the Commonwealth, including from stormwater discharges per 314 CMR 3.04(2)(a). However, NEP will be exempt from the requirement per 314 CMR 3.05(2), as the Project will require NPDES CGP authorization under 3 U.S.C. 1251 § 404.

Due to earth disturbing activities of more than one (1) acre, this Project will require a federal NPDES CGP and associated coverage pursuant to the Surface Water Discharge regulations specifically at 314 CMR 3.06. The NPDES CGP requires filing an NOI that provides information on the site and identifies the site's general operator, and development of a SWPPP that includes appropriate BMPs to minimize pollutant discharges.

The Project will comply with the requirements of the NPDES CGP. As a component to this compliance, a site-specific SWPPP will be prepared and implemented throughout the Project's construction and restoration phases. Implementation of this plan will include extensive use of erosion and sediment control measures designed to minimize site disturbance and prevent opportunities for sedimentation to occur offsite or toward wetland resource areas. The SWPPP will also include measures to ensure post-construction revegetation and stabilization of disturbed soil areas, which will serve to minimize the potential for ongoing erosion and sedimentation. NEP will submit a SWPPP for the Project in compliance with the EPA's NPDES program under the Stormwater CGP, as well as Bureau of Water Resources.

14.3.7 Chapter 91

As discussed in Section 6.3, based on comments received from MassDEP on the EENF (dated 3/10/23), NEP has consulted further with MassDEP on the applicable Chapter 91 requirements for the Project. The type and number of crossings within the E131 ROW are outlined in Section 6. The E131 was built in 1925 and has not been substantially altered since that time. As such, the existing line is exempt from licensing under 310 CMR 9.05(3)(c) and (f). The proposed work at each of the crossings is maintenance work on an existing utility line that will not reduce the height of lowest electric cable, will not alter the alignment of the crossing or otherwise affect navigability or other Chapter 91 interests. As such, the work is exempt from further Chapter 91 approvals under the maintenance provisions of 910 CMR 9.05(3)(a) and 910 CMR 9.22(1).

14.3.8 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 Section 9, Section 26-27C (950 CMR 70-71). These regulations set up a process that includes identification of listed historic properties in the vicinity of the proposed Project, assessment of effect; and consultation among interested parties to avoid, minimize, or mitigate any adverse effects.

NEP's cultural resource consultant, PAL, has developed an archaeological site avoidance and protection plan (ASAPP) and provided associated documentation to MHC, Native American Tribes, and DCR. The DCR Staff Archaeologist responded on 7/13/23, communicating that they had no substantive comments on the ASAPP, and requested that NEP continue to coordinate with DCR's Operations and Construction Access Permits staff within DCR managed portions of the Project. NEP continues to coordinate with the USACE regarding the Section 106 review of the Project and the USACE's consultation with the MHC and Native American Tribes regarding implementation of the ASAPP.

14.3.9 MADCR Construction Access Permit

As per 302 CMR 11.08(1)(a), no modifications to DCR property may be made without a Construction and Access Permit. NEP is coordinating the Project with DCR and plans to submit an application for a construction and access permit. The provisions for construction and access permits are set forth at 302 CMR 11.08(4) and outlined below.

(a) Duration of Construction and Access Permits.

- 1. Construction. Construction of the proposed project, work, or activity within or on a DCR parkway or other DCR property under the terms of a construction and access permit must be completed within one year of the effective date, provided, however, that DCR may extend the construction and access permit by an additional one year upon written request of the applicant or permittee, provided said request is filed prior to the expiration of the original construction and access permit.*

It is anticipated that construction on and access through DCR land will not be completed within one year. Additional time, longer than one year, will require NEP to provide a written request for an extended permit duration.

2. Use. Construction and access permits shall allow ingress and egress to and from the DCR Roadway or other DCR Property for an indefinite period, but a new construction and access permit shall be required when:

a. Constructing, reconstructing or expanding an existing facility on the property served, which results in a substantial increase in or impact on traffic on the DCR parkway or other DCR property;

It is not anticipated that the proposed Project will increase or otherwise impact traffic.

b. Constructing a new access or modifying an existing permitted access; or

The construction and access permit will address access to the extent necessary.

c. A construction and access permit would otherwise be required based on 302 CMR 11.00.

We do not anticipate that this is applicable.

(b) Any Construction and Access Permit issued under 302 CMR 11.00 shall include the following provisions:

1. Construction under a Construction and Access Permit. Construction under a duly issued construction and access permit may commence upon 72 hours written notice (which may be delivered by facsimile or electronic mail) or logged telephone notice by the permittee to the Department.

No construction activities will commence prior to 72 hours following official notice to the Department.

2. Prior to the commencement of any excavation work, the permittee must notify Dig Safe to obtain location of utilities. The permittee is charged with the responsibility of reviewing all applicable plans, site visits, and any other means available to ensure that the proposed excavation work will not adversely affect any subsurface utilities, equipment or structures, including trees and tree root systems.

NEP will coordinate with Dig Safe prior to commencing construction activities.

3. In the event an unanticipated site of archaeological or cultural significance is encountered during project implementation, project work shall be halted and DCR shall be notified.

NEP will halt activities and contact DCR should any such sites be encountered during construction.

4. If human remains are discovered during project implementation, the proponent shall halt work, secure the site, and notify the state police, the medical examiner, and the DCR staff archaeologist.

NEP will halt activities and contact the above referenced parties should human remains be encountered during construction.

5. The permittee must agree to indemnify and hold DCR and the Commonwealth of Massachusetts harmless for all injuries to persons or property resulting or arising from the issuance of a construction and access permit. The permittee must warrant that all restorative work remain in a safe and proper condition for a period of one year after work ceases, and agree that it shall indemnify and defend any suits arising from an unsafe or dangerous condition.

NEP will consent to the above terms.

(c) No action may be taken under a construction and access permit, unless such construction and access permit has been issued in writing.

Construction on and access through DCR-owned property will not commence until a construction and access permit has been issued in writing.

14.4 Federal Permits/Authorizations

14.4.1 Section 404 of the Clean Water Act

The proposed Project will involve work within Waters of the United States (WOTUS), including vegetated wetlands and over watercourses, subject to Section 404 of the Clean Water Act. Authorization under the Commonwealth of Massachusetts General Permits for Massachusetts, specifically 2 (maintenance), 6 (utility line activities), and 24 (temporary construction access and dewatering), is required for the proposed activities that will result in a temporary and permanent discharge of fill material to a WOTUS. Accordingly, a Pre-Construction Notification has been filed with the U.S. Army Corps of Engineers. Applicable MA GP General Conditions compliance requirements are addressed in the following section.

As noted in the discussion of state permits, the wetlands and streams along the ROW are subject to the jurisdiction of Sections 401 and 404 of the federal CWA. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating water quality standards for surface waters. Section 401 WQC, as administered by MassDEP, was discussed previously, and part of the regulations jurisdiction includes confirming that federally issued permits will not result in violation of state water quality standards. In contrast, the Section 404 process is administered by the USACE and regulates dredge and fill activities in Waters of the U.S. ("WOTUS").

The USACE (Federal Register 1982) and the EPA (Federal Register 1980) jointly define wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas". Section 404 of the CWA establishes permit programs to regulate the discharge of dredged or fill material into waters of the United States, as well as discharges of dredged or fill material into wetlands adjacent to nominal waters (33 CFR 328). The Project qualifies for authorization under a Pre-Construction Notification (PCN) in accordance with the USACE Massachusetts General Permits, specifically 2 (maintenance), 6 (utility line activities), and 24 (temporary construction access and dewatering), for activities within federal wetlands as defined by

Section 404 of the CWA, primarily due to the temporary BVW impacts associated with construction mats, which are considered “fill”. NEP anticipates submitting a PCN and continuing to consult with USACE through the permitting process. Applicable MA GP General Conditions compliance requirements are addressed below.

Suitable Material & Discharge of Pollutants (GC 5)

No discharge of unsuitable material will occur as a result of the proposed Project. A section 401 WQC permit application was filed with MassDEP on June 16, 2023. The Project’s compliance with Section 401 of the Clean Water Act (CWA) is further documented in Section 6 of this narrative. Where concrete is necessary to support construction concrete washouts will occur within designated, portable washout basins or within designated concrete washout locations. No concrete washouts will occur within WOTUs.

Tribal Rights and Burial Rights (GC 6)

As discussed in Section 8 of this narrative NEP retained The Public Archaeology Laboratory, Inc. (PAL) to undertake historic and archaeological due diligence and review of the Project Site. PAL has undertaken multiple historic and archaeological reviews from 2019 to present. A *Project Notification Form*, dated January 10, 2020, was submitted to the Massachusetts Historical Commission (MHC) with copies to the Massachusetts Board of Underwater Archaeological Resources (MABUAR) and Tribal Historic Preservation Officers (THPOs). Proof of delivery and Copies of the MHC and BUAR response letters are also included in Appendix C.

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 filed a survey report with the MHC and other consulting parties on December 20, 2022, and MHC responded on January 11, 2023, requesting that NEP provide copies of the reports to the USACE. PAL plans to submit a draft archaeological site avoidance and protection plan to the MHC, Tribes, and other consulting parties in the 2nd quarter of 2023, along with a request to amend the intensive (locational) archaeological survey permit to perform the limited archaeological mitigation. PAL developed an archaeological site avoidance and protection plan (ASAPP) and provided associated documentation to MHC, Native American Tribes, and DCR on 7/11/2023.

NEP continues to consult with the USACE, 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.

Avoidance, Minimization and Compensatory Mitigation (GC 7)

The Project has been designed to avoid and minimize impacts to the identified resource areas. An alternatives analysis was prepared outlining the practicable alternative options to access and work areas and is provided in Section 2. Unavoidable temporal impacts to WOTUS will be restored *in situ* following the completion of construction and compensatory mitigation will be provided for all unavoidable permanent impacts. Refer to Section 6 for a discussion of the Project’s proposed minimization, and mitigation measures.

Water Quality and Stormwater Management (GC 8)

The Project’s compliance with Section 401 of the Clean Water Act (CWA) is documented in Section 14.3.1 of this narrative.

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 EPA NPDES CGP will be required. A 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 (Refer to Appendix G).

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."

NEP will submit a Stormwater 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.

Federal Threatened and Endangered Species (GC 10)

Review of the Project through the IPaC tool and NLEB Determination Key (D-Key) indicated that the proposed actions would occur within areas where Northern Long-Eared Bats are reasonably certain to occur (refer the Consistency Letter (Project Code: 2023-0084707) in Appendix C). As such, the proposed Project received a determination of "may affect" for the NLEB. NEP has conducted site-specific presence/probable absence surveys in accordance with the *Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines* to determine whether or not an incidental take is reasonably certain to occur. Survey results confirm presence of the Tricolored Bat within the Project Site but found no evidence of Northern Long-Eared Bat. NEP will continue to coordinate with the USFWS to avoid a "Take" of Tricolored Bat during construction.

Essential Fish Habitat (GC 11)

According to a data query of the NOAA Habitat Conservation Essential Fish Habitat (EFH) mapper, there is no EFH within or near the Project Site. Further, no Habitat Areas of Particular Concern (HAPC) or EFH Areas Protected from Fishing (EFHA) were identified.

Historic Properties (GC 14)

As discussed in Section 8 of this narrative NEP retained The Public Archaeology Laboratory, Inc. (PAL) to undertake historic and archaeological due diligence and review of the Project Site. PAL has undertaken multiple historic and archaeological reviews from 2019 to present. A *Project Notification Form*, dated January 10, 2020, was submitted to the Massachusetts Historical Commission (MHC) with copies to the Massachusetts Board of Underwater Archaeological Resources (MABUAR) and Tribal Historic Preservation Officers (THPOs). Proof of delivery is provided in Appendix C. Copies of the MHC and BUAR response letters are also included in Appendix C.

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 filed a survey report with the MHC and other consulting parties on December 20, 2022, and MHC responded on January 11, 2023, requesting that NEP provide copies of the reports to the USACE. PAL plans to submit a draft archaeological site avoidance and protection plan to the MHC, Tribes, and other consulting parties in the 2nd quarter of 2023, along

with a request to amend the intensive (locational) archaeological survey permit to perform the limited archaeological mitigation. PAL developed an archaeological site avoidance and protection plan (ASAPP) and provided associated documentation to MHC, Native American Tribes, and DCR on 7/11/2023.

NEP continues to consult with the USACE, 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.

Heavy Equipment in Wetlands (21)

Construction mats will be utilized in all wetland areas to minimize impacts where the operation of heavy equipment within vegetated wetlands cannot be avoided. All equipment and materials associated with the proposed Project will be staged or stored in upland locations.

Temporary Fill, Work & Construction Mats (22)

Due to the size of the proposed Project, Project sequencing and existing outage schedules segments of the proposed temporary access roads (composed of construction matting) will be required to stay in place for greater than one year. Construction mats will be managed in accordance with the Best Management Practices as enumerated under the Massachusetts General Permit Section IV General Condition 22(c) (1-6). Following completion of the Project all construction matting will be removed and impacts to WOTUS associated with the placement of construction matting will be restored *in situ*.

Restoration of Wetland Areas (23)

Temporal impacts to wetland areas will be restored *in situ* following the completion of construction. For further information regarding the specific measures proposed for *in situ* restoration areas. Refer to Section 6.

Approximately 11.3 acres of tree cutting is proposed, to support construction activities. Trees will be cut at or above ground level and rootballs will remain in place unless deemed otherwise infeasible or unsafe. Compensatory mitigation will be provided for all proposed permanent impacts to WOTUS (refer to Section 6). Appropriate steps will be taken to avoid the establishment of invasive species within restoration areas.

Soil Erosion and Sediment Controls (GC 25)

NEP has outlined procedures to avoid, minimize, and mitigate environmental impacts through their proprietary policies and procedures document, EG-303NE (provided under Appendix G). These policies will be followed throughout all phases of the proposed Project. The following BMPs will be implemented during construction to minimize the potential for impacts to wetland resource areas.

Once all permits have been procured and prior to the commencement of construction, an Environmental Field Issue (EFI) will be developed for the Project and presented to all contractors on-site. The EFI will detail pertinent environmental protection measures, locations of sensitive resource areas to be avoided, erosion and sedimentation control measures, permit conditions, and training requirements. All on-site personnel will be required to participate in EFI training prior to engagement in work activities. NEP will maintain a record of EFI training throughout the course of the construction.

Aquatic Life Movements and Management of Water Flows (26)

Temporary and permanent impacts to WOTUS will be conducted in such a way as to maintain existing hydrologic connections. Where deemed necessary, construction matting will be installed on runners to allow for sustained periods of low flows between vegetated wetlands and connected WOTUS. Where bridged crossings are necessary, they will be installed from upland areas so as to avoid impacts to Bank and to prevent erosion and stream bed scour associated with the crossing.

Utility Line Installation and Removal (32)

The proposed ACR Project will not impact or alter existing hydrology. Stockpiling of materials and/or debris will occur within designated upland locations. If the temporary storage of drilling spoils is required within WOTUS spoils will be stored within a spin-off box prior to removal. Sediment bags will be utilized where dewatering is necessary within proximity to WOTUS.

14.4.2 Section 106 and the National Historic Preservation Act

Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation ("ACHP") a reasonable opportunity to comment (33 CFR 325 Appendix C and 36 CFR Part 800 and 33 CFR 325, Appendix C). Pursuant to 36 CFR 800.16, an undertaking consists of "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, those carried out with federal financial assistance, those requiring a federal permit, license or approval and those subject to State or local regulation administered pursuant to a delegation or approval by a federal agency."

For the Project, the undertaking is the Section 404 Permit, and the responsible federal agency is the USACE. "Section 106 review" follows a specific process, which is guided by federal regulations (36 CFR 800 and 33 CFR 325, Appendix C). These regulations have created a series of steps by which federal agencies identify and evaluate historic properties that may be affected by their undertakings, assess adverse effects to those properties, and take prudent and feasible measures to avoid, minimize, or mitigate those effects. This review is underway, as described in Section 8, above.

14.4.3 EPA – Stormwater Pollution Prevention Plan

As described previously, NEP will submit an eNOI to the EPA to notify them of the intent to have construction stormwater discharges on the Project. As a component of the eNOI process, NEP will prepare a SWPPP for the Project in compliance with the EPA's NPDES program under the Stormwater CGP, as well as MassDEP Bureau of Water Resources Surface Water Discharge (NPDES) Permitting Program WM 15 permit application. Implementation of the SWPPP will include extensive use of erosion and sediment control measures designed to minimize site disturbance and prevent opportunities for sedimentation to occur offsite or toward wetland resource areas. The SWPPP will also have a component that consists of spill prevention, countermeasures and controls that address the accidental or unintended release or spill of pollutants, such as fuel, hydraulic fluid, or lubricants. The SWPPP will also be a component of the Project's EFI and will be included in the environmental training that construction contractor personnel will receive.

14.4.4 US Fish & Wildlife Service

Under Section 7 of the Endangered Species Act ("ESA"), any action requiring one or more federal permits or licenses must also consult with the USFWS to ensure that proposed

actions do not jeopardize listed species or destroy or adversely modify critical habitat. Accordingly, the USFWS Endangered Species Consultation Procedure available on their website was followed. As a result of the USFWS Endangered Species Consultation Procedure, it was determined that four federally listed species may be present within the Project area. The NLEB Determination Key (D-Key) indicated that the proposed actions would occur within areas where Northern Long-Eared Bats are reasonably certain to occur (refer the Consistency Letter (Project Code: 2023-0084707) in Appendix C). As such, the proposed Project received a determination of “*may affect*” for the NLEB. NEP has conducted site-specific presence/probable absence surveys in accordance with the *Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines* to determine whether or not an incidental take is reasonably certain to occur. Survey results confirm presence of the Tricolored Bat within the Project Site but found no evidence of Northern Long-Eared Bat. NEP will continue to coordinate with the USFWS to avoid a “Take” of Tricolored Bat during construction.

Section 15

Draft Section 61 Findings and Mitigation

15.1 Introduction

In accordance with M.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 required an EIR shall determine whether the Project is likely, directly or indirectly, to cause Damage to the Environment and shall make a finding describing the Damage to the Environment and confirming that all feasible measures have been taken to avoid or minimize the Damage to the Environment. An EIR is required because the Project is located within a DGA around an Environmental Justice Population [310 CMR 11.06(7)(b)].

The Proposed Section 61 Findings below, the DEIR narrative, and Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) incorporate consultations with various state agencies. While NEP will continue to consult with certain agencies concerning mitigation, this DEIR contains the most up-to-date information on the Project's mitigation measures, including those to which NEP has committed and those under discussions with agencies. Each Section 61 Finding is essentially a stand-alone document, so it does not incorporate previously defined acronyms.

15.2 Draft Section 61 Findings

MassDEP Wetlands / Waterways, 401 Water Quality Certification

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: 401 Water Quality Certification

NEP will seek a 401 Water Quality Certification from the Department of Environmental Protection (MassDEP) for the proposed E131 Asset Condition Refurbishment Project pursuant to M.G.L. 314 CMR 9.00.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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 the 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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 the existing and the construction of new access routes are required to facilitate the Project.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the EIR, which is incorporated by reference into this Section 61 Finding.

Project Mitigation: Mitigation was considered as a matter of course during the planning and design process as an overall approach to avoiding impacts whenever possible. In terms of mitigation during construction, NEP has established best management Practices (“BMPs”) that are to be followed by NEP employees and its contractors for accessing sites and performing construction activities on transmission ROWs. These BMPs ensure that this Project will be completed in accordance with applicable environmental laws and regulations, as well as with NEP policies and compliance objectives. NEP completed field investigations and a constructability review along the Project route to determine access routes and construction techniques to be implemented during construction of the Project to provide an accurate impact assessment and to design work to avoid and minimize impacts within wetlands and other sensitive resources (e.g., cultural resources) to the greatest extent practicable. Accordingly, commitments listed in Section 6 are to be carried out by NEP, to ensure that proposed wetlands and waterways mitigation strategies will be implemented as the Project proceeds.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

Findings: After the draft findings herein have been reviewed by the Massachusetts Department of Environmental Protection, and revised by the Proponent, as appropriate, MassDEP will make a finding that the foregoing information adequately describes the environmental impacts associated with the Project, and that with the implementation of the mitigation measures described above, practicable means will have been taken to avoid or minimize adverse environmental impacts subject to MassDEP authority. Implementation of avoidance, minimization, and mitigation measures will occur in accordance with the terms and conditions set forth in the 401 Water Quality Certification.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY _____

DATE _____

MA Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (NHESP)

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: Conservation and Management Permit

NEP will seek a Conservation and Management Permit under the Massachusetts Endangered Species Act (MESA; 321 CMR 10.23) from the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP) for the proposed E131 Asset Condition Refurbishment Project pursuant to 310 CMR 10.00.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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 the existing and the construction of new access routes are required to facilitate the Project.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the Draft EIR, which is incorporated by reference into this Section 61 Finding.

Project Mitigation: Mitigation was considered as a matter of course during the planning and design process as an overall approach to avoiding impacts whenever possible. In terms of mitigation during construction, NEP has established best management Practices ("BMPs") that are to be followed by NEP employees and its contractors for accessing sites and performing construction activities on transmission ROWs. These BMPs ensure that this Project will be completed in accordance with applicable environmental laws and regulations, as well as with NEP policies and compliance objectives. NEP completed field investigations and a constructability review along the Project route to determine access routes and construction techniques to be implemented during construction of the Project

to provide an accurate impact assessment and to design work to avoid and minimize impacts within wetlands and other sensitive resources (e.g., cultural resources) to the greatest extent practicable.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

NEP is working closely with NHESP to develop mitigation measures for each species, and consultation is ongoing. The Project will implement the necessary actions to avoid, minimize, and mitigate Project-related impacts to comply with the Massachusetts Endangered Species Act ("MESA") permit issued for the Project. A detailed mitigation plan will be discussed with NHESP as part of the Conservation and Management Permit review process.

Findings: After the draft findings herein have been reviewed by Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program, and revised by the Proponent, as appropriate, the Natural Heritage and Endangered Species Program will make a finding that the foregoing information adequately describes the environmental impacts associated with the Project, and that with the implementation of the mitigation measures described above, practicable means will have been taken to avoid or minimize adverse environmental impacts subject to NHESP authority.

MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE
NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM

BY _____

DATE _____

MA Department of Transportation

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: Permit to Access State Highway

NEP will seek a Permit to Access State Highway (700 CMR 13.00) from the MA Department of Transportation (MassDOT) for the proposed E131 Asset Condition Refurbishment Project.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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 the existing and the construction of new access routes are required to facilitate the Project.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the Draft EIR, which is incorporated by reference into this Section 61 Finding.

Project Mitigation: Mitigation was considered as a matter of course during the planning and design process as an overall approach to avoiding impacts whenever possible. In terms of mitigation during construction, NEP has established best management Practices ("BMPs") that are to be followed by NEP employees and its contractors for accessing sites and performing construction activities on transmission ROWs. These BMPs ensure that this Project will be completed in accordance with applicable environmental laws and regulations, as well as with NEP policies and compliance objectives. NEP completed field investigations and a constructability review along the Project route to determine access routes and construction techniques to be implemented during construction of the Project to provide an accurate impact assessment and to design work to avoid and minimize

impacts within wetlands and other sensitive resources (e.g., cultural resources) to the greatest extent practicable.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

Consultation with MassDOT District 1 regarding anticipated Project activities within highway jurisdiction has been ongoing throughout the Project. With MassDOT input, a Traffic Management Plan ("TMP") will be developed and submitted for review and approval prior to the start of construction. Enforceable commitments in the TMP will be carried out by NEP to ensure that proposed traffic mitigation strategies will be implemented as the Project proceeds. Such strategies may include, as appropriate, traffic management procedures; construction time restrictions; signage; installation of track pads to minimize soil in roadways; and/or restoration of vegetation along soft shoulders after construction. All work will occur in accordance with NEP Policy for ROW Access, Maintenance and Construction Best Management Practices.

Findings: After the draft findings herein have been reviewed by Massachusetts Department of Transportation, and revised by the Proponent, as appropriate, the Massachusetts Department of Transportation will make a finding that the foregoing information adequately describes the traffic impacts associated with the Project, and that with the implementation of the mitigation measures described above, practicable means will have been taken to avoid or minimize adverse environmental impacts subject to Massachusetts Department of Transportation authority. Appropriate conditions consistent with this Section 61 Finding are included in the State Permit to Access State Highway issued by Massachusetts Department of Transportation to describe more fully and ensure implementation of said measures.

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

BY _____

DATE _____

MA Department of Conservation and Recreation, Construction Access Permit

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: Construction Access Permit

NEP will seek a Construction Access Permit (CAP) (302 CMR 11.00) from the Department of Conservation and Recreation for the proposed E131 Asset Condition Refurbishment Project.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the Draft EIR, which is incorporated by reference into this Section 61 Finding.

The Project includes on and off-ROW tree removal and construction activities within DCR properties of the Commonwealth under the care, custody, and control of the DCR under 302 CMR 11.00.

Project Mitigation: Mitigation was considered as a matter of course during the planning and design process as an overall approach to avoiding impacts whenever possible. In terms of mitigation during construction, NEP has established best management Practices ("BMPs") that are to be followed by NEP employees and its contractors for accessing sites and performing construction activities on transmission ROWs. These BMPs ensure that this

Project will be completed in accordance with applicable environmental laws and regulations, as well as with NEP policies and compliance objectives. NEP completed field investigations and a constructability review along the Project route to determine access routes and construction techniques to be implemented during construction of the Project to provide an accurate impact assessment and to design work to avoid and minimize impacts within wetlands and other sensitive resources (e.g., cultural resources) to the greatest extent practicable.

The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

At this time, proposed mitigation may include, but is not limited to, the following:

- Work will be conducted according to the CAP terms and conditions.
- Work will be performed in accordance with applicable statutes, regulations, codes, or standards.
- NEP will coordinate with the DCR Staff Archaeologist and Ecologist prior to the commencement of work.
- Appropriate mitigation and/or in-lieu fees will be provided for activities which result in disruption to DCR properties.

Coordination with DCR is ongoing.

Findings: After the draft findings herein have been reviewed by DCR, and revised by the Proponent, as appropriate, DCR will make a finding that the foregoing information adequately describes the environmental impacts associated with the Project, and that with the implementation of the mitigation measures described above, practicable means will have been taken to avoid or minimize adverse environmental impacts subject to DCR authority.

DEPARTMENT OF CONSERVATION AND RECREATION

BY _____

DATE _____

Executive Office of Energy and Environmental Affairs, Environmental Justice

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: Executive Office of Energy and Environmental Affairs ("EEA") – Environmental Justice

These Findings are limited to the subject matter jurisdiction of the Executive Office of Energy and Environmental Affairs (EEA) Massachusetts Environmental Policy Act (MEPA) Interim Protocol for Analysis of Environmental Justice (EJ) Impacts, which implements requirements related to the content of MEPA Environmental Impact Reports (EIRs), as set forth in Section 58 of the Act.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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 the existing and the construction of new access routes are required to facilitate the Project.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the Draft EIR, which is incorporated by reference into this Section 61 Finding.

Project Mitigation: The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear

commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

The Project will occur within the existing ROW, thereby minimizing adverse environmental impacts to the nature of the Project, outage constraints in the region, and NEP's efforts to reduce impacts to the natural and human environment. No long-term impacts on soil, bedrock, vegetation, surface water, groundwater, wetland resources or air quality will occur. Any potential sedimentation impacts, and other short-term construction impacts to wetlands and surface waters, will be mitigated through the use of soil erosion and sediment control best management practices ("BMPs") and temporary construction mats to protect wetland soils, vegetation root stock, and streams. As part of the Project, an environmental monitor will be part of the Project team to ensure compliance with regulatory programs and permit conditions, and to oversee the proper installation and maintenance of the soil erosion and sediment control BMPs. At this time, proposed mitigation includes, but is not limited to, the following:

Air Quality: Construction-period activities, such as grading, roadbuilding, vehicle travel, and other earth-disturbing work may result in a temporary increase in airborne dust. Impacts to air quality will be minimized by managing the control of dust movement with practices such as spreading wood mulch or straw and using water trucks to spray dried soil to keep it moist. The potential for dust generation is only anticipated during the construction period. Post construction, soil will be stabilized and re-vegetated.

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 BMPs. The impacts from these emissions will be minimal and are not anticipated to cause impacts to public health. Additionally, idling times are limited 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 and be in compliance with the Massachusetts Anti-idling Law, M.G.L. c. 90 § 16A, c. 111 §§ 142A – 142M, and 310 CMR 7.11.

Water Quality: The Project will incorporate protective and preventative measures to minimize and avoid impacts to water quality. To protect water quality and sensitive resource areas, temporary access will be constructed using construction mats. Construction mats are comprised of wooden beams, bolted together, and are typically 4 feet wide by 16 feet 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 and are also placed in a manner that does not affect the flow of water in streams. These mats will be removed when construction is completed, and the wetlands will be restored. In addition, BMPs, such as the use of straw wattles, silt fencing, stormwater management features, and other control measures will be used to prevent soil and other material from being transported into wetlands and streams. Using these BMPs, any impacts to water quality will be negligible and temporary and are not anticipated to cause impacts to public health.

Land Protection and Open Space: Access to Protected Land and Open Space within EJ Populations will not be impacted.

Noise: Noise impacts associated with construction-period activities are temporary in nature and expected to be minimal. Noise-generating activities will be conducted in

accordance with any local and state requirements and are not anticipated to cause impacts to public health.

Traffic: Impacts on traffic during the construction of the Project will be minor and intermittent. The work areas will be accessed primarily from NEP-owned access routes or minor town roadways. NEP will obtain the necessary permits from Massachusetts Department of Transportation for access. Once on-site, vehicle traffic will be limited to within or in proximity to the ROW. Since the ROW 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.

Findings: After the draft findings herein have been reviewed by the EEA - EJ Program, and revised by the Proponent, as appropriate, the EEA - EJ Program will make a finding that the foregoing information adequately describes the environmental impacts to the EJ Populations associated with the proposed Project, and that with the implementation of the mitigation measures described above, feasible means will have been taken to avoid or minimize adverse environmental impacts subject to EEA's EJ authority.

DEPARTMENT OF EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

BY _____

DATE _____

Executive Office of Energy and Environmental Affairs, Climate Change Adaptation and Resiliency

Project Name: E131 Asset Condition Refurbishment (ACR) Project

Project Location: Adams, North Adams, Florida, Monroe

Project Proponent: New England Power Company ("NEP")

EEA Number: 16663

Agency Action: Executive Office of Energy and Environmental Affairs ("EEA") – Climate Change

These Findings are limited to the subject matter jurisdiction of the Executive Office of Energy and Environmental Affairs (EEA) Massachusetts Environmental Policy Act (MEPA) Interim Protocol on Climate Change Adaptation and Resiliency ("Interim Protocol") which complies with Executive Order 569.

Project Description: Comprehensive inspections have identified structures and wires in need of replacement due to asset condition and aging infrastructure, and lack of safe access for maintenance and emergency needs. Inspections 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.

From a safety and reliability perspective, and in order to extend asset life, the following activities are proposed in Massachusetts:

- 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 the existing and the construction of new access routes are required to facilitate the Project.

MEPA Jurisdiction: Pursuant to M.G.L. c. 30 §61- §62A-I, of the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations at 301 CMR 11.00, the Proponent (NEP) has prepared and submitted this DEIR to the MEPA office. 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*

Additionally, the proposed Project requires state permits from the Massachusetts Department of Environmental Protection (MassDEP), Massachusetts Division of Fisheries and Wildlife (Natural Heritage and Endangered Species Program, NHESP), Massachusetts Department of Transportation, and the Massachusetts Department of Conservation and Recreation. Additional State Agency Actions include consistency with EEA protocols.

Project Impacts: The potential environmental impacts of the Project have been characterized and quantified in the Draft EIR, which is incorporated by reference into this Section 61 Finding.

Risk factors identified for the Project area by the Resilient MA Action Team (RMAT) tool, include: High exposure to Extreme Precipitation - Urban Flooding; Extreme Precipitation - Riverine Flooding; and Extreme Heat. Based on an analysis of the Project purpose and associated impacts, the Project is not anticipated to result in adverse impacts in these areas and should instead provide substantial benefits over existing conditions.

Project Mitigation: The Proponent recognizes that the identification of effective mitigation, and implementation of that mitigation throughout the life of the Project, is central to its responsibilities under MEPA. Accordingly, the Proponent has prepared Table 15-1 (Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix) that describes the mitigation that the Proponent would provide. The Proponent provides clear commitments to implement the mitigation measures, and provides a schedule for their implementation based upon Project phasing.

NEP has taken steps to promote climate change adaptation and resiliency in the design of the Project and continues to consider climate change and long-term infrastructure resiliency as an important goal in its long-term infrastructure planning. The Project will result in a more climate-ready and resilient transmission system that can withstand more extreme weather events and address existing system capacity shortages and increased demand. In addition, NEP’s preferred solution uses substantial portions of the existing ROW, thereby minimizing alteration of new land resources to construct the Project. The purpose of the Project is to address existing asset conditions along the E131 line that pose a threat to electrical reliability.

Findings: After the draft findings herein have been reviewed by the EEA - Climate Change Program, and revised by the Proponent, as appropriate, the EEA - Climate Change Program will make a finding that the foregoing information adequately describes the environmental impacts to the climate associated with the proposed Project, and that with the implementation of the mitigation measures described above, feasible means will have been taken to avoid or minimize adverse climate impacts subject to the MEPA Interim Protocol on Climate Change Adaptation and Resiliency.

DEPARTMENT OF EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

BY _____

DATE _____

15.3 Summary of Mitigation Commitments

Avoidance, minimization and mitigation measures for each subject matter/parameter are addressed in Sections 3 through 9 of this DEIR narrative. A summary of avoidance and minimization measures and mitigation commitments is provided in Table 15-1.

Table 15-1: E131 Avoidance, Minimization and Mitigation Measures, BMPs and Schedule Matrix

Parameter	Avoidance, Minimization and Mitigation Measures and BMPs	Construction Activity						
		Vegetation removal & mowing	Erosion & sediment controls	Access improvement	Structure removal / disposal	Structure installation	Wire replacement	ROW restoration
General	An Environmental Field Issue (EFI) document will be developed for the Project and used for training contractors and environmental monitors. The EFI is a comprehensive document that outlines permit conditions, includes NEP BMPs and specifies the expectations and requirements that NEP will hold construction personnel responsible for compliance with. A copy of the EFI is kept on file at the NEP office, at the site trailer and/or site supervisor's vehicle. Contractor training will be an ongoing process, as needed, when new personnel arrive on site.	X	X	X	X	X	X	X
Land Alteration and Stormwater	Erosion and sediment controls will be installed and maintained. The SWPPP will be implemented to ensure that BMPs are utilized during construction to address potential impacts from erosion and stormwater runoff. Stormwater management and pollution prevention will be accomplished through stabilization and structural control BMPs, as well as good housekeeping practices. A component of the SWPPP will include requirements for spill control, clean up and reporting.		X	X	X	X	X	X
	Disturbed areas on the site will be stabilized using standard BMPs, which can include seeding and mulching, hydroseeding, water bars, slope breakers, amongst others, to be presented in the EFI document.	X	X	X	X	X	X	X
	Tree removal will be conducted using methods and equipment which minimize ground disturbance, such as feller bunchers or other tree handling equipment (where possible). To the extent feasible, NEP forestry crews will preserve understory scrub-shrub and herbaceous vegetation to avoid and minimize creating areas of bare soil surfaces.	X						
	Where tree removal and/or new access is proposed in areas of steep slopes or high erosive potential, additional precautions will be taken to ensure soil stability is maintained. These may include installation of water bars, plunge pools, diversion channels, and/or check dams, as appropriate to site specific conditions.	X	X	X				X
	Dust controls will be implemented as needed throughout the duration of the Project, on disturbed soils that are subject to surface dust movement and dust blowing.	X	X	X	X	X	X	X
Tree removal	Where tree removal is proposed within the ROW (i.e., in areas which will be permanently maintained as low growing, herbaceous or scrub/shrub communities), appropriate conservation seed mixes will be applied in areas of bare soil surfaces, in order to promote biodiversity, provide pollinator habitat, and replace lost forest habitats with alternative ecologically valuable community types. NEP is a member of the Monarch CCAA and is currently undergoing a bio-audit to benchmark the habitat and ecosystem quality of the ROW. Further details of the on-going bio-audit are available here: https://bioaudit.acrt.com/national-grid/ .	X						X
	Where conditions are suitable, a portion of the wood generated during tree removal activities might remain on-site as standing snags, brush piles, log piles, and decaying large woody debris. Optimal locations for these habitat features will be determined in coordination with NHESP (in the case of rare species habitat), and by professional ecologists and wildlife biologists, for areas outside of designated rare species habitat.	X						X
	Tree removal reduced from 17.6 acres to 11.3 acres since EENF filing.	X						
	Within NEP fee-owned parcels, wood collected during tree removal shall be committed to reuse in long-lived wood products or will be donated to affordable housing projects or wood banks in MA. Outside of NEP fee-owned parcels, the trees within the ROW belong to the respective private landowners. As such, it will not be possible to provide a detailed break-down of how all wood is distributed/disposed of by parties other than NEP.	X						
Wetlands and Waterways	Install, inspect, and maintain temporary erosion and sediment controls, and other applicable construction BMPs, around work sites in or near wetlands. These will minimize the potential for erosion and sedimentation, mark the limits of wetlands, and restrict crew access, as appropriate.		X	X	X	X	X	X
	Within jurisdictional resource areas, limit grading for access and work areas to the extent necessary to provide a safe workspace.			X	X	X		X
	Avoid or minimize access through wetlands to the extent practicable. Where access must be improved or developed outside of vegetated wetlands, the access would be designed (where practical), so as not to interfere with surface water flow or the functions of the wetland.	X	X	X	X	X	X	X
	NEP will coordinate with the DCR Staff Archaeologist and Ecologist prior to the commencement of work	X						
	Decommission, remove and restore four structure locations 101, 144, 153 and 180 (currently located within BVWs) from the alignment to eliminate the potential for repeated future impacts to the associated wetlands for maintenance.				X			
	Work pad size within Riverfront Area will be reduced to the extent feasible post-construction. Work pads and pull pads within RFA will be loamed, seeded and otherwise restored to 'natural' conditions, (i.e., existing ROW conditions).					X		X
	In-Situ Wetland Restoration: Once construction is complete, restore wetlands to pre-construction configurations and contours, to the extent practicable. Conduct post-wetland restoration monitoring. Riverfront Area will be allowed to return to scrub shrub habitat or another non-forested habitat.							X
	Ex-Situ Replication/Compensatory Mitigation: Construction of a 700 sf wetland replication area for the 660 sf of permanent vegetated wetland loss; post-construction monitoring and reporting.							X
	Comply with the conditions of local, state, and federal permit conditions related to wetlands.	X		X	X	X	X	X
Store petroleum products more than 100 feet from a wetland.	X	X	X	X	X	X	X	

Parameter	Avoidance, Minimization and Mitigation Measures and BMPs	Construction Activity						
		Vegetation removal & mowing	Erosion & sediment controls	Access improvement	Structure removal / disposal	Structure installation	Wire replacement	ROW restoration
	Proposed stream crossings will be temporary in nature and will be bridged using construction mats laid to not impact the hydrology or the bed of the stream. Native shrub species will revegetate the stream banks.	X	X	X	X	X	X	X
	Limit disturbance for structure foundations in wetlands to the amount necessary to perform the installations.					X		
	Do not pile cut woody wetland vegetation to block surface water flows or otherwise to adversely affect the integrity of the wetland.	X						
	Attempt to schedule activities located near waterways during low-flow periods, to the extent practicable. Some crossings may have to be installed outside of typical low-flow periods to adhere to Project construction schedules and to conform to any transmission line outage windows that must be coordinated to maintain the reliability of the transmission grid.	X		X				
	Overhead crossings designed to avoid conflicts.						X	
<i>Rare Species Contractor Education and Awareness</i>	Contractors working in state-listed species habitat will be trained in species identification.	X	X	X	X	X	X	X
	Contractors will be required to practice good housekeeping and securely dispose of food wrappers and waste to discourage any increase in the predator population.	X	X	X	X	X	X	X
<i>Construction Timing and Restrictions for Rare Species</i>	Work at Adams substation in the vicinity of known rare plant species will be conducted outside of the growing season. Work will be conducted within previously disturbed areas to the extent feasible to avoid impacts to rare plants. If work is required during the growing season, construction matting will only be in place for a four week maximum timeframe.	X	X	X	X	X	X	X
	Project activities will adhere to National Grid's approved Operation and Maintenance Plan (OMP), approved by the NHESP. Mitigation measures and BMPs to protect identified rare species will be implemented and maintained throughout the Project duration.	X	X	X	X	X	X	X
	Identified populations of rare plant species will be flagged by an NHESP-approved botanist. Rare species areas will be monitored by professional wildlife scientists and/or botanists during construction and post-construction to evaluate growth habits and work-related impacts. Specific functions to be performed by these scientists will be defined during consultation with NHESP.	X	X	X	X	X	X	X
	A MESA Conservation & Management Permit (CMP) will be issued for the rare plant species for which a "take" is anticipated. Compliance with CMP performance standards includes implementing a conservation and management plan that provides a long-term net benefit to the conservation of the state-listed species. Specific measures will be discussed with NHESP and may consist of state-listed habitat management on the Proponent's property, Conservation Restriction, offsite mitigation, in-situ habitat restoration of temporarily disturbed areas, protective fencing and enclosures/exclusions, and/or other measures to achieve net benefit for each affected species.	X	X	X	X	X	X	X
	Install STR 179 using direct embed techniques requiring no foundation and install STR 181 using micropile foundations to avoid permanent concrete foundations. Install new utility pole structures adjacent to existing structures, where feasible.					X		
	Important habitat areas for the protected species will be delineated/identified on the project construction plans provided with the Environmental Field Issue. These features will also be flagged or demarcated in the field.	X	X	X	X	X	X	X
<i>Monitoring for Rare Species</i>	Per the OMP, NHESP will provide specific management requirements where cutting is required for maintenance activities in wetland resources areas located within mapped state-listed species habitat.	X	X	X	X	X	X	X
	Per the OMP, areas dominated by low-growing shrub species (lowbush blueberry, huckleberry, sheep laurel, New Jersey tea, sweet fern and scrub oak) should be encouraged and restored if disturbance is necessary for maintenance-related activities.							X
<i>Vegetation Management for Rare Species</i>	NHESP mapped habitats within the ROW are subject to the special conditions established in NEP's VMP.	X						
	Construction mats will be used for wetland access. This practice retains the root systems and seed stock and facilitates revegetation post-construction.	X	X	X	X	X	X	X
	Erosion and Sediment Controls will be installed and regularly maintained to protect water quality in wetland resource areas and other waterbodies.		X	X	X	X	X	X
<i>BMPs for Rare Species</i>	Use pre-existing trails and access routes to avoid impacting previously undisturbed areas.	X	X	X	X	X	X	X
	Dewatering discharge will be pumped into a straw bale or silt fence settling basin to be located in an upland area (preferably well-vegetated whenever practicable).					X		
	Foundation excavations will be covered when left unattended.					X		
	Per the OMP, materials will not be stockpiled in CVPs or wetland resource areas.	X	X	X	X	X	X	X
	Parking of contractor vehicles will be limited or avoided, when practicable, in specified areas within the ROW.	X	X	X	X	X	X	X
	Equipment will be monitored regularly for leaks and secondary containment will be used under equipment that will be parked in habitat areas during construction. Refueling will not occur within 100 feet of wetlands or waterways.	X	X	X	X	X	X	X
	Where tree removal is proposed within NHESP habitat, NEP will coordinate with NHESP to provide a comprehensive mitigation plan for tree removal activities. This may include species-specific habitat enhancement and creation measures, both on and off-ROW.	X						X
Upon completion of the Project activities, work areas for maintenance activities will be restored to pre-existing condition. These areas will be allowed to progressively vegetate with typical regular management.							X	

Parameter	Avoidance, Minimization and Mitigation Measures and BMPs	Construction Activity							
		Vegetation removal & mowing	Erosion & sediment controls	Access improvement	Structure removal / disposal	Structure installation	Wire replacement	ROW restoration	
<i>Specialized Construction and Restoration Measures for Rare Species</i>	Per the OMP, areas dominated by low-growing shrub species should be restored in-kind if disturbance is necessary for maintenance-related activities.							X	
	Native vegetation should be preserved in and adjacent to wetlands whenever practicable. Use of construction mats allows for the preservation of root stock by tamping down existing vegetation. Construction matting within wetlands in Priority/Estimated Habitat will be removed immediately after completion of work, to reduce impacts to emergent vegetation and facilitate revegetation.	X	X	X	X	X	X	X	X
	In compliance with the VMP and OMP, vegetation and maintenance activities will continue to be managed regularly in NHESP habitat using restrictions and measures that avoid adverse impacts to protected species.	X	X	X	X	X	X	X	X
<i>Invasive Species</i>	Identification of the wetlands containing invasive species will be shown on Project plans provided to contractors.	X	X	X	X	X	X	X	
	Environmental training of workers so that BMPs are implemented consistently.	X	X	X	X	X	X	X	
	Requiring contractors check that construction equipment, vehicles, and materials (e.g., equipment mats) be clean and free of excess soil, debris, and vegetation before being mobilized to the Project ROWs.	X		X	X	X	X	X	
	Cleaning any equipment working in or traversing a wetland containing invasive plant species prior to relocating to another work site. Cleaning of vehicles and other equipment (including the tracks and tires) will involve removal of visible dirt, debris and vegetation using brooms, shovels, and, if needed, compressed air.	X		X	X	X	X	X	
	Use of construction mats at wetland crossings so construction vehicles that frequently travel along on-ROW access routes, such as pickups carrying personnel or material delivery trucks, can avoid direct wetland interaction.	X		X	X	X	X	X	
	Use of straw, or alternative BMP erosion and sedimentation controls will be used in and near wetlands.		X	X		X		X	
	Mats used in wetlands containing invasive species will be cleaned prior relocation to other work areas or wetlands. Cleaning of matting will involve dropping mats one on top of another to loosen any sediment and debris. The matting will then be swept to remove loose soil and any plant material.	X		X				X	
	Construction equipment and excavated soil material will be contained within the approved limits of work areas within the ROW; these limits of work will be defined on Project plans.	X	X	X	X	X	X	X	
	Soils excavated from wetlands or riparian areas containing a predominance of invasive plants will be stockpiled separately (to the extent that there is sufficient workspace) and contained within staked bales, silt fence or other approved erosion and sedimentation control BMPs to minimize the potential of spreading these soils elsewhere onto the ROW.					X			
	Final restoration of the ROW will be performed in accordance with National Grid's Environmental Guidance Document EG-303.							X	
	NEP field monitors will perform site inspections and oversee the contractors' compliance with applicable federal, state, and local permit conditions, Project plans (e.g., SWPPP), and NEP policies.	X	X	X	X	X	X	X	
	Soil and vegetation disturbance will be minimized to the extent practicable.	X	X	X	X	X	X	X	
	Erosion and sedimentation controls will be installed and maintained, per the SWPPP.		X	X	X	X	X	X	
Prior to moving to other work areas, remove plant matter, soil, or other deleterious material from equipment and construction matting when working at the sites containing invasive species.	X		X	X	X	X	X		
<i>Historic Resources</i>	Mitigation will be determined in consultation with MHC, THPOs, DCR, any other consulting parties and Advisory Council on Historic Preservation ("ACHP"), as appropriate. If determined to be necessary, data collection activities will occur prior to any construction activities. If the site is to be protected in place, appropriate protective measures will be taken when earth-disturbing construction activities occur in the vicinity.	X	X	X	X	X	X	X	
	Tribal representative-identified stone walls will be avoided to the extent practicable. If avoidance is not feasible during access, the stone wall will be bridged using construction mats. The work pad at Structure 84 has been located to avoid historic stone structures. Comply with EG-303 NE regarding cultural avoidance and protection measures.	X	X	X	X	X	X	X	
<i>Hazardous Waste</i>	Work will be completed in accordance with EG-303, EG-501, EG-502, and EG-1707 which describe NEP's procedures for managing hazardous waste and contaminated soils, and NEP's spill response and reporting procedures.	X	X	X	X	X	X	X	
	If oil and/or hazardous material are identified during the implementation of this Project, notification will be made to MassDEP, per reporting requirements, and the necessary precautions outlined in NEPs BMPs and relevant permits will be followed.	X	X	X	X	X	X	X	
	Develop a spill prevention and response plan with procedures to be used during construction to minimize the potential for a fuel spill and, if a spill occurs, to control and minimize potential effects.	X	X	X	X	X	X	X	
	If refueling and maintenance in the field are necessary, vehicles and equipment will be brought to an area greater than 100 feet away from sensitive environmental features, and Reasonable environmental precautions will be taken.	X	X	X	X	X	X	X	

Parameter	Avoidance, Minimization and Mitigation Measures and BMPs	Construction Activity						
		Vegetation removal & mowing	Erosion & sediment controls	Access improvement	Structure removal / disposal	Structure installation	Wire replacement	ROW restoration
<i>General Decarbonization Benefits</i>	Improved transmission system infrastructure will provide improved electric transmission reliability.					X	X	
<i>Climate Change Adaptation & Resiliency</i>	Precipitation Resiliency: <ul style="list-style-type: none"> Replacement steel structures and caisson foundations are more resilient to weather extremes than the existing structures. Access improvements will better withstand flood conditions and will reduce the potential for erosion impacts during future maintenance. Improved line clearances (tree removal) will reduce the risk of outages due to trees falling on the lines, which is likely to become more frequent with climate change (due to both temperature stress and increased precipitation destabilizing upland trees). Mitigation measures for work within wetlands also facilitate precipitation resiliency. 	X		X		X	X	
	Temperature Resiliency: Upgrades to infrastructure, e.g., insulators and conductors, will allow the system to handle greater electrical loads during heat waves.						X	
	Inland Flooding Resiliency: <ul style="list-style-type: none"> Replacement steel structures and caisson foundations are more resilient to inundation. Structures within the floodplain are not expected to restrict flows or cause an increase in flood stage or velocity. Impacts to peak runoff rates (from tree removal and increases in impervious surface area), will be mitigated through a combination of hard and soft engineering techniques. 					X		X
<i>Traffic</i>	Consult with MassDOT to review proposed plans for overhead crossings (including the use of guard structures) and to review plans to access the NEP ROW via Route 2 (state highway); develop a Transportation Management Plan (TMP) to address impacts and MassDOT concerns to ensure a safe working environment and safe passage for highway traffic.			X			X	
<i>Emissions</i>	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 have USEPA-verified (or equivalent) emission control BMPs, 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. Vehicle idling will be minimized in accordance with Massachusetts' Anti-idling law, M.G.L. c. 90, § 16A, c. 111, §§ 142A – 142M, and 310 CMR 7.11. 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.	X	X	X	X	X	X	X
	Dust controls will be evaluated and implemented as needed throughout the duration of the Project on disturbed soils that are subject to surface dust movement and dust blowing.	X	X	X	X	X	X	X
<i>Environmental Justice/ Public Health</i>	Additional outreach will be conducted in EJ communities to facilitate additional information and coordination, including: <ul style="list-style-type: none"> Additional direct mail, "leave behinds" (e.g., fliers, brochures) and posted signage Continue to update Project website Monitor the toll-free Project hotline and email inquiry address Email construction updates 	X	X	X	X	X	X	X
	Construction-period measures such as dust and emissions controls, construction matting and BMPs will be utilized. NEPA will comply with local and state noise requirements, and the MassDOT Access Permit for construction-period access from Route 2.	X	X	X	X	X	X	X
<i>Open Space (Construction Access Permit)</i>	NEP will continue consultations with DCR regarding future CAP permitting. Work will be conducted according to the CAP terms and conditions.	X	X	X	X	X	X	X
	Elimination of off-ROW access road within Monroe State Forest to Structures 67 and 68 resulted in reduction of 1.06 acres of land alteration.	X		X				
	NEP will coordinate with local park managers to implement mitigation measures to avoid impacts to recreation to the extent feasible. Signage will be implemented at trail heads and where trails cross the ROW, to notify hikers of construction activities.	X	X	X	X	X	X	X

Section 16

Response to Comments

As required by the Certificate on the EENF, **“The DEIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the EENF that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response. This directive is not intended to, and shall not be construed to, enlarge the Scope of the DEIR beyond what has been expressly identified in this certificate.”**

The following section provides a response to comments received on the EENF. Each letter received has been assigned an abbreviation, listed below in Table 16-1. All comment letters received are included in Appendix A and specific comments within each letter are noted in the margin with an abbreviation and comment number. Below are the comments, transcribed verbatim, accompanied by a response to each.

TABLE 16-1

EENF Commenter and Abbreviation

Commenter	Abbreviation
Certificate of the Secretary of Energy and Environmental Affairs on the Expanded Environmental Notification Form	MEPA
Mohawk Trail Woodlands Partnership	MTWP
Hoosic River Watershed Association	HooRWA
Massachusetts Department of Conservation and Recreation	DCR
Berkshire Environmental Action Team	BEAT
Berkshire Regional Planning Commission	BRPC
Mass Audubon, Appalachian Mountain Club, Massachusetts Association of Conservation Commissions, Massachusetts Land Trust Coalition, The Nature Conservancy in Massachusetts, Sierra Club Massachusetts Chapter, The Trustees of Reservations, Friends of Mohawk Trail State Forest, and Harvard Forest	AUD et al.
Massachusetts Department of Environmental Protection, Western Regional Office	DEP WERO
Massachusetts Department of Environmental Protection, Waterways Regulation Program	DEP WRP
Massachusetts Department of Transportation	MassDOT
Massachusetts Natural Heritage and Endangered Species Program	NHESP

MEPA Certificate on EENF (MEPA)

MEPA 01: According to the EENF, potential environmental impacts associated with the project include the alteration of ±111 acres of land, of which 92 acres will be permanent (permanent gravel access roads and work pads) and 19 acres will be temporary. It is unclear how the project is accounting for up to ±250 acres of alteration of DCR land associated with new, permanent access roads within ROW boundaries and off-ROW access. This should be clarified in the DEIR.

Response: As indicated in the EENF and clarified in DEIR narrative Section 1.2 and Table 1-1, potential environmental impacts include the alteration of 62.5 acres of land, of which 62.4 acres will be permanent (permanent gravel access roads and work pads) and 0.07 acres will be temporary. Approximately 16 acres of alteration of DCR land is associated with new, permanent access roads within ROW boundaries and 6 acres for off-ROW access.

MEPA 02: Within the project's DGA, the Proponent indicates that the communities of Adams, North Adams, Monroe, and Rowe meet at least one of the four "vulnerable health EJ criteria"; however, the EENF does not identify which communities and census tracts exceed 110% of the statewide rate for each criteria: Heart Attack Rate, Pediatric Asthma Rate (available at the community level), Low Birth Weight, and Blood Lead Prevalence (available at the census tract level). The DEIR should provide additional analysis of impacts on EJ populations consistent with the MEPA Interim Protocol including fully analyzing the data available in the DPH tool at the municipal and census tract level.

Response: DEIR narrative Section 3 presents additional analysis of impacts on EJ populations consistent with the MEPA Interim Protocol, including using data available in the DPH tool at the municipal and census tract level. The narrative identifies which communities and census tracts exceed 110% of the statewide rate for each of the four "vulnerable health EJ criteria".

MEPA 03: As discussed in the Climate Change section below, the project has a high exposure and risk rating based on the project's location for extreme precipitation (riverine and urban flooding) and extreme heat. Approximately 86 acres of vegetation impact is proposed project-wide including ±17.6 acres of tree removal. Implications for GHG emissions and heat island effects should continue to be analyzed as set forth in the Climate Change Scope below. To the extent tree clearing will affect adjacent EJ populations with heightened vulnerabilities as shown by the DPH EJ Tool or EPA EJ Screen, specific mitigation should be considered.

Response: Tree removal impacts have been reduced from 17.6 acres to 11.3 acres since the EENF filing. DEIR narrative Section 3 addresses EJ Populations with heightened vulnerabilities and Section 10 addresses climate change risks, including GHG emissions and heat island effects.

MEPA 04: According to the EENF, 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. The 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 EENF does not describe potential impacts to open space and DCR land from construction of 5 miles of new access roads or improvement of existing access roads. Comments from DCR indicate concerns regarding recreational impacts associated with temporary closure of trails and roads used for public recreation during active construction. As impacts to public recreation will also affect EJ populations, these issues should be fully explored in the DEIR.

Response: DEIR narrative Section 9 addresses existing DCR lands, recreational opportunities and impacts associated with the Project. There is no proposed loss of open space associated with the Project.

MEPA 05: The EENF includes a commitment to provide wetland replication to compensate for the ±700 sf of permanent fill within BVW but does not propose replication to mitigate any permanent forested wetland conversion. If the rutting from temporary construction matting is greater than approximately six inches deep, these areas will be restored to reestablish existing topography and maintain existing wetland hydrology...

The EENF identifies a preliminary mitigation strategy involving the decommissioning, removal and restoration of four structures (101, 144, 153, and 180) located within four separate BVWs which will eliminate the need for future repeated alterations of the associated resource areas for maintenance. Additional information regarding mitigation for permanent wetland impacts should be provided in the DEIR.

Response: Please refer to DEIR narrative Section 6 regarding restoration and mitigation. No permanent forested wetland conversion is proposed.

MEPA 06: Tree clearing related to new permanent access roads is estimated to be 17.6 acres; the EENF does not clarify what amount of tree clearing is located on the ROW versus off-ROW or whether it is all located on DCR land. The proposed work will impact 246 acres of DCR land within the ROW and 4 acres outside the ROW. The EENF provides a table (Table 3-4) which summarizes land alteration associated with access roads (Type R, S, and 1-5) and matting in each state forest. The project will impact BVW (175,353 sf temporary and 517 sf permanent) and RFA (18,452 sf temporary and 64,571 sf permanent) within DCR land. The precise extent of impacts on DCR property should be clarified in the DEIR.

Response: Tree removal impacts have been reduced from 17.6 acres to 11.3 acres since the EENF filing. A discussion of Project areas and proposed access road improvement locations within DCR-managed state forests is provided in DEIR narrative Section 9.

MEPA 07: **The DEIR should address the recommendations from the MA Resilience Design Tool to assess the resiliency of the proposed new structures and stormwater features. It should also address heat effects and GHG emissions from land and tree clearing, in accordance with the Scope below.**

Response: The EENF output report from the MA Climate Resilience Design Standards Tool was created on February 4, 2022, prior to revisions to the Tool later in 2022. An updated RMAT output report has been prepared for the Project and is provided in DEIR Appendix D. The updated RMAT output report includes a 50-year (2%) return period for Extreme Precipitation – Riverine flooding (instead of the 100-year (1%) return in the initial RMAT report). The DEIR narrative Section 12 Construction addresses the recommendations from the Climate Resilience Design Standards Tool (2% storm) to assess the resiliency of the proposed Project assets and stormwater features. Section 10 addresses heat effects and GHG emissions from land and tree clearing.

MEPA 08: **All construction activities should be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017 and the handling of clean wood associated with tree removal).**

Response: We acknowledge comments provided by the MassDEP Bureau of Air and Waste and agree to comply with requirements listed therein, including the waste ban provision at 310 CMR 19.017 and the handling of clean wood associated with tree removal.

MEPA 09: **If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). All construction activities should be undertaken in compliance with the conditions of all State and local permits.**

Response: We acknowledge comments provided by the MassDEP Bureau of Waste Site Cleanup and agree to comply with requirements listed therein, including presentation and enforcement of a spills contingency plan addressing prevention and management of potential releases of soil and/or hazardous materials from pre-and post-construction activities. If soil and/or groundwater contamination is encountered during excavation activities, NEP will engage the Licensed Site Professional (LSP) that is currently under contract.

MEPA 10: **The DEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this Scope.**

Response: The DEIR has been prepared to address the requirements of Section 11.07 of the MEPA regulations and the modifications described in the Scope of the Certificate.

MEPA 11: **The DEIR should identify measures the Proponent will include to further reduce the impacts of the project since the filing of the EENF, or, if certain measures are infeasible, the DEIR should discuss why these measures will not be adopted.**

Response: Measures identified to further reduce impacts of the Project since filing the EENF are described in Section 1.5 of the DEIR.

MEPA 12: **The DEIR should describe the project and identify any changes to the project and associated environmental impacts since the filing of the EENF.**

Response: Project changes and design refinements (and associated environmental impacts) made since the filing of the EENF are described in Section 1.5 of the DEIR.

MEPA 13: **[The DEIR] should include updated site plans for existing and post-development conditions. It should provide figures that clearly identify any additional permanent and temporary easements that will be required to create access to the ROW.**

Response: Updated site plans are provided in DEIR Appendix B.

MEPA 14: **The plans and narrative provided in the DEIR should identify the extent of any off-ROW clearing required for access road construction, and whether permanent easements will need to be acquired to maintain those areas as utility corridors.**

Response: Updated site plans are provided in DEIR Appendix B. DEIR narrative Section 1 provides information regarding access road construction and off-ROW clearing. No new permanent easements are required for the Project.

MEPA 15: **The DEIR should provide a brief description and analysis of all applicable statutory and regulatory standards and requirements and describe how the project will meet those standards.**

Response: Section 14 of the DEIR narrative presents an analysis of applicable statutory and regulatory standards and requirements, and how the Project will meet those standards.

MEPA 16: **[The DEIR] should include a list of required Agency Permits, Financial Assistance, or other state or local approvals and provide an update on the status of each.**

Response: An updated list of required local, state, and federal permits is provided in DEIR narrative Section 1.6.

MEPA 17: The EENF summary of impacts table notes that the maximum height of existing structures is 85 feet, and the project will result in an increase of this height by 25 feet to a maximum height of 110 feet.

Response: Proposed new structure heights will range between 10 and 20 feet greater than existing heights. Proposed structure heights are greater than existing because of updated clearance requirements, changes in grading, insulator swing mitigation, increased cable design tensions, and changes in structure locations and removals.

MEPA 18: The DEIR should clarify the width of the maintained ROW as the EENF indicates it is both between 100 and 150 feet and between 125 and 150 feet.

Response: The width of the existing, maintained E131 ROW varies between 125 feet and 150 feet.

MEPA 19: The DEIR should include an expanded alternatives analysis that demonstrates the project is taking all feasible measures to avoid and minimize environmental impacts to wetland resource areas and mapped habitat, as well as tree clearing, which is consistent with requirements pursuant to all applicable regulations (i.e., WPA, WQC, MESA, M.G.L. c. 3, s. 5A, etc.). It should evaluate at least one Reduced Impact Alternative that provides less impacts and/or greater setback to on-site wetlands, less land clearing and land alteration, and less impacts to mapped habitat than the Preferred Alternative. If this alternative is dismissed, the DEIR should explain why.

Response: An expanded alternatives analysis is provided in Section 2 of the DEIR narrative. Reduced Impact Alternatives were evaluated. Criteria used to dismiss the Reduced Impact Alternatives are discussed in DEIR narrative Section 2 and presented in Table 2-2.

MEPA 20: As noted in the EENF, clearing outside of the ROW (and securing new easements with landowners) is proposed in other locations and should be further explored where sensitive resource areas might be avoided.

Response: DEIR narrative Section 2 and Table 2-2 present an expanded alternatives analysis, including considerations for further avoidance of sensitive resource areas.

MEPA 21: The DEIR should quantify environmental impacts and provide a conceptual plan for these alternatives. It should compare the environmental impacts with the Preferred Alternatives, in particular, with respect to land alteration, wetland resource areas, vernal pools, rare species habitat, and archaeological resources in a tabular format.

Response: An expanded alternatives analysis is provided in Section 2 of the DEIR narrative. Reduced Impact Alternatives and a Full Build Alternative were

evaluated. Criteria used to dismiss the Reduced Impact Alternatives are discussed in DEIR narrative Section 2 and presented in Tables 2-1 and 2-2.

MEPA 22: The DEIR should describe how more vegetation could be preserved in sensitive areas.

Response: Proposed land alteration is presented in DEIR narrative Section 4, including consideration of avoidance and minimization measures.

MEPA 23: The DEIR should provide further justification for relocating structures to BVW and closer to sensitive resource areas within Estimated and Priority Habitat.

Response: DEIR narrative Section 6 provides additional information regarding why structures must be relocated to BVW and Section 5 provides further justification for relocating structures closer to sensitive resource areas within Estimated and Priority Habitat.

MEPA 24: The Proponent should continue to take steps, including undertaking additional measures, to meaningfully engage EJ populations in decision-making for the project. The DEIR should describe a public involvement plan that the project intends to follow for EJ populations within the DGA for the remainder of the MEPA review process, and the Proponent should hold at least one public meeting to provide details of the project prior to filing the DEIR. The DEIR should detail how public involvement efforts will continue throughout subsequent permitting and through the construction period for the project. It should describe any outreach that will be conducted as part of local review processes, including the procedures for providing abutter notice and opportunities for public input into project design and timing. The DEIR, or a summary thereof, should be distributed to the EJ Reference List, and an updated list should be obtained from the MEPA Office.

Response: DEIR narrative Section 3 describes a public involvement plan that the Project intends to follow for EJ populations within the DGA for the remainder of the MEPA review process, throughout subsequent permitting and through the construction period.

MEPA 25: The DEIR should provide an updated baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts. The DEIR should fully analyze the data available in the DPH tool at the municipal and census tract level to characterize existing unfair or inequitable Environmental Burdens.

Response: An updated baseline assessment of existing Environmental Burdens and related public health consequences impacting EJ Populations is provided in DEIR narrative Section 3.

MEPA 26: [The DEIR] should describe in detail the proximity of the project site to those neighborhoods and discuss the specific activities, including the extent of forest clearing and construction activity, that will take place near those neighborhoods.

Response: Please refer to DEIR narrative Section 3.3.

MEPA 27: Based on the additional analyses required by the Scope included in this Certificate, the DEIR should provide an updated assessment of whether the project's impacts may result in disproportionate adverse effects, or increase the risks of climate change, on the identified EJ population, particularly in light of the GHG emissions, air pollutants, and heat island effects that may be associated with large-scale forest clearing activities.

Response: The DEIR affirms that the short-term environmental or public health impacts of the Project as identified in Section 3 will be avoided and minimized using BMPs, and that there are no long-term environmental or public health impacts. 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 populations, including EJ populations. Reference Section 10 for additional details.

MEPA 28: The DEIR should consider any loss of open space or recreational opportunities that may affect EJ populations lacking access to such resources.

Response: DEIR narrative Section 9 addresses existing DCR lands, recreational opportunities and impacts associated with the Project. There is no proposed loss of open space associated with the Project.

MEPA 29: [The DEIR] should discuss what mitigation will be provided for any properties located directly adjacent to tree clearing activities, in light of the loss in shading and other impacts that may be anticipated.

Response: See response to MEPA 26.

MEPA 30: Analysis of the stormwater should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions, and whether existing conditions would be worsened or improved by the project.

Response: Please refer to DEIR narrative Section 11.

MEPA 31: The DEIR should explain the discrepancy between the EENF stating that the project would result in a total of 111 acres of land alteration and will also alter up to 250 acres of land to construct new roads through DCR land on ROW and off-ROW.

Response: Land alteration impacts are clarified in DEIR narrative Section 4.

MEPA 32: The DEIR should provide updated estimates of land alteration (temporary and permanent) associated with access roadways on ROW and off-ROW (new and improvements to existing), structure installation, work pads, pull pads, vegetation removal/tree clearing on ROW and off-ROW, and other project components in a tabular format.

The DEIR should clarify the amount of alteration including the type of vegetation that will be cleared (i.e., mature trees, scrub shrub, etc.).

It should clarify the location, type and amount of alteration in previously undisturbed areas.

The DEIR should document the land alteration that will occur as a result of the additional tree clearing and permanent conversion of forested area to shrub/scrub area. Land alteration should also include any clearing that may be required off-ROW to improve/widen existing access roads or construct new access roads. Off-ROW impacts to wetlands should also be included and updated as part of wetlands impacts discussed below.

The DEIR should identify how the project is designed to avoid and minimize land alteration and preserve open space and tree cover.

The DEIR should clarify if permanent work pads are accounted for in the estimate of permanent land alteration.

The DEIR should report all impacts associated with access roads both on- and off-ROW.

Response: Please refer to DEIR narrative Section 4 and Table 4-1 for updated estimates of land alteration from construction activities. No permanent conversion of forested wetland area is proposed as part of this Project.

MEPA 33: The EENF indicates that the project will require clearing of 17.6 acres of trees to construct off-ROW permanent access roads. The DEIR should indicate if any other vegetation removal will require additional tree removal and trimming, beyond the scope covered by the current VMP, in all off-ROW locations and within the ROW. The DEIR should indicate the acreage of impact associated with additional clearing beyond that covered by the VMP and include this in the reported permanent land alteration impacts summary.

Response: Tree removal impacts have been reduced from 17.6 acres to 11.3 acres for the entire Project since the EENF filing. The 11.3 acres of tree removal is associated with the construction of access roads and work pads that need to extend outside the limits of the existing, maintained ROW. This tree removal is all beyond the scope of the VMP and has been accounted for in the total permanent land alteration impacts, as presented in DEIR narrative Section 4 and Table 4-1.

MEPA 34: The DEIR should identify, in a narrative that references plans, where vegetation removal will need to be coordinated with private landowners. A summary of all tree removal impacts in the ROW and off-ROW, including within DCR land, should be provided in the DEIR.

Response: The Project plans provided in Appendix A identify the proposed tree removal locations. NEP will continue to coordinate with private landowners and DCR regarding proposed tree removals both on-ROW and off-ROW. A summary of tree removal impacts is presented in DEIR narrative Section 4 and Table 4-1.

MEPA 35: The DEIR should describe mitigation for impacts associated with land alteration including, but not limited to, minimizing soil disturbance, retaining scrub/shrub understory and ground cover to help reduce soil erosion, using large woody debris and deadwood to create habitat, mulching/seeding bare soils to stimulate revegetation, and reusing cleared trees for long-lived wood products. The DEIR should describe when the approved Five-Year VMP (2014-2018) will be renewed by MDAR pursuant to 333 CMR 11.00) as it is outdated.

Response: Mitigation measures for impacts associated with land alteration are described in DEIR narrative Section 4 and Table 15-1. We note that EENF Table 9-1 included incorrect dates for the current, approved Five-Year VMP. The current, approved VMP is dated 2019-2023 and is available online at the MA Department of Agricultural Resources website.

MEPA 36: The Proponent should continue to work proactively with NHESP to address outstanding issues, including continuing to assess alternatives to further reduce permanent and temporary impacts to state-listed species and their habitats, and developing a robust conservation and management plan that provides a long-term net benefit to state-listed plants, with a focus on protection of individual plants and plant populations, additional surveys, seed collection, and management to enhance habitat quality in the immediate vicinity of the project site. The DEIR should summarize the results of consultations with NHESP and address these outstanding issues.

Response: DEIR narrative Section 5 summarizes the results of consultations with NHESP and changes to the Project that incorporate avoidance measures, including phased matting at the Adams Substation. A Conservation and Management Plan is in development based on consultations with NHESP.

MEPA 37: The DEIR should clearly identify the project's consistency with the performance standards for a CMP. It should provide an update on potential impacts to state-listed rare species habitat, including the acreage of Priority Habitat both on- and off-ROW impacted by the project. It should identify proposed measures to avoid, minimize and mitigate those impacts. The DEIR should clarify what amount of impact within mapped habitat (1.67 acres) will also impact wetland resources areas and associated buffer zone.

Response: DEIR narrative Section 14.3.4 identifies the Project's consistency with the CMP performance standards. Section 5 provides an update on proposed measures to avoid, minimize and mitigate impacts to state-listed rare species habitat. Proposed impacts within the 1.67 acres of mapped habitat will also impact 1.67 acres of wetland resource areas (BVW) because the state-listed rare plants are wetland species.

MEPA 38: **MassDEP comments recommend that the Proponent wait to file Notices of Intent (NOIs) until the conclusion of MEPA review to ensure sufficient opportunities for public involvement and to avoid any potential conflict with the final Certificate, OOCs, or the WQC...MassDEP also recommends coordinated submittal of NOIs and outreach to the affected municipalities due to the complexity and long, linear nature of the project.**

Response: Recommendation noted.

MEPA 39: **The DEIR should identify when delineations of BVW, Inland Bank, LUW, BLSF, RFA were conducted. MassDEP comments note that the site may contain Isolated Vegetated Wetlands (IVW) and Isolated Land Subject to Flooding (ILSF). The DEIR should describe if IVW and ILSF were observed and delineated. The DEIR should consider both surface and subsurface hydrology, wildlife habitat, and comply with BMPs for stormwater management and sedimentation and erosion control to avoid and minimize potential significant changes to the hydrology of the affected resource areas and downstream reaches. The DEIR should include tree work details, potential time-of-year restrictions, specific locations of proposed construction mats, implementation sequencing, and site-specific mitigation details.**

Response: DEIR narrative Section 6 identifies when delineations of wetland resource areas were conducted and further discusses the presence/absence of IVW and ILSF. Sedimentation control barriers and stormwater BMPs will be incorporated into road and work pad construction to prevent erosion and are further described in DEIR narrative Section 11. Tree work details are described in DEIR narrative Section 4. Time of year restrictions pertaining to work within rare species habitat is described in Section 5. Locations of proposed construction mats are identified on the Project plans provided in Appendix B. A summary of proposed mitigation measures is presented in Table 15-1.

MEPA 40: **The DEIR should ensure that estimates for impacts to wetland resource areas are conservative and account for all temporary and off-ROW impacts. It should clearly describe why structures 24, 60, 80, 151, 172 will be relocated from the 100-foot Buffer Zone to BVW and describe efforts to avoid, minimize, and mitigate impacts associated with these structures.**

Response: DEIR narrative Section 6 provides additional information regarding why structures must be relocated to BVW and efforts to avoid, minimize and mitigate impacts associated with these structures.

MEPA 41: The DEIR should confirm that the SWPPP will include clear provisions specific to the management and protection of the resource areas within the project area.

Response: DEIR narrative Section 14 confirms that the SWPPP will include clear provisions specific to the management and protection of the resource areas within the Project area.

MEPA 42: The DEIR should clearly identify the location of Old Growth Forests in the project area. The DEIR should describe how impacts to Old Growth Forest will be avoided and discuss placement of a buffer zone around these sensitive resource areas. The DEIR should discuss how clearing of large diameter trees in the Monroe Reserve will be limited to the maximum extent practicable.

Response: DEIR Section 9 provides additional detail on coordination with DCR relative to old growth forest.

MEPA 43: The DEIR should describe how impacts to cold water fisheries in the project area will be avoided and minimized.

Response: No work is proposed within the limits of streams/ waterways and there will be no direct impacts to streams/ waterways. BMPs will conform with NEP's Environmental Guidance (EG-303NE) on Access, Maintenance and Construction Best Management Practices and will be utilized to avoid sedimentation of waterways located adjacent to work areas.

MEPA 44: The DEIR should clearly identify which elements of the project qualify for exemption under the Utility Maintenance Exemption (c. 30, s. 62A) and WPA, and which do not...The DEIR should describe how the project qualifies for Limited Project status for non-exempt activities. It should demonstrate how the project will comply with performance standards to the maximum extent practicable.

Response: As indicated in Section 14 of the DEIR narrative, a substantial portion of the work for the Project – including, for example, the proposed structure replacements – qualifies under the utility maintenance exemption. The elements of the Project that do not qualify as exempt will meet the requirements for a Limited Project. Section 14 also demonstrates how the project will comply with performance standards to the maximum extent practicable.

MEPA 45: The DEIR should provide an update to cumulative impacts to IVW, BVW and LUW for consistency with WQC regulations (314 CMR 9.00). The DEIR should evaluate reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and identify mitigation for unavoidable impacts (including temporary impacts) in accordance with the WPA and WQC regulations.

Response: Section 6 of the DEIR narrative provides an update to cumulative impacts for consistency with the WQC regulations. Avoidance, minimization and

mitigation measures are discussed in Section 2 and presented in Table 15-1. Section 2 of the DEIR provides an expanded alternatives analysis.

MEPA 46: The DEIR should acknowledge the need to demonstrate compliance with the provisions of 314 CMR 9.06(3) if a project design modification occurs or changes during construction involve the discharge of dredged or fill material to an ORW.

Response: No impacts to ORWs are anticipated as a result of the proposed Project. As discussed in DEIR Section 12, the 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. No impacts to this tributary are proposed.

MEPA 47: The DEIR should provide plans which depict the two proposed permanent stream crossings, and the narrative should identify these plans. It should identify whether the crossings are proposed in intermittent or perennial streams and whether these streams constitute ORWs. The DEIR should include information to confirm that stream crossings will meet the performance standards for Bank (inland) at 310 CMR 10.54(4) and LUW at 310 CMR 10.56(4) and will be designed to meet the Massachusetts Stream Crossing Standards. Designs should incorporate the upper confidence interval times provided in the NOAA 14 Point Precipitation Frequency Atlas.

Response: Since the EENF filing, the two proposed permanent stream crossings have been removed from the Project.

MEPA 48: The EENF states that 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. MassDEP comments note that such features may constitute stormwater conveyances, in which case, the provisions of 310 CMR 10.05(6)(k) through (q) would apply. The DEIR should confirm that all stormwater conveyances will include stormwater BMPs to attenuate pollutants and provide a setback from the receiving waters and wetlands as described in the Massachusetts Stormwater Handbook.

Response: Please refer to DEIR narrative Sections 11, 12.2.2 and 14.3.3 for a discussion of stormwater management and erosion control.

MEPA 49: MassDEP comments note that the Hoosic River crossing is authorized to be maintained pursuant to the existing un-termed license (No. 6274 issued in 1974) provided that the license is valid, and the structures have been maintained in accordance with the specifications therein. The DEIR should confirm the license is valid and the specifications have been adhered to.

Response: A copy of License No. 6274 is provided in DEIR Appendix C. The license is valid and all structures have been maintained in accordance with the license specifications.

MEPA 50: **As outlined in MassDEP WRP comments, the DEIR should evaluate all waterways within the footprint of the project with respect to the c. 91 jurisdictional standards at 310 CMR 9.04(1)(e). This evaluation should not be based on the MassDEP Technical Advisory #WE03-0814 which specifically notes that nontidal rivers/streams not identified in the document could potentially be subject to c. 91 jurisdiction. The DEIR should include details on the scope of work within each waterway in c. 91 jurisdiction to allow MassDEP WRP to provide guidance on any c. 91 authorization that may be required. The Proponent should schedule a pre-application consultation with MassDEP Waterways as requested in comments and should provide an update on coordination in the DEIR.**

Response: NEP has coordinated with DEP as requested and no evaluation of jurisdiction is necessary since the existing line is exempt and the proposed work qualifies as maintenance.

MEPA 51: **The DEIR should provide additional information regarding which portions of the project cannot be located or operated away from waterways which are non-tidal, navigable rivers/streams subject to jurisdiction pursuant to c. 91 and the Waterways Regulations. The analysis provided in the DEIR should support a finding of water-dependency as required by 310 CMR 9.12(2)(d) and review the project's conformance with the relevant c.91 regulatory standards (if applicable).**

Response: Please refer to MEPA 50 response above.

MEPA 52: **The Proponent indicates that it may have existing rights to access the ROW through DCR property; however, as indicated in comments from DCR, additional information is needed to determine if new permanent easements are required which would require disposition of state-owned land protected by Article 97.**

Response: NEP is actively consulting with DCR and the EEA Office of General Counsel on this issue.

MEPA 53: **The DEIR must identify impacts (temporary and permanent) to Article 97 Land and proposed measures to avoid, minimize and mitigate impacts. The alternatives analysis and proposed mitigation (i.e., payments into the DCR Land Conservation Fund, etc.) in the DEIR should address compliance with the EEA Article 97 Policy. The Proponent is directed to consult with DCR regarding the applicability of Article 97 prior to filing the DEIR.**

Response: See response to MEPA 52.

MEPA 54: As requested in comments, the Proponent should coordinate with DCR's Senior Ecologist, Staff Archaeologist and Management Foresters related to wetlands, rare species habitat, trails, forest stands identified by DCR's Old Growth Policy and other forest resources, and potential archaeological resources, including the amount of proposed tree clearing within the state forest sections of the ROW, and along access routes identified by the Proponent.

Response: NEP has continued to coordinate with the DCR Staff Archaeologist regarding the Project's review of archaeological resources within DCR state forest sections of the ROW. Please refer to MEPA 42 response above regarding continuing consultation with DCR staff related to wetlands, rare species habitat, trails, forest resources and archaeological resources.

MEPA 55: Comments from DCR and Mass Audubon et al. express concerns about recreational impacts associated with temporary closure of trails and roads used for public recreation during active construction and impacts that may result in increased Off-Highway Vehicle (OHV) access to the state forests, potentially causing degradation of natural and cultural resources. DCR requests coordination with the Proponent to develop and implement strategies to deter this unauthorized trail use. The DEIR should provide an update on these consultations.

Response: NEP will continue to consult with DCR regarding strategies to deter unauthorized trail use.

MEPA 56: The DEIR should identify specific protection and restoration measures to be taken for sensitive natural and cultural resources on public conservation lands.

Response: NEP will continue to consult with DCR regarding specific protection and restoration measures for sensitive natural and cultural resources on public conservation lands.

MEPA 57: The DEIR should include maintenance plans (equipment, roadways, vegetation management, etc.) that will ensure ongoing impacts are minimized. The DEIR should describe how maintenance plans will be modified or developed to avoid and minimize impacts to birds, nests, and young during the breeding season, and to reptiles and amphibians that may be vulnerable to operation of trucks or other equipment, especially on protected conservation lands.

Response: NEP will monitor the condition of the roadways annually to ensure they remain viable and compliant with permit conditions.

MEPA 58: The DEIR should identify specific plans to regulate and enforce rules on allowable and appropriate types of recreation.

Response: NEP will continue to consult with DCR regarding strategies to deter unauthorized trail use, allowable and appropriate types of recreation on DCR property.

MEPA 59: The Proponent should continue to work with MassDOT (District 1) to identify any traffic and construction management plans that may be required for temporary work within the state highway layout to minimize traffic disruption during construction. The DEIR should describe the location of all roadways under MassDOT jurisdiction and include a figure that identifies locations within the state highway layout where work or construction access will occur. It should describe the outcome of any consultation with MassDOT. The DEIR should describe the extent of truck traffic that will result from refurbishment and tree clearing activities, including the number of truck trips required.

Response: NEP continues to coordinate with MassDOT District 1. A DOT Access Permit is required for the Project for the Route 2 crossing and is discussed in DEIR narrative Section 14.3.5. Section 7 addresses state highway access associated traffic management plans and the number of truck trips required.

MEPA 60: The EENF indicates that the Proponent will continue to consult with MHC and Native American Tribes to develop measures to avoid, minimize or mitigate adverse effects to historic and archaeological resources. The DEIR should provide an update on coordination with MHC and the tribes. It should summarize measures in the avoidance and protection plan.

Response: NEP's cultural resource consultant has developed an archaeological site avoidance and protection plan (ASAPP) and provided associated documentation to MHC, Native American Tribes, and DCR. The DCR Staff Archaeologist responded on 7/13/23, communicating that they had no substantive comments on the ASAPP, and requested that NEP continue to coordinate with DCR's Operations and Construction Access Permits staff within DCR managed portions of the Project. NEP continues to coordinate with the USACE regarding the Section 106 review of the Project and the USACE's consultation with the MHC and Native American Tribes regarding implementation of the ASAPP. Please refer to DEIR narrative Section 8.

MEPA 61: While the EENF describes the general resiliency benefits of the project achieved by updating aging infrastructure to current design standards, it does not specifically address the design recommendations from the MA Resilience Design Tool. The DEIR should include a revised output report, which includes these recommendations. The DEIR should include a narrative explaining whether proposed infrastructure improvements will make the project assets more resilient to risks associated with riverine flooding from a 100-year (1%) storm event estimated as of 2070. It should discuss the extent to which existing electrical lines are exposed to riverine flooding, and what measures the Proponent is taking to improve asset resiliency over a longer-term horizon. In particular, the DEIR should discuss whether new foundations are being elevated above any defined base flood elevations or other similar water/flood elevation measure to ensure that the structures are resilient to future flooding risks. Where impervious/semi-

pervious area is created and stormwater management is required, the DEIR should address the recommendations from the MA Resilience Design Tool, including whether the stormwater management designs will be resilient to future climate conditions including the 100-year (1% chance) storm as of 2070.

Response: The EENF output report from the MA Climate Resilience Design Standards Tool was created on February 4, 2022, prior to revisions to the Tool later in 2022. An updated RMAF output report has been prepared for the Project and is provided in DEIR Appendix D. The updated RMAF output report includes a 50-year (2%) return period for Extreme Precipitation – Riverine flooding (instead of the 100-year (1%) return in the initial RMAF report).

The DEIR narrative Section 12 Construction addresses the recommendations from the Climate Resilience Design Standards Tool (2% storm) to assess the resiliency of the proposed Project assets and stormwater features, including the extent to which existing electrical lines are exposed to riverine flooding, what measures the Proponent is taking to improve asset resiliency over a longer-term horizon, stormwater management design, and whether new foundations are being elevated above any defined base flood elevations or other similar water/flood elevation measure to ensure that the structures are resilient to future flooding risks.

MEPA 62: The DEIR should further describe mitigation in areas of access road creation where there are steep slopes and severe erosion potential including temporary and permanent stabilization methods.

Response: DEIR narrative Section 12 describes temporary and permanent stabilization methods and other BMPs associated with access road creation where there are steep slopes and potential for severe erosion.

MEPA 63: The DEIR should provide a quantitative carbon analysis of tree clearing activities that should consider both the one-time direct emissions from tree cutting as well as loss of potential carbon sequestration over a certain time period (e.g., 30 or 40 years). While the EENF indicates that 17.6 acres of the total 86 acres of vegetation clearing is associated with tree removal, it did not fully characterize the land cover types for all vegetation clearing. The Proponent has proposed to use LiDAR data on other Asset Condition Refurbishment (ACR) projects (i.e., EEA#16607 A1/B2 ACR Project), confirmed with select sampling, to estimate the age and height of trees to be cleared and to assign carbon values to those trees based on “best available datasets.” The Proponent should use a consistent methodology to estimate carbon impacts from all vegetation clearing proposed for the project. The Proponent may, in the alternative, make use of the EVALIDator tool from the U.S. Forestry Service,¹⁵ which provides estimates of carbon stocks (including above ground and below ground biomass) specific to Massachusetts forests and considers variations among forest types based on region. As the EVALIDator tool does not provide an

estimate of annual carbon sequestration rates (carbon flux over time), the Proponent may rely on other sources of data, including the EPA GHG Emissions Calculator, for this value and estimate annual rates over a 30-year time period from the date of construction. The DEIR should describe the methodology and data used to develop the analysis, identify associated impacts on GHG emissions, and identify measures to avoid, minimize and mitigate impacts.

Response: Please refer to DEIR narrative Section 10 for a discussion of greenhouse gas emissions, a quantitative carbon analysis and carbon accounting.

MEPA 64: The DEIR should identify mitigation measures commensurate with the project's impacts on the project corridor's capacity to sequester and store carbon. Potential mitigation measures may include funding programs that add or maintain biomass for sequestration purposes (such as tree planting, carbon credits, forest conservation or commitments to implement forest restoration practices) and preserving/protecting forested land through a Conservation Restriction or other means. At a minimum, the Proponent should clearly explain its plan for disposition of the trees cleared through the project, including the process for identifying potential markets for reuse of wood and a process for tracking and reporting. The Proponent should commit to reuse of cleared trees for long-lived wood products to the greatest extent practicable and should indicate how the ultimate disposition of the trees will be tracked and documented. Potential mitigation for carbon emissions due to land alteration might include donation of harvested wood to benefit an affordable housing project; tree planting in EJ populations near the project area (recommendation of 50 trees/acre with a commitment to water and replace for two years); and donation of harvested wood (cut and split to a wood bank) in Massachusetts.

Response: Please refer to DEIR narrative Section 10 and Table 15-1 for a discussion of mitigation measures related to carbon storage.

MEPA 65: The DEIR should confirm that the project will include a spills contingency plan that addresses prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities. It should confirm that this plan will be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential releases.

Response: Please refer to DEIR narrative Section 13.

MEPA 66: The EENF included draft Section 61 Findings and proposed mitigation measures. The DEIR chapter should include an updated comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the impacts of the project. The DEIR should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure,

identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, EJ, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project.

Response: Table 15-1 in Section 15 of the DEIR narrative provides a comprehensive list of commitments to avoid, minimize and mitigate Project impacts. Draft Section 61 Findings for each Agency Action are provided in Section 15 of the DEIR narrative.

Mohawk Trail Woodlands Partnership (MTWP)

MTWP 01: This work is necessary to reconstruct and maintain the electrical grid for a healthier distribution network as extra capacity is needed to diversify fossil-fuel exacerbated climate change.

Response: Comment acknowledged.

MTWP 02: The various state and federal government bodies who will oversee this effort have adequate tools at their disposal to assure design and construction compliance to the greatest extent possible - as long as they keep in contact at every step of the work.

Response: Comment acknowledged.

MTWP 03: Our rural towns need to be sure we will benefit from this work that primarily brings power across rather than into our area. This can be aided by understanding the impact modernizing of wires and structures will have - as well as the stated increased maintenance going forward - both positive and potentially negative - at key intersection points like substations, road crossings, view-sheds, nearby residences, etc. Of particular concern are local opportunities and concerns surrounding upgraded regional access points (substations) and potential private and public generating and storage systems that may result from this work over the next decade. These will have significant planning impacts in the rural communities these lines traverse.

Response: Comment acknowledged.

MTWP 04: It looks like quite a few off-right-of-way (ORW) road construction is planned due to terrain. Much of this is on existing/former woods roads that also may be/could potentially be trails in state forests. A strong effort should be made to condition permits for this work on improving public access to the state land after completion and in using this work to demonstrate proper and innovative developing techniques - potentially during workshops open to the public and land conservation professionals.

Response: Please refer to MEPA 55 and MEPA 58 responses.

MTWP 05: I don't see much about geology in this filing, except as it serves to inhibit the work. Although there appears to be adequate consideration of historic interests, I personally would love to see some of the end result aimed at educating the public about the ground itself on which they stand. Realizing that most after-completion access to this extensive land cut is to be restricted, I hope particular areas of interest can be designated for educational access for schools and other guided groups.

Response: Comment acknowledged.

MTWP 06: Lastly, and directly relevant to the Northwestern Massachusetts (currently Mohawk Trail) Woodlands Partnership, examples of the forestry impacts and proposed mitigation - along with how the material to be removed is used - would be a great window on how infrastructure development and woodland values can be combined favorably.

Response: Comment acknowledged.

Hoosic River Watershed Association (HooRWA)

HooRWA 01: We do, however, have some serious concerns regarding the extensive tree cutting (~ ~ ~ < 92 acres for the total project) proposed for developing new access roads. Specific to the communities of Adams and North Adams, there is extensive road widening (to 16 feet), road stabilization work and the addition of spur roads. Many new road segments and excursions are also proposed in those communities (between pole numbers: old #147 through old #178 and old #59 through old #72).

Response: Comment acknowledged. Please note the acreage of the proposed tree clearing has been reduced from 17.6 acres in the EENF filing to 11.3 acres for the entire Project.

HooRWA 02: Comments a through e which comment on tree clearing and access road create and how they relate to wetland impacts, habitat fragmentation, and ATV use along the ROW.

Response: Comments acknowledged and concerned relative to clarification of these areas of concern noted throughout.

HooRWA 03: Use of tracked construction vehicles - within the current rights of way - to negate the need to cut an extensive quantity of trees - in order to construct 16-foot wide access roads.

Response: NEP plans to utilize tracked construction vehicles to the extent practicable to construct 12-foot-wide access roads. However, due to site constraints (including very steep slopes) and equipment required for the rebuild Project, additional non-tracked equipment and vehicles will be required.

HooRWA 04: Don't increase the width of existing roads/trails to accommodate normal road-use vehicles - that would no longer be needed - if tracked construction vehicles were used.

Response: Access road development is being completed to facilitate standard electric utility construction vehicles and equipment. As noted in HooRWA 03 response, NEP plans to utilize tracked construction vehicles to the extent practicable to construct 12-foot-wide access roads.

HooRWA 05: Don't increase access nor improve access to the power line right of way - to discourage the expected increase in ATV usage.

Response: Comment acknowledged. Development of the access roads along the ROW are necessary to facilitate the infrastructure replacement for the overall longevity and resiliency of the line. NEP will continue to coordinate with DCR regarding access rights and recreational use along the ROW.

HooRWA 06: During construction, use industrial-type helicopters (e.g., Carson company) to carry and install; equipment, concrete, piers and poles. Those helicopters were used extensively (and effectively) on/over the rugged terrain surrounding the Bear Swamp Hydroelectric facility and power pole installation project in 1973.

Response: While helicopters can be used in some instances (lighter-lift work related to pulling rope, flying x-braces and insulators, etc.), this will not be feasible for this Project. Access to the proposed structure locations is still required by drilling trucks in order to bore holes for dead-end and tangent structures, due to the amount of bedrock/ledge present on site. At the time that the Bear Swamp Hydroelectric Facility was constructed in 1973, the site was undeveloped, and there were no existing energized structures or facilities that needed to be avoided during construction phase.

HooRWA 07: By modifying your installation techniques and processes, you can avoid some of the costs of: hauling in tons of rock for stabilization, limit the costs of grading the rock, eliminate much of the need for extensive tree cutting /disposal/disposition.

Response: Comment acknowledged. Please refer to HooRWA 06 response above.

HooRWA 08: Consult with Robert T. Leverett, a nationally recognized old-growth tree specialist, to review the locations of proposed tree cutting, especially in Florida and Monroe, to ensure old-growth forests will not be overly stressed - and will be protected. He has previously advised the State in protecting these resources.

Response: Please refer to the response to MEPA 42 above. NEP is in consultation with DCR regarding old-growth forests.

Massachusetts Department of Conservation and Recreation (DCR)

DCR 01: The proposed work will impact approximately 246 acres of DCR land within the ROW and 4 acres outside the ROW.

Response: DEIR narrative Section 9 and Tables 9-1 and Table 9-2 provide additional information regarding the extent of impacts on DCR property (on-ROW and off-ROW).

DCR 02: **The proposed Project includes the use and “improvement” of woods roads outside of the ROW to enable access through DCR forest land to the NEP ROW for Project activities. Proposed changes to the access corridors include tree clearing, widening, and improving the corridors, which will result in permanent impacts to the state forests. Any permanent changes or improvements to off-ROW access routes on DCR property will require permanent easements, triggering Article 97 of the Amendments to the Massachusetts Constitution. DCR also notes that if the off-ROW improved woods road and trails are to be permanently used for ongoing maintenance on the NEP ROW, that change in use of DCR property would also trigger Article 97...**

Transfers of interests in state conservation property must also meet the requirements set forth in the EEA Article 97 Land Disposition Policy (the “Policy”).

DCR will continue to coordinate with the Proponent regarding any additional rights needed that would trigger an Article 97 disposition request.

Response: See response to MEPA 52. NEP is actively consulting with DCR and the EEA Office of General Counsel on this issue.

DCR 03: **Work activities on DCR property outside of existing easements associated with the NEP ROW, or requiring access across DCR property, will also require a Construction and Access Permit (“CAP”).**

Response: Comment acknowledged. DEIR narrative Section 14 addresses the need for a DCR Construction and Access Permit.

DCR 04: **DCR requests that the Proponent be required to coordinate with DCR’s Senior Ecologist, Staff Archaeologist, and Management Foresters related to wetlands, rare species habitat, trails, forest stands identified by DCR’s Old Growth Policy and other forest resources, and potential archaeological resources, including the amount of proposed tree clearing within the state forest sections of the ROW, and along access routes identified by the Proponent.**

Response: Please refer to MEPA 54 and MEPA 60 responses above.

DCR 05: **The Senior Ecologist and Foresters will review the flagged work limits and work with the Proponent to minimize impacts to sensitive resources, minimize clearing to the extent possible, and identify mitigation opportunities should a loss or conversion of wetlands, rare species habitat or other forest or recreational resources occur as a result of these work activities. The Staff Archaeologist will coordinate with the Proponent and their cultural resource consultant to develop and implement measures to avoid, minimize,**

or mitigate adverse effects to significant historic and archaeological resources within DCR property. We look forward to reviewing specific protection and restoration measures to be taken for sensitive natural and cultural resources on public conservation lands.

Response: Comment acknowledged. See response to MEPA 60 above regarding coordination with the Staff Archaeologist. Please refer to MEPA 42 response above regarding continuing consultation with DCR staff related to wetlands, rare species habitat, trails, forest resources and archaeological resources.

DCR 06: Environmental permit applications for work activities on DCR land, including Massachusetts Endangered Species Act (MESA) and Wetlands Protection Act (WPA) permits, must be signed by the Department as 'Owner' following review by DCR staff members and prior to submission to regulatory agencies.

Response: Comment acknowledged.

DCR 07: DCR is concerned about recreational impacts considering that the Project proposes to temporarily close trails and roads used for public recreation during active construction. DCR is also concerned that the Project may result in increased Off Highway Vehicle access to the state forests, potentially causing degradation of natural and cultural resources. The Department requests coordination with NEP to develop and implement strategies to deter this unauthorized trail use.

Response: NEP looks forward to consultation with DCR regarding potential recreation impacts and strategies to deter unauthorized trail use.

Berkshire Environmental Action Team (BEAT)

BEAT 01: BEAT is extremely concerned about the potential impact of this proposed project directly increasing compacted soils, creating new, larger roads that further fragment wildlife habitat, and decreasing tree cover. We are additionally concerned about the add-on effects caused by Off-Road Vehicle (ORV) use of these new roads, and invasive species introduction both by the construction and the ORV use.

Response: Comment acknowledged. Proposed work is primarily located within an existing, maintained ROW with infrastructure that requires maintenance and upgrades. Access to electrical infrastructure to conduct maintenance activities for the overall longevity of the system and to provide reliability. As presented in DEIR narrative Section 2 alternatives analysis, NEP has avoided, minimized and mitigated impacts while also maintaining the reliability of the system. Please refer to the MEPA 04, MEPA 55, MEPA 58 and HoorWA 05 responses above.

BEAT 02: We agree with Mass Audubon et al, that "The MEPA Office should consider working with the utilities on a programmatic approach to these types of projects, in order to avoid, minimize, and mitigate environmental impacts for transmission system upgrades, including

new impacts to conservation lands extending beyond existing footprints and/or ROWs. To the extent individual projects are part of a utility company's overall reliability plans, they should be reviewed as phases of a single program rather than segmented without evaluation of cumulative impacts. A programmatic approach would also ensure consistency of review and provide efficiencies for the utilities and all agencies involved in reviewing and permitting these projects. In particular, clarification is needed regarding what work constitutes an Article 97 disposition for projects within permanently protected public lands and, and appropriate mitigation for unavoidable Article 97 impacts."

Response: NEP welcomes continued coordination with the MEPA Office.

BEAT 03: Greenhouse gas emissions should include emissions from the project taking into consideration:

- the emissions from the production of carbon-intensive steel as compared to carbon-sequestering wood
- the decrease in soil carbon sequestering of highly compacted roadbed vs. existing soils
- the emissions from tree harvesting and the reduced amount of sequestration that will cause.

In addition, greenhouse gas emissions from wetland disturbance and conversion should be included, as well as the loss of the carbon sequestration that would have occurred if the trees had continued to grow and sequester carbon both above ground and in the soil. As the Certificate for the Eversource project (EEA #16567) said, "project-related reduction in future carbon sequestration will be calculated as the difference between the amount of carbon that would have been sequestered in the future by the affected forest had it not been cleared and the amount of carbon that will be sequestered by grass-scrub/shrub habitat that replaces the forest. The DEIR should account for carbon sequestration from any trees that are removed and not replaced/converted to scrub shrub."

Response: Comments acknowledged, please reference Section 10 of the DEIR for additional information.

BEAT 04: We hope that the proponent will take into consideration the suggestions from the Hoosic River Watershed Association for ways to decrease the construction impacts including using tracked vehicles and using "... industrial-type helicopters (e.g., Carson company) to carry and install; equipment, concrete, piers and poles. Those helicopters were used extensively (and effectively) on/over the rugged terrain surrounding the Bear Swamp Hydroelectric facility and power pole installation project in 1973."

Response: Comment acknowledged. Please refer to the HooRWA 03, 04 and 06 responses above.

BEAT 05: BEAT believes that upgrading from existing shield wire to new fiber optic ground wire (OPGW) is extremely important. We also believe the utility should be considering other upgrades that would benefit resilience, including:

1. Increasing grid stability by installing grid-scale storage solutions at every substation. This could be standard lithium-ion batteries, or less toxic iron-flow batteries such as ESS or other non-toxic, long-duration batteries, as well as FORM multi-day batteries. FORM is a viable partner as early as next year.

Response: Comment acknowledged.

BEAT 06: **2. Grid mapping would determine where the grid needs upgrading. This would allow injection of distributed, zero emissions electricity into the grid, opening the floodgates to allow more renewables and battery storage to serve grid demand. Proper grid mapping and upgrades would facilitate adoption of a largely untapped supply of distributed energy, lowering demand on central generation facilities and lowering emissions in the electric generation sector. It would also incentivize more individual properties to add on-site generation if they could more easily participate in supplying power to the grid. Furthermore, the cost of assessing parts of the grid should not be borne by those wishing to add small amounts of generation to the grid, and the mapping should not be done piecemeal but rather done in a comprehensive fashion to allow the utilities and grid operator to determine where injection of electricity into the grid would be most beneficial.**

Response: Comment acknowledged.

BEAT 07: BEAT is very concerned by the apparent oversight in the EENF of mentioning possible impact to Article 97 lands as Mass Audubon et al., point out...

Response: Please refer to MEPA 52.

Berkshire Regional Planning Commission (BRPC)

BRPC 01: Include an analysis of alternative methods such as tracked construction vehicles and/or the use of industrial-type helicopters to carry and install; equipment, concrete, piers and poles. BRPC shares the concerns raised by the Hoosic River Watershed Association (HooRWA). Such alternatives would significantly reduce tree cutting and impacts to resource areas.

Response: Comment acknowledged. Please refer to the HooRWA 03, 04 and 06 and BEAT 04 responses above.

BRPC 02: Provide an alternatives analysis relative to the permanent impacts associated with the replacement and relocation of five structures to Bordering Vegetated Wetlands (BVW) via direct embed methods.

Response: Please refer to DEIR narrative Section 6 regarding reasons for relocation of the five structures to BVW and site constraints.

BRPC 03: Provide greater clarification with regard to why permanent access roads that do not currently exist are necessary.

Response: Please refer to DEIR narrative Section 2 Alternative Analysis regarding existing site constraints, including very steep terrain, which would otherwise require multiple switchbacks and in most cases greater environmental impacts within the existing, maintained ROW rather than proposing permanent off-ROW access. Additionally, permanent access roads will allow for both structure installation and required future maintenance.

BRPC 04: Provide clarification with regard to the selection of steel structures and/or an alternatives analysis comparing wooden versus steel structures. The current wooden structures, which are proposed to be replaced with steel structures were installed in 1925 and have withstood the test of time in standing for nearly 100 years.

Response: NEP selected steel structures based on product standardization and lifespan maintenance requirements to support reliability. Steel structures reduce the frequency of maintenance related to woodpecker damage and wood rot.

BRPC 05: Provide greater detail with regard to proposed mitigation measures including specific details related to wetland mitigation and replication.

Response: Proposed mitigation measures are described in DEIR narrative Section 4 and Table 15-1. Please refer to DEIR narrative Section 6 regarding wetland restoration and mitigation.

BRPC 06: Clarify what methods will be used to control invasive species if they are to become established within the ROW.

Response: Employees and contractors maintaining vegetation on ROWs and substations must follow the NEP ROW Vegetation and Substation Vegetation Management Plans (VMPs) [current VMP: Massachusetts Five-Year Vegetation Management Plan, 2018-2023]. NEP utilizes an Integrated Vegetation Management (IVM) program that is an environmentally responsible means of combining biological, chemical, and mechanical treatment methods (mowing, selective pruning, and hand-cutting) with an understanding of the stages of ecological succession and interspecies competition.

BRPC 07: In addition, BRPC has concerns regarding the capacity of the electrical grid in relation to the Commonwealth's electrification goals. The EENF states that in addition to the refurbishment work, the existing circuits will be adapted to provide high speed communications between substations by replacing existing shield wire with fiber optic ground wire (OPGW). The EENF states that a strong and reliable electrical transmission and distribution system is vital to the region's safety, security, and economic prosperity and that benefits of the project include a strengthened transmission system in western New England that offers greater reliability and safety for customers. However, it is not clear whether the project will directly address the anticipated future demand or whether additional work would be needed in the future.

Response: Comment acknowledged.

Mass Audubon et al. (AUD et al.)

AUD et al 01:The Massachusetts Environmental Policy Act (MEPA) Office should consider working with the utilities on a programmatic approach to these types of projects, in order to avoid, minimize, and mitigate environmental impacts for transmission system upgrades, including new impacts to conservation lands extending beyond existing footprints and/or rights of way (ROW). To the extent individual projects are part of a utility company's overall reliability plans, they should be reviewed as phases of a single program rather than segmented without evaluation of cumulative impacts. A programmatic approach would also ensure consistency of review and provide efficiencies for the utilities and all agencies involved in reviewing and permitting these projects.

Response: NEP welcomes continued coordination with the MEPA Office.

AUD et al. 02: In particular, clarification is needed regarding what work constitutes an Article 97 disposition for projects within permanently protected public lands and appropriate mitigation for unavoidable Article 97 impacts.

Response: See response to MEPA 52. NEP will continue to consult with DCR regarding access and the applicability of Article 97. Please also refer to DCR 02 and BEAT 07 responses.

AUD et al 03: Our organizations are strongly supportive of the Commonwealth's commitment to climate action, including the Decarbonization Roadmap and the 2050 Clean Energy and Climate Plan. We recognize that updating the electric transmission grid is important and necessary. Replacement of poles, towers, wires and associated infrastructure along existing ROW is undoubtedly needed in many locations, taking into account the age of many of these facilities as well as advancements in engineering and technology. We hope that refurbishment projects such as this will not only improve reliability, but also increase the capacity of existing transmission ROW corridors (where feasible and supportive of overall systems operation and decarbonization goals). A robust and resilient transmission grid also provides the backbone connecting to an improved distribution system, including deployment of distributed renewable energy systems and storage.

Response: Comment acknowledged.

AUD et al. 04: The new roads on DCR lands will impact 245.7 acres within existing ROW and 3.8 acres outside the existing ROW. The project crosses steep, mountainous terrain including rock outcrops, cliffs, and ravines with cold water fisheries. In some locations, road construction will include retaining walls (sheet pile, gabion baskets, large block gravity walls). There will be impacts to Priority and Estimated Habitat of state-listed species protected under the

Massachusetts Endangered Species Act, including five plants, a fish, and a dragonfly. More than 14 acres of wetlands will be altered, with most of this characterized as temporary, with the use of swamp matting to enable equipment access during construction.

Response: Comment acknowledged. DEIR narrative Section 1 Table 1-1, Section 6, Table 6-1, and Section 9 Tables 9-1 and 9-2 provide additional information regarding the extent of impacts within the Project area. No work is proposed within the limits of streams/ waterways and there will be no direct impacts to streams/ waterways. DEIR narrative Section 5 provides an update on proposed measures to avoid, minimize and mitigate impacts to state-listed rare species habitat. DEIR narrative Section 14.3.4 identifies the Project's consistency with the MESA CMP performance standards.

AUD et al. 05: The review of this project and other transmission upgrade projects impacting conservation lands (state, municipal, federal, land trust, Conservation Restrictions, water supply lands) and/or sensitive habitats should document best practices for avoiding, minimizing, and mitigating impacts.

Response: Comment acknowledged. The NEP Environmental Guidance document: ROW Access, Maintenance and Construction Best Management Practices for New England (EG-303NE) addresses best practices and BMPs to avoid impacts to wetlands, waterways, rare species habitats, known below and above ground historical/archeological resources and other environmentally sensitive areas.

AUD et al. 06: The EENF states that this project is not an Article 97 disposition. However, on close review of the work involved, it appears that Article 97 is applicable.

- **New and improved, heavy duty gravel access roads will be built.**
- **Parts of the access roads extend beyond the limits of the existing ROW Easement.**
- **Monroe is a Reserve in the DCR Landscape Designations**
- **No new roads are allowed in Reserves under those designations, nor in Old Growth per the 1999 DEM policy that underwent review in the Environmental Monitor.**
- **The replacement of old poles and towers with new, steel towers includes expanded impacts beyond the existing footprint.**

Response: Please refer to MEPA 52.

AUD et al. 07: The EIR should include information required for Article 97 disposition, including detailed alternatives analysis and specific commitments to mitigation such as payments into the DCR Land Conservation Fund. In addition to compensation for unavoidable impacts, the EIR should include maintenance plans that will ensure ongoing impacts are minimized. This includes maintenance of equipment and roadways, and vegetation management. While the

utilities have Vegetation Management Plans that are reviewed through the Department of Agricultural Resources, that process is focused on minimizing impacts from the use of herbicides. Other considerations that should be addressed here include use of mechanical equipment such as mowing or tree cutting, and the operation of heavy equipment. Maintenance plans should avoid and minimize impacts to birds, nests, and young during the breeding season, and to reptiles and amphibians that may be vulnerable to operation of trucks or other equipment, especially on protected conservation lands.

Response: Please refer to MEPA 52. NEP will monitor the condition of the roadways annually to ensure they remain viable and compliant with permit conditions. BMPs will conform with NEP's Environmental Guidance (EG-303NE) on Access, Maintenance and Construction Best Management Practices

AUD et al. 08: The EENF indicates that roads will be available for use by the public on DCR lands. Specific plans need to be in place to regulate and enforce rules on allowable and appropriate types of recreation. For example, ATVs are not allowed on DCR lands except in specific designated areas, and not in Reserves.

Response: NEP will continue to consult with DCR regarding strategies to deter unauthorized trail use, and allowable and appropriate types of recreation on DCR property.

AUD et al. 09: In Monroe, the line crosses Dunbar Brook, a sensitive cold-water fishery in a ravine with documented Old Growth Forest. It is unclear if Old Growth will be directly impacted – hopefully not, since there is less than 1,500 acres of Old Growth remaining statewide. It appears from the plans that access will be to the towers on either side of the ravine rather than directly crossing the brook with equipment, although this should be clearly stated.

Response: Please refer to MEPA 42 response above regarding continuing consultation with DCR staff regarding Old Growth Forest.

AUD et al. 10: Clearing is proposed in the area around a tower replacement above the brook – although probably outside the actual Old Growth, there are some remarkably large trees in that area, and any clearing within the Reserve should be limited as much as feasible. The plans also call for widening and hardening Raycroft Road Ext in Monroe State Forest at this location, including outside of the existing utility easement.

Response: Please refer to MEPA 42 response above regarding continuing consultation with DCR staff regarding Old Growth Forest.

AUD et al. 11: Examples of best practices that should be applied to this and other transmission replacement projects may include access from one direction rather than a through road where feasible, temporary roads or matting in sensitive areas (in addition to the existing plans for temporary wetland crossings), and other general standards, applied appropriately to local conditions.

Response: Recommendation noted. Table 15-1 in Section 15 of the DEIR narrative provides a comprehensive list of NEP commitments to avoid, minimize and mitigate Project impacts. Table 2-2 in Section 2 of the DEIR narrative provides a summary of alternatives considered for the E131 Project. NEP has eliminated pass-through roads where feasible and has worked to avoid sensitive resource areas where added matting is required.

AUD et al. 12: There should also be a standardization of mitigation requirements for unavoidable Article 97 impacts. Standard procedures and best practices for these reviews and mitigation would benefit DCR and other local and state agencies, as well as the utilities by creating efficiencies, since several of these kinds of projects are anticipated in various locations across the state.

Response: Comment acknowledged. NEP will continue to consult with DCR regarding access and the applicability of Article 97.

Massachusetts Department of Environmental Protection, Western Regional Office (DEP WERO)

DEP WERO 01: The Proponent acknowledges they will file Notices of Intent (NOI) under the WPA with the various Municipalities impacted. MassDEP cannot take any action (issue a permit) until the Secretary has issued a final Certificate for the project. In the event a municipal Order of Conditions is appealed to MassDEP, the subsequent decision regarding a Superseding Order of Conditions cannot be issued until after the project has received a final Certificate from the Secretary. Therefore, to ensure full opportunities for public involvement and to avoid any potential conflict with the final Certificate from the Secretary, MassDEP recommends that no such filing occur until after the project has received a final Certificate from the Secretary. Should the Proponent file a NOI prior to the issuance of a final Certificate from the Secretary, MassDEP recommends the Proponent request that the Conservation Commission(s) defer a decision and keep the meeting open until the Secretary has issued the final Certificate and MassDEP has issued any required 401 WQC.

Response: Recommendation noted.

DEP WERO 02: Due to the complexity and long, linear nature of the project, MassDEP recommends coordinated submittal of NOIs and outreach to the affected municipalities.

Response: Recommendation noted.

DEP WERO 03: The Proponent indicates that certain structure replacement activities qualify for exemption under the Utility Maintenance Exemption (Chapter 30, Section 62A). In addition, the WPA provides exemptions for: repairing or replacing, but not substantially changing or enlarging, an existing and lawfully located structure or facility used in the service of the public and used to provide electric...services. Portions of the Project involve repairing

or replacing structures, while other portions involve substantially changing or enlarging structures or facilities. The Proponent should clearly identify to the Issuing Authority, which aspects of the project it believes qualify for exemption and which do not.

Response: Section 14 of the DEIR narrative identifies which elements of the Project qualify for exemption under the Utility Maintenance Exemption (c. 30, s. 62A) and WPA, and how the Project qualifies for Limited Project status for non-exempt activities. Section 14 also demonstrates how the Project will comply with performance standards to the maximum extent practicable.

DEP WERO 04: The Proponent indicates that the following resource areas are present on the Project Locus: Bank (inland), Bordering Vegetated Wetland, Land Under Water Bodies and Waterways, Bordering Land Subject to Flooding and Riverfront Area. In addition, the Project Locus may contain Isolated Vegetated Wetlands and Isolated Land Subject to Flooding. All Resource Areas and associated features must be identified and delineated in accordance with Regulation 310 CMR 10.00.

Response: All associated features and resource areas have been delineated and identified on the ER maps provided in Appendix B and further described in Section 6 of the DEIR. The Project locus does not contain IVW or ILSF.

DEP WERO 05: The portions of the project that do not qualify as exempt activities, as determined by the Issuing Authority, may be eligible for review under the Limited Project provisions contained at 310 CMR 10.53(3)(d). As for all Limited Projects, allowance under these provisions is at the discretion of the local Commission and to the extent practicable, work must comply with the General Performance Standards...Through the WPA permitting process, the Proponent is required to demonstrate how the project will protect the interests of the Act.

Response: Section 14 of the DEIR narrative identifies which elements of the Project qualify for exemption under the Utility Maintenance Exemption (c. 30, s. 62A) and WPA, and how the Project qualifies for Limited Project status for non-exempt activities. Section 14 also demonstrates how the Project will comply with performance standards to the maximum extent practicable.

DEP WERO 06: The proposed project has the potential to result in significant changes to the hydrology of the affected resource areas and downstream reaches. Therefore, the Proponent is advised to consider both surface and subsurface hydrology, wildlife habitat, and comply with Best Management Practices for stormwater management and sedimentation and erosion control. WPA permitting documents should also include tree work details, potential time-of-year restrictions, specific locations of proposed construction mats, implementation sequencing, and site-specific mitigation details.

Response: Please refer to MEPA 30 and 48 responses regarding hydrology and stormwater BMPs. Sedimentation control barriers and stormwater BMPs will

be incorporated into road and work pad construction to prevent erosion and are further described in DEIR narrative Section 11. Tree work details are described in DEIR narrative Section 4. Time of year restrictions pertaining to work within rare species habitat is described in Section 5. Locations of proposed construction mats are identified on the Project plans provided in Appendix B. A summary of proposed mitigation measures is presented in Table 15-1. WPA permitting documents will also incorporate this information.

DEP WERO 07: The Project proposes to create two new permanent stream crossings. The narrative should specify which plan sheets depict the crossings. The Proponent should clearly state whether the crossings are proposed in intermittent or perennial streams and whether the streams to be culverted constitute Outstanding Resource Waters. The Stream crossing should at a minimum meet the performance standards for Bank (inland), clarified at 310 CMR 10.54(4), and the Performance Standards for Land Under Water Bodies and Waterways, clarified at 310 CMR 10. 56(4). The Proposed crossings should be designed such that they meet the Massachusetts Stream Crossing Standards. In order to provide resiliency in the face of documented increases in precipitation, MassDEP recommends designing the crossings by incorporating the upper confidence interval times, a factor of the National Oceanic and Atmospheric Administration (NOAA) 14 Point Precipitation Frequency Atlas, rather than utilize precipitation estimates from the older Technical Paper-40 (TP-40)

Response: Since the EENF filing, the two proposed permanent stream crossings have been removed from the Project.

DEP WERO 08: The Project proposes both in-situ and created bordering vegetated wetland restoration and replication. As part of the WPA filing, the Proponent should document how the restoration and replication will be accomplished, preserve and protect the Interests of the Act, and be designed in alignment with the recommended procedure identified in the Massachusetts Inland Wetland Replication Guidelines, dated March 2002.

Response: Please refer to DEIR narrative Section 6 regarding wetland restoration and mitigation. The WPA NOI filing will document how the restoration and replication will be accomplished, preserve and protect the Interests of the Act, and be designed in alignment with the recommended procedure identified in the Massachusetts Inland Wetland Replication Guidelines, dated March 2002.

DEP WERO 09: The Proponent states the proposed project will not result in any new point source discharges and therefore suggests that the provisions 310 CMR 10.05(6)(k) through (q) (Stormwater Standards) do not apply. However, the Proponent also states that 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. MassDEP wishes to clarify that such Stormwater management features may constitute

stormwater conveyances. If, upon review of the impact site specific design the issuing authority determines that such features constitute stormwater conveyances, the provisions of 310 CMR 10.05(6)(k) through (q) would apply. All stormwater conveyances should be provided with stormwater best management practices to attenuate pollutants and to provide a setback from the receiving waters and wetlands as described in the Massachusetts Stormwater Handbook.

Response: Please refer to MEPA 48 response above.

DEP WERO 10: Under regulation, 314 CMR 9.00, the Proponent is required to provide sufficient information to adequately describe cumulative impacts to "Waters of the Commonwealth" (isolated and bordering vegetated wetlands and land under water). During the WQC permitting process the Proponent will be required to document efforts to avoid, minimize, and mitigate impacts as required by regulation. Mitigation for any unavoidable impacts is a requirement of the regulations. Appropriate mitigation measures will be determined as part of the WQC application process. MassDEP staff are available for consultation.

Response: Comment acknowledged. Avoidance, minimization and mitigation measures for wetland resource areas are discussed in Section 2 and presented in Table 15-1. Section 6 of the DEIR narrative provides an update to cumulative impacts for consistency with the WQC regulations. DEIR narrative Section 14 also demonstrates how the Project will comply with WQC regulatory performance standards.

DEP WERO 11: In accordance with the MEPA process, some Resource Areas and Waters of the Commonwealth impacts are listed as "temporary" in the EENF; the Proponent should be aware that the WPA and associated regulations do not have a designation of "temporary impacts" to resource areas. The WQC regulations, 314 CMR 9.00 specifically include "temporary" activities as being subject to the regulations (314 CMR 9.02). However, temporal impacts to resource areas can be mitigated through "in-situ" replication and/or restoration, as well as via off-site considerations.

Response: Comment acknowledged.

DEP WERO 12: The Proponent has identified the Phelps Brook (PWS ID 11900000-01S) as an ORW, and the Project plans identify no impacts to Phelps Brook. In the event a project design modification occurs or changes during construction involve the discharge of dredged or fill material to an ORW, the Proponent will need to demonstrate compliance with the provisions of 314 CMR 9.06(3).

Response: Comment acknowledged. No impacts to ORWs are anticipated as a result of the proposed Project. As discussed in DEIR Section 12, the 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.

DEP WERO 13: The Proponent provides an alternatives analysis designed to address the General Provisions of the MEPA review process, as articulated at 301 CMR 11.01(b). MassDEP wishes to clarify that the submitted Alternatives Analysis does not substitute for, nor serve as, the site-specific impact Alternatives Analysis required in 310 CMR 10.00 and 314 CMR 9.00.

Response: Comment acknowledged. The WPA NOI filing and WQC filing will address the required site-specific impact Alternatives Analysis required in 310 CMR 10.00 and 314 CMR 9.00.

DEP WERO 14: MassDEP recommends that the Proponent ensure that the SWPPP includes clear provisions specific to the management and protection of the resource areas within the project.

Response: Recommendation noted.

DEP WERO 15: MassDEP recommends clarifying in the SEIR the applicability of the Chapter 91 regulations and if applicable, that the Proponent file a Request for Determination of Applicability, in accordance with 310 CMR 9.06, to determine the exempt status of the project.

Response: Please refer to MEPA 50 response above.

DEP WERO 16: [Comments from Bureau of Air and Waste (Page 6 of MassDEP letter dated March 10, 2023)]

Response: We acknowledge comments provided by the MassDEP Bureau of Air and Waste and the Bureau of Waste Site Cleanup and agree to comply with requirements listed therein, including presentation and enforcement of a spills contingency plan addressing prevention and management of potential releases of soil and/or hazardous materials from pre-and post-construction.

DEP WERO 17: [Comments from Bureau of Waste Site Cleanup (pages 6-7 of MassDEP letter dated March 10, 2023)]

Response: We acknowledge comments provided by the MassDEP Bureau of Air and Waste and the Bureau of Waste Site Cleanup and agree to comply with requirements listed therein, including presentation and enforcement of a spills contingency plan addressing prevention and management of potential releases of soil and/or hazardous materials from pre-and post-construction.

DEP WERO 18: Section 61 Findings, labeled as a summary of mitigation measures to avoid and minimize environmental impacts, was discussed. Proposed Section 61 Findings must be included in the filing of the Single Environmental Impact Report.

Response: Draft Section 61 Findings for each Agency Action are provided in Section 15 of the DEIR narrative.

DEP WRP 01: Section 8.2.2. of the EENF includes the Proponent's assessment of the Project relative to Chapter 91 regulations and notes the standards for Chapter 91 jurisdiction with respect to non-tidal rivers and streams pursuant to 310 CMR 9.04(1)(e). The assessment refers to "MassDEP Technical Advisory #WE03-08, Jurisdiction Under the Public Waterfront Act in Non-tidal Rivers and Streams, (revised August 10, 2006)" as the basis for the conclusion that the only waterway within the project site subject to Chapter 91 jurisdiction is the Hoosic River. However, the referenced document is not a Jurisdictional Determination, nor does it purport to be a comprehensive list of jurisdictional waterways and specifically notes that "nontidal rivers and streams not shown on this list could potentially be subject to jurisdiction". Therefore, the Proponent should conduct an evaluation of all waterways within the footprint of the project with respect to the standards at 310 CMR 9.04(1)(e) to be included in the Environmental Impact Report.

Response: Please refer to MEPA 50 response above.

DEP WRP 02: The EENF characterizes the E131 line over Hoosic River crossing as categorically exempt from Chapter 91 licensing "because it will require an Order of Conditions from the Adams Conservation Commission". This is not a correct reading of the standards for certain exempt projects as specified at 310 CMR 9.05(3)(g) which do not require Chapter 91 authorization for "...structures for which a final Order of Conditions has been issued under M.G.L. c. 131, § 40 and 310 CMR 10.00: Wetlands Protection, and which does not reduce the space available for navigation; such fill or structures are limited to: 1. overhead wires, conduits, or cables to be attached to an existing bridge, without substantial alteration thereof, or constructed and maintained in accordance with the National Electrical Safety Code...". A project may meet this standard, not because it requires an Order of Conditions, but rather because it complies with all provisions as specified therein. However, as noted earlier in the EENF, the E131 crossing over the Hoosic River was previously authorized by Chapter 91 License No. 6274 issued by the Massachusetts Department of Public Works on August 1, 1974 which is an un-termed license. Provided that the license is valid, and the structures have been maintained in accordance with the specifications therein, the Hoosic River crossing is authorized to be maintained pursuant to the existing license.

Response: Comment acknowledged. A copy of License No. 6274 is provided in DEIR Appendix C. The license is valid, and the structures have been maintained in accordance with the license specifications.

Massachusetts Department of Transportation (MassDOT)

MassDOT 01: The Project route will intersect with the state jurisdictional highway layout at multiple locations, including the Curran Memorial Highway in Adams and Mohawk Trail (Route 2) in Florida. Project-

related construction in these locations will require a temporary access permit for construction activities and/or a utility access permit issued by MassDOT District 1. Further MassDOT permits will be required for temporary construction access, overhead wire crossings of the above-listed state routes, and new access roadways proposed within the state highway right-of-way. As the utility line already exists in place, no additional impacts on the state jurisdictional right of way are anticipated after Project completion.

Response: Please refer to DEIR narrative Section 7. The Project route will intersect with the state jurisdictional highway layout only at Mohawk Trail (Route 2) in Florida. NEP continues to consult with MassDOT District 1 regarding the required temporary access permit off of a state highway.

MassDOT 02: Once completed, the Project is not expected to result in additional vehicle trips on an average weekday, except for the occasional or yearly maintenance activities. MassDOT does not anticipate that these activities would significantly impact the transportation system and therefore recommends no further review for environmental impacts on the state transportation system. The Proponent should coordinate with MassDOT District 1 to minimize traffic disruption during Project construction and prevent impacts on state jurisdictional roadways.

Response: Comment acknowledged. NEP will continue to coordinate with MassDOT District 1 throughout the Project.

Massachusetts Natural Heritage and Endangered Species Program (NHESP)

NHESP 01: The Proponent has engaged the Division in pre-filing consultations to discuss potential impacts associated with the Project. The Proponent has been actively working with the Division to avoid and minimize permanent and temporary impacts to state-listed species and their habitats, including initiating field surveys and habitat assessments. Although a formal MESA filing has not yet been submitted, the Division anticipates – based on previously submitted information and ongoing consultations with the Proponent – that the Project, as proposed, will likely result in a Take (321 CMR 10.18 (2)(b)) of state-listed plants.

Response: A formal MESA filing was submitted to NHESP on April 17, 2023. NEP has continued consultations with NHESP regarding avoidance and minimization measures and has incorporated measures into the Project plan as presented in DEIR narrative Section 5.

NHESP 02: The Division recommends that the Proponent continue to work proactively with the Division to address several outstanding issues, including (1) continuing to assess alternatives to further reduce permanent and temporary impacts to state-listed species and their habitats, and (2) developing a robust conservation and management plan that provides a long-term net benefit to state-listed plants, with a focus on protection of individual plants and plant populations, additional surveys, seed collection, and

management to enhance habitat quality in the immediate vicinity of the Project site. The Division anticipates being able to address these issues through the MESA review process, and looks forward to continued consultation with the Proponent.

Response: Please refer to NHESP 01 response above. NEP looks forward to continued consultation with NHESP.

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Tighe&Bond

APPENDIX A



The Commonwealth of Massachusetts
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March 17, 2023

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : E131 Asset Condition Refurbishment (ACR) Project
PROJECT MUNICIPALITY : Adams, North Adams, Florida, and Monroe
PROJECT WATERSHED : Hoosic and Deerfield
EEA NUMBER : 16663
PROJECT PROPONENT : New England Power Company (NEP)
DATE NOTICED IN MONITOR : February 8, 2023

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF) and hereby determine that this project **requires** the preparation of a Draft Environmental Impact Report (DEIR). The EENF identifies baseline environmental conditions and potential environmental impacts but contains an inadequate alternatives analysis and a limited description of mitigation measures. In particular, the DEIR should explore alternatives to reduce the extent of tree clearing so as to avoid or minimize impacts to environmental resources. The DEIR should discuss whether Article 97 legislation is needed, and if so, include a full description of how the project will comply with applicable requirements. The Proponent should offer meaningful mitigation measures to offset the environmental impacts in project areas where impacts to wetlands and undisturbed forests cannot be avoided or minimized. As an adequate alternatives analysis is a central component of the MEPA review process, the request to file a Single EIR is denied.

Project Description

As described in the EENF, the project is part of a larger refurbishment effort that continues north of the Massachusetts border and ends at the Harriman Substation in Readsboro, Vermont. The E131 Transmission Line right-of-way (ROW) runs for ± 11.4 miles in Massachusetts through Adams, North Adams, Florida, and Monroe. The project includes replacement of ± 160 structures (H-frame, steel triple pole, steel lattice) with new steel structures and removal of five structures. Most structure replacements

will be directly embedded into the ground; however, where soil or line conditions necessitate, concrete caisson foundations will be installed at 24 structure locations, a micropile foundation system will be installed at one structure location, and pad foundations will be installed at three structure locations. Additional work includes construction of new permanent access roads (± 5 miles), improvement of existing access roads, replacement of insulators and hardware, replacement of existing shield wire with Optical Ground Wires (OPGWs),¹ installation of three new switch structures,² and replacement of conductor in four sections. Vegetation removal within the proposed limits of disturbance will include routine mowing as well as trimming of low-growth vegetation, and proposed both within the ROW and “off-ROW” areas where new access roads are proposed. Approximately 86 acres of vegetation impact is proposed project-wide including ± 17.6 acres of tree removal associated with construction of off-ROW access roads. Once trees are removed, these access roads will continue to be maintained. Expansion of the existing maintained ROW will be limited to some 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. Project construction timeline is anticipated to be from mid-2024 to 2027.

Project Corridor

The project corridor consists of the Line E131 ROW, which includes a ± 13 -mile 115 kilovolt (kV) overhead electric transmission line supported by wooden H-frame structures (and access roads within and outside of the ROW) extending from the Harriman #8 Substation in Readsboro, Vermont to the Adams #21 Substation in Adams, Massachusetts. The portion of the ROW within Massachusetts is ± 11.4 miles with a total limit of work of ± 463 acres within the Towns of Adams, North Adams, Florida, and Monroe, of which ± 9 acres are located beyond the existing ROW easement. The E131 line was constructed in 1925 and 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. Various inspections of the E131 line over the past several years have identified deteriorated wood pole assets and loadbreak switches on structures were also noted as poorly operational and in need of replacement.

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 corridor includes portions of the adjacent J10 Line and Bear Swamp Tap Line. The J10 Line splits from Line E131 in Adams where it runs roughly parallel to the Line E131 ROW for ± 3 miles before rejoining Line E131 in Florida. 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, which extends roughly perpendicular from Line E131 for ± 0.20 miles. According to the EENF, the 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 (periodically) maintained width ranges from ± 100 to ± 150 feet³ and 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

¹ OPGW will replace existing shield wire and will provide high-speed communication between substations.

² Switch structures are H-frame utility poles that support transmission line switches, which allow sections of the line to be isolated when maintenance is needed.

³ The EENF also indicates the maintained ROW width is between 125 and 150 feet.

Conservation and 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, the ROW and surrounding areas are generally densely forested.

The ROW contains Bordering Vegetated Wetlands (BVW), Inland Bank, Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), Riverfront Area (RFA), and associated Buffer Zones. The EENF states that one vernal pool was observed within the ROW (between structures 85 and 86); one Certified Vernal Pool (CVP) is located within the ROW (near access road to structures 141-143) and one Potential Vernal Pool (PVP) is located within (or near) the ROW (near access road to structures 59-70). Additional PVPs may exist on the ROW. The project corridor includes areas that are inundated during a 100-year storm as mapped on the Federal Emergency Management Act (FEMA) Flood Insurance Rate Maps (FIRMs). The ROW crosses over Phelps Brook, which is a tributary to Phelps Brook Reservoir, an Outstanding Resource Water (ORW). The EENF identifies areas of Priority and Estimated Habitat as determined by the 15th Edition of the Massachusetts Natural Heritage Atlas for several rare species. The corridor contains several historic and archaeological sites previously recorded in the Massachusetts Historical Commission’s (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth.

The ROW is within the Designated Geographic Area (DGA) of Environmental Justice (EJ) populations⁴ located in whole or in part within 1 mile of the project site as stated in 301 CMR 11.02 (definition of “DGA”). The ROW crosses two EJ populations characterized by Income (North Adams and Monroe) and is located within 1 mile of five EJ populations characterized by Income (two in North Adams, one in Monroe, one in Adams, and one in Rowe). The ROW is within 5 miles of an additional 14 EJ populations characterized by Income, and Minority and Income.

Environmental Impacts and Mitigation

According to the EENF, potential environmental impacts associated with the project include the alteration of ±111 acres of land, of which 92 acres will be permanent (permanent gravel access roads and work pads) and 19 acres will be temporary. It is unclear how the project is accounting for up to ±250 acres of alteration of DCR land associated with new, permanent access roads within ROW boundaries and off-ROW access. This should be clarified in the DEIR. Potential impacts to wetland resource areas are listed in the table below.

Wetland Resource Area	Temporary Impacts (sf)	Permanent Impacts (sf)	Total Impact (sf)
BVW	617,322 (14.2 acres)	700	618,022 (14.2 acres)
LUW	0	32	32
BLSF	146	0	146
RFA ⁵	74,451 (1.7 acres)	102,971 (2.4 acres)	177,422 (4.1 acres)
Bank ⁶	0 linear feet (lf)	64 lf	64 lf
Buffer Zone	158,377 (3.63 acres)	950,564 (21.82 acres)	1,108,941 (25.45 acres)

⁴ “Environmental Justice Population” is defined in M.G.L. c. 30, § 62 under four categories: Minority, Income, English Isolation, and a combined category of Minority and Income.

⁵ Note that impacts located within the limits of RFA overlap with impacts to BLSF, BVW, and the 100-ft Buffer Zone. Therefore, the total impacts to the project site are not equal to the sum of alterations.

⁶ Construction mats will span the Bank of rivers and streams; however, the totals reflect the potential for alteration.

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Temporary impacts to BVW and BLSF are due to construction access, staging, and installation of structure foundations, as well as mowing associated with the current Vegetation Management Plan (VMP) (2014-2018). 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; the replacement and relocation of Structures 24, 60, 80, 151 and 172 to BVW via direct embed methods; work envelopes, and pull pads; stabilization material for access roads, and tree removal. The project will impact 1.67 acres of Priority and Estimated Habitat of state-listed species. Greenhouse Gas (GHG) emissions and other air pollutants are associated with construction vehicles and tree clearing. Impacts to historical and archaeological areas are possible.

Measures to avoid, minimize, and mitigate project impacts include use of existing access roads from the adjacent J10 Line and within the E131 ROW to avoid new land disturbance, where feasible; use of temporary construction mats where crossing wetlands or water courses is unavoidable; spanning of streams to avoid impacts to bank; removing five structures from the ROW; use of erosion and sedimentation controls and other best management practices (BMPs) during construction; restoration of any disturbed areas to existing grades to allow for revegetation; restoration of temporarily impacted wetland resources to pre-construction conditions; BVW replication for permanent impacts; and protection of identified rare species throughout construction. As discussed below, the DEIR should expand on the alternatives analysis for the project and include a revised list of mitigation measures.

Jurisdiction and Permitting

The project is undergoing MEPA review and is subject to a mandatory EIR pursuant to 301 CMR 11.03(1)(a)(1)(a) and 11.03(3)(a)(1)(a) of the MEPA regulations because it requires Agency Actions and will result in the alteration of 50 or more acres of land and one or more acres of BVW. The project is also required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA (1 mile) around one or more EJ Populations. In addition, the project exceeds the Environmental Notification Form (ENF) threshold at 301 CMR 11.03(3)(b)(1)(f) for alteration of one-half or more acres of any other wetlands.⁷ As discussed below, the project may exceed ENF thresholds at 301 CMR 11.03(1)(b)(3) for disposition or change in use of land or an interest in land subject to Article 97 of the Amendments to the Constitution of the Commonwealth (Article 97).⁸ The project requires a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP), a Conservation and Management Permit (CMP) from the Natural Heritage and Endangered Species Program (NHESP), a Construction Access Permit (CAP) from the Massachusetts Department of Conservation and Recreation (DCR) and a temporary Access Permit for construction activities and/or a Utility Access Permit from the Massachusetts Department of Transportation (MassDOT). If an Article 97 disposition or change in use is implicated, the project must meet the requirements set forth in the Executive Office of Energy and Environmental Affairs' (EEA) Article 97 Land Disposition Policy and new M.G.L. c. 3, s. 5A. A transfer in ownership or interest in state conservation property would require legislative authorization by the General Court through a two-thirds supermajority roll call vote.

The project requires Orders of Conditions (OOC) from the Adams, North Adams, Florida, and

⁷ Although the project will result in a take of a state-listed rare species, it is estimated to impact less than 2 acres of mapped habitat; therefore, 301 CMR 11.03(2)(b)(2) (disturbance of greater than two acres of designated priority habitat that results in a take of a state-listed species) is not exceeded.

⁸ The EENF did not identify the potential exceedance of this threshold.

Monroe Conservation Commissions (or in the case of an appeal, a Superseding Order of Conditions from MassDEP); a Section 404 Pre-Construction Notification (PCN) from the U.S. Army Corps of Engineers (ACOE); a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the U.S. Environmental Protection Agency (EPA); and review by MHC acting as the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR 800).

The project is not receiving Financial Assistance from the Commonwealth. Therefore, MEPA jurisdiction is limited to those aspects of the project that are within the subject matter of any required or potentially required Agency Actions and that may cause Damage to the Environment, as defined in the MEPA regulations.

Request for Single EIR

The MEPA regulations at 301 CMR 11.06(8) indicate that a Single EIR may be allowed provided I find that the EENF:

- a) 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;
- b) provides a detailed baseline in relation to which potential environmental impacts and mitigation measures can be assessed; and,
- c) demonstrates that the planning and design of the project use all feasible means to avoid potential environmental impacts.

For any Project for which an EIR is required in accordance with 301 CMR 11.06(7)(b), I must also find that the EENF:

- d) 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 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.

Consistent with this request, the EENF was subject to an extended comment period under 301 CMR 11.05(8).

Review of the EENF

The EENF provides a description of existing and proposed conditions, preliminary project plans, a limited analysis of alternatives, assessment of impacts, and a review of construction methods; it also identifies measures to avoid, minimize and mitigate environmental impacts. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the EENF contained an output report from the Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action

Team (RMAT) (the “MA Resilience Design Tool”),⁹ together with information on climate resilience strategies to be undertaken by the project.

Alternatives Analysis

The EENF describes the need for the project, stating that existing transmission structures have surpassed their life expectancy and inspections have shown deteriorated wood poles with woodpecker damage, thin/rotting pole tops, loss of cross-sectional area of the poles, deterioration of wood spar arms, among other issues. 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. The EENF asserts that significant access road improvements or construction of new access roads will be needed due to this limited access to the E131 ROW corridor to facilitate the project and provide safe, reliable, and long-term access.

Based on the project goal to repair and improve existing assets, the EENF includes a limited analysis of a No Build Alternative, a Critical Asset Repair Alternative, and the Preferred Alternative (as described herein). The No Build Alternative establishes a baseline against which the project can be evaluated but is not a feasible option because it would not achieve the project goal and the existing system would remain at risk for failure. This alternative was dismissed based on the asset condition of the E131 line and the need to improve high-speed communications between substations.

The Critical Asset Repair Alternative would address only the most essential asset related issues required to meet electrical safety standards. This alternative would reduce the number of structure replacements/repairs that must be immediately addressed. However, it was dismissed for the following reasons: would not significantly reduce the extent of environmental impacts because it would require repeated access to the ROW with extensive access road improvements and tree removals to address continuing structure deterioration with recurrent impacts to DCR State Forest lands, BVW, other environmental resources and rare species habitat; would not address asset safety and reliability; would increase cost and inefficiency of repeatedly revisiting the same ROW within a short timespan; and would fail to meet the need for improving the reliability of the existing communications between the substations served by the circuit.

The Preferred Alternative proposes full refurbishment of the E131 line with expanded access, replacement of existing structures and replacement of the existing shield wire with OPGW. According to the EENF, the Preferred Alternative will result in a more resilient transmission line which addresses safety, asset reliability and repair requirements; provide improved communication between substations as a result of the installation of OPGW; reduce overall disturbance to wetland resources, rare species habitat and public open space; and not require repeated disturbance along the ROW. As such, the Preferred Alternative was selected as it best addresses the project need, while resulting in the least impacts to the natural and human environment.

The EENF does not identify how the Preferred Alternative was designed to avoid and minimize land clearing and impacts to sensitive resource areas associated with the new access roads, work pads, pull pads, and replacement of poles. It does not clearly describe why permanent access roads are required in certain locations nor explain that the number is minimum required to refurbish the E131 Line.

⁹ https://resilientma.org/rmat_home/designstandards/

Environmental Justice

As noted previously, the ROW crosses two EJ populations characterized by Income (North Adams and Monroe) and is located within 1 mile of five EJ populations characterized by Income (two in North Adams, one in Monroe, one in Adams, and one in Rowe). The ROW is within 5 miles of an additional 14 EJ populations characterized by Income, and Minority and Income. There are no communities identified within the DGA in which greater than 5% of the community speak a language other than English, or who do not identify as speaking English “very well.”

Effective January 1, 2022, all new projects in the DGA (as defined in 301 CMR 11.02, as amended) around EJ populations are subject to new requirements imposed by Chapter 8 of the Acts of 2021: *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy* (the “Climate Roadmap Map”) and amended MEPA regulations at 301 CMR 11.00.¹⁰ Two related MEPA protocols – the MEPA Public Involvement Protocol for Environmental Justice Populations (the “MEPA EJ Public Involvement Protocol”) and MEPA Interim Protocol for Analysis of project Impacts on Environmental Justice Populations (the “MEPA Interim Protocol for Analysis of EJ Impacts”) – are also in effect for new projects filed on or after January 1, 2022.¹¹ Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations and must submit analysis of impacts to such EJ populations in the form of an EIR.

The EENF describes public involvement activities conducted prior to filing, including advance notification of the project circulated to a list of community-based organizations (CBOs) and tribes/indigenous organizations (the “EJ Reference List”) provided by the MEPA Office. Circulated information included the EJ Screening Form which identified ways to request additional information or a community meeting. The EJ screening form included a link to a public project website (<https://www.e131project.com>) which provides an interactive mapper and contact information. A copy of the EENF, as well as the MEPA remote consultation meeting notice, were distributed to the EJ Reference List. The Proponent also held a virtual public meeting on August 10, 2022 prior to filing the EENF. Information pertaining to this meeting was advertised in the *Berkshire Eagle* and *The Recorder*, and was also provided on the EJ Screening Form. The EENF indicates that there were no attendees at the public meeting. Repositories for hard copies of project materials have been established at the Adams, North Adams, Florida, and Monroe public libraries which will be updated regularly as additional project documents become available.

The EENF contains a baseline assessment of existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts. The EENF indicates that “vulnerable health EJ criteria” for municipalities located within one mile of the project area were identified using the Massachusetts Department of Public Health (DPH) EJ Tool; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured

¹⁰ MEPA regulations have been amended to implement Sections 55-60 of the Climate Roadmap Act and took effect on December 24, 2021. More information is available at <https://www.mass.gov/service-details/information-about-upcoming-regulatory-updates>.

¹¹ Available at <https://www.mass.gov/service-details/eea-policies-and-guidance>.

to be 110% above statewide rates based on a five-year rolling average.¹² Within the project’s DGA, the Proponent indicates that the communities of Adams, North Adams, Monroe, and Rowe meet at least one of the four “vulnerable health EJ criteria”; however, the EENF does not identify which communities and census tracts exceed 110% of the statewide rate for each criteria: Heart Attack Rate, Pediatric Asthma Rate (available at the community level), Low Birth Weight, and Blood Lead Prevalence (available at the census tract level). The DEIR should provide additional analysis of impacts on EJ populations consistent with the MEPA Interim Protocol including fully analyzing the data available in the DPH tool at the municipal and census tract level.

The EENF also includes a review of the mapping layers available in the DPH EJ Tool to identify sources of potential pollution existing within the identified EJ population. The information is summarized in the table below.

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 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 falls within the 90th to 95th percentiles for asthma cases.

Based on the baseline assessment of existing burdens, the EENF does not conclude whether or not there is an existing “unfair or inequitable” burden; however, it asserts that the project will not result in disproportionate adverse effects on the EJ populations. In particular, the EENF asserts that the project will benefit surrounding communities by increasing reliability of the overall transmission line through refurbishment of existing structures and wires on more robust structures. The EENF notes that the project is not anticipated to increase flooding in the area, and that impacts to 146 sf of BLSF are associated with temporary matting only. The project will also not impact wetland resource areas in or near EJ areas. Impacts to traffic are not anticipated, as the ROW does not cross densely populated areas

¹² See <https://matracking.ehs.state.ma.us/Environmental-Data/ej-vulnerable-health/environmental-justice.html>. Four vulnerable health EJ criteria are tracked in the DPH EJ Viewer.

and only one high-use roadway (Route 2). The EENF asserts that 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. It further asserts that the project will minimize construction-phase impacts to air quality, water quality, and noise using BMPs. The Proponent commits to using ultra-low sulfur diesel fuel, emission control devices, and limits on idling of construction vehicles.

As discussed in the Climate Change section below, the project has a high exposure and risk rating based on the project's location for extreme precipitation (riverine and urban flooding) and extreme heat. Approximately 86 acres of vegetation impact is proposed project-wide including ± 17.6 acres of tree removal. Implications for GHG emissions and heat island effects should continue to be analyzed as set forth in the Climate Change Scope below. To the extent tree clearing will affect adjacent EJ populations with heightened vulnerabilities as shown by the DPH EJ Tool or EPA EJ Screen, specific mitigation should be considered.

According to the EENF, 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. The 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 EENF does not describe potential impacts to open space and DCR land from construction of 5 miles of new access roads or improvement of existing access roads. Comments from DCR indicate concerns regarding recreational impacts associated with temporary closure of trails and roads used for public recreation during active construction. As impacts to public recreation will also affect EJ populations, these issues should be fully explored in the DEIR.

Land Alteration

The EENF indicates that the land area within the project ROW is ± 454 acres and outside of the ROW is ± 9 acres, for a total project site in Massachusetts of ± 463 acres, within which work is proposed on ± 111 acres (92 acres permanent and 19 acres temporary). Land uses were evaluated within the ROW and for a 300-ft buffer on either side of the ROW and consist primarily of forest property/open space (25-32%), state forest land (31-40%) and residential uses (21-25%). State-owned lands crossed by portions of the E131 line include the Monroe (1.36 miles), Florida (0.68 miles), and Savoy (1.78 miles) Mountain State Forests. According to the EENF, most new land alteration will occur as the result of construction of new access roads and modification of existing access roads. The EENF notes that only 125 to 150 feet of the existing ROW has been subject to periodic maintenance. These existing maintained ROW limits will not be expanded 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. Approximately 789,053 sf (18.1 acres) of temporary construction matting is anticipated. Land alteration will occur both within ROW limits and "off ROW" areas where new access roads are proposed.

Vegetation Removal/Tree Clearing

Vegetation removal prior to construction 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, of which 17.6 acres of trees will be removed. Tree removal is needed primarily to facilitate the construction of off-

ROW permanent access roads. The EENF does not indicate how much tree removal will occur within the maintained ROW limits (125 to 150 feet) or in the limited areas of expansion of the ROW. All work will be undertaken in accordance with the Proponent's VMP that has been approved by the Massachusetts Department of Agricultural Resources (MDAR).

Work Pads and Pull Pads

The EENF describes work pads (typically $\pm 10,000$ sf) and pull pads (typically $\pm 8,000$ sf) that will be placed at all structures where work is proposed. Permanent work pads are proposed in upland areas. Grading and establishment of retaining walls at select locations will be required to provide a safe workspace. Temporary work pads and pull pads composed of construction matting will be used to the maximum extent practicable in wetland resource areas. All pull pads will be temporary and restored in situ following completion. Establishment of work and pull pads will result in the disturbance of a total of ± 22.35 acres of land. Following construction, work pads will be stabilized and remain for future maintenance and pull pads will be reclaimed, reseeded, and stabilized.

Access Roads

Access road development (to accommodate construction materials and equipment) is comprised of three elements including improvements to existing, historical access routes, construction of new access roads where none presently exist, and placement of temporary construction matting to access areas within or near wetland resource areas. In general, access roads will need to be 16-ft wide with a level stone surface. Historical access roads are categorized as Type R (13,120 lf) where only minor repairs are required (filling ruts and potholes) with no widening needed and Type S (12,270 lf) which potentially required widening. New access roads (26,927 lf) will require grading and placement and compaction of gravel; these are categorized as Type 1 standard 16-foot-wide road and Types 2 to 5 where additional site-specific conditions may require grading, stone addition, and measures to ensure stone remains in place. Approximately 10,698 lf of construction matting will be used.

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 to reduce impacts from stormwater flows, maintain the longevity of the roads, and reduce maintenance. 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. The Proponent proposes to maintain all new access roads (including those which extend beyond the existing easement) once they are constructed, meaning that it will need to obtain additional easements from landowners.

Rare Species

Portions of the project area are mapped as *Priority* and *Estimated Habitat* for seven state-listed species (five plants, one fish, and one insect). These species and their habitats are protected pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). The EENF notes that 1.67 acres of impact from placement of construction matting for the construction of temporary access roads and work pads is within mapped habitat.

According to the EENF, botanical surveys were conducted for state-listed plant species along the E131 line ROW and J10 line ROW in 2017, 2020, 2021 and 2022 by an NHESP-approved botanist.

Survey reports summarizing the findings of these surveys were submitted to NHESP. Following observation of Bailey's sedge (plant) within the project corridor, additional botanical surveys were conducted and populations were observed at specified locations in 2022. In 2020 and 2022, two plant species (Hairy-Fruited Sedge and Foxtail Sedge) were observed within the project footprint based on botanical surveys conducted. According to recent and historical botanical surveys, no instances of Large-Leaved Goldenrod (plant) have been identified on or in proximity to the E131 line ROW; the EENF notes it is unlikely that suitable habitat is available at or near the project corridor. The EENF does not provide any information on the fifth plant species (Woodland Millet).

A 2020 Longnose Sucker (fish) habitat report stated that the reach of the Hoosic River within the limit of work is likely not a breeding area but could serve as a migratory corridor. The EENF does not anticipate any long-term impacts on Longnose Sucker or its habitat in this reach of the Hoosic River based on the results of the survey and the lack of in-water work proposed for this project.

According to the EENF, the Proponent considered the mature fruit season of state-listed sedges to identify time of year (TOY) restrictions, identified and mapped state-listed species in the field along the project corridor and in relation to access road/work pads, reduced the footprint of the limit of work, and evaluated BMPs that will be implemented to protect habitats and water quality. Project-specific mitigation measures will be developed in consultation with NHESP and other agencies, which may consist of state-listed habitat management on the Proponent's property, offsite mitigation, and/or other measures to achieve net benefit for each affected species, in accordance with 321 CMR 10.23.

The Proponent has consulted with NHESP and will continue to coordinate strategies to avoid and minimize permanent and temporary impacts for the project. Temporary construction matting will be used to cross mapped wetlands and rare species habitat to minimize impacts to rare plant species. Other 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 these populations will be avoided.

As recommended by NHESP, rare species habitats will be monitored post-construction 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 these species. The Proponent is coordinating with NHESP to prepare a CMP pursuant to the MESA for the project and will submit a MESA Project Review Checklist to NHESP for work conducted in rare species habitat.

Wetlands / Water Resources

The four local Conservation Commissions will review the project for its consistency with the Limited Project provisions of the Wetlands Protections Act (WPA), the Wetland Regulations (310 CMR 10.00), and associated performance standards. MassDEP will review the project for its consistency with the 401 WQC regulations (314 CMR 9.00). The EENF indicates that certain structure replacement activities qualify for exemption under the Utility Maintenance Exemption (c. 30, s. 62A) and the WPA.

Water resources, including wetlands and streams, were delineated within the project area. According to the EENF, the project is proposed to result in significant unavoidable temporary and permanent impacts to BVW, Inland Bank, LUW, BLSF, RFA, and associated buffer zones. One CVP

and one PVP are located within or near the ROW; one vernal pool was observed within the ROW and additional PVPs may exist on the ROW. The ROW crosses over Phelps Brook which is as an ORW; project plans do not identify impacts to Phelps Brook. The EENF reviews the performance standards for each wetland resource area and describes the potential temporary and permanent impacts for each activity as detailed in the table below.

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.

Permanent impacts to Bank, BVW, LUW, RFA and Buffer Zone are associated with the installation of two culverts, improvement of access roads, a new switch structure, installation of concrete caisson foundations for the replacement of four structures, and replacement and relocation of five structures to BVW via direct embed methods. Temporary impacts associated with the proposed work will occur in BVW, BLSF and RFA. No permanent roads or grading are proposed in BVW or BLSF.

The EENF states the project requires a WQC due to the permanent fill of ±700-sf of BVW (new switch structure, concrete caisson foundations, and direct embed of five structures to BVW) and ±14.2 acres of BVW temporarily impacted by construction mats. The EENF does not describe any secondary impacts due to tree removal in the ROW that will alter forested wetlands converting them to scrub shrub wetlands. As previously mentioned, ±86 acres of vegetation impact are proposed project-wide including ±17.6 acres of tree removal associated with construction of off-ROW access roads. The EENF includes a commitment to provide wetland replication to compensate for the ±700 sf of permanent fill within BVW but does not propose replication to mitigate any permanent forested wetland conversion. If the rutting from temporary construction matting is greater than approximately six inches deep, these

MEPA 05

areas will be restored to reestablish existing topography and maintain existing wetland hydrology.

The Proponent intends to implement site specific mitigation measures for temporary and permanent impacts to wetland resource areas as required by the WPA and Sections 401 and 404 of the Clean Water Act and related federal and state regulations. The Proponent anticipates that the final mitigation plan will be developed during the federal, state and local permitting processes. The EENF identifies a preliminary mitigation strategy involving the decommissioning, removal and restoration of four structures (101, 144, 153, and 180) located within four separate BVWs which will eliminate the need for future repeated alterations of the associated resource areas for maintenance. Additional information regarding mitigation for permanent wetland impacts should be provided in the DEIR.

Chapter 91/Waterways

The EENF identifies 10 perennial streams and numerous intermittent streams within the ROW. However, it asserts that the project crosses only one jurisdictional waterway (the Hoosic River) subject to licensing by MassDEP under M.G.L. c. 91 and the Waterways Regulations (310 CMR 9.00). MassDEP requires a c. 91 license for electric transmission crossings over rivers and streams even where there is no physical structure in the stream or river. The EENF asserts that the crossing over the Hoosic River is exempt from c. 91 pursuant to 310 CMR 10.00 because it will be covered by a final OOC and will be constructed and maintained in accordance with the National Electric Safety Code (NESC) and will not reduce the space available for navigation per (310 CMR 9.05(3)(g)); the DEIR will be required to confirm this exemption applies. The E131 crossing over the Hoosic River was previously authorized by c. 91 License No. 6274 issued by the Massachusetts Department of Public Works on August 1, 1974, which is an un-termed license according to comments from the MassDEP Waterways Regulation Program (WRP).

Article 97

As previously noted, the E131 line ROW passes through approximately six miles of DCR-owned land (Article 97) in the Monroe, Florida, and Savoy Mountain State Forests. DCR comments note that the project will use and improve roads outside of the ROW to enable access through DCR forest land to the ROW for project activities. Proposed changes to the access corridors include tree clearing, widening, and improving the corridors, which will result in permanent impacts to the state forests and potentially increase total off-ROW impacts on DCR land. Tree clearing related to new permanent access roads is estimated to be 17.6 acres; the EENF does not clarify what amount of tree clearing is located on the ROW versus off-ROW or whether it is all located on DCR land. The proposed work will impact 246 acres of DCR land within the ROW and 4 acres outside the ROW. The EENF provides a table (Table 3-4) which summarizes land alteration associated with access roads (Type R, S, and 1-5) and matting in each state forest. The project will impact BVW (175,353 sf temporary and 517 sf permanent) and RFA (18,452 sf temporary and 64,571 sf permanent) within DCR land. The precise extent of impacts on DCR **MEPA 06** property should be clarified in the DEIR.

Work activities on DCR property outside of existing ROW/easements, or requiring access across DCR property, will require a CAP. In addition, the acquisition of new easements over DCR property will trigger the requirements of Article 97. DCR comments note that if the off-ROW improved woods roads and trails are to be permanently used for utility maintenance, this could constitute a change in use of DCR property and also trigger Article 97. The EENF states that this project does not involve an Article 97 disposition. Joint comments from MassAudubon, et al. note that it appears Article 97 is

applicable based on the following: new and improved gravel access roads will be built and some parts extend beyond the limits of the existing ROW easement; Monroe is a Reserve in the DCR Landscape Designations which prohibits new roads (similarly in the 1999 Old Growth Policy); and replacement of old poles and towers with new, steel towers includes expanded impacts beyond the existing footprint.

Transportation

According to MassDOT comments, the project route will intersect with state jurisdictional highway layout at multiple locations, including the Curran Memorial Highway in Adams and Mohawk Trail (Route 2) in Florida. Project-related construction in these locations will require a temporary Access Permit for construction activities and/or a Utility Access Permit from MassDOT. Comments from MassDOT note that access permits will be required for temporary construction access, overhead wire crossings of the above listed state routes, and new access roadways proposed within the state highway ROW. To minimize impacts, the Proponent will develop a Traffic Management Plan for review and approval by MassDOT and will establish traffic control plans for construction traffic on busy streets and will limit access to the ROW by installing signage and barriers (large stones) at access points from public roads.

Historic and Archaeological Resources

The project is subject to review under Section 106 of the NHPA of 1966 as amended (36 CFR 800) and M.G.L. c. 9, ss. 26-27C (950 CMR 71.00). As described in the EENF, a cultural resources due diligence review was completed in October 2019, which identified the need to perform a subsequent intensive (locational) archaeological survey. A State Archaeologist's Permit application was submitted to the MHC in April 2021 and MHC issued a permit to conduct the survey on April 13, 2021, which was amended on April 19, 2022 to include access road upgrades. The Proponent conducted fieldwork and testing in 2021 and 2022. The Proponent plans to perform additional required 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. A survey report was filed with MHC in 2022. Comments from DCR request coordination with the DCR Staff Archaeologist related to potential archaeological resources on DCR property.

Climate Change

The EENF describes the project as an important component in addressing climate change, noting that the proposed work will result in an improved electrical transmission system which will be more resilient to future extreme storms and will be able to meet peak demand during periods of extreme heat. The EENF describes how the project complies with local climate resilient adaptation strategies which identify aging infrastructure as a vulnerability and indicate the need for improved reliability of electrical service to support economic growth.

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool to assess the climate risks of the project. Based on the output report attached to the EENF,¹³ the project has a high exposure rating based on the project's location for extreme precipitation (urban and riverine flooding) and extreme heat. Based on the ±50-year useful life

¹³ The output report from the MA Climate Resilience Design Standards Tool was created on February 4, 2022, prior to revisions of the Tool in 2022.

identified and the self-assessed criticality of the project asset, the Tool recommends a planning horizon of 2070 and a return period associated with a 100-year (1% chance) storm event when designing the project (a “utilities” asset) for the extreme precipitation parameter. The EENF states that the project will result in a more climate-ready and resilient transmission system that can withstand more extreme weather events and provide improved reliability of the electric system during and after storm events. No permanent impacts are proposed to BLSF within the three areas along the project corridor which are mapped as 100-year floodplain. In addition, the Proponent will remove structure 144 from floodplain to allow the line to fully span the floodplain and eliminate future impacts to this area from infrastructure work. Other climate adaptation and resiliency strategies include reinforced structure foundations, replacement of existing wooden structures with stronger and more weather resistant steel structures, stabilization of the site and reestablishment of natural vegetation. The DEIR should address the recommendations from the MA Resilience Design Tool to assess the resiliency of the proposed new structures and stormwater features. It should also address heat effects and GHG emissions from land and tree clearing, in accordance with the Scope below.

Construction Period

During the construction-phase of the project there may be intermittent and localized increases in noise, dust and emissions from construction vehicles and related equipment. The EENF includes a description of the Proponent’s transmission line construction procedures for each project activity (tree removal, access road improvements, OPGW installation, etc.) and listed BMPs that will be implemented related to air quality, water quality, and traffic. The EENF also indicates that the project will be overseen by an Environmental Monitor, a qualified environmental professional designated by the Proponent who will monitor on-site construction conditions in relation to permit and regulatory requirements. The Proponent will submit a Stormwater Pollution Prevention Plan (SWPPP) for the project in compliance with the NPDES CGP. The EENF describes the type of equipment that will be used to install the new structures and overhead lines and to remove existing structures. The EENF did not quantify the extent of truck traffic associated with these activities; the Proponent does not anticipate significant impacts to traffic as the corridor does not cross densely populated areas or high-use roadways. Work areas will be accessed primarily from access routes owned by the Proponent or minor town roadways. Once on-site, vehicle traffic will be limited to within or in proximity to the ROW.

All construction activities should be managed in accordance with applicable MassDEP regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017 and the handling of clean wood associated with tree removal). The EENF states the Proponent will incorporate anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11) including no unnecessary idling. On- and off-road vehicles and engines used during construction will minimize emissions by using vehicles adhering to the more stringent EPA Tier 4 emissions standards or will be retrofitted with USEPA verified emission control devices. The Proponent requires that construction equipment use ultra-low sulfur diesel fuel. If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the Massachusetts Contingency Plan (MCP; 310 CMR 40.0000). All construction activities should be undertaken in compliance with the conditions of all State and local permits.

SCOPE

General

MEPA 10 The DEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this Scope. Recommendations provided in this Certificate may result in a modified design
 MEPA 11 that would further avoid, minimize, and/or mitigate Damage to the Environment. The DEIR should identify measures the Proponent will include to further reduce the impacts of the project since the filing of the EENF, or, if certain measures are infeasible, the DEIR should discuss why these measures will not be adopted.

Project Description and Permitting

MEPA 12 The DEIR should describe the project and identify any changes to the project and associated
 MEPA 13 environmental impacts since the filing of the EENF. It should include updated site plans for existing and post-development conditions. It should provide figures that clearly identify any additional permanent and temporary easements that will be required to create access to the ROW. The plans and narrative
 MEPA 14 provided in the DEIR should identify the extent of any off-ROW clearing required for access road construction, and whether permanent easements will need to be acquired to maintain those areas as
 MEPA 15 utility corridors. The DEIR should provide a brief description and analysis of all applicable statutory and regulatory standards and requirements and describe how the project will meet those standards. It should
 MEPA 16 include a list of required Agency Permits, Financial Assistance, or other state or local approvals and
 MEPA 17 provide an update on the status of each. The EENF summary of impacts table notes that the maximum height of existing structures is 85 feet, and the project will result in an increase of this height by 25 feet to a maximum height of 110 feet. The DEIR should explain why the height of structures will be
 MEPA 18 increased. The DEIR should clarify the width of the maintained ROW as the EENF indicates it is both between 100 and 150 feet and between 125 and 150 feet.

The information and analyses identified in this Scope should be addressed within the main body of the DEIR and not in appendices. In general, appendices should be used only to provide raw data, such as drainage calculations, traffic counts, capacity analyses and energy modelling, that is otherwise adequately summarized with text, tables and figures within the main body of the DEIR. Information provided in appendices should be indexed with page numbers and separated by tabs, or, if provided in electronic format, include links to individual sections. Any references in the DEIR to materials provided in an appendix should include specific page numbers to facilitate review.

Alternatives Analysis

The EENF does not describe a Reduced Build Alternative that reduces impacts to or setbacks from wetland resource areas or avoids tree clearing. MassDEP comments emphasize that the alternatives analysis provided in the EENF does not substitute for, nor serve as, the site-specific impact alternatives analysis required in 310 CMR 10.00 and 314 CMR 9.00.

MEPA 19 The DEIR should include an expanded alternatives analysis that demonstrates the project is taking all feasible measures to avoid and minimize environmental impacts to wetland resource areas and mapped habitat, as well as tree clearing, which is consistent with requirements pursuant to all applicable

regulations (i.e., WPA, WQC, MESA, M.G.L. c. 3, s. 5A, etc.). It should evaluate at least one Reduced Impact Alternative that provides less impacts and/or greater setback to on-site wetlands, less land clearing and land alteration, and less impacts to mapped habitat than the Preferred Alternative. If this alternative is dismissed, the DEIR should explain why. As noted in the EENF, clearing outside of the ROW (and securing new easements with landowners) is proposed in other locations and should be further explored where sensitive resource areas might be avoided. The DEIR should quantify environmental impacts and provide a conceptual plan for these alternatives. It should compare the environmental impacts with the Preferred Alternatives, in particular, with respect to land alteration, wetland resource areas, vernal pools, rare species habitat, and archaeological resources in a tabular format. The DEIR should describe how more vegetation could be preserved in sensitive areas. The DEIR should provide further justification for relocating structures to BVW and closer to sensitive resource areas within Estimated and Priority Habitat.

Environmental Justice/Public Health

The Proponent should continue to take steps, including undertaking additional measures, to meaningfully engage EJ populations in decision-making for the project. The DEIR should describe a public involvement plan that the project intends to follow for EJ populations within the DGA for the remainder of the MEPA review process, and the Proponent should hold at least one public meeting to provide details of the project prior to filing the DEIR. The DEIR should detail how public involvement efforts will continue throughout subsequent permitting and through the construction period for the project. It should describe any outreach that will be conducted as part of local review processes, including the procedures for providing abutter notice and opportunities for public input into project design and timing. The DEIR, or a summary thereof, should be distributed to the EJ Reference List, and an updated list should be obtained from the MEPA Office.

The DEIR should provide an updated baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1 and the MEPA Interim Protocol for Analysis of EJ Impacts. The DEIR should fully analyze the data available in the DPH tool at the municipal and census tract level to characterize existing unfair or inequitable Environmental Burdens. It should describe in detail the proximity of the project site to those neighborhoods and discuss the specific activities, including the extent of forest clearing and construction activity, that will take place near those neighborhoods. Based on the additional analyses required by the Scope included in this Certificate, the DEIR should provide an updated assessment of whether the project's impacts may result in disproportionate adverse effects, or increase the risks of climate change, on the identified EJ population, particularly in light of the GHG emissions, air pollutants, and heat island effects that may be associated with large-scale forest clearing activities. The DEIR should consider any loss of open space or recreational opportunities that may affect EJ populations lacking access to such resources. It should discuss what mitigation will be provided for any properties located directly adjacent to tree clearing activities, in light of the loss in shading and other impacts that may be anticipated. Analysis of the stormwater should specifically assess whether flooding risks may be exacerbated for nearby EJ populations, including under future climate conditions, and whether existing conditions would be worsened or improved by the project.

Land Alteration

The DEIR should explain the discrepancy between the EENF stating that the project would result in a total of 111 acres of land alteration and will also alter up to 250 acres of land to construct new roads

through DCR land on ROW and off-ROW.

MEPA 32 The DEIR should provide updated estimates of land alteration (temporary and permanent) associated with access roadways on ROW and off-ROW (new and improvements to existing), structure installation, work pads, pull pads, vegetation removal/tree clearing on ROW and off-ROW, and other project components in a tabular format. The DEIR should clarify the amount of alteration including the type of vegetation that will be cleared (i.e., mature trees, scrub shrub, etc.). It should clarify the location, type and amount of alteration in previously undisturbed areas. The DEIR should document the land alteration that will occur as a result of the additional tree clearing and permanent conversion of forested area to shrub/scrub area. Land alteration should also include any clearing that may be required off-ROW to improve/widen existing access roads or construct new access roads. Off-ROW impacts to wetlands should also be included and updated as part of wetlands impacts discussed below. The DEIR should identify how the project is designed to avoid and minimize land alteration and preserve open space and tree cover. The DEIR should clarify if permanent work pads are accounted for in the estimate of permanent land alteration. The DEIR should report all impacts associated with access roads both on- and off-ROW.

MEPA 33 The EENF indicates that the project will require clearing of 17.6 acres of trees to construct off-ROW permanent access roads. The DEIR should indicate if any other vegetation removal will require additional tree removal and trimming, beyond the scope covered by the current VMP, in all off-ROW locations and within the ROW. The DEIR should indicate the acreage of impact associated with additional clearing beyond that covered by the VMP and include this in the reported permanent land

MEPA 34 alteration impacts summary. The DEIR should identify, in a narrative that references plans, where vegetation removal will need to be coordinated with private landowners. A summary of all tree removal impacts in the ROW and off-ROW, including within DCR land, should be provided in the DEIR.

MEPA 35 The DEIR should describe mitigation for impacts associated with land alteration including, but not limited to, minimizing soil disturbance, retaining scrub/shrub understory and ground cover to help reduce soil erosion, using large woody debris and deadwood to create habitat, mulching/seeding bare soils to stimulate revegetation, and reusing cleared trees for long-lived wood products. The DEIR should describe when the approved Five-Year VMP (2014-2018) will be renewed by MDAR pursuant to 333 CMR 11.00) as it is outdated.

Rare Species

NHESP comments anticipate that the project will likely result in a Take (321 CMR 10.18 (2)(b)) of state-listed plants. A Take of state-listed species may only be permitted if the project meets the following performance standards for a CMP (321 CMR 10.23) to demonstrate that it has avoided, minimized and mitigated impacts to state-listed species: adequately assess alternatives to both temporary and permanent impacts to the state-listed species; demonstrate that an insignificant portion of the local population will be impacted; and develop and agree to carry out a conservation and management plan that provides a long-term net benefit to the conservation of the state-listed species.

MEPA 36 The Proponent should continue to work proactively with NHESP to address outstanding issues, including continuing to assess alternatives to further reduce permanent and temporary impacts to state-listed species and their habitats, and developing a robust conservation and management plan that provides a long-term net benefit to state-listed plants, with a focus on protection of individual plants and plant populations, additional surveys, seed collection, and management to enhance habitat quality in the

MEPA 37 immediate vicinity of the project site. The DEIR should summarize the results of consultations with NHESP and address these outstanding issues. The DEIR should clearly identify the project's consistency with the performance standards for a CMP. It should provide an update on potential impacts to state-listed rare species habitat, including the acreage of Priority Habitat both on- and off- ROW impacted by the project. It should identify proposed measures to avoid, minimize and mitigate those impacts. The DEIR should clarify what amount of impact within mapped habitat (1.67 acres) will also impact wetland resources areas and associated buffer zone.

Wetlands and Stormwater

MEPA 38 MassDEP comments recommend that the Proponent wait to file Notices of Intent (NOIs) until the conclusion of MEPA review to ensure sufficient opportunities for public involvement and to avoid any potential conflict with the final Certificate, OOCs, or the WQC. If NOIs are filed prior to the conclusion of MEPA review, MassDEP recommends the Proponent request that the local Conservation Commissions defer a decision on the filing and keep the meeting open until the Secretary has issued the final Certificate, and MassDEP has issued the WQC, to ensure consistency with any requirements in the Certificate and conditions of the WQC. MassDEP also recommends coordinated submittal of NOIs and outreach to the affected municipalities due to the complexity and long, linear nature of the project.

MEPA 39 The DEIR should identify when delineations of BVW, Inland Bank, LUW, BLSF, RFA were conducted. MassDEP comments note that the site may contain Isolated Vegetated Wetlands (IVW) and Isolated Land Subject to Flooding (ILSF). The DEIR should describe if IVW and ILSF were observed and delineated. The DEIR should consider both surface and subsurface hydrology, wildlife habitat, and comply with BMPs for stormwater management and sedimentation and erosion control to avoid and minimize potential significant changes to the hydrology of the affected resource areas and downstream reaches. The DEIR should include tree work details, potential time-of-year restrictions, specific locations of proposed construction mats, implementation sequencing, and site-specific mitigation details.

MEPA 40 The DEIR should ensure that estimates for impacts to wetland resource areas are conservative and account for all temporary and off-ROW impacts. It should clearly describe why structures 24, 60, 80, 151, 172 will be relocated from the 100-foot Buffer Zone to BVW and describe efforts to avoid,

MEPA 41 minimize, and mitigate impacts associated with these structures. The DEIR should confirm that the SWPPP will include clear provisions specific to the management and protection of the resource areas within the project area.

MEPA 42 The DEIR should clearly identify the location of Old Growth Forests in the project area. The DEIR should describe how impacts to Old Growth Forest will be avoided and discuss placement of a buffer zone around these sensitive resource areas. The DEIR should discuss how clearing of large

MEPA 43 diameter trees in the Monroe Reserve will be limited to the maximum extent practicable. The DEIR should describe how impacts to cold water fisheries in the project area will be avoided and minimized.

MEPA 44 The DEIR should clearly identify which elements of the project qualify for exemption under the Utility Maintenance Exemption (c. 30, s. 62A) and WPA, and which do not. According to MassDEP comments, portions of the project that do not qualify as exempt activities may be eligible for review under the Limited Project provisions pursuant to 310 CMR 10.53(3)(d) at the discretion of the local Conservation Commission and to the extent practicable, work must comply with General Performance Standards. The DEIR should describe how the project qualifies for Limited Project status for non-exempt activities. It should demonstrate how the project will comply with performance standards to the

MEPA 45 maximum extent practicable. The DEIR should provide an update to cumulative impacts to IVW, BVW

and LUW for consistency with WQC regulations (314 CMR 9.00). The DEIR should evaluate reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and identify mitigation for unavoidable impacts (including temporary impacts) in accordance with the WPA and WQC regulations. The DEIR should acknowledge the need to demonstrate compliance with the provisions of 314 CMR 9.06(3) if a project design modification occurs or changes during construction involve the discharge of dredged or fill material to an ORW.

MEPA 46

MEPA 47 The DEIR should provide plans which depict the two proposed permanent stream crossings, and the narrative should identify these plans. It should identify whether the crossings are proposed in intermittent or perennial streams and whether these streams constitute ORWs. The DEIR should include information to confirm that stream crossings will meet the performance standards for Bank (inland) at 310 CMR 10.54(4) and LUW at 310 CMR 10.56(4) and will be designed to meet the Massachusetts Stream Crossing Standards. Designs should incorporate the upper confidence interval times provided in the NOAA 14 Point Precipitation Frequency Atlas.

MEPA 47

The EENF states that 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. MassDEP comments note that such features may constitute stormwater conveyances, in which case, the provisions of 310 CMR 10.05(6)(k) through (q) would apply. The DEIR should confirm that all stormwater conveyances will include stormwater BMPs to attenuate pollutants and provide a setback from the receiving waters and wetlands as described in the *Massachusetts Stormwater Handbook*.

MEPA 48

Chapter 91

MassDEP comments note that the Hoosic River crossing is authorized to be maintained pursuant to the existing un-termed license (No. 6274 issued in 1974) provided that the license is valid, and the structures have been maintained in accordance with the specifications therein. The DEIR should confirm the license is valid and the specifications have been adhered to.

MEPA 49

As outlined in MassDEP WRP comments, the DEIR should evaluate all waterways within the footprint of the project with respect to the c. 91 jurisdictional standards at 310 CMR 9.04(1)(e). This evaluation should not be based on the MassDEP Technical Advisory #WE03-08¹⁴ which specifically notes that nontidal rivers/streams not identified in the document could potentially be subject to c. 91 jurisdiction. The DEIR should include details on the scope of work within each waterway in c. 91 jurisdiction to allow MassDEP WRP to provide guidance on any c. 91 authorization that may be required. The Proponent should schedule a pre-application consultation with MassDEP Waterways as requested in comments and should provide an update on coordination in the DEIR.

MEPA 50

MEPA 51 The DEIR should provide additional information regarding which portions of the project cannot be located or operated away from waterways which are non-tidal, navigable rivers/streams subject to jurisdiction pursuant to c. 91 and the Waterways Regulations. The analysis provided in the DEIR should support a finding of water-dependency as required by 310 CMR 9.12(2)(d) and review the project's conformance with the relevant c.91 regulatory standards (if applicable).

MEPA 51

¹⁴ MassDEP Technical Advisory #WE03-08, *Jurisdiction Under the Public Waterfront Act in Non-tidal Rivers and Streams*, (revised August 10, 2006)

Article 97

As noted previously, the project will involve construction of $\pm 1,076,044$ sf (245.7 acres) of new, permanent access roads within the ROW boundaries and $\pm 165,387$ sf (3.8 acres) of off-ROW access (i.e., use and improvement of woods roads) within DCR forest land to enable access to the E131 Line ROW. The Proponent indicates that it may have existing rights to access the ROW through DCR property; however, as indicated in comments from DCR, additional information is needed to determine if new permanent easements are required which would require disposition of state-owned land protected by Article 97.

MEPA 52

If required, a disposition of a property interest over this land requires approval by a two-thirds vote of the legislature, and compliance with the EEA Article 97 Land Disposition Policy (the Article 97 Policy) and new M.G.L. c. 3, s. 5A (Public Lands Preservation Act). The Article 97 Policy was established to ensure No Net Loss of public conservation lands under the ownership and control of the Commonwealth. It provides for transfer of ownership or interests in Article 97 Land only under exceptional circumstances. The Policy establishes six criteria for determining when “exceptional circumstances” exist such that a disposition of Article 97 land may be appropriate. These include:

- The Proponent of the disposition must conduct an analysis of alternatives, commensurate with the type and size of the proposed disposition, that achieves the purpose of the disposition without the use of Article 97 land (i.e., use of other land available within the appropriate market area)
- The disposition of the subject parcel and its proposed use may not destroy or threaten a unique or significant resource (e.g., significant habitat, rare or unusual terrain, or areas of significant public recreation)
- Real estate of equal or greater value, and of significantly greater resource value is granted to the disposing agency
- The minimum necessary area of Article 97 should be included in the disposition and the existing resources continue to be protected to the maximum extent possible
- The disposition serves an Article 97 purpose or another public purpose without detracting from the mission, plans, policies and mandates of EEA and its appropriate department or division
- The disposition is not contrary to the express wishes of the person(s) who donated or sold the parcel or interests to the Commonwealth

MEPA 53

The DEIR must identify impacts (temporary and permanent) to Article 97 Land and proposed measures to avoid, minimize and mitigate impacts. The alternatives analysis and proposed mitigation (i.e., payments into the DCR Land Conservation Fund, etc.) in the DEIR should address compliance with the EEA Article 97 Policy. The Proponent is directed to consult with DCR regarding the applicability of Article 97 prior to filing the DEIR. As noted above, work activities on DCR property outside of existing easements associated with the ROW, or requiring access across DCR property, will

MEPA 54

require a CAP. As requested in comments, the Proponent should coordinate with DCR’s Senior Ecologist, Staff Archaeologist and Management Foresters related to wetlands, rare species habitat, trails, forest stands identified by DCR’s Old Growth Policy and other forest resources, and potential archaeological resources, including the amount of proposed tree clearing within the state forest sections of the ROW, and along access routes identified by the Proponent. Comments from DCR and MassAudubon et al. express concerns about recreational impacts associated with temporary closure of trails and roads used for public recreation during active construction and impacts that may result in increased Off-Highway Vehicle (OHV) access to the state forests, potentially causing degradation of natural and cultural resources. DCR requests coordination with the Proponent to develop and implement

MEPA 55 strategies to deter this unauthorized trail use. The DEIR should provide an update on these consultations.
 MEPA 56 The DEIR should identify specific protection and restoration measures to be taken for sensitive natural and cultural resources on public conservation lands.

MEPA 57 The DEIR should include maintenance plans (equipment, roadways, vegetation management, etc.) that will ensure ongoing impacts are minimized. The DEIR should describe how maintenance plans will be modified or developed to avoid and minimize impacts to birds, nests, and young during the breeding season, and to reptiles and amphibians that may be vulnerable to operation of trucks or other equipment, especially on protected conservation lands. The DEIR should identify specific plans to regulate and enforce rules on allowable and appropriate types of recreation.
 MEPA 58

Transportation

MEPA 59 The Proponent should continue to work with MassDOT (District 1) to identify any traffic and construction management plans that may be required for temporary work within the state highway layout to minimize traffic disruption during construction. The DEIR should describe the location of all roadways under MassDOT jurisdiction and include a figure that identifies locations within the state highway layout where work or construction access will occur. It should describe the outcome of any consultation with MassDOT. The DEIR should describe the extent of truck traffic that will result from refurbishment and tree clearing activities, including the number of truck trips required.

Historic and Archaeological Resources

An intensive (locational) archaeological survey was conducted in 2021 and 2022 and a limited archaeological site examination investigation will be conducted 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. The EENF indicates that the Proponent will continue to consult with MHC and Native American Tribes to develop measures to avoid, minimize or mitigate adverse effects to historic and archaeological resources. The DEIR should provide an update on coordination with MHC and the tribes. It should summarize measures in the avoidance and protection plan.
 MEPA 60

Climate Change

Adaptation and Resiliency

MEPA 61 While the EENF describes the general resiliency benefits of the project achieved by updating aging infrastructure to current design standards, it does not specifically address the design recommendations from the MA Resilience Design Tool. The DEIR should include a revised output report, which includes these recommendations. The DEIR should include a narrative explaining whether proposed infrastructure improvements will make the project assets more resilient to risks associated with riverine flooding from a 100-year (1%) storm event estimated as of 2070. It should discuss the extent to which existing electrical lines are exposed to riverine flooding, and what measures the Proponent is taking to improve asset resiliency over a longer-term horizon. In particular, the DEIR should discuss whether new foundations are being elevated above any defined base flood elevations or other similar water/flood elevation measure to ensure that the structures are resilient to future flooding risks. Where impervious/semi-pervious area is created and stormwater management is required, the DEIR should address the recommendations from the MA Resilience Design Tool, including whether the stormwater management designs will be resilient to future climate conditions including the 100-year (1% chance)

MEPA 62 storm as of 2070. The DEIR should further describe mitigation in areas of access road creation where there are steep slopes and severe erosion potential including temporary and permanent stabilization methods.

Land Alteration

MEPA 63 The DEIR should provide a quantitative carbon analysis of tree clearing activities that should consider both the one-time direct emissions from tree cutting as well as loss of potential carbon sequestration over a certain time period (e.g., 30 or 40 years). While the EENF indicates that 17.6 acres of the total 86 acres of vegetation clearing is associated with tree removal, it did not fully characterize the land cover types for all vegetation clearing. The Proponent has proposed to use LiDAR data on other Asset Condition Refurbishment (ACR) projects (i.e., EEA#16607 A1/B2 ACR Project), confirmed with select sampling, to estimate the age and height of trees to be cleared and to assign carbon values to those trees based on “best available datasets.” The Proponent should use a consistent methodology to estimate carbon impacts from all vegetation clearing proposed for the project. The Proponent may, in the alternative, make use of the EVALIDator tool from the U.S. Forestry Service,¹⁵ which provides estimates of carbon stocks (including above ground and below ground biomass) specific to Massachusetts forests and considers variations among forest types based on region. As the EVALIDator tool does not provide an estimate of annual carbon sequestration rates (carbon flux over time), the Proponent may rely on other sources of data, including the EPA GHG Emissions Calculator, for this value and estimate annual rates over a 30-year time period from the date of construction. The DEIR should describe the methodology and data used to develop the analysis, identify associated impacts on GHG emissions, and identify measures to avoid, minimize and mitigate impacts.

MEPA 64 The DEIR should identify mitigation measures commensurate with the project’s impacts on the project corridor’s capacity to sequester and store carbon. Potential mitigation measures may include funding programs that add or maintain biomass for sequestration purposes (such as tree planting, carbon credits, forest conservation or commitments to implement forest restoration practices) and preserving/protecting forested land through a Conservation Restriction or other means. At a minimum, the Proponent should clearly explain its plan for disposition of the trees cleared through the project, including the process for identifying potential markets for reuse of wood and a process for tracking and reporting. The Proponent should commit to reuse of cleared trees for long-lived wood products to the greatest extent practicable and should indicate how the ultimate disposition of the trees will be tracked and documented. Potential mitigation for carbon emissions due to land alteration might include donation of harvested wood to benefit an affordable housing project; tree planting in EJ populations near the project area (recommendation of 50 trees/acre with a commitment to water and replace for two years); and donation of harvested wood (cut and split to a wood bank) in Massachusetts.

Construction

MEPA 65 The DEIR should confirm that the project will include a spills contingency plan that addresses prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities. It should confirm that this plan will be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential releases.

¹⁵ <https://www.fia.fs.fed.us/tools-data/>

Mitigation and Section 61 Findings

MEPA 66

The EENF included draft Section 61 Findings and proposed mitigation measures. The DEIR chapter should include an updated comprehensive list of all commitments made by the Proponent to avoid, minimize and mitigate the impacts of the project. The DEIR should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The list of commitments should be provided in a tabular format organized by subject matter (traffic, water/wastewater, GHG, EJ, etc.) and identify the Agency Action or Permit associated with each category of impact. Draft Section 61 Findings should be separately included for each Agency Action to be taken on the project.

Responses to Comments

The DEIR should contain a copy of this Certificate and a copy of each comment letter received. It should include a comprehensive response to comments on the EENF that specifically address each issue raised in the comment letter; references to a chapter or sections of the DEIR alone are not adequate and should only be used, with reference to specific page numbers, to support a direct response. This directive is not intended to, and shall not be construed to, enlarge the Scope of the DEIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent may circulate copies of the DEIR to commenters other than Agencies in a digital format (e.g., CD-ROM, USB drive) or post to an online website. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. A copy of the DEIR should be made available for review in the Adams, North Adams, Florida, and Monroe Public Libraries.

March 17, 2023

Date



Rebecca L. Tepper

Comments received:

- 02/23/2023 Richard Chandler, Mohawk Trail Woodlands Partnership
- 02/27/2023 Andrew Kawczak, Hoosic River Watershed Association
- 03/08/2023 Massachusetts Department of Conservation and Recreation (DCR)
- 03/10/2023 Massachusetts Department of Environmental Protection (MassDEP) – Waterways Regulation Program (WRP)

- 03/10/2023 MassDEP, Western Regional Offices (WERO)
- 03/10/2023 Berkshire Regional Planning Commission (BRPC)
- 03/10/2023 Massachusetts Department of Transportation (MassDOT)
- 03/10/2023 Berkshire Environmental Action Team (BEAT)
- 03/10/2023 Mass Audubon, Appalachian Mountain Club, Massachusetts Association of Conservation Commissions, Massachusetts Land Trust Coalition, The Nature Conservancy in Massachusetts, Sierra Club Massachusetts Chapter, The Trustees of Reservations, Friends of Mohawk Trail State Forest, and Harvard Forest
- 03/10/2023 Massachusetts Division of Fisheries and Wildlife (DFW) – Natural Heritage and Endangered Species Program (NHESP)

RLT/PPP/ppp

Patel, Purvi (EEA)

From: Katy L. Wilkins <KLWilkins@tigheBond.com>
Sent: Thursday, February 23, 2023 8:04 AM
To: Patel, Purvi (EEA)
Cc: Tyrrell, Michael; Emmett Lollis-Taylor; ashfield@verizon.net
Subject: FW: E-131 ACR project in western MA by application from Eversource

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good morning Purvi,

I received this correspondence relative to the E131 ACR Project and am passing along to you per their request.

Thank you,

Katy Wilkins
Project Manager

o. 413.875.1305 | m. 508.272.3172
53 Southampton Road, Westfield, MA 01085
w: tighebond.com | halvorsondesign.com

-----Original Message-----

From: RICHARD CHANDLER <ashfield@verizon.net>
Sent: Wednesday, February 22, 2023 6:59 PM
To: Katy L. Wilkins <KLWilkins@tigheBond.com>
Cc: Hank Art <Henry.W.Art@williams.edu>; Nowak, Joseph <jnowak@bcn.net>; Lisa Hayden <lhayden@newenglandforestry.org>
Subject: E-131 ACR project in western MA by application from Eversource

[Caution - External Sender]

Hello Ms. Wilkins - I will be unable to attend the Zoom meeting on this project that traverses several towns in the Mohawk Trail Woodlands Partnership (name change currently pending to Northwestern Massachusetts Woodlands Partnership). We are a quasi-state body representing 21 Northern Berkshire and Western Franklin County towns including those most impacted by this effort.

I have been asked to forward to MEPA, with you identified as project contact, my previously shared comments (copied in below) with our Board Chair (Hank Art of Williamstown) and our administrative agent Lisa Hayden of the New England Forestry Foundation.

They are also copied here.

Please share these as is appropriate while you consider approval and conditions of this project under MEPA status. Thank you for the opportunity:

"Thanks for the forward of this extensive line upgrade project. I read almost all of the material in the attachment and feel that:

MTWP 01

1) This work is necessary to reconstruct and maintain the electrical grid for a healthier distribution network as extra capacity is needed to diversify fossil-fuel exacerbated climate change.

MTWP 02

2) The various state and federal government bodies who will oversee this effort have adequate tools at their disposal to assure design and construction compliance to the greatest extent possible - as long as they keep in contact at every step of the work.

MTWP 03

3) Our rural towns need to be sure we will benefit from this work that primarily brings power across rather than into our area. This can be aided by understanding the impact modernizing of wires and structures will have - as well as the stated increased maintenance going forward - both positive and potentially negative - at key intersection points like substations, road crossings, view-sheds, nearby residences, etc. Of particular concern are local opportunities and concerns surrounding upgraded regional access points (substations) and potential private and public generating and storage systems that may result from this work over the next decade. These will have significant planning impacts in the rural communities these lines traverse.

MTWP 04

4) It looks like quite a few off-right-of-way (ORW) road construction is planned due to terrain. Much of this is on existing/former woods roads that also may be/could potentially be trails in state forests. A strong effort should be made to condition permits for this work on improving public access to the state land after completion and in using this work to demonstrate proper and innovative developing techniques - potentially during workshops open to the public and land conservation professionals.

MTWP 05

5) I don't see much about geology in this filing, except as it serves to inhibit the work. Although there appears to be adequate consideration of historic interests, I personally would love to see some of the end result aimed at educating the public about the ground itself on which they stand. Realizing that most after-completion access to this extensive land cut is to be restricted, I hope particular areas of interest can be designated for educational access for schools and other guided groups.

MTWP 06

6) Lastly, and directly relevant to the Northwestern Massachusetts (currently Mohawk Trail) Woodlands Partnership, examples of the forestry impacts and proposed mitigation - along with how the material to be removed is used - would be a great window on how infrastructure development and woodland values can be combined favorably.

I don't expect to attend the Zoom meeting, but perhaps these comments could be passed along."

Rick Chandler, Partnership Vice Chair and Town Representative for Ashfield

[Dashboard\(javascript:void\(0\);\)](#) > [View Comment\(javascript:void\(0\);\)](#)

View Comment


Comment Details

EEA #/MEPA ID 16663	First Name ANDREW	Address Line 1 46 D STREET	Organization Hoosic River Watershed Association
Comments Submit Date 2-27-2023	Last Name KAWCZAK	Address Line 2 --	Affiliation Description Proponent
Certificate Action Date 3-10-2023	Phone --	State MASSACHUSETTS	Status Accepted
Reviewer Patel, Purvi	Email akawczak@yahoo.com	Zip Code 01247	

Comment Title or Subject

Topic: Environmental impacts

Comments



See attachment below

Attachments

- [powerpoleinstln.docx\(null\)](#)
- [Scan2023-02-24_155802natlgrid.pdf\(null\)](#)

[BACK TO SEARCH RESULTS](#)

February 20, 2023

Purvi Patel – MEPA/ENF analyst
Katy Wilkins – National Grid consultant

RE: E131 Asset condition Refurbishment Project (power pole replacement project) Expanded Environmental Notification Form – MEPA project # 16663

Dear Professional:

Established in 1986, the Hoosic River Watershed Association (HoorWA) is a citizens environmental organization dedicated to; the restoration, conservation and enjoyment of the Hoosic River watershed. The watershed size is 720 square miles, covering the three states of; Massachusetts, Vermont and New York. In Massachusetts, the watershed includes the towns of; Lanesboro, Cheshire, **Adams, North Adams**, Clarksburg, New Ashford and Williamstown. (See hoorwa.org for more information)

As such, we have reviewed the subject EENF and truly understand the importance to the area to install and maintain a healthy electrical grid. We do however, have some serious concerns regarding the extensive tree cutting (~ ~ ~ < 92 acres for the total project) proposed for developing new access roads. Specific to the communities of **Adams and North Adams**, there is extensive road widening (to 16 feet), road stabilization work and the addition of spur roads. Many new road segments and excursions are also proposed in those communities (between pole numbers: old #147 through old #178 **and** old #59 through old #72).

As you likely know:

- HoorWA 01**
- HoorWA 02**
- a) Unnecessary tree cutting removes trees that otherwise perform valuable function of sequestering carbon emissions. Massachusetts' has recently adopted new climate change policies and regulations - that include crediting the importance of carbon sequestration using trees/ forests as the collective sinks. Additionally, the State of Massachusetts recently funded the Woodlands Partnership of North-West Massachusetts - that among other things - advocates the value of forest carbon sequestration - as being important to their goals.
 - b) Construction of new access roads will ultimately increase the use of ATVs. ATV usage typically results in soil erosion and direct wetland destruction. When wet conditions/rain ultimately arrives, the soil erosion/loose soil - creates mud slurry that can find its way into a wetland, vernal pool or adjacent stream - stressing each - long after this project is complete.

- c) New or improved roads will further stress wildlife due to habitat fragmentation. Some of the proposed road excursions enter lands adjacent State lands that were intended to assist wildlife survival through preservation of habitat integrity. Additional cutting of forests, adding or improving roads, challenges that environmental and wildlife benefit.
- d) Some road improvements, new road additions - remove wetlands and vernal pools - that are extremely difficult to successfully replicate.
- e) New road construction will increase the opportunity to introduce invasive species to the area.

As such, we believe there is a better environmental balance to achieve your objective of installing new poles.

We request that you consider:

HooRWA 03 a) Use of tracked construction vehicles - within the current rights of way - to negate the need to cut an extensive quantity of trees – in order to construct 16-foot wide access roads.

HooRWA 04 b) Don't increase the width of existing roads/trails to accommodate normal road-use vehicles - that would no longer be needed - if tracked construction vehicles were used.

HooRWA 05 c) Don't increase access nor improve access to the power line right of way - to discourage the expected increase in ATV usage.

HooRWA 06 d) During construction, use industrial-type helicopters (e.g., Carson company) to carry and install; equipment, concrete, piers and poles. Those helicopters were used extensively (and effectively) on/over the rugged terrain surrounding the Bear Swamp Hydroelectric facility and power pole installation project in 1973.

HooRWA 07 e) By modifying your installation techniques and processes, you can avoid some of the costs of: hauling in tons of rock for stabilization, limit the costs of grading the rock, eliminate much of the need for extensive tree cutting /disposal/disposition.

HooRWA 08 f) Consult with Robert T. Leverett, a nationally recognized old-growth tree specialist, to review the locations of proposed tree cutting, especially in Florida and Monroe, to ensure old-growth forests will not be overly stressed - and will be protected. He has previously advised the State in protecting these resources.

Fundamentally, we believe a shift in your proposed construction methods and techniques - will result in much less stress on the environment and wildlife -- and still be good for you and the surrounding communities!

Sincerely,

Andrew Kawczak
 President, Hoosic River Watershed Association



Hoosic River Watershed Association

February 27, 2023

Purvi Patel – MEPA/ENF analyst

Katy Wilkins – National Grid consultant at Tighe & Bond

RE: E131 Asset condition Refurbishment Project (power pole replacement project) Expanded Environmental Notification Form – MEPA project # 16663

Dear Professionals:

Established in 1986, the Hoosic River Watershed Association (HoorWA) is a citizens' environmental organization dedicated to; the restoration, conservation and enjoyment of the Hoosic River watershed. The watershed size is 720 square miles, covering the three states of; Massachusetts, Vermont and New York. In Massachusetts, the watershed includes the towns of; Lanesboro, Cheshire, **Adams, North Adams**, Clarksburg, New Ashford and Williamstown. (See hoorwa.org for more information)

As such, we have reviewed the subject EENF and truly understand the importance to the area to install and maintain a healthy electrical grid. We do however, have some serious concerns regarding the extensive tree cutting (~~tbd < 92 acres for the total project) proposed for developing new access roads. Specific to the communities of **Adams** and **North Adams**, there is extensive road widening (to 16 feet), road stabilization work, work terraces and the addition of spur roads. Many new road segments and excursions are also proposed in those communities (between pole numbers: old #147 through old #178 **and** old #59 through old #72).

As you likely know:

- a) Unnecessary tree cutting removes trees that otherwise perform valuable function of sequestering carbon emissions. Massachusetts' has recently adopted new climate change policies and regulations - that include crediting the importance of carbon sequestration using trees/ forests as the collective sinks. Additionally, the State of Massachusetts recently funded the Woodlands Partnership of North-West Massachusetts - that among other things - advocates the value of forest carbon sequestration - as being important to their goals.
- b) Construction of new access roads will ultimately increase the use of ATVs. ATV usage typically results in soil erosion and direct wetland destruction. When wet conditions/rain ultimately arrives, the soil erosion/loose soil - creates mud slurry that can find its way into a wetland, vernal pool or adjacent stream - stressing each - long after this project is complete.

- c) New or improved roads will further stress wildlife due to habitat fragmentation. Some of the proposed road excursions enter lands adjacent State lands that were intended to assist wildlife survival through preservation of habitat integrity. Additional cutting of forests, adding or improving roads, challenges that environmental and wildlife benefit.
- d) Some road improvements, new road additions - remove wetlands and vernal pools - that are extremely difficult to successfully replicate.
- e) New road construction will increase the opportunity to introduce invasive species to the area.

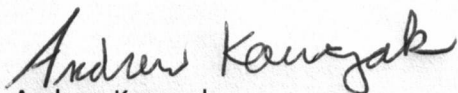
As such, we believe there is a better environmental balance to achieve your objective of installing new poles.

We request that you consider:

- a) Use of tracked construction vehicles - within the current rights of way - to negate the need to cut an extensive quantity of trees - in order to construct 16-foot wide access roads.
- b) Don't increase the width of existing roads/trails to accommodate normal road-use vehicles - that would no longer be needed - if tracked construction vehicles were used.
- c) Don't increase access nor improve access to the power line right of way - to discourage the expected increase in ATV usage.
- d) During construction, use industrial-type helicopters (e.g., Carson company) to carry and install; equipment, concrete, piers and poles. Those helicopters were used extensively (and effectively) on/over the rugged terrain surrounding the Bear Swamp Hydroelectric facility and power pole installation project in 1973.
- e) By modifying your installation techniques and processes, you can avoid some of the costs of: hauling in tons of rock for stabilization, limit the costs of grading the rock, eliminate much of the need for extensive tree cutting /disposal/disposition.
- f) Consult with Robert T. Leverett, a nationally recognized old-growth tree specialist, to review the locations of proposed tree cutting, especially in Florida and Monroe, to ensure old-growth forests will not be overly stressed - and will be protected. He has previously advised the State in protecting these resources.

Fundamentally, we believe a shift in your proposed construction methods and techniques - will result in much less stress on the environment and wildlife -- and still be good for you and the surrounding communities!

Sincerely,



Andrew Kawczak

President, Hoosic River Watershed Association



March 8, 2023

Secretary Rebecca L. Tepper
Executive Office of Energy and Environmental Affairs
Attn: Purvi Patel, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EEA#16663 E131 Asset Condition Refurbishment Project EENF

Dear Secretary Tepper:

The Department of Conservation and Recreation (“DCR” or “the Department”) is pleased to submit the following comments in response to the Expanded Environmental Notification Form (“EENF”) filed by New England Power Company (“NEP” or the “Proponent”) for the proposed E131 Asset Condition Refurbishment Project (the “Project”) in Adams, Savoy, Florida and Monroe.

NEP’s E131 right-of-way (“ROW”) ranges between 200 and 400 feet in width. The current maintained width ranges from approximately 100 to 150 feet. NEP proposes to expand the existing maintained ROW in limited areas as required for the safe placement of structures and work pads. Approximately six miles of ROW passes through Monroe, Florida and Savoy state forests. Tree clearing related to new permanent access roads is also proposed. The proposed work will impact approximately 246 acres of DCR land within the ROW and 4 acres outside the ROW.

Article 97

The proposed Project includes the use and “improvement” of woods roads outside of the ROW to enable access through DCR forest land to the NEP ROW for Project activities. Proposed changes to the access corridors include tree clearing, widening, and improving the corridors, which will result in permanent impacts to the state forests. Any permanent changes or improvements to off-ROW access routes on DCR property will require permanent easements, triggering Article 97 of the Amendments to the Massachusetts Constitution. DCR also notes that if the off-ROW improved woods road and trails are to be permanently used for ongoing maintenance on the NEP ROW, that change in use of DCR property would also trigger Article 97.

Pursuant to the Public Lands Preservation Act, codified at M.G.L. c. 3, § 5A, a disposition of land that will trigger Article 97 requires (1) the submission to the Secretary of an alternatives analysis “demonstrating that all other options to avoid or minimize said Article XCVII disposition or change in use have been explored and no feasible or substantially equivalent alternative exists”; and (2) identification of replacement land or an interest in land not already subject to Article 97, in a comparable location that is of equal or greater natural resource value, acreage, and monetary value. The Secretary is authorized to waive or modify the replacement land requirement in limited circumstances, and in accordance with certain conditions. DCR requests that the Proponent become familiar with guidance on the PLPA published by the Executive Office



DCR 01

DCR 02

of Energy and Environmental Affairs (“EEA”), which can be found at <https://www.mass.gov/info-details/article-97-the-public-lands-preservation-act>.

Transfers of interests in state conservation property must also meet the requirements set forth in the EEA Article 97 Land Disposition Policy (the “Policy”). The Policy has the stated goal of ensuring no net loss of lands protected under Article 97 in the ownership and control of the Commonwealth and its political subdivisions, and states as a general premise that EEA and its agencies shall not sell, transfer, or otherwise dispose of any right or interest in Article 97 lands. Transfer of ownership or interests therein only may occur under exceptional circumstances, as defined in the Policy, including the determination that no feasible alternative is available, and a minimum amount of land or an interest therein is being disposed for the proposed use. Such a transfer also requires legislative authorization by the General Court through a two-thirds supermajority roll-call vote. DCR will continue to coordinate with the Proponent regarding any additional rights needed that would trigger an Article 97 disposition request. Work activities on DCR property outside of existing easements associated with the NEP ROW, or requiring access across DCR property, will also require a Construction and Access Permit (“CAP”).

DCR 03

Natural, Cultural and Recreational Resources

DCR 04

DCR requests that the Proponent be required to coordinate with DCR’s Senior Ecologist, Staff Archaeologist, and Management Foresters related to wetlands, rare species habitat, trails, forest stands identified by DCR’s Old Growth Policy and other forest resources, and potential archaeological resources, including the amount of proposed tree clearing within the state forest sections of the ROW, and along access routes identified by the

DCR 05

Proponent. The Senior Ecologist and Foresters will review the flagged work limits and work with the Proponent to minimize impacts to sensitive resources, minimize clearing to the extent possible, and identify mitigation opportunities should a loss or conversion of wetlands, rare species habitat or other forest or recreational resources occur as a result of these work activities. The Staff Archaeologist will coordinate with the Proponent and their cultural resource consultant to develop and implement measures to avoid, minimize, or mitigate adverse effects to significant historic and archaeological resources within DCR property. We look forward to reviewing specific protection and restoration measures to be taken for sensitive natural and cultural resources

DCR 06

on public conservation lands. Environmental permit applications for work activities on DCR land, including Massachusetts Endangered Species Act (MESA) and Wetlands Protection Act (WPA) permits, must be signed by the Department as ‘Owner’ following review by DCR staff members and prior to submission to regulatory agencies.

DCR 07

DCR is concerned about recreational impacts considering that the Project proposes to temporarily close trails and roads used for public recreation during active construction. DCR is also concerned that the Project may result in increased Off Highway Vehicle access to the state forests, potentially causing degradation of natural and cultural resources. The Department requests coordination with NEP to develop and implement strategies to deter this unauthorized trail use.

Thank you for the opportunity to comment on the EENF. If you have any questions regarding these comments, or to request additional information or coordination with DCR, please contact andy.backman@mass.gov.

Sincerely,

Douglas Rice

Douglas J. Rice,
Commissioner

cc: Nancy Putnam, Jonathan Patton, Sean Grant, Katherine Preissler, Peter Church, Tom Brule, Bill VanDoren, Priscilla Geigis, Patrice Kish, Tom LaRosa



BERKSHIRE ENVIRONMENTAL ACTION TEAM
20 Chapel St. Pittsfield, MA 01201 • thebeatnews.org
413-464-9402 • team@thebeatnews.org

Protecting the environment for wildlife in support of the natural world that sustains us all.

March 10, 2023

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
MEPA Office - Purvi Patel - EEA # 16663
100 Cambridge St., Suite 900
Boston, MA 0211

via email

Re: EEA # 16663 - E131 Asset Condition Refurbishment Project
Adams, North Adams, Florida, and Monroe, Massachusetts

Dear Secretary Rebecca Tepper,

Please accept the following comments from the Berkshire Environmental Action Team (BEAT). BEAT's mission is to protect the environment for wildlife in support of the natural world that sustains us all.

Draft Environmental Impact Report

Please require the submission of a Draft Environmental Impact Report, rather than a Single Environmental Impact Report. There are far too many questions and potential impacts that have not been addressed to cover in a Single EIR.

BEAT 01 BEAT is extremely concerned about the potential impact of this proposed project directly increasing compacted soils, creating new, larger roads that further fragment wildlife habitat, and decreasing tree cover. We are additionally concerned about the add-on effects caused by Off-Road Vehicle (ORV) use of these new roads, and invasive species introduction both by the construction and the ORV use.

Cumulative Impact Analysis

BEAT 02 We agree with Mass Audubon et al, that "The MEPA Office should consider working with the utilities on a programmatic approach to these types of projects, in order to avoid, minimize, and mitigate environmental impacts for transmission system upgrades, including new impacts to conservation lands extending beyond existing footprints and/or ROWs. To the extent individual projects are part of a utility company's overall reliability plans, they should be reviewed as phases of a single program rather than segmented

without evaluation of cumulative impacts. A programmatic approach would also ensure consistency of review and provide efficiencies for the utilities and all agencies involved in reviewing and permitting these projects. In particular, clarification is needed regarding what work constitutes an Article 97 disposition for projects within permanently protected public lands and, and appropriate mitigation for unavoidable Article 97 impacts.”

Greenhouse Gas Emissions

BEAT 03 Greenhouse gas emissions should include emissions from the project taking into consideration:

- the emissions from the production of carbon-intensive steel as compared to carbon-sequestering wood
- the decrease in soil carbon sequestering of highly compacted roadbed vs. existing soils
- the emissions from tree harvesting and the reduced amount of sequestration that will cause.

In addition, greenhouse gas emissions from wetland disturbance and conversion should be included, as well as the loss of the carbon sequestration that would have occurred if the trees had continued to grow and sequester carbon both above ground and in the soil. As the Certificate for the Eversource project (EEA #16567) said, *“project-related reduction in future carbon sequestration will be calculated as the difference between the amount of carbon that would have been sequestered in the future by the affected forest had it not been cleared and the amount of carbon that will be sequestered by grass-scrub/shrub habitat that replaces the forest. The DEIR should account for carbon sequestration from any trees that are removed and not replaced/converted to scrub shrub.”*

Alternatives Analysis

BEAT 04 We hope that the proponent will take into consideration the suggestions from the Hoosic River Watershed Association for ways to decrease the construction impacts including using tracked vehicles and using “... industrial-type helicopters (e.g., Carson company) to carry and install; equipment, concrete, piers and poles. Those helicopters were used extensively (and effectively) on/over the rugged terrain surrounding the Bear Swamp Hydroelectric facility and power pole installation project in 1973.”

Additional analysis

BEAT 05 BEAT believes that upgrading from existing shield wire to new fiber optic ground wire (OPGW) is extremely important. We also believe the utility should be considering other upgrades that would benefit resilience, including:

1. Increasing grid stability by installing grid-scale storage solutions at every substation. This could be standard lithium-ion batteries, or less toxic iron-flow batteries such as [ESS](#) or other non-toxic, long-duration batteries, as well as

[FORM multi-day batteries](#). FORM is a Massachusetts company and could be a viable partner as early as next year¹.

2. Grid mapping would determine where the grid needs upgrading. This would allow injection of distributed, zero emissions electricity into the grid, opening the floodgates to allow more renewables and battery storage to serve grid demand. Proper grid mapping and upgrades would facilitate adoption of a largely untapped supply of distributed energy, lowering demand on central generation facilities and lowering emissions in the electric generation sector. It would also incentivize more individual properties to add on-site generation if they could more easily participate in supplying power to the grid.

Furthermore, the cost of assessing parts of the grid should not be borne by those wishing to add small amounts of generation to the grid, and the mapping should not be done piecemeal but rather done in a comprehensive fashion to allow the utilities and grid operator to determine where injection of electricity into the grid would be most beneficial.

Potential impact to “permanently protected” Article 97 lands

BEAT 07 BEAT is very concerned by the apparent oversight in the ENF of mentioning possible impact to Article 97 lands as Mass Audubon et al., point out:

Article 97 of the Massachusetts State Constitution protects public lands and requires a 2/3 roll call vote of both chambers of the Legislature for any change in use or disposition. [An Act Preserving Open Space in the Commonwealth](#) (Ch. 274 of the Acts of 2022, aka the *Public Lands Preservation Act*) further established requirements and a process for such dispositions.

The EENF states that this project is not an Article 97 disposition. However, on close review of the work involved, it appears that Article 97 is applicable.

- New and improved, heavy duty gravel access roads will be built.
- Parts of the access roads extend **beyond the limits of the existing ROW Easement**
- Monroe is a Reserve in the DCR Landscape Designations². **No new roads are allowed in Reserves** under those designations, nor in Old Growth per the 1999 DEM policy that underwent review in the Environmental Monitor.
- The replacement of old poles and towers with new, steel towers includes expanded impacts beyond the existing footprint.

The EIR should include information required for Article 97 disposition, including detailed alternatives analysis and specific commitments to mitigation such as payments into the DCR Land Conservation Fund. In addition to compensation for unavoidable impacts, the EIR should include maintenance plans that will ensure ongoing impacts are minimized. This includes maintenance of equipment and roadways, and vegetation management. While the utilities have Vegetation Management Plans that are review through the Department of Agricultural Resources, that process is focused on minimizing impacts from the use of herbicides. Other considerations that should be addressed here include use of mechanical equipment such as mowing or tree cutting, and the operation of heavy equipment. Maintenance plans should avoid

¹ <https://techcrunch.com/2022/10/06/form-energys-iron-air-battery-on-pace-for-2024-launch-with-450m-series-e/>

² www.mass.gov/doc/landscape-designations/download

and minimize impacts to birds, nests, and young during the breeding season, and to reptiles and amphibians that may be vulnerable to operation of trucks or other equipment, especially on protected conservation lands. The EENF indicates that roads will be available for use by the public on DCR lands. Specific plans need to be in place to regulate and enforce rules on allowable and appropriate types of recreation. For example, ATVs are not allowed on DCR lands except in specific designated areas, and not in Reserves.

In Monroe, the line crosses Dunbar Brook, a sensitive cold water fishery in a ravine with Old Growth Forest. It is unclear if Old Growth will be directly impacted – hopefully not since there is less than 1,500 acres of Old Growth remaining statewide³. It appears from the plans that access will be to the towers on either side of the ravine rather than directly crossing the brook with equipment, although this should be clearly stated. Clearing is proposed in the area around a tower replacement above the brook – although probably outside the actual Old Growth, there are some remarkably large trees in that area, and any clearing within the Reserve should be limited as much as feasible. The plans also call for widening and hardening Raycroft Road Ext in Monroe State Forest at this location, including outside of the existing utility easement.

Considering the many concerns to be considered, we hope that the Secretary will require a Draft Environmental Impact Report as the next step in the MEPA process.

Thank you for considering our comments.

Sincerely,



Jane Winn, Executive Director

³ Anthony W. D'Amato, David A. Orwig, David R. Foster "New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning," *Northeastern Naturalist*, 13(4), 495-506, (1 December 2006) [10.1656/1092-6194\(2006\)13\[495:NEOMOF\]2.0.CO;2](https://doi.org/10.1656/1092-6194(2006)13[495:NEOMOF]2.0.CO;2)



March 10, 2023

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
Attn: Purvi Patel
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: New England Power Company E131 Asset Condition Refurbishment Project, EEA# 16663

Dear Secretary Tepper:

The Berkshire Regional Planning Commission (BRPC) hereby submits comments on the Expanded ENF (EENF) for the New England Power Company (NEP) E131 Asset Condition Refurbishment Project (EEA# 16663). The proposed project spans four municipalities in Massachusetts: Adams, North Adams, Florida, and Monroe. The project's stated 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 met or exceeded MEPA review thresholds for a Mandatory Environmental Impact Report (EIR) and the proponent has requested a Single EIR.

The proposed project will have extensive impacts including 92 acres of permanently altered land, 102,971 sf of permanently altered Riverfront Area, and new steel structures 25ft higher than the current maximum height of 85ft. Impacts will primarily result from the replacement of structures, installation of new structures and the creation of both temporary and permanent access roads. The EENF states that permanent impacts are associated with the replacement and relocation of five structures to Bordering Vegetated Wetlands (BVW) via direct embed methods. The EENF further states that these areas were closely evaluated for alternatives but designs that relocated structures outside of BVW were deemed infeasible. However, this detail is absent within the alternatives analysis. The EENF presented an alternatives analysis that was limited to a No Build Alternative and options for selective/targeted maintenance and improvements. The EENF states "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."

The standard which must be met to allow a Single Environmental Impact Report (SEIR) is the submission of an EENF which must include more extensive and detailed information that describes and analyzes a proposed project and its alternatives and assesses its potential environmental impacts and environmental mitigation measures. It is our opinion that the EENF does not include the level of extensive and detailed information that is warranted in order to grant a Single EIR. The EENF describes the proposed project, however weaknesses and deficiencies remain within the alternatives analysis and the assessment of the potential environmental impacts and environmental mitigation measures.

BRPC offers the following for consideration to be included within a Draft EIR:

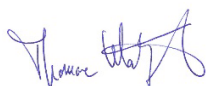
- BRPC 01** 1. Include an analysis of alternative methods such as tracked construction vehicles and/or the use of industrial-type helicopters to carry and install; equipment, concrete, piers and poles. BRPC shares the concerns raised by the Hoosic River Watershed Association (HoorWA). Such alternatives would significantly reduce tree cutting and impacts to resource areas.
- BRPC 02** 2. Provide an alternatives analysis relative to the permanent impacts associated with the replacement and relocation of five structures to Bordering Vegetated Wetlands (BVW) via direct embed methods.

- BRPC 03** 3. Provide greater clarification with regard to why permanent access roads that do not currently exist are necessary.
- BRPC 04** 4. Provide clarification with regard to the selection of steel structures and/or an alternatives analysis comparing wooden versus steel structures. The current wooden structures, which are proposed to be replaced with steel structures were installed in 1925 and have withstood the test of time in standing for nearly 100 years.
- BRPC 05** 5. Provide greater detail with regard to proposed mitigation measures including specific details related to wetland mitigation and replication.
- BRPC 06** 6. Clarify what methods will be used to control invasive species if they are to become established within the ROW.

BRPC 07 In addition, BRPC has concerns regarding the capacity of the electrical grid in relation to the Commonwealth's electrification goals. The EENF states that in addition to the refurbishment work, the existing circuits will be adapted to provide high speed communications between substations by replacing existing shield wire with fiber optic ground wire (OPGW). The EENF states that a strong and reliable electrical transmission and distribution system is vital to the region's safety, security, and economic prosperity and that benefits of the project include a strengthened transmission system in western New England that offers greater reliability and safety for customers. However, it is not clear whether the project will directly address the anticipated future demand or whether additional work would be needed in the future.

The BRPC Environmental Review Committee endorsed these comments at their meeting on March 9, 2023.

Sincerely,

A handwritten signature in blue ink, appearing to read "Thomas Matuszko".

Thomas Matuszko, AICP
Executive Director



March 10, 2023

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Via Email: purvi.patel@mass.gov

Re: **EEA #11663, E131 Asset Condition Refurbishment (ACR) Project, Florida, North Adams, Monroe, and Adams, MA**

Dear Secretary Tepper:

On behalf of Mass Audubon, Appalachian Mountain Club, Massachusetts Association of Conservation Commissions, Massachusetts Land Trust Coalition, The Nature Conservancy in Massachusetts, Sierra Club Massachusetts Chapter, The Trustees of Reservations, Friends of Mohawk Trail State Forest, and Harvard Forest, we submit the following comments on this transmission line refurbishment project. We request that these comments be addressed in the required Environmental Impact Report (EIR), in particular that the Article 97 aspects be carefully addressed.

Transmission System Refurbishment Projects

AUD et al 01 The Massachusetts Environmental Policy Act (MEPA) Office should consider working with the utilities on a programmatic approach to these types of projects, in order to avoid, minimize, and mitigate environmental impacts for transmission system upgrades, including new impacts to conservation lands extending beyond existing footprints and/or rights of way (ROW). To the extent individual projects are part of a utility company’s overall reliability plans, they should be reviewed as phases of a single program rather than segmented without evaluation of cumulative impacts. A programmatic approach would also ensure consistency of review and provide efficiencies for the utilities and all agencies

AUD et al 02 involved in reviewing and permitting these projects. In particular, clarification is needed regarding what

work constitutes an Article 97 disposition for projects within permanently protected public lands and appropriate mitigation for unavoidable Article 97 impacts.

AUD et al 03 Our organizations are strongly supportive of the Commonwealth's commitment to climate action, including the Decarbonization Roadmap and the 2050 Clean Energy and Climate Plan. We recognize that updating the electric transmission grid is important and necessary. Replacement of poles, towers, wires and associated infrastructure along existing ROW is undoubtedly needed in many locations, taking into account the age of many of these facilities as well as advancements in engineering and technology. We hope that refurbishment projects such as this will not only improve reliability, but also increase the capacity of existing transmission ROW corridors (where feasible and supportive of overall systems operation and decarbonization goals). A robust and resilient transmission grid also provides the backbone connecting to an improved distribution system, including deployment of distributed renewable energy systems and storage.

Project Summary

The project involves replacement of more than 150 existing (mostly wooden H frame) structures with new steel structures, upgrading from existing shield wire to new fiber optic ground wire (OPGW), and related work including at least 24 new concrete foundations. The Expanded Environmental Notification Form (EENF) indicates that the replacement of the structures and wires is exempt from MEPA as a utility maintenance activity. Extensive new permanent and temporary road construction is proposed, both to carry out the infrastructure replacement and for purposes of ongoing maintenance. This roadwork is not exempt from MEPA and exceeds review thresholds for alteration of land and wetlands. The project corridor traverses 6 miles of permanently protected state lands in the Department of Conservation and Recreation's (DCR) Monroe, Florida, and Savoy Mountain State Forests. The new roads on DCR lands will impact 245.7 acres within existing ROW and 3.8 acres outside the existing ROW. The project crosses steep, mountainous terrain including rock outcrops, cliffs, and ravines with cold water fisheries. In some locations, road construction will include retaining walls (sheet pile, gabion baskets, large block gravity walls). There will be impacts to Priority and Estimated Habitat of state-listed species protected under the Massachusetts Endangered Species Act, including five plants, a fish, and a dragonfly. More than 14 acres of wetlands will be altered, with most of this characterized as temporary, with the use of swamp matting to enable equipment access during construction.

AUD et al 04 The review of this project and other transmission upgrade projects impacting conservation lands (state, municipal, federal, land trust, Conservation Restrictions, water supply lands) and/or sensitive habitats should document best practices for avoiding, minimizing, and mitigating impacts.

Article 97

Article 97 of the Massachusetts State Constitution protects public lands and requires a 2/3 roll call vote of both chambers of the Legislature for any change in use or disposition. *An Act Preserving Open Space in the Commonwealth* (Ch. 274 of the Acts of 2022, aka the *Public Lands Preservation Act*) further established requirements and a process for such dispositions.

AUD et al 06 The EENF states that this project is not an Article 97 disposition. However, on close review of the work involved, it appears that Article 97 is applicable.

- New and improved, heavy duty gravel access roads will be built.

- Parts of the access roads extend **beyond the limits of the existing ROW Easement**.
- Monroe is a Reserve in the DCR Landscape Designations¹. **No new roads are allowed in Reserves** under those designations, nor in Old Growth per the 1999 DEM policy that underwent review in the Environmental Monitor.
- The replacement of old poles and towers with new, steel towers includes expanded impacts beyond the existing footprint.

The EIR should include information required for Article 97 disposition, including detailed alternatives analysis and specific commitments to mitigation such as payments into the DCR Land Conservation

AUD et al 07 Fund. In addition to compensation for unavoidable impacts, the EIR should include maintenance plans that will ensure ongoing impacts are minimized. This includes maintenance of equipment and roadways, and vegetation management. While the utilities have Vegetation Management Plans that are reviewed through the Department of Agricultural Resources, that process is focused on minimizing impacts from the use of herbicides. Other considerations that should be addressed here include use of mechanical equipment such as mowing or tree cutting, and the operation of heavy equipment.

AUD et al 08 Maintenance plans should avoid and minimize impacts to birds, nests, and young during the breeding season, and to reptiles and amphibians that may be vulnerable to operation of trucks or other equipment, especially on protected conservation lands. The EENF indicates that roads will be available for use by the public on DCR lands. Specific plans need to be in place to regulate and enforce rules on allowable and appropriate types of recreation. For example, ATVs are not allowed on DCR lands except in specific designated areas, and not in Reserves.

In Monroe, the line crosses Dunbar Brook, a sensitive cold-water fishery in a ravine with documented Old Growth Forest. It is unclear if Old Growth will be directly impacted – hopefully not, since there is less than 1,500 acres of Old Growth remaining statewide². It appears from the plans that access will be

AUD et al 09 to the towers on either side of the ravine rather than directly crossing the brook with equipment, AUD et al 10 although this should be clearly stated. Clearing is proposed in the area around a tower replacement above the brook – although probably outside the actual Old Growth, there are some remarkably large trees in that area, and any clearing within the Reserve should be limited as much as feasible. The plans also call for widening and hardening Raycroft Road Ext in Monroe State Forest at this location, including outside of the existing utility easement.

AUD et al 11 Examples of best practices that should be applied to this and other transmission replacement projects may include access from one direction rather than a through road where feasible, temporary roads or matting in sensitive areas (in addition to the existing plans for temporary wetland crossings), and other

AUD et al 12 general standards, applied appropriately to local conditions. There should also be a standardization of mitigation requirements for unavoidable Article 97 impacts. Standard procedures and best practices for these reviews and mitigation would benefit DCR and other local and state agencies, as well as the utilities by creating efficiencies, since several of these kinds of projects are anticipated in various locations across the state.

¹ www.mass.gov/doc/landscape-designations/download

² Anthony W. D'Amato, David A. Orwig, David R. Foster "New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning," *Northeastern Naturalist*, 13(4), 495-506, (1 December 2006) [10.1656/1092-6194\(2006\)13\[495:NEOMOF\]2.0.CO;2](https://doi.org/10.1656/1092-6194(2006)13[495:NEOMOF]2.0.CO;2)

Thank you for the opportunity to comment, and for your careful consideration of these comments.

Sincerely,

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MEPA Director Tori Kim
Peter Church, Director of Forest Stewardship, DCR
Natural Heritage and Endangered Species Program
MassDEP
Berkshire Regional Planning Commission
Towns of Adams, North Adams, Florida, and Monroe Conservation Commissions

OLD GROWTH POLICY
Department of Environmental Management
Division of Forests and Parks
Bureau of Forestry

Massachusetts' Old-Growth Forests

Old-growth forests are valued for their scientific, ecological and social significance. From a scientific perspective they serve as windows to the past. Increment cores of tree growth, microtopography and other features provide information that can be analyzed to ascertain past climatic events, forest fires and insect infestations that may have occurred hundreds of years ago (Henry and Swan, 1974)). Old-growth forests provide opportunities to acquire baseline data that can help us understand how forest ecosystems develop over time without human influence. They are valued ecologically because they provide some habitat components that are not common in young forests. We are not aware of any organisms that are dependent on old growth for their existence in Massachusetts, although a number of organisms preferentially inhabit older forests. Old-growth forests are revered for the social values associated with them. They provide a backdrop for some forms of outdoor recreation and some individuals take great comfort in knowing that there are some areas of forest land set aside in a wild and natural state and allowed to develop free from human influences.

The first formal inventory of old-growth forests in Massachusetts was carried out in 1993 by Dr. Peter Dunwiddie for the Massachusetts Natural Heritage Program. He analyzed 13 stands having a combined area of over 350 acres. These stands averaged approximately 25 acres in size and were located in Berkshire and Franklin Counties. Since that time, Dunwiddie and Robert Leverett have published an article, an update of Dunwiddie's earlier one, in *Rhodora - The Journal of the New England Botanical Club*, entitled *Survey of Old-Growth Forest in Massachusetts*. This survey documented an additional 15 stands in western Massachusetts and one in central Massachusetts. The total acreage reported in this most recent survey was 630 acres. These acreage figures are only approximate because these areas are located in rough, steep terrain and their often indistinct stand boundaries make precise delineation difficult. For the most part, these stands occur on lands administered by the Department of Environmental Management (DEM) although three of them are on private land. Until such time as a more authoritative source or more detailed information becomes available, such as through the development of site-specific plans, the stands on DEM land documented in the two previously cited papers shall be considered to be the old-growth stands to which this policy will apply.

DEM's approach to the management of old-growth forests has always assumed a low profile. Little effort has been made to publicize either the existence or location of these stands and that will continue to be the case. The only attempt to achieve public recognition for any of them took place in the early 1970s when a section of the Mohawk Trail and Savoy Mountain State Forests was dedicated as a Society of American Foresters (SAF) Representative Natural Area. This took place following the recognition accorded the Cold River area by the investigative work by Robert Livingston and Paul Hosier of the University of Massachusetts Botany Department (Hosier, 1969). Shortly after that, the Hopper, on the west slopes of Mt. Greylock, which contains several old growth stands, was dedicated as an SAF Representative Natural Area and as a National Natural History Landmark. Recently, the "discovery" of an old-growth area on Mount Wachusett that, heretofore, did not meet the contemporary definition of an old-growth forest has prompted a great deal of public interest in these areas.

In light of this interest, DEM has developed draft policies that were first presented at a public meeting at Mount Wachusett in July of 1997. Following that, written policies were circulated to the individuals and organizations that had previously expressed an interest in the management of old-growth forests for their comments. The policies were also published in the *Environmental Monitor*, to solicit public comments. A number of comments were received and the draft policies have been modified to accommodate them. The degree to which DEM can implement these policies and fulfill its other commitments will depend on a significant increase in its management resources.

These policies will be reviewed annually to determine if they reflect current scientific thought relating to old-growth forests. At the time of the review any additional old-growth areas that have been noted will be considered for inclusion in the list of areas referenced by these policies.

The policies for the management of old-growth forests on DEM land that were adopted by the DEM Board on December 17, 1998 contain five major sections. They (1) provide a definition of old-growth forests, and (2) in addition to that state that DEM will preserve and maintain the integrity of existing old-growth stands, (3) "restore" old-growth where appropriate and utilize these areas as buffers, (4) prepare site-specific management plans and (5) create old-growth attributes in managed stands. Following is an explanation of these policies in detail.

A Definition of Old Growth:

Various definitions of old-growth forests have evolved over the last several decades and now include stands that previously were not considered to be old-growth. These definitions will, no doubt, continue to evolve and become more quantitative as more becomes known about these forests. A national effort has been underway since 1988 to develop and refine definitions of old-growth conditions in thirty-five eastern forest associations (White and Lloyd, 1994). This effort is being spearheaded by the U.S. Forest Service's Southern Region and is being carried out in cooperation with the Nature Conservancy. In addition to that, a number of scientists are working independently to study old-growth forests in the northeastern United States. Presently, the Department of Environmental Management subscribes to the criteria put forth by Cogbill (Cogbill, 1996) and Dunwiddie (Dunwiddie, 1993) as follows:

Minimum stand size

Stands greater than 5 to 10 acres are considered to be large enough to be self-sustaining in spite of natural disturbances and attrition. From a practical standpoint, stands of this size are also efficient to map and administer.

Lack of disturbance

There should be no evidence of significant, human post-European settlement disturbance - the most common forms of disturbance are either timber harvesting or agricultural use.

Age of older trees

Old -growth forests should have a component of old trees that are greater than 50% of the maximum longevity for that particular species. Little is known about this aspect of forest development. However, several sources of this information are available and will be consulted when appropriate (Fowells, 1965; Harlow, et. al. 1996; and Stahle, 1996).

Regeneration

Although old-growth stands are recognized primarily by the presence of old trees, to be self-perpetuating they must have a component of trees in younger age classes that can be recruited to fill voids in the canopy as overstory trees become senescent and die or as gaps are created by external influences.

In addition to the aforementioned features, old growth stands have other characteristics that are unique. Classic, textbook old-growth stands have a preponderance of large, tolerant, late-successional species such as hemlock, beech and sugar maple. Until recently, stands of this nature were the only ones that were considered as old-growth stands. The composition of stands sampled by Dunwiddie and Leverett (Dunwiddie and Leverett, 1996) ranged from pure hemlock through mixed hemlock-hardwood stands to pure hardwood stands. Early and mid-successional species such as white birch, white ash and black cherry, though not always lacking, do not occur in great numbers in these stands (Dunwiddie and Leverett, 1996). The old-growth stand on Mount Wachusett is the only one east of the Connecticut River in Massachusetts and is the only documented old-growth stand in Massachusetts that has a significant oak component (Cogbill, 1996; Foster, et. al. 1996).

Generally speaking, old-growth stands have greater amounts of coarse woody debris (cwd - dead limbs, stems and other woody material that is on the forest floor and is generally greater than 3" in diameter) than most younger stands. A recent study (Whitbeck, 1995) in the Cold River area of the Mohawk Trail State Forest showed the mean accumulation of cwd to be 30 tons per acre. The mean accumulation in nearby second-growth stands was 9 tons per acre. There was a great deal of variation, however, in both the old-growth and the young stands. Old-growth stands probably have more large, standing dead or structurally unsound live trees than younger stands. Previously disturbed middle-aged stands may have greater numbers of smaller and medium size snags than old-growth stands (McComb and Muller, 1983). However, the basal area of dead trees may remain constant through most developmental stages (Tritton and Siccama, 1990).

Gaps, or openings in the crown canopy, are another structural feature of old-growth stands. These gaps may range in size from a small gap created by the death of an individual tree to a large gap created by an extraordinary meteorological event. These gap-forming events are most often episodic, occurring infrequently after long intervening periods with little or no disturbance. A good example of a recent disturbance of this nature is the beech scale-nectria complex, consisting of a beech scale insect and a nectria fungus that was imported from Europe. It was first noted in the Canadian Maritime Provinces in the late 1800s (Shigo, 1972). The first recorded outbreak occurred 30 years later and the complex slowly spread southwesterly, reaching western Massachusetts in the 1960s. The complex created a tremendous amount of beech mortality (Twery and Paterson, 1984) and led to the establishment of gaps of various sizes, regeneration within them and a surge of coarse woody debris (Houston, 1975). This occurred in both second-growth and old-growth forests and its severity varied depending on stand composition.

Other examples of severe episodic events are the ice storms that the Northeast has experienced in 1921, 1942, 1958 and 1998. The effects of these ice storms are often restricted to a particular elevation with forests above and below the affected elevation remaining unaffected. Hurricanes are the most common, widespread meteorological disturbance in the New England region. The 1938 hurricane and many other lesser hurricanes have caused disturbances that have caused damage across entire landscapes. Tornadoes and microbursts are other gap-forming phenomena that are local in nature, but have significant impacts. It is unlikely that a "steady state" (where annual or periodic growth equals mortality) is ever really achieved in Massachusetts' forests except perhaps on a vast, regional landscape scale.

In Massachusetts, old growth forests are found where they have been protected either by severe topography from anthropogenic disturbance and severe weather and/or they occur on sites where the trees have little value for consumptive uses because the cost of their extraction exceeds their value for commodity uses.

Preserve and Maintain the Integrity of Existing Old-Growth Stands.

Areas that meet the criteria for old growth, as set forth in this policy, are excluded from any manipulative activities. Wildlife habitat improvement, road and trail construction, conversion to other land uses, silviculture and other activities that may have an adverse effect on old-growth forests will not be permitted. A natural disturbance such as a windstorm in an old-growth area will not be cause for its old-growth designation to be withdrawn. In most instances DEM will not implement remedial measures following natural disturbances that occur in old-growth areas. Exceptions to this may occur when intervention is required to reduce or forestall damage to the ecosystem as a whole or to ensure the public's safety. A severe insect or disease infestation, are two examples of situations that might lead to intervention, particularly from introduced pests, and human-caused wildfires. If remedial measures are undertaken it will only be with methods that create minimal disturbance. Guidelines for implementing this policy will be developed locally in the site-specific plans described below. Existing, low-impact uses such as hunting, fishing, pedestrian use on existing trails, etc. will continue to be allowed. The maintenance of existing roads and trails that pass through old-growth areas will be permitted, but will be restricted to the existing corridor.

Buffers adjacent to old-growth stands are necessary to minimize the influence of adverse edge effects and reduce the potential for the invasion of species that may have a deleterious effect on the old-growth ecosystem. In most cases, on DEM lands, old-growth areas are embedded in larger areas of protection forest that will remain unmanaged to serve as buffers and other resource protection functions. DEM will establish and maintain buffers adjacent to isolated old-growth stands that occur outside of protection forests. In so far as possible, these buffers will consist of forested areas where disturbance is either precluded or minimized. The location and extent of these buffers will be dealt with in the site-specific management plans that will be prepared for each stand or aggregation of stands.

Recently, growing interest in old-growth forests has led to the increased use of these areas by the general public and the scientific community. To minimize any deleterious effects that these activities might have, DEM has instituted a policy of requiring special use permits for formal group visits and for research activities that take place in these areas.

The special use permit:

- Identifies responsible individuals.
- Ensures that the activities are appropriate for the site.
- Assigns liability.
- Places time limits on the activities.
- Requires that any research findings be shared with both DEM and the scientific community.

Utilize Existing Land Use Zoning to "Restore" Old Growth Characteristics.

As stated earlier, most old growth stands occur in areas where timber harvesting and changes in land use have not occurred because of their inaccessibility and/or steep terrain. On DEM land these areas are already classified as protection forests that preclude conventional forest management activities. It shall be DEM's policy to allow these areas to develop, without human intervention into stands that have characteristics of old growth stands. These areas will never meet the strict definition of old-growth forests since they have been disturbed previously. Nevertheless, over a long period of time they will develop most of the attributes of old-growth forests. In addition, these areas will serve as buffers around core old-growth stands.

In 1979, the Bureau of Forestry's *Forest Management Practices Generic Environmental Impact Report*, classified in excess of 12,300 acres that were withdrawn from conventional forest management. As one might imagine, most of this acreage occurred in Berkshire and Franklin counties. The best example of one of these areas is the upper Cold River Valley in the Mohawk Trail and Savoy Mountain State Forests. This area includes a broad range of topography, elevations, aspects, soil types, forest types and some of the most productive soils in the Commonwealth are found there.

Prepare Site-Specific Management Plans for Each Designated Old Growth Area

These plans will deal with issues that can only be addressed locally in the context of their immediate environment. The issuance of special use permits, public access, boundary delineation, buffers, response to insects and disease, wildfire, etc. will be dealt with in these plans. Since the plans for stands that are in close proximity to each other can be dealt with collectively, only a minimal number of them will need to be developed. These plans will be a product of a team effort led by the Management Forestry Program staff and will include the property supervisor and staff from the Forest Health Program and the Bureau of Forest Fire Control.

Manage for Old Growth Attributes

Some attributes of old growth stands can be achieved through management of selected, previously disturbed stands (DeGraaf, 1989; Hunter, 1990). Some of these practices are:

Retain live "cull" and standing dead trees.

Many species of wildlife are dependent on cavities in both live and dead trees for their existence (Tubbs, et. al. 1986). Dead trees are also valuable as a substrate for feeding.

Retain coarse woody debris, either as standing trees or down material.

This will be accomplished either by felling certain trees and leaving them or by allowing some trees to remain unharvested and will eventually die (McMinn and Crossley, 1996; Gore and Patterson, 1986).

Leaving some unharvested trees.

This will be accomplished by leaving individual trees or aggregations of trees in otherwise managed stands. These trees could be left in perpetuity or through long rotations (see below). This practice would be used to create a more complex vertical structure and refugia for species that prefer older forests. One of the best opportunities for implementing this is the practice of creating unharvested or partially harvested riparian buffers (Murray and Stauffer, 1995)

Lengthen rotations.

Rather than utilize rotations (a rotation is the planned length of time it takes a stand or tree to achieve a particular level of maturity) that are often as short as 60 to 100 years, some even-aged stands will be allowed to develop for 120 to 150 or more years of age until they are harvested. Trees in some unevenaged stands will be allowed to achieve larger maximum tree sizes than they ordinarily would (Hannah, 1994). There will be significant variation in exactly how this would be applied from site to site.

Practice single tree selection or group selection.

These practices are an appropriate management strategy for some forest associations and condition classes. (Smith, et. al., 1996). This will provide some structural attributes that are characteristic of old-growth stands that may be lacking in second-growth and even-aged stands.

The first three of these practices can and will be applied to some degree in all silvicultural operations on DEM land. Employing lengthened rotations and unevenaged management will require sophisticated site-specific analyses before their implementation. It should be made quite clear that the foregoing management practices are intended to provide old-growth attributes in stands that are managed and should, in no way, be construed as measures for restoring old-growth forests.

Literature cited

- Cogbill, C.V., for Vanasse Hangen Brustlin, Inc. for Wachusett Mountain Associates. 1996. *Wachusett Mountain Historical Forest Ecology Report*. 30 p.
- DeGraaf, R.M., Yamasaki, M., Leak, W.B. and Lanier, J.W. 1989. *New England Wildlife: Management of Forested Habitats*. GTR NE - 144. Radnor, PA. USDA Forest Service, Northeastern Forest Experiment Station. 271 p.
- Dunwiddie, P. W., 1993. *Survey of Old-Growth Forest in Massachusetts*, Final Report, prepared for Mass. Natural Heritage and Endangered Species Program. 9 p. plus appendices.
- Dunwiddie, P. W. and Leverett, R. T. 1996. *Survey of Old-Growth Forest in Massachusetts*. in *Rhodora*, Vol. 98, No. 896, pp. 419 - 444,
- Foster, D.R., O'Keefe, J.F. and Orwig, D.A.. 1996. *Final Report on Old-Growth Forests on Wachusett Mountain*. Report prepared for the Massachusetts Department of Environmental Management. 8 p. plus appendices.
- Fowells, H. A. compiler. 1965. *Silvics of Forest Trees of the United States*, Agricultural Handbook no. 271, U.S. Forest Service, first edition. 762 p.
- Gore, J.A., And Patterson, W.A., III, 1986. *Mass of Downed Wood in Northern Hardwood Forests in New Hampshire: Potential Effects of Forest Management*. Canadian Journal of Forest Research, Vol. 16, No. 2, pp.335 - 339.
- Hannah, P.R. 1994. *Potentials for Creating and Managing Old-Growth Stands*. Unpublished paper presented at the Old Growth Forests in the Northeast Conf., Williamstown, MA. 3 p.
- Harlow, W.M., E.S. Harrar, J.W. Hardin and F.W. White. 1996. *Textbook of Dendrology*. Eighth ed. McGraw-Hill, New York. 534 p.
- Henry, J.D., and Swan, J.M.A. 1974. *Reconstructing Forest History From Live and Dead Plant Material - An Approach to the Study of Forest Succession in Southern New Hampshire*. Ecology, Vol. 55, No. 4, pp. 772 - 783.
- Houston, D.R., 1975. *Beech Bark Disease, the aftermath forests are structured for a new outbreak*. Journal of Forestry, Volume 73, pp. 660 - 663.
- Hosier, P. 1969. *The Structure and Composition of a Virgin Hemlock - Northern Hardwood Forest in Northwest Massachusetts*. Master's Thesis. Botany Dept. Univ. of Mass. Amherst, MA. approx. 50 p.
- Hunter, M. 1990. *Wildlife, Forests and Forestry, Principles of Managing Forests for Biological Diversity*. Prentice Hall, Englewood Cliffs, NJ. 370 p.
- McComb, W.C. and Muller, R.N. 1983. *Snag Densities In Old Growth And Second Growth Appalachian Forests*. The Journal of Wildlife Management. Vol. 47: pp. 376 - 382.
- McMinn, J.W., and Crossley, D.A. Jr. Eds. 1996. *Biodiversity and Coarse woody Debris in Southern Forests, Proceedings of the Workshop on Coarse Woody Debris in Southern Forests: Effects on Biodiversity*. GTR SE - 94. Asheville, North Carolina. USDA, Forest Service, Southern Research Station. 146 p.
- Murray, N.L. and Stauffer, D.F. 1995. *Nongame Bird Use Of Habitat In Central Appalachian Riparian Forests*. The Journal of Wildlife Management. Vol. 59, No. 1. pp. 78 - 88.
- Shigo, A.L., 1972. *The Beech Bark Disease Today In The Northeastern U.S.*, Journal of Forestry, Vol. 70, pp. 660 - 663.
- Smith, D.M., Larson, B.C., Kelty, M.J., Ashton, P.M.S., 1997. *The Practice of Silviculture, Applied Forest Ecology*. John Wiley and Sons, New York. 537 p.
- Stahle, D. W. 1996. *Tree Rings and Ancient Forest History - Chapter 22 in Eastern Old Growth Forests, Prospects for Rediscovery and Recovery*. Davis, M.B., editor, Island Press, Washington D.C. ,
- Tritton, L.M., Siccama, T.G., 1990. *What proportion of standing trees in forests of the Northeast are dead?* Bulletin of the Torrey Botanical Club. 117(2), 1990, pp. 163 - 166.
- Tubbs, C. H., DeGraaf, R. M., Yamasaki, M., Healy, W.M. 1986. *Guide to Wildlife Tree Management in New England Northern Hardwoods*. USFS, GTR NE - 118. 30 p.
- Twery, M. and Patterson, W.A. III, 1984. *Variations in beech bark disease and its effects on species composition and structure of northern hardwood stands in central New England*. In Canadian Journal of Forest Research, Vol. 14, No. 4, pp. 565 - 574.
- Whitbeck, M. 1995. *Accumulation of Fallen Woody Debris in Old Growth Stands of Western Massachusetts: A Search for a Definition of Old Growth*. 11 p.
- White, D.L., and Lloyd, F.T. 1994. *Defining Old Growth: Implications for Management*. In *Proceedings of the Eighth Biennial Southern Silvicultural Research Conference*. USFS, Southern Research Station, Asheville, North Carolina.

New Estimates of Massachusetts Old-growth Forests: Useful Data for Regional Conservation and Forest Reserve Planning

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Abstract - Old-growth forests are currently identified as core components of regional conservation and forest-reserve planning efforts by agencies and organizations across the northeastern United States. Despite the importance of these ecosystems from an ecological and conservation standpoint, major questions remain concerning their actual extent, location, and configuration in many states. Here we report a substantially revised estimate for individual tracts and the total area of old-growth forests in Massachusetts based on analysis of historical documents and extensive field research and mapping. We estimate that the total area of old-growth in the state is 453 ha, in 33 stands that range from 1.2 to 80.9 ha in size. Over 80% of these forests occur in the Berkshire Hills and Taconic Mountains in the extreme western part of the state. These forests are structurally unique and contain some of the oldest documented *Tsuga canadensis* (hemlock) and *Picea rubens* (red spruce) in New England, as well as the second-oldest documented *Betula lenta* (black birch) in the country. Due to their relatively small size and isolated character, these areas are susceptible to human and natural disturbance and require protection, including substantial buffer areas. Old-growth stands will enhance the value and function of designated forest reserves and will gradually become surrounded by forests of increasingly similar structure and ecosystem characteristics.

Introduction

The few remaining old-growth forests in New England have long been conservation priorities due to their unusual ecosystem characteristics and value for scientific study (Dunwiddie et al. 1996). Traditionally, many of these areas were protected as small isolated tracts (Cogbill 1985, Peterken 1996); however, recent efforts at broad-scale conservation planning in the northeastern United States have initiated interest in incorporating old-growth forests as core components of large forest reserves and networks of reserves (Jenkins et al. 2004, TNC 2004). For example, recent statewide conservation plans in Massachusetts, a state with scattered old-growth stands, have used the amount of old-growth forest as a primary criterion for prioritizing candidate reserves (EOEA 2005, Foster et al. 2005). While other criteria, such as rare species habitat and the extent of existing protected land, also inform this decision process, old-growth forests play a central role in

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this and other broad-scale forest-conservation efforts in the Northeast (Jenkins et al. 2004, Rusterholz 1996).

Despite the emphasis on old-growth forests in forest-conservation planning in Massachusetts, the data employed in these efforts is of variable and changing quality. Information on the number, location, and extent of old-growth stands has changed greatly over time. Early studies concluded that there were no old-growth forests (Egler 1940), whereas recent estimates have ranged from 260 (Dunwiddie and Leverett 1996) to 1200 ha (R.T. Leverett and G.A. Beluzo, Holyoke Community College, Holyoke, MA, unpubl. data). The wide range of these estimates is due to the limited number of rigorous field-based studies (Dunwiddie 1993, Dunwiddie and Leverett 1996, Hosier 1969) and variation in the definition of old-growth conditions (R.T. Leverett and G.A. Beluzo, unpubl. data). Clearly, the importance of old-growth forests in guiding the large forest-reserve planning process in Massachusetts and other northeastern states warrants the development of accurate maps and data for all remaining stands.

This note summarizes recent efforts to extend prior studies of old-growth forests in Massachusetts (Dunwiddie 1993, Dunwiddie and Leverett 1996) by developing a comprehensive assessment of remaining old-growth stands based upon extensive analysis of historical documents, exhaustive field research (including detailed tree aging at all sites), and the consistent application of stringent definitions. This research is part of a larger study examining the disturbance dynamics, structural and compositional attributes, and ecosystem properties of the eighteen largest old-growth forest stands in western Massachusetts (A.W. D'Amato and D.A. Orwig, unpubl. data).

Methods

A series of hand-drawn maps depicting confirmed (Dunwiddie 1993) and potential old-growth areas based primarily on visual characteristics of trees (Leverett 1996a,b) were used to guide reconnaissance efforts aimed at determining the extent of old-growth on the landscape in western Massachusetts. Field reconnaissance of the potential old-growth areas was conducted in the summers of 2003 and 2004. In addition, extensive historical and dendroecological analyses were used at Wachusett Mt. in central Massachusetts (Princeton) to estimate the extent of old-growth at this location (Cogbill 1995, Orwig 2004, Orwig et al. 2001).

Several criteria were applied in the field to help identify old-growth forests: 1) the absence of any evidence of past land-use (e.g., cut stumps, stone walls or structures, numerous multiple-stemmed trees); 2) the presence of at least 5 old trees (> 225 years old; indicating establishment prior to European settlement in these locations [Field and Dewey 1829] and exceeding 50% of the maximum longevity for species commonly

encountered [Dunwiddie and Leverett 1996]) per hectare in the forest overstory as determined through the collection of increment core samples (see below); and 3) the existence of forest structural characteristics that are often indicative of old-growth condition, such as pit and mounds, large snags, gnarled tree crowns, and the accumulation of large volumes of coarse woody debris (Leverett 1996b).

The age of overstory trees in potential old-growth areas was determined by taking increment cores at 0.3 m in height from at least 10 trees per hectare. Cores were mounted, sanded, and aged under a dissecting microscope. In addition, periods of increased radial growth were qualitatively assessed during age determination to identify patterns of dramatic, sustained growth releases that may indicate past selective logging (Orwig and Abrams 1999). To complement field evidence, extensive historical research was also undertaken to ensure the absence of past land-use at areas designated as containing old-growth forests. Historical maps and documents were utilized to note the location of settlements, sawmills, and other areas of intensive land-use (e.g., tanneries) in relation to the potential old-growth areas (e.g., Beers 1876, Hall et al. 2002, MGS 1940, Nason 1847).

Once an area was confirmed as containing old-growth based on field and historical evidence, a series of three to five 400-m² plots were established along transects through the central portion of each stand. Locations of all plots were recorded using a GPS. In addition, boundaries of old-growth stands were determined in the field by extensive visual and dendroecological evidence as mentioned above, delineated onto 7.5-minute USGS quadrangles, and transferred into shape files using GIS (ArcView 3.2). When available, old-growth boundaries were also confirmed with historical evidence. Species and diameter at breast height (dbh) was recorded for all living and dead trees (stems ≥ 1.37 m tall and ≥ 10 cm dbh) within these plots. In addition, increment cores were taken from all trees within these plots and from additional trees outside of the plots for age determination and reconstruction of dendroecological dynamics. Plots were permanently marked to enable long-term investigations of the disturbance dynamics in these areas, comparisons with adjacent managed second-growth forests, and changes associated with pests and pathogens in the region (e.g., *Adelges tsugae* Annand (hemlock woolly adelgid) and beech bark disease (caused by the fungi *Nectria* spp., preceded by the beech scale *Cryptococcus fagisuga* Lind.).

Results and Discussion

Based on our collected field data and historical research, we estimate the total area of old-growth forest remaining on public land in Massachusetts to be 452.8 ha (Table 1). As reported in previous studies (Dunwiddie and Leverett 1996), much of this area is located within the Berkshire Hills and

Taconic Mountains of western Massachusetts; however, a sizable amount (80.9 ha) of old-growth forest also exists on Wachusett Mt. in the north-central portion of the state (Fig. 1, Table 1). Our estimate is greater than the prior published estimate of old-growth forest area in Massachusetts (260 ha; Dunwiddie and Leverett 1996) due largely to the expansion of boundaries for previously recognized old-growth areas on Wachusett Mt., Todd Mt., Clark Mt., Mt. Greylock, and along the Cold River (combined expansion of

Table 1. Characteristics of old-growth forests on public land in Massachusetts. MT = Mohawk Trail State Forest, SM = Savoy Mountain State Forest, M = Monroe State Forest, W = Windsor State Forest, MG = Mount Greylock State Reservation, MW = Mount Washington State Forest, ME = Mount Everett State Reservation, B = Beartown State Forest, EM = East Mountain State Forest, WM = Wachusett Mountain State Reservation.

Location/site name	State forest	Size (ha)	Latitude (N)	Longitude (W)	Elevation (m)	Aspect
Cold River: Route 2 to Black Brook	MT	38.4	42°38'7"	72°58'48"	350–420	NW–NE
Cold River: Route 2 to Black Brook Picnic Area	MT	14.2	42°37'48"	72°58'	320–450	N–NW
Lower Gulf Brook	MT	6.1	42°37'53"	72°59'52"	380–415	NW
Manning Brook	MT	6.1	42°38'23"	72°59'20"	375–420	NE
Black Brook	MT	10.1	42°37'45"	72°58'12"	360–500	N–NW
Tannery Falls	MT	3.6	42°37'39"	73°0'12"	390–420	NW
Todd and Clark Mountains	MT	80.9	42°38'50"	72°56'45"	330–460	Varied
Trout Brook West	MT	6.1	42°37'57"	72°56'19"	410–450	E
Hawks Mountain	MT	2.0	42°37'45"	72°55'34"	360–410	NW
Thumper Mountain	MT	0.8	42°38'23"	72°56'6"	250–270	NE
Middle Cold River to Route 2	MT-SM	18.2	42°38'3"	72°59'29"	360–415	N
Upper Cold River	MT-SM	32.4	42°39'7"	73°1'	390–450	Varied
Upper Gulf Brook	MT-SM	8.1	42°37'59"	73°0'43"	380–415	NE
Bear Swamp	M	12.1	42°41'50"	72°57'31"	360–480	E
Dunbar Brook	M	8.1	42°42'14"	72°58'8"	390–490	NE
Parsonage Brook	M	1.6	42°42'44"	72°58'46"	470–510	NW
Spruce Mountain	M	1.6	42°42'52"	72°59'56"	600–670	SE
Smith Brook-Deerfield River	M	1.6	42°41'58"	72°58'56"	360–450	NE
Hunt Hill	M	2.8	42°41'25"	72°58'53"	520–600	SE
Windsor Jambs	W	1.2	42°31'20"	72°59'35"	430–475	SW
The Hopper	MG	46.5	42°39'2"	73°9'58"	540–720	Varied
Stony Ledge	MG	4.0	42°38'54"	73°11'34"	675–720	NE
Mount Williams	MG	10.1	42°40'32"	73°9'59"	510–600	NW–NE
Roaring Brook	MG	10.1	42°37'44"	73°12'5"	550–630	N–NW
Bash Bish Falls	MW	15.4	42°6'47"	73°29'43"	415–485	N–NE
Mount Race	MW	2.0	42°4'39"	73°25'47"	645–710	Varied
Sages Ravine-Bear Rock Falls	MW	4.9	42°3'18"	73°26'4"	350–420	N
Alander Mountain	MW	2.0	42°5'7"	73°28'48"	585–610	SW
Mount Everett-Glen Brook	ME	14.2	42°6'37"	73°25'32"	490–560	NE
Mount Everett-Guilderd Pond	ME	1.6	42°6'36"	73°26'22"	610–630	SW
Burgoyne Pass	B	1.2	42°16'3"	73°17'8"	390–470	S–SW
Ice Gulch	EM	3.6	42°9'30"	73°19'18"	405–440	SE–SW
Wachusett Mountain	MW	80.9	42°29'	71°53'	425–520	Varied
Total		452.8				

areas previously reported by Dunwiddie and Leverett [1996] equaled 181.4 ha). In all cases, the old-growth areas for which boundaries were expanded had not been rigorously sampled in prior investigations (e.g., no quantitative vegetation sampling and/or minimal tree aging [Dunwiddie and Leverett 1996]). In addition to the expansion of boundaries, another factor that contributed to the difference in our estimates from those published by Dunwiddie and Leverett (1996) is the inclusion of several previously unreported areas (e.g., Tannery Falls and Stony Ledge [Table 1]). It is important to note that although our estimates of total area of old-growth forest are higher than previously reported, these estimates are substantially lower than those used in recent forest-reserve planning exercises for western Massachusetts (see below).

Most of the old-growth areas in Massachusetts are small (< 10 ha) and are located in rugged topography (see Dunwiddie and Leverett 1996 for a detailed description of site characteristics), which presumably protected these areas from extensive land-use. Other factors such as Native American hostility (Hosier 1969) and an unfavorable climate for agriculture (Egler 1940) also help explain the persistence of old-growth on these landscapes, particularly in the regions of the state containing the largest areas of old-growth (i.e., Mohawk Trail and Savoy Mountain State Forests [Table 1]). Beyond these physiographic and historical factors, the composition of these old-growth forests may also partially explain their presence on the landscape in Massachusetts. In particular, the majority of these forests are dominated by *Tsuga canadensis* (Table 2), a historically low-value timber species (Howard et al. 2000) that likely limited the

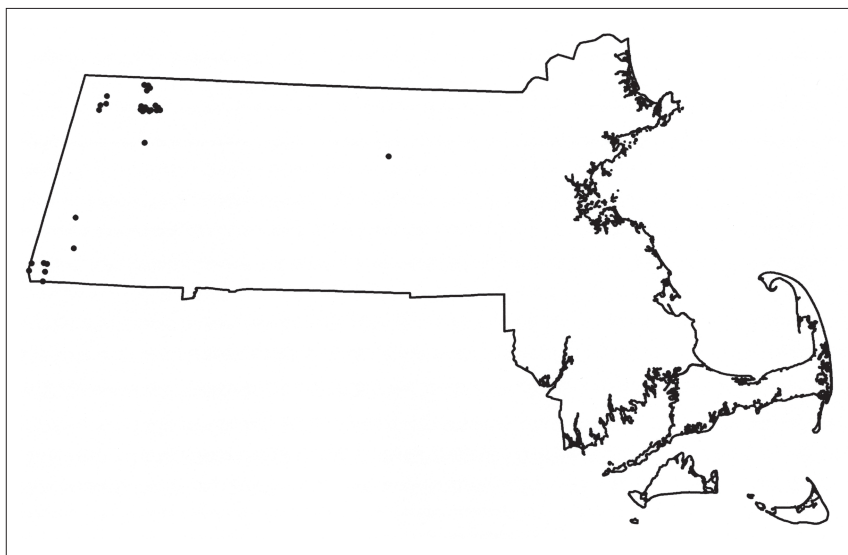


Figure 1. Location of old-growth forests on public land in Massachusetts.

Table 2. Basal area (B, m²/ha) and density (D, stems/ha) of overstory tree (≥ 10 cm dbh) species in the eighteen largest old-growth areas in western Massachusetts. BASH = Bash Bish Falls, BB = Black Brook, CRA1 = Cold River A1, CRA2 = Cold River A2, CRB = Cold River B, CRC = Cold River C, CRD = Cold River D, DH = Deer Hill, DB = Dunbar Brook, GR = Grinder Brook, HA = Hopper A, HB = Hopper B, MB = Manning Brook, ME = Mt. Everett, MO = Money Brook, TB = Tower Brook, TC = Todd-Clark Mountains, and WB = Wheeler Brook.

Species	Study area																							
	BASH		BB		CRA1		CRA2		CRB		CRC		CRD		DH		DB							
	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D						
<i>Tsuga canadensis</i> (L.) Carr.	34.6	431	37.6	468	31.5	119	27.5	275	31.0	375	-	-	34.5	450	33.5	267	-	-						
<i>Fagus grandifolia</i> Ehrh.	-	-	1.0	42	5.5	131	5.8	119	-	-	5.4	63	0.1	5	1.8	8	7.0	88						
<i>Betula lenta</i> L.	1.2	19	6.0	67	4.9	50	3.0	44	3.1	33	0.1	6	3.2	85	-	-	-	-						
<i>Betula alleghaniensis</i> Britt.	-	-	-	-	0.9	19	0.7	25	2.1	33	5.3	44	-	-	-	-	6.1	13						
<i>Betula papyrifera</i> Marsh.	0.5	6	-	-	-	-	0.4	6	0.6	8	-	-	0.8	20	-	-	-	-						
<i>Picea rubens</i> Sarg.	-	-	0.3	8	-	-	-	-	-	-	-	-	9.3	90	6.2	50	-	-						
<i>Acer saccharum</i> Marsh.	0.9	6	-	-	0.9	6	-	-	-	-	17.1	163	-	-	-	-	14.9	113						
<i>Acer rubrum</i> L.	-	-	0.4	17	-	-	1.2	25	0.7	17	-	-	1.1	10	-	-	-	-						
<i>Acer pensylvanicum</i> L.	-	-	-	-	0.4	31	0.3	13	0.5	33	-	-	-	-	-	-	0.5	31						
<i>Quercus rubra</i> L.	-	-	2.0	25	-	-	0.8	6	0.6	17	-	-	-	-	-	-	-	-						
<i>Fraxinus americana</i> L.	-	-	-	-	-	-	-	-	-	-	0.2	6	-	-	-	-	7.9	38						
<i>Ostrya virginiana</i> (P. Mill.) K. Koch	0.4	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
<i>Tilia americana</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
<i>Pinus strobus</i> L.	10.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Total	48.3	525	47.3	627	44.1	356	39.7	513	38.6	516	28.1	282	49	660	41.5	325	36.4	282						

Table 2, continued.

Species	Study area																							
	GR		HA		HB		MB		ME		MO		TB		TC		WB							
	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D	B	D						
<i>Tsuga canadensis</i> (L.) Carr.	34.8	367	25.9	356	14.3	244	12.5	150	29.2	208	22.2	231	27.5	217	36.4	400	40.4	367						
<i>Fagus grandifolia</i> Ehrh.	-	-	1.8	31	0.3	6	4.1	63	-	-	0.9	19	0.3	8	0.2	6	0.7	25						
<i>Betula lenta</i> L.	2.0	33	0.4	6	-	-	1.6	38	2.9	42	1.7	13	-	-	2.8	44	4.1	58						
<i>Betula alleghaniensis</i> Britt.	1.1	25	6.8	119	13.1	181	2.2	63	2.2	108	2.1	19	8.3	92	0.8	13	-	-						
<i>Betula papyrifera</i> Marsh.	-	-	-	-	0.4	6	-	-	0.3	8	-	-	-	-	0.3	6	0.9	8						
<i>Picea rubens</i> Sarg.	-	-	6.2	75	7.2	106	-	-	-	-	0.2	13	0.1	8	-	-	0.3	8						
<i>Acer saccharum</i> Marsh.	-	-	-	-	-	-	11.6	88	-	-	17.5	125	9.4	108	-	-	-	-						
<i>Acer rubrum</i> L.	-	-	-	-	-	-	-	-	0.6	8	-	-	-	-	3.9	63	2.1	42						
<i>Acer pensylvanicum</i> L.	0.1	8	0.2	19	0.1	6	0.1	6	0.4	25	0.4	31	0.4	33	0.2	13	-	-						
<i>Quercus rubra</i> L.	-	-	-	-	-	-	-	-	-	-	1.7	6	-	-	0.5	6	3.7	25						
<i>Fraxinus americana</i> L.	-	-	-	-	-	-	0.1	6	-	-	3.8	6	0.6	8	-	-	-	-						
<i>Ostrya virginiana</i> (P. Mill.) K. Koch	-	-	-	-	-	-	-	-	-	-	-	-	0.7	8	-	-	-	-						
<i>Tilia americana</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	1.6	17	-	-	-	-						
<i>Pinus strobus</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Total	38	433	41.3	606	35.4	549	32.2	414	35.6	399	50.5	463	48.9	499	45.1	551	52.2	533						

profitability of forest-harvesting activities in these areas. Moreover, the majority of hemlock stands examined in this study were located adjacent to forests that were logged in the past, suggesting that topography alone was not a deterrent for loggers. Due to the impending migration of the hemlock woolly adelgid into Massachusetts, there is a need to document these hemlock stands now, as they all could be substantially and irrevocably altered by this invasive pest (Orwig and Foster 1998).

Despite the relatively small size of these old-growth forests, they represent a rare and unique habitat type within a landscape dominated predominantly by 100–150 year old second-growth forests (A.W. D'Amato, unpubl. data). In addition, many of these parcels are located within the same state forest boundary and/or in different nearby state forests (e.g., MT and SM; Fig. 1, Table 1). These circumstances provide a wonderful opportunity for old-growth reserve efforts because many of the old-growth patches could be easily linked together in several large reserves on state-owned land that would protect and enhance the individual old-growth areas (Foster et al. 2005, Spies and Franklin 1996).

Our study of old-growth forests in Massachusetts differs from past efforts in the state by conducting extensive tree aging and analysis of historical documents for every site. Results highlight the fact that remaining old-growth forests in Massachusetts contain some of the oldest documented trees in New England (Table 3), including *T. canadensis* and *Picea rubens* 488 and 414 years old, respectively (cf. Brown 1996, Cogbill 1996, ITRDB 2006, Tyrrell et al. 1998). In addition, these areas contain some of the oldest known *Betula lenta* (332 years), *Betula alleghaniensis* (380 years), and *Quercus rubra* (325 years) trees in the country (Table 3; Burns and Honkala 1990; ITRDB 2006; Pederson et al., in press). Future comparisons of the structure, composition, and ecosystem properties of these old-growth areas with adjacent second-growth areas will increase our understanding of the importance of these areas as unique habitat types on the landscape.

Table 3. Maximum ages found for species commonly occurring in old-growth forests in Massachusetts.

Species	Age
<i>Tsuga canadensis</i>	488
<i>Picea rubens</i>	414
<i>Betula lenta</i>	332
<i>Betula alleghaniensis</i> ¹	370
<i>Fagus grandifolia</i>	271
<i>Pinus strobus</i>	269
<i>Acer saccharum</i>	242
<i>Acer rubrum</i>	224
<i>Quercus rubra</i> ¹	325

¹Data from Orwig et al. (2001).

The estimates of the total area of old-growth forest remaining on public land in Massachusetts presented in this paper are much lower than estimates used in recent forest-reserve planning exercises for western Massachusetts (1200 ha; EOE 2005; R.T. Leverett and G.A. Beluzo, unpubl. data). These higher estimates were generated primarily through the expansion of existing old-growth delineations onto portions of the landscape with similar topography, as well as through the inclusion of second-growth areas containing some trees with old-growth characteristics (e.g., large size; R.T. Leverett and G.A. Beluzo, unpubl. data). Based on our extensive field and archival research, we have confirmed that many of these areas have experienced extensive anthropogenic disturbance and therefore should not be included in delineations of old-growth forest stands on the landscape. While these second-growth forests will constitute important components of forest-reserve networks, the few remaining old-growth forest ecosystems should remain a higher conservation priority in these forest-reserve networks.

Conclusions

Old-growth forests are a rare ecosystem type on the landscape of Massachusetts. While our estimate of the total area of this forest type on the landscape is greater than prior studies, this still represents only 0.1 percent of the total forest area in Massachusetts. Therefore, the protection of these areas is critical as they represent one of the rarest habitat types in the state and region. As forest protection efforts and large-scale reserve planning in New England proceeds, it is crucial that these isolated old-growth areas are incorporated into larger reserve systems to ensure their protection and enhance the functioning of the established reserves. In order to ensure the protection of these unique systems as well as facilitate future old-growth research in Massachusetts, a rigorous, comprehensive estimate of the extent, location, and characteristics of old-growth forests remaining was paramount. By rigorously updating past estimates of old-growth area, we have developed a database that should be central to future legislative efforts aimed at old-growth protection, reserve planning, and comparisons between second-growth and old-growth forest ecosystems. While it is likely that other undocumented old-growth areas may exist within the landscape of Massachusetts, it is unlikely that the total area of old-growth in the state will exceed 500 ha.

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Literature Cited

- Beers, F.W. 1876. Atlas of Berkshire County, Massachusetts. R.T. White, New York, NY.
- Brown, P.M. 1996. OLDLIST: A database of maximum tree ages. Pp. 727–731, *In* Dean, J.S., D.M. Meko and T.W. Swetnam (Eds.). *Tree Rings, Environment, and Humanity*. Radiocarbon 1996, Department of Geosciences, The University of Arizona, Tucson, AZ.
- Burns, R.M., and B.H. Honkala, (Eds.). 1990. *Silvics of North America: Volume 2, Hardwoods*. USDA Forest Service Agricultural Handbook 654. Washington, DC. 877 pp.
- Cogbill, C.V. 1985. Evaluation of the forest history and old-growth nature of Big Reed Pond Preserve. T8R10 and T8R11 W.E.L.S. Maine. Maine Chapter of the Nature Conservancy, Brunswick, ME (unpublished report).
- Cogbill, C.V. 1995. An assessment of the historical ecology of the forests on the northeast slope of Wachusett Mountain, Massachusetts. Report prepared by Vanasse Hangen Brustlin, Inc. for Wachusett Mountain Associates, Princeton, MA.
- Cogbill, C.V. 1996. Black growth and fiddlebutts: The nature of old-growth red spruce. Pp. 113–125, *In* Davis, M.B. (Ed.). *Eastern Old-growth Forests: Prospects for Rediscovery and Recovery*. Island Press, Washington, DC.
- Dunwiddie, P.W. 1993. Survey of old-growth forests in Massachusetts. Unpublished report to the Massachusetts Natural Heritage and Endangered Species Program, Nantucket, MA.
- Dunwiddie, P.W., and R.T. Leverett. 1996. Survey of old-growth forests in Massachusetts. *Rhodora* 98:419–444.
- Dunwiddie, P.W., D. Foster, D. Leopold, and R.T. Leverett. 1996. Old-growth forests of southern New England, New York, and Pennsylvania. Pp. 126–143, *In* Davis, M.B. (Ed.). *Eastern Old-growth Forests: Prospects for Rediscovery and Recovery*. Island Press, Washington, DC.
- Egler, F.E. 1940. Berkshire Plateau vegetation, Massachusetts. *Ecological Monographs* 10:145–192.
- Executive Office of Environmental Affairs (EOEA). 2005. Landscape assessment and forest management framework for the Berkshire ecoregions. Boston, MA. Draft report. June 17, 2005.
- Field, D.D., and C. Dewey. 1829. A history of the county of Berkshire, Massachusetts, in two parts. S.W. Bush, Pittsfield, MA.
- Foster, D.R., D.B. Kittredge, B. Donahue, G. Motzkin, D. Orwig, A. Ellison, B. Hall, B. Colburn, and A.W. D'Amato. 2005. *Wildlands and woodlands: A vision for the forests of Massachusetts*. Harvard Forest, Petersham, MA. Paper No. 26.

- Hall, B., G. Motzkin, D. Foster, M. Syfert, and J. Burk. 2002. Three hundred years of forest and land-use change in Massachusetts, USA. *Journal of Biogeography* 29:1319–1335.
- Hosier, P.E. 1969. The structure and composition of a virgin hemlock-northern hardwood forest in northwestern Massachusetts. M.A. Thesis. University of Massachusetts, Amherst, MA.
- Howard, T., P. Sendak, and C. Codrescu. 2000. Eastern hemlock: A market perspective. Pp. 161–166, *In* McManus, K.A., K.S.Shields, D.R. Souto (Eds.). Proceedings: Symposium on Sustainable Management of Hemlock Ecosystems in Eastern North America. USDA General Technical Report 267. Newtown Square, PA.
- International Tree-Ring Data Bank (ITRDB). 2006. Contributors of the International Tree-Ring Data Bank, IGBP PAGES/World Data Center for Paleoclimatology, NOAA/NCDC Paleoclimatology Program, Boulder, CO. Available online at:<http://www.ncdc.noaa.gov/paleo/treering.html>.
- Jenkins, D.H., D.A. Devlin, N.C. Johnson, and S.P. Orndorff. 2004. System design and management for restoring Penn's Woods. *Journal of Forestry* 102:30–36.
- Leverett, R.T. 1996a. Map of potential old-growth areas in western Massachusetts. Unpublished map set filed at Harvard Forest, Petersham, MA.
- Leverett, R.T. 1996b. Definitions and history. Pp. 3–17, *In* M.B. Davis (Ed.). *Eastern Old-Growth Forests: Prospects for Rediscovery and Recovery*. Island Press, Washington, DC.
- Massachusetts Geodetic Survey (MGS). 1940. Massachusetts city and town map series: Massachusetts Geodetic Survey, Massachusetts WPA project no. 20684. Massachusetts Department of Public Works, Boston, MA.
- Nason, E. 1847. *Gazeteer of Massachusetts*. B.B. Russell, Boston, MA.
- Orwig, D.A. 2004. An evaluation of the western slope forests of Wachusett Mountain. Report submitted to the Massachusetts Department of Conservation and Recreation, Commonwealth of Massachusetts, Princeton, MA. 20 pp.
- Orwig, D.A., and M.D. Abrams. 1999. Impacts of early selective logging on the dendro-ecology of an old-growth, bottomland hemlock-white pine-northern hardwood forest on the Allegheny Plateau. *Journal of the Torrey Botanical Society* 126:234–244.
- Orwig, D.A., and D.R. Foster. 1998. Forest response to the introduced hemlock woolly adelgid in southern New England, USA. *Journal of the Torrey Botanical Society* 125:60–73.
- Orwig, D.A., C.V. Cogbill, D.R. Foster, and J.F. O'Keefe. 2001. Variations in old-growth structure and definitions: Development and dynamics of forests on Wachusett Mountain, Massachusetts. *Ecological Applications* 11:437–452.
- Pederson, N., A.W. D'Amato, and D.A. Orwig. In press. Central hardwood natural history from dendrochronology: Maximum ages of rarely studied species. *In* D.S. Buckley. Proceedings of the 15th Central Hardwood Forest Conference, Knoxville, TN.
- Peterken, G.F. 1996. *Natural Woodland: Ecology and Conservation of Northern Temperate Regions*. Cambridge University Press, New York, NY. 522 pp.
- Rusterholz, K.A. 1996. Identification and protection of old growth on state-owned land in Minnesota. Pp. 233–244, *In* M.B. Davis (Ed.). *Eastern Old-Growth Forests: Prospects for Rediscovery and Recovery*. Island Press, Washington, DC.

- Spies, T.A., and J.F. Franklin. 1996. The diversity and maintenance of old-growth forests. Pp. 296–314, *In* R.C. Szaro and D.W. Johnston (Eds.). *Biodiversity in Managed Landscapes: Theory and Practice*. Oxford University Press, New York, NY.
- The Nature Conservancy (TNC). 2004. Determining the size of eastern forest reserves. The Nature Conservancy, Boston, MA.
- Tyrrell, L.E., G.J. Nowacki, T.R. Crow, D.S. Buckley, E.A. Nauertz, J.N. Niese, J.L. Rollinger, and J.C. Zasada. 1998. Information about old growth for selected forest type groups in the eastern United States. General Technical Report NC-197. US Department of Agriculture Forest Service, North Central Forest Experiment Station, St. Paul, MN.



Department of Environmental Protection

Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Gary Moran
Acting Commissioner

March 10, 2023

Rebecca L. Tepper, Secretary
Executive Office of Energy & Environmental Affairs
Massachusetts Environmental Policy Act Office
Purvi Patel, EEA No. 16663
100 Cambridge Street, 9th Floor
Boston, MA 02114-2524

Re: New England Power - E131 Asset Condition
Refurbishment Project – Adams, North Adams,
Florida, Monroe - EENF

Dear Secretary Tepper,

The Massachusetts Department of Environmental Protection (MassDEP), Western Regional Office (WERO) appreciates the opportunity to comment on the Expanded Environmental Notification Form (EENF) submitted for the proposed New England Power Company (NEP) E131 Asset Condition Refurbishment Project in Adams, North Adams, Florida and Monroe (EEA #16663).

The applicable MassDEP regulatory and permitting considerations regarding wetlands, air pollution, solid waste and waste site cleanup are discussed.

I. Project Description

The Proponent, New England Power Company (NEP) is proposing to upgrade the existing electric grid system over approximately 11.4 circuit miles within the E131 line Right of Way in Adams, North Adams, Florida and Monroe. NEP anticipates project construction timeline will be mid-2024 to 2027. The existing width of the line easement rights is between 200-400 feet, contains the overhead 115 kV transmission line E131 and includes a portion of the adjacent J10 Line and the Bear Swamp Tap Line. Approximately six miles of the project passes through Massachusetts Department of Conservation and Recreation (DCR) properties. The project includes replacement of 157 Wooden H-frame, six steel triple pole structures, three existing steel lattice structures, and removal of four existing H-frame structures and one lattice structure. Approximately twenty-four structures to be installed will require concrete caisson foundations and one structure will require a micropile foundation.

Additional proposed upgrades include installation of three new switch gear structures, replacement of existing shield wire, replacement of conductors in four sections and replacement of all insulators and hardware, construction of new access roads and improvements to existing access roads. The road work includes grading and tree removal within the NEP Right-of-Way.

Temporary impacts are proposed within mapped Priority and Estimated Habitat of seven state-listed species that have been identified by Natural Heritage Endangered Species Program (NHESP). The Proponent is coordinating with NHESP on the project.

Environmental Justice populations are identified within one and five-mile radii of the project site (income criteria). The Proponent posits the project will have neither short-term nor long-term environmental or public health impacts effecting Environmental Justice Populations.

The project exceeds thresholds for a Mandatory Environmental Impact Report (EIR); the Proponent is requesting the Secretary approve a Single EIR.

Environmental Impacts associated with this project include:

- Total site acreage – 463 acres – limit of disturbance
- New acres of land altered – 19 acres – Temporary, 92 acres Permanent
- Acres of Impervious Area – 9 acres existing, no change
- Square feet (SF) of new Bordering Vegetated Wetlands alteration: 617,322 SF – Temporary, 700 SF-Permanent
- Square feet of new other wetland alteration:
 - Bank – 64 Linear Feet
 - Land Under Waterbodies and Waterways – 32 SF – Permanent
 - Bordering Land Subject to Flooding – 146 Square Feet – Temporary
 - Riverfront Area 74,451 Square Feet - Temporary, 102,971 Square Feet – Permanent
- Structures- maximum height, existing 85 feet, change 25 feet, Total 110 feet

II. Required Mass DEP Permits and/or Applicable Regulations

Wetlands

310 CMR 10.000

Water Quality Certificate

314 CMR 9.00

Water Quality Standards

314 CMR 4.00

Air Pollution

310 CMR 7.00

Solid Waste

310 CMR 16.00

Hazardous Waste
310 CMR 30.00
Bureau of Waste Site Cleanup
310 CMR 40.000

III. Permit Discussion

Bureau of Water Resources

Wetlands Protection Act

The project as described is subject to the Wetlands Protection Act (WPA) and the associated regulations as well as the requirements for a 401 Water Quality Certificate (WQC). The Proponent acknowledges they will file Notices of Intent (NOI) under the WPA with the various Municipalities impacted. MassDEP cannot take any action (issue a permit) until the Secretary has issued a final Certificate for the project. In the event a municipal Order of Conditions is appealed to MassDEP, the subsequent decision regarding a Superseding Order of Conditions cannot be issued until after the project has received a final Certificate from the Secretary. Therefore, to ensure full opportunities for public involvement and to avoid any potential conflict with the final Certificate from the Secretary, MassDEP recommends that no such filing occur until after the project has received a final Certificate from the Secretary. Should the Proponent file a NOI prior to the issuance of a final Certificate from the Secretary, MassDEP recommends the Proponent request that the Conservation Commission(s) defer a decision and keep the meeting open until the Secretary has issued the final Certificate and MassDEP has issued any required 401 WQC.

DEP WERO 01

DEP WERO 02 Due to the complexity and long, linear nature of the project, MassDEP recommends coordinated submittal of NOIs and outreach to the affected municipalities.

Statutory Exemption

The Proponent indicates that certain structure replacement activities qualify for exemption under the Utility Maintenance Exemption (Chapter 30, Section 62A). In addition, the WPA provides exemptions for: *repairing or replacing, but not substantially changing or enlarging, an existing and lawfully located structure or facility used in the service of the public and used to provide electric...services*. Portions of the Project involve repairing or replacing structures, while other portions involve substantially changing or enlarging structures or facilities. The Proponent should clearly identify to the Issuing Authority, which aspects of the project it believes qualify for exemption and which do not.

DEP WERO 03

Resource Area Delineation

The Proponent indicates that the following resource areas are present on the Project Locus: Bank (inland), Bordering Vegetated Wetland, Land Under Water Bodies and Waterways, Bordering Land Subject to Flooding and Riverfront Area. In addition, the Project Locus may contain Isolated Vegetated Wetlands and Isolated Land Subject to Flooding. All Resource Areas and associated features must be identified and delineated in accordance with Regulation 310 CMR 10.00. All such delineations are subject to the review and approval of the Issuing Authority.

DEP WERO 04

Limited Project Status

The portions of the project that do not qualify as exempt activities, as determined by the Issuing Authority, may be eligible for review under the Limited Project provisions contained at 310 CMR 10.53(3)(d). As for all Limited Projects, allowance under these provisions is at the discretion of the local Commission and to the extent practicable, work must comply with the *General Performance Standards*. As described in the EENF, the Proponent proposes to alter the following regulated Resource Areas: Bordering Vegetated Wetland, Bordering Land Subject to Flooding, Bank (inland), Land Under a Water Bodies or Waterway, and Riverfront Area. Activities will also be occurring in the Buffer Zone of Resource Areas. Through the WPA permitting process, the Proponent is required to demonstrate how the project will protect the interests of the Act.

DEP WERO 05

Hydrologic impacts

The proposed project has the potential to result in significant changes to the hydrology of the affected resource areas and downstream reaches. Therefore, the Proponent is advised to consider both surface and subsurface hydrology, wildlife habitat, and comply with Best Management Practices for stormwater management and sedimentation and erosion control. WPA permitting documents should also include tree work details, potential time-of-year restrictions, specific locations of proposed construction mats, implementation sequencing, and site-specific mitigation details.

DEP WERO 06

Stream Crossings

The Project proposes to create two new permanent stream crossings. The narrative should specify which plan sheets depict the crossings. The Proponent should clearly state whether the crossings are proposed in intermittent or perennial streams and whether the streams to be culverted constitute Outstanding Resource Waters. The Stream crossing should at a minimum meet the performance standards for Bank (inland), clarified at 310 CMR 10.54(4), and the Performance Standards for Land Under Water Bodies and Waterways, clarified at 310 CMR 10.56(4). The Proposed crossings should be designed such that they meet the Massachusetts Stream Crossing Standards. In order to provide resiliency in the face of documented increases in precipitation, MassDEP recommends designing the crossings by incorporating the upper confidence interval times, a factor of the National Oceanic and Atmospheric Administration (NOAA) 14 Point Precipitation Frequency Atlas, rather than utilize precipitation estimates from the older Technical Paper-40 (TP-40).

DEP WERO 07

Wetland Mitigation

The Project proposes both in-situ and created bordering vegetated wetland restoration and replication. As part of the WPA filing, the Proponent should document how the restoration and replication will be accomplished, preserve and protect the Interests of the Act, and be designed in alignment with the recommended procedure identified in the Massachusetts Inland Wetland Replication Guidelines, dated March 2002.

DEP WERO 08

Stormwater

The Proponent states the proposed project will not result in any new point source discharges and therefore suggests that the provisions 310 CMR 10.05(6)(k) through (q) (Stormwater Standards) do not apply. However, the Proponent also states that Stormwater management features such as

DEP WERO 09

swales, stone check dams, water bars, or other similar measures will be installed as necessary based on the access road design. MassDEP wishes to clarify that such Stormwater management features may constitute stormwater conveyances. If, upon review of the impact site specific design the issuing authority determines that such features constitute stormwater conveyances, the provisions of 310 CMR 10.05(6)(k) through (q) would apply. All stormwater conveyances should be provided with stormwater best management practices to attenuate pollutants and to provide a setback from the receiving waters and wetlands as described in the *Massachusetts Stormwater Handbook*.

401 Water Quality Certification

The Proponent acknowledges the project will require a 401 Water Quality Certification (WQC). The MassDEP Wetlands program administers the WQC program on behalf of the US Army Corps of Engineers. Under regulation, 314 CMR 9.00, the Proponent is required to provide sufficient information to adequately describe cumulative impacts to “Waters of the Commonwealth” (isolated and bordering vegetated wetlands and land under water). During the WQC permitting process the Proponent will be required to document efforts to avoid, minimize, and mitigate impacts as required by regulation. Mitigation for any unavoidable impacts is a requirement of the regulations. Appropriate mitigation measures will be determined as part of the WQC application process. MassDEP staff are available for consultation.

DEP WERO 10

In accordance with the MEPA process, some Resource Areas and Waters of the Commonwealth impacts are listed as “temporary” in the EENF; the Proponent should be aware that the WPA and associated regulations do not have a designation of “temporary impacts” to resource areas. The WQC regulations, 314 CMR 9.00 specifically include “temporary” activities as being subject to the regulations (314 CMR 9.02). However, temporal impacts to resource areas can be mitigated through “in-situ” replication and/or restoration, as well as via off-site considerations.

DEP WERO 11

Outstanding Resource Waters

Outstanding Resource Waters (ORW) are designated in 314 CMR 4.00: Massachusetts Surface Water Quality Standards. Massachusetts 314 CMR 4.06(2) clarifies that tributaries to public water supplies and their associated vegetated wetlands are also considered ORW’s. The Proponent has identified the Phelps Brook (PWS ID 11900000-01S) as an ORW, and the Project plans identify no impacts to Phelps Brook. In the event a project design modification occurs or changes during construction involve the discharge of dredged or fill material to an ORW, the Proponent will need to demonstrate compliance with the provisions of 314 CMR 9.06(3).

DEP WERO 12

Alternatives Analysis

The Proponent provides an alternatives analysis designed to address the General Provisions of the MEPA review process, as articulated at 301 CMR 11.01(b). MassDEP wishes to clarify that the submitted Alternatives Analysis does not substitute for, nor serve as, the site-specific impact *Alternatives Analysis* required in 310 CMR 10.00 and 314 CMR 9.00.

DEP WERO 13

Stormwater Pollution Prevention Plan

The Proponent indicates that the project is subject to the requirements of the EPA Administered National Pollutant Discharge Elimination System regulations and that the Proponent will prepare

DEP WERO 14 a Stormwater Pollution Prevention Plan (SWPPP). MassDEP recommends that the Proponent ensure that the SWPPP includes clear provisions specific to the management and protection of the resource areas within the project.

Chapter 91

The Proponent indicates that the project is exempt from the requirement of MGL Chapter 91 and its regulations, citing 310 CMR 9.05(3)(g). That section refers to the placement of fill or structures: *placement in a non-tidal river or stream subject to jurisdiction under 310 CMR 9.04(1)(e) of fill or structures for which a final Order of Conditions has been issued under M.G.L. c. 131, § 40 and 310 CMR 10.00: Wetlands Protection, and which does not reduce the space*

DEP WERO 15 *available for navigation...* The Project, as currently proposed, does not appear to involve the placement of fill or structures in a non-tidal river or stream subject to the jurisdiction of 310 CMR 9.04(1)(e); it is currently unclear how that provision applies. MassDEP recommends clarifying in the SEIR the applicability of the Chapter 91 regulations and if applicable, that the Proponent file a Request for Determination of Applicability, in accordance with 310 CMR 9.06, to determine the exempt status of the project.

DEP WERO 16 Bureau of Air and Waste

Air Quality

Construction Activities

Construction activity must conform to current Air Pollution Control Regulations. The Proponent should implement measures to alleviate dust, noise, and odor nuisance conditions that may occur. Such measures must comply with the MassDEP's Bureau of Air and Waste (BAW) Regulations 310 CMR 7.01, 7.09, and 7.10.

Construction Equipment

All non-road engines shall be operated using only ultra-low sulfur diesel (ULSD) with a sulfur content of no greater than 15 ppm pursuant to 40 CFR 80.510.

Solid Waste

The Proponent shall properly manage and dispose of all solid waste generated by this proposed project pursuant to 310 CMR 16.00 and 310 CMR 19.000, including the regulations at 310 CMR 19.017 (waste ban).

Hazardous Waste

Any hazardous wastes generated must be properly managed in accordance with 310 CMR 30.0000. If any hazardous waste, including waste oil, is generated at any of the sites, the Proponent must ensure that such generation is properly registered with EPA and MassDEP.

DEP WERO 17 Bureau of Waste Site Cleanup

Release tracking number (RTN) 1-0019242 has been identified within the project area. This RTN has a Permanent Solution without Conditions (PS). If soil and/or groundwater contamination is encountered during excavation activities, the Proponent should retain a Licensed Site Professional

(LSP); the MCP details procedures to follow for the parties conducting work. MassDEP staff are available for guidance.

A spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential releases.

Asbestos

The Proponent must ensure that any asbestos and asbestos-containing materials are appropriately identified and removed and disposed in accordance with 310 CMR 7.15 and 310 CMR 19.061.

IV. Other Comments/Guidance

The Proponent has requested the Secretary allow the submittal of a Single Environmental Impact Report (SEIR). MassDEP has no objection should the Secretary approve submittal of an SEIR.

Greenhouse Gas (GHG) Emissions

The Proponent indicates that GHG emissions from the project will be minimal during the construction phase of the project, with no long-term impacts and requests a de minimis exemption.

DEP WERO 18 Section 61 Findings

Section 61 Findings, labeled as a summary of mitigation measures to avoid and minimize environmental impacts, was discussed. Proposed Section 61 Findings but must be included in the filing of the Single Environmental Impact Report.

MassDEP staff is available for discussions as the project progresses. If you have any questions regarding this comment letter, please do not hesitate to contact Kathleen Fournier at (413) 755-2267.

Sincerely,



Catherine V. Skiba, P.G. for
Michael Gorski
Regional Director

cc: MEPA File



Department of Environmental Protection

100 Cambridge Street 9th Floor Boston, MA 02114 • 617-292-5500

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Gary Moran
Acting Commissioner

Memorandum

To: Purvi Patel, MEPA Unit

From: Waterways Regulation Program, MassDEP/Boston

cc: Daniel Padien, Program Chief, MassDEP/Boston

Re: E131 Asset Condition Refurbishment (ACR) Project, EENF / EEA #16663
Chapter 91 Waterways Regulation Program Comments

Date: March 10, 2023

The Department of Environmental Protection Waterways Regulation Program (the “Department”) has reviewed the above referenced EENF (EEA #16663) submitted by the New England Power Company (the “Proponent”) upgrade existing electrical utility infrastructure and construct improved roadways by which the transmission line can be accessed located in Adams, North Adams, Florida, and Monroe (the “Project”).

Section 8.2.2. of the EENF includes the Proponent’s assessment of the Project relative to Chapter 91 regulations and notes the standards for Chapter 91 jurisdiction with respect to non-tidal rivers and streams pursuant to 310 CMR 9.04(1)(e). The assessment refers to “MassDEP Technical Advisory #WE03-08, *Jurisdiction Under the Public Waterfront Act in Non-tidal Rivers and Streams*, (revised August 10, 2006)” as the basis for the conclusion that the only waterway within the project site subject to Chapter 91 jurisdiction is the Hoosic River. However, the referenced document is not a Jurisdictional Determination, nor does it purport to be a comprehensive list of jurisdictional waterways and specifically notes that “nontidal rivers and streams not shown on this list could potentially be subject to jurisdiction”. Therefore, the Proponent should conduct an evaluation of all waterways within the footprint of the project with respect to the standards at 310 CMR 9.04(1)(e) to be included in the Environmental Impact Report.

The EENF characterizes the E131 line over Hoosic River crossing as categorically exempt from Chapter 91 licensing “because it will require an Order of Conditions from the Adams Conservation

DEP WRP 02 Commission”. This is not a correct reading of the standards for certain exempt projects as specified at 310 CMR 9.05(3)(g) which do not require Chapter 91 authorization for “...*structures for which a final Order of Conditions has been issued under M.G.L. c. 131, § 40 and 310 CMR 10.00: Wetlands Protection, and which does not reduce the space available for navigation; such fill or structures are limited to: 1. overhead wires, conduits, or cables to be attached to an existing bridge, without substantial alteration thereof, or constructed and maintained in accordance with the National Electrical Safety Code...*”. A project may meet this standard, not because it requires an Order of Conditions, but rather because it complies with all provisions as specified therein. However, as noted earlier in the EENF, the E131 crossing over the Hoosic River was previously authorized by Chapter 91 License No. 6274 issued by the Massachusetts Department of Public Works on August 1, 1974 which is an un-termed license. Provided that the license is valid, and the structures have been maintained in accordance with the specifications therein, the Hoosic River crossing is authorized to be maintained pursuant to the existing license.

The Department looks forward to receipt of the necessary evaluation of all waterways within the Project footprint relative to the Chapter 91 jurisdictional standards at 310 CMR 9.04(1)(e), so that substantive comments and licensing guidance may be provided. The Proponent is encouraged to contact the Department at DEP.Waterways@mass.gov for guidance on the necessary information to be provided, and with any questions on these comments, prior to submittal of any subsequent MEPA filing.



Maura Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Gina Fiandaca, Secretary & CEO



March 10, 2023

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Adams et. al. – E131 Asset Condition Refurbishment Project
(EEA #16663)

ATTN: MEPA Unit
Purvi Patel

Dear Secretary Tepper:

On behalf of the Massachusetts Department of Transportation, I am submitting comments regarding the Expanded Environmental Notification Form filed for the proposed E131 asset condition refurbishment project starting in Adams and running through North Adams, Florida, and Monroe as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please contact J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit, at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

DJM/jll

cc: Jonathan Gulliver, Administrator, Highway Division
Carrie Lavalley, P.E., Chief Engineer, Highway Division
Francisca Heming, District 1 Highway Director
James Danila, P.E., State Traffic Engineer
Franklin Regional Council of Governments (FRCOG)
Berkshire Regional Planning Commission (BRPC)



Maura Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Gina Fiandaca, Secretary & CEO



MEMORANDUM

TO: David J. Mohler, Executive Director
Office of Transportation Planning

FROM: J. Lionel Lucien, P.E., Manager
Public/Private Development Unit

DATE: March 10, 2022

RE: Adams et. al. – E131 Asset Condition Refurbishment Project
(EEA #16663)

The Public/Private Development Unit (PPDU) has reviewed the Environmental Notification Form (ENF) for the E131 Asset Condition Refurbishment Project (the “Project”) starting in Adams and running through North Adams, Florida, and Monroe by Tighe and Bond, Inc. on behalf of New England Power Company (the “Proponent”). The Project entails the refurbishment of existing overhead electrical utility lines, including the replacement of 157 existing electrical utility lattice structures with steel H-frame structures. The Project additionally includes the construction of new access drives in order to replace and maintain the electrical infrastructure. The overhead lines to be refurbished in this Project run from the #21 sub-station in Adams to the state line in Monroe and then on to the Harriman sub-station in Readsboro, Vermont.

The Project surpasses MEPA thresholds for review of an Environmental Notification Form (ENF) and an Environmental Impact Report (EIR) due to impacts on land per 301 CMR 11.03(1) and wetlands per 301 CMR 11.03(3). The Project also requires an Environmental Impact Report (EIR) per 301 CMR 11.06(7)(b) as the utility route intersects several Designated Geographic Areas surrounding Environmental Justice (EJ) Populations.

MassDOT 01

The Project route will intersect with the state jurisdictional highway layout at multiple locations, including the Curran Memorial Highway in Adams and Mohawk Trail (Route 2) in Florida. Project-related construction in these locations will require a temporary access permit for construction activities and/or a utility access permit issued by MassDOT District 1. Further MassDOT permits will be required for temporary construction access, overhead wire crossings of the above-listed state routes, and new access roadways proposed within the state highway right-of-way. As the utility line already exists in place, no additional impacts on the state jurisdictional right of way are anticipated after Project completion.

Once completed, the Project is not expected to result in additional vehicle trips on an average weekday, except for the occasional or yearly maintenance activities. MassDOT does not anticipate that these activities would significantly impact the transportation system and therefore recommends no further review for environmental impacts on the state transportation

MassDOT 02 system. The Proponent should coordinate with MassDOT District 1 to minimize traffic disruption during Project construction and prevent impacts on state jurisdictional roadways. If you have any questions regarding these comments, please contact *Curtis.B.Wiemann@dot.state.ma.us*.



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

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March 10, 2023

Rebecca Tepper, Secretary
Executive Office of Environmental Affairs
Attention: MEPA Office
Purvi Patel, EEA No. 16663
100 Cambridge St.
Boston, Massachusetts 02114

Project Name: E131 Asset Condition Refurbishment Project
Proponent: New England Power Company d/b/a National Grid
Location: Adams, North Adams, Florida, and Monroe, MA
Document Reviewed: Expanded Environmental Notification Form (EENF)
Project Description: Complete refurbishment of existing transmission line infrastructure, including access roadway improvements
EEA No.: 16663
NHESP Tracking No. 22-40756

Dear Secretary Tepper:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (Division) has reviewed the Expanded Environmental Notification Form (EENF) for the E131 Asset Condition Refurbishment Project (Project) and would like to offer the following comments regarding state-listed species and their habitats.

Portions of the proposed Project are located within Priority Habitat, as indicated in the 15th Edition of the MA Natural Heritage Atlas, and therefore requires review through a direct filing with Division for compliance with the Massachusetts Endangered Species Act (MESA, MGL c.131A) and its implementing regulations (321 CMR 10.00).

The Proponent has engaged the Division in pre-filing consultations to discuss potential impacts associated with the Project. The Proponent has been actively working with the Division to avoid and minimize permanent and temporary impacts to state-listed species and their habitats, including initiating field surveys and habitat assessments. Although a formal MESA filing has not yet been submitted, the Division anticipates – based on previously submitted information and ongoing consultations with the Proponent – that the Project, as proposed, will likely result in a Take (321 CMR 10.18 (2)(b)) of state-listed plants.

Projects resulting in a Take of state-listed species may only be permitted if they meet the performance standards for a Conservation and Management Permit (CMP; 321 CMR 10.23). In order for a project to qualify for a CMP, the applicant must demonstrate that the project has avoided, minimized and mitigated impacts to state-listed species consistent with the following performance standards: (a) adequately assess alternatives to both temporary and permanent impacts to the state-listed species, (b) demonstrate that

NHESP 01

MASSWILDLIFE

an insignificant portion of the local population will be impacted, and (c) develop and agree to carry out a conservation and management plan that provides a long-term net benefit to the conservation of the state-listed species.

NHESP 02 The Division recommends that the Proponent continue to work proactively with the Division to address several outstanding issues, including (1) continuing to assess alternatives to further reduce permanent and temporary impacts to state-listed species and their habitats, and (2) developing a robust conservation and management plan that provides a long-term net benefit to state-listed plants, with a focus on protection of individual plants and plant populations, additional surveys, seed collection, and management to enhance habitat quality in the immediate vicinity of the Project site. The Division anticipates being able to address these issues through the MESA review process, and looks forward to continued consultation with the Proponent.

The Division will not render a final decision until the MEPA review process and its associated public and agency comment period is completed, and until all required MESA filing materials are submitted to the Division. As the MESA review is ongoing, no work associated with the proposed Project shall occur until the MESA permitting process is complete. If you have any questions or need additional information, please contact Lauren Glorioso, Endangered Species Review Biologist, at (508)389-6361 or lauren.glorioso@mass.gov. We appreciate the opportunity to comment on the proposed Project.

Sincerely,



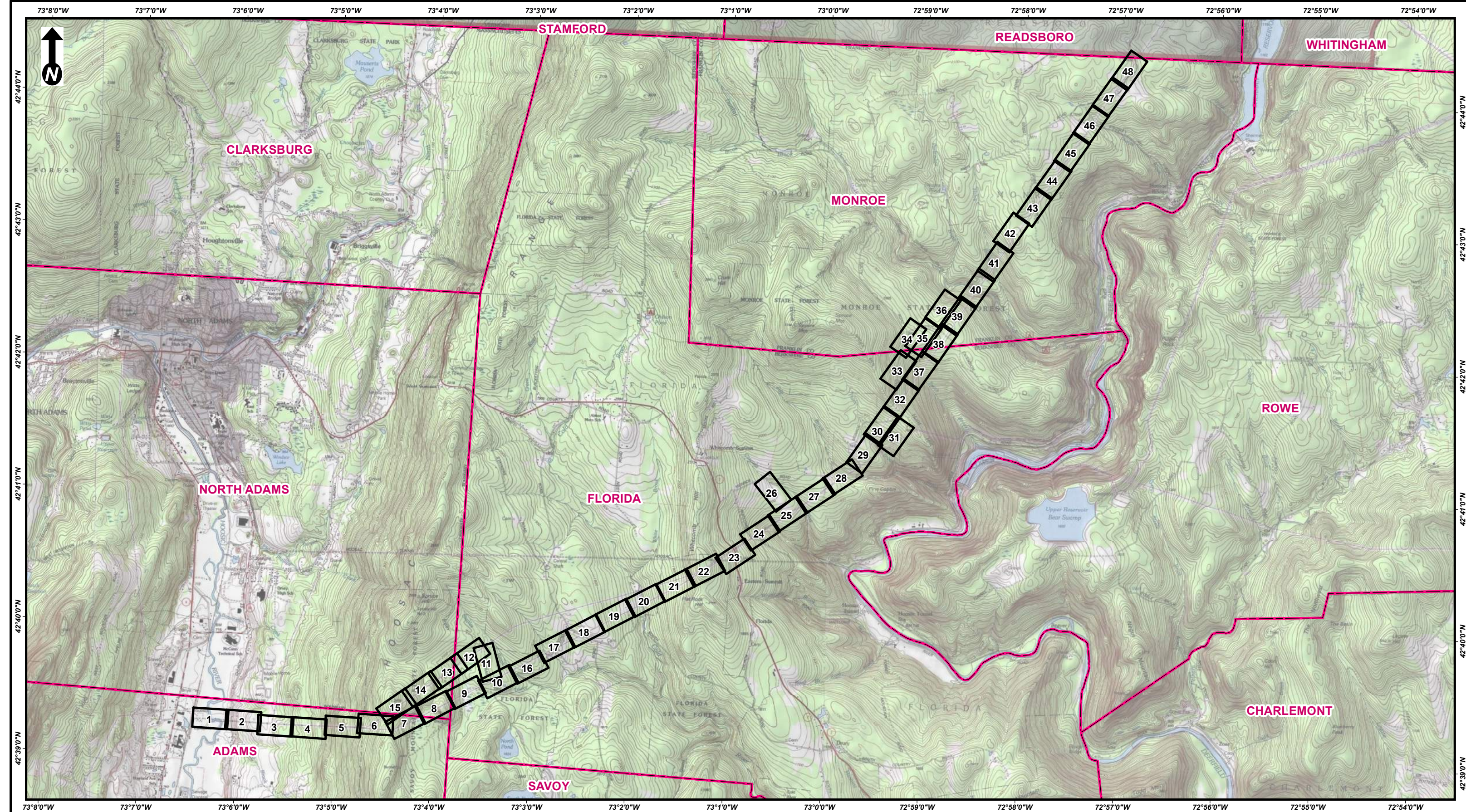
Everose Schlüter, Ph.D.
Assistant Director

cc: Michael Tyrrell, National Grid
Katherine Wilkins, Tighe & Bond
MassDEP Western Regional Office, Wetlands & Waterways
Town of North Adams Board of Selectmen
Town of North Adams Planning Board
Town of North Adams Conservation Commission
Town of Adams Board of Selectmen
Town of Adams Planning Board
Town of Adams Conservation Commission
Town of Florida Board of Selectmen
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Town of Monroe Planning Board

Town of Monroe Conservation Commission

Tighe&Bond

APPENDIX B



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

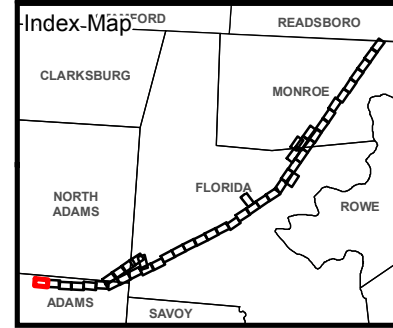
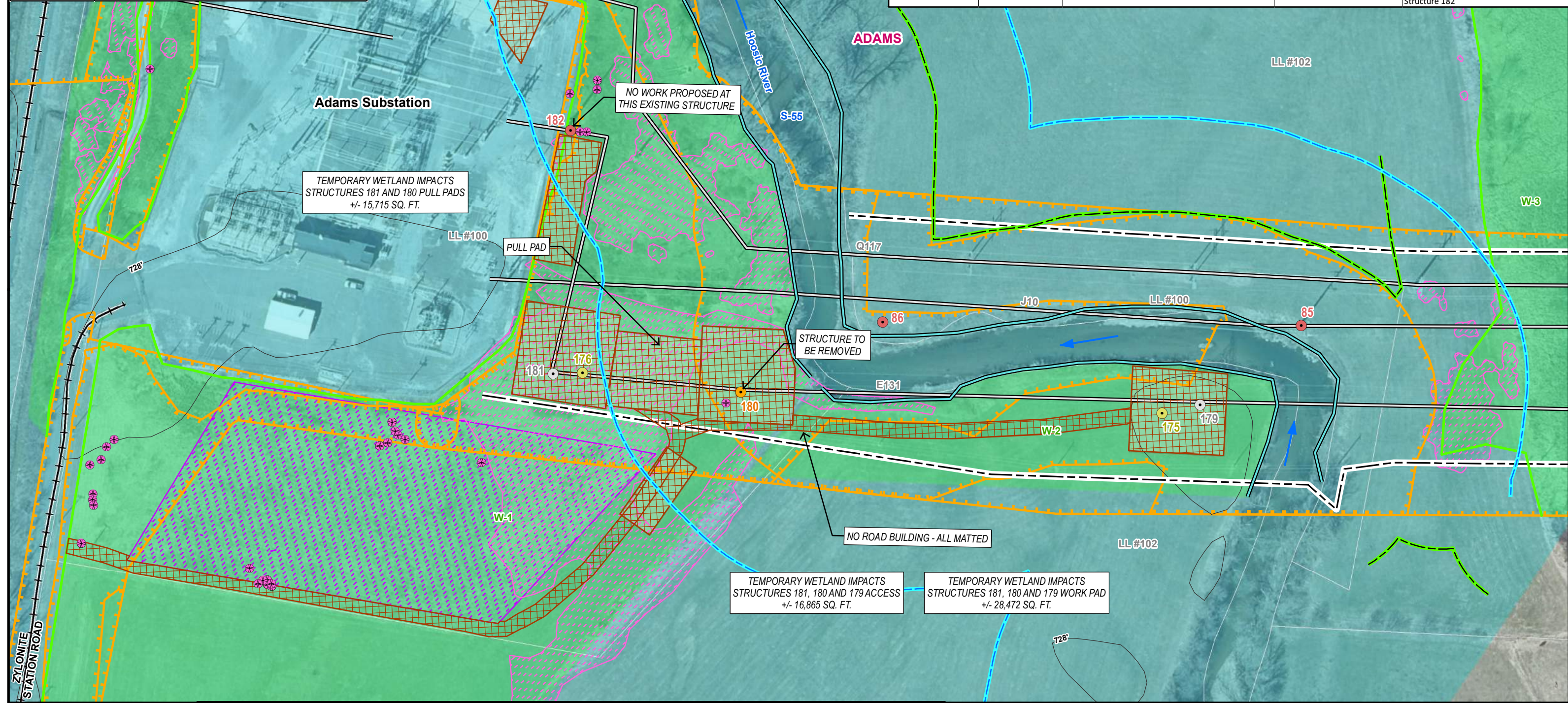
E131 - ASSET CONDITION REFURBISHMENT PROJECT

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

Source: Copyright: © 2013
National Geographic Society, i-cubed
nationalgrid
Tighe & Bond

Road Type	Description
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Construction Year	Months	Work Activity	Duration Mats Can Be Left in Place Within Rare Plants Areas	Comments
2025/2026	September - March	Install mat access road to existing Structures 179, 180 and 181	September to March	Mats outside rare plant areas can remain
2025/2026	September - March	Replace Structures 179 and 181 (includes old structure removal)	September to March	Mats outside rare plant areas can remain
2025/2026	September - March	Remove existing Structure 180	September to March	Reduced matting around Structure 180 to avoid rare plants.
2027	March - July	Install pull-pad matting, pull conductor and OPGW	4 consecutive weeks	Avoid installing stringers over rare plants at Structure 182



Legend

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 0 50 100 Feet

**Indicates Layers Set to Transparency*

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

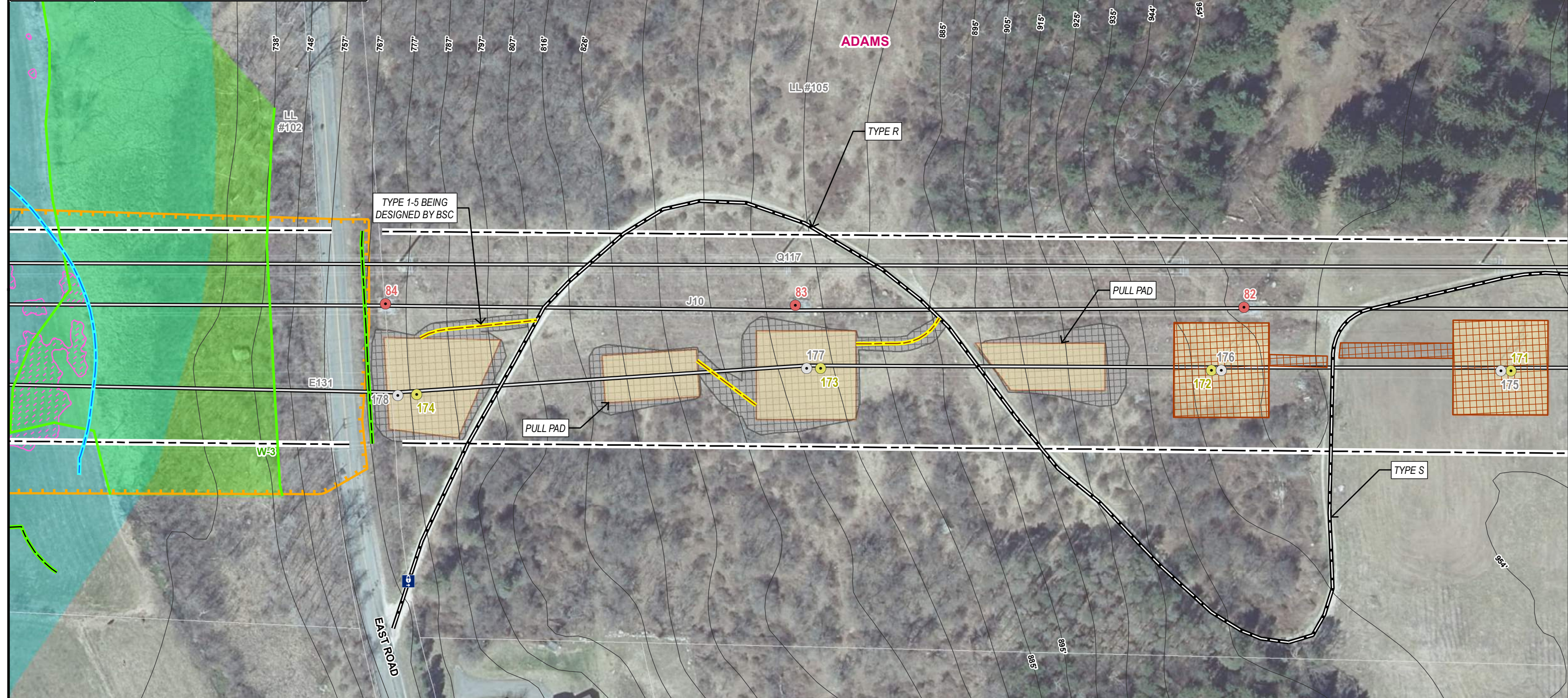
Adams, Massachusetts
 Page 1 of 48

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).

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams, Massachusetts
Page 2 of 48

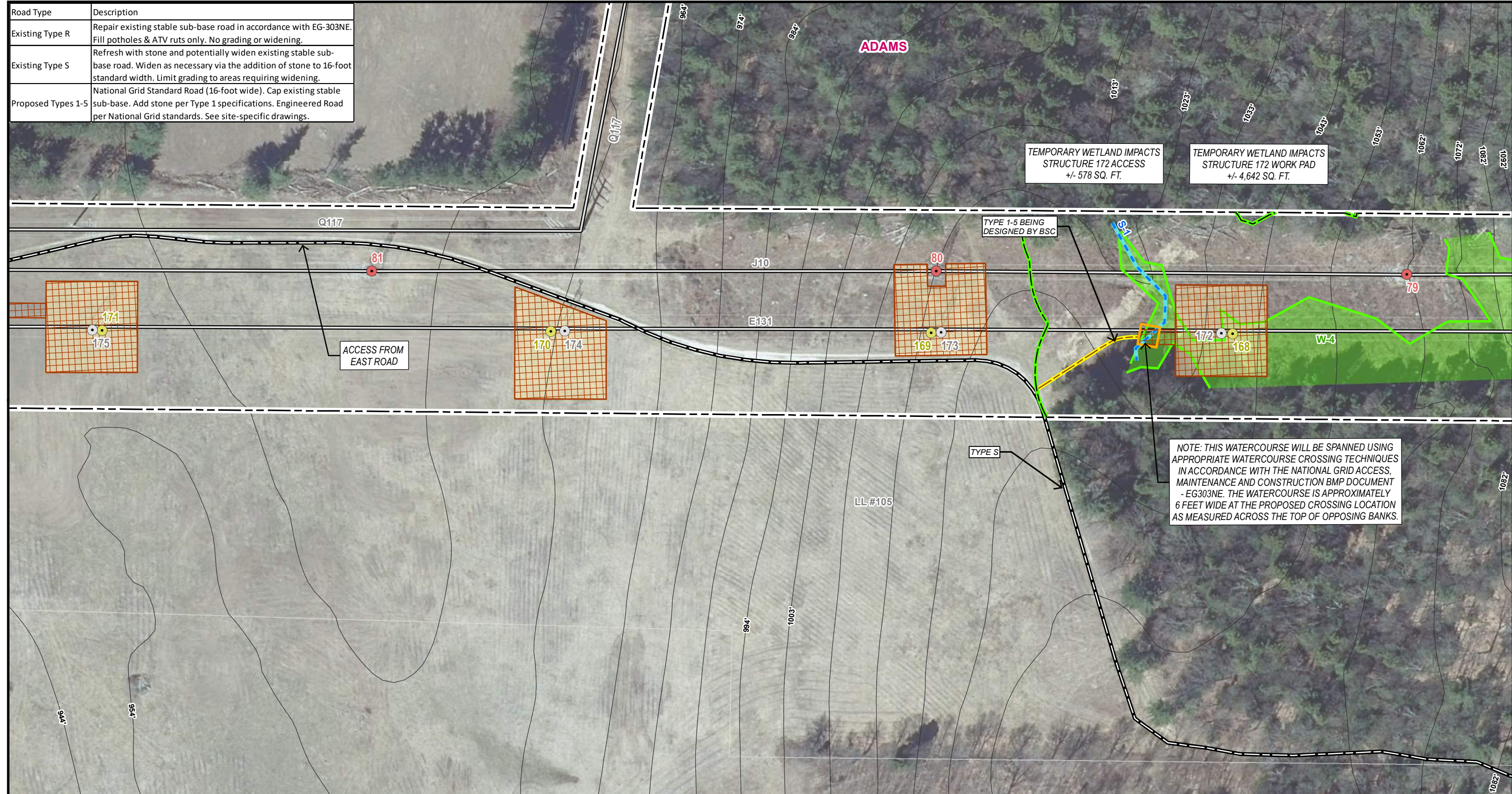
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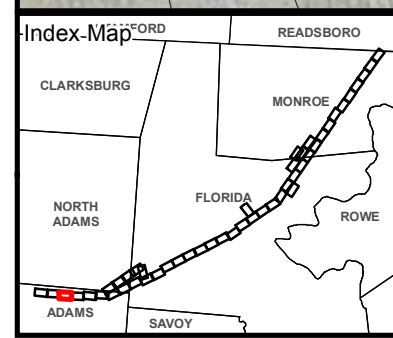
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NOTE: THIS WATERCOURSE WILL BE SPANNED USING APPROPRIATE WATERCOURSE CROSSING TECHNIQUES IN ACCORDANCE WITH THE NATIONAL GRID ACCESS, MAINTENANCE AND CONSTRUCTION BMP DOCUMENT - EG303NE. THE WATERCOURSE IS APPROXIMATELY 6 FEET WIDE AT THE PROPOSED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



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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams, Massachusetts
Page 3 of 48

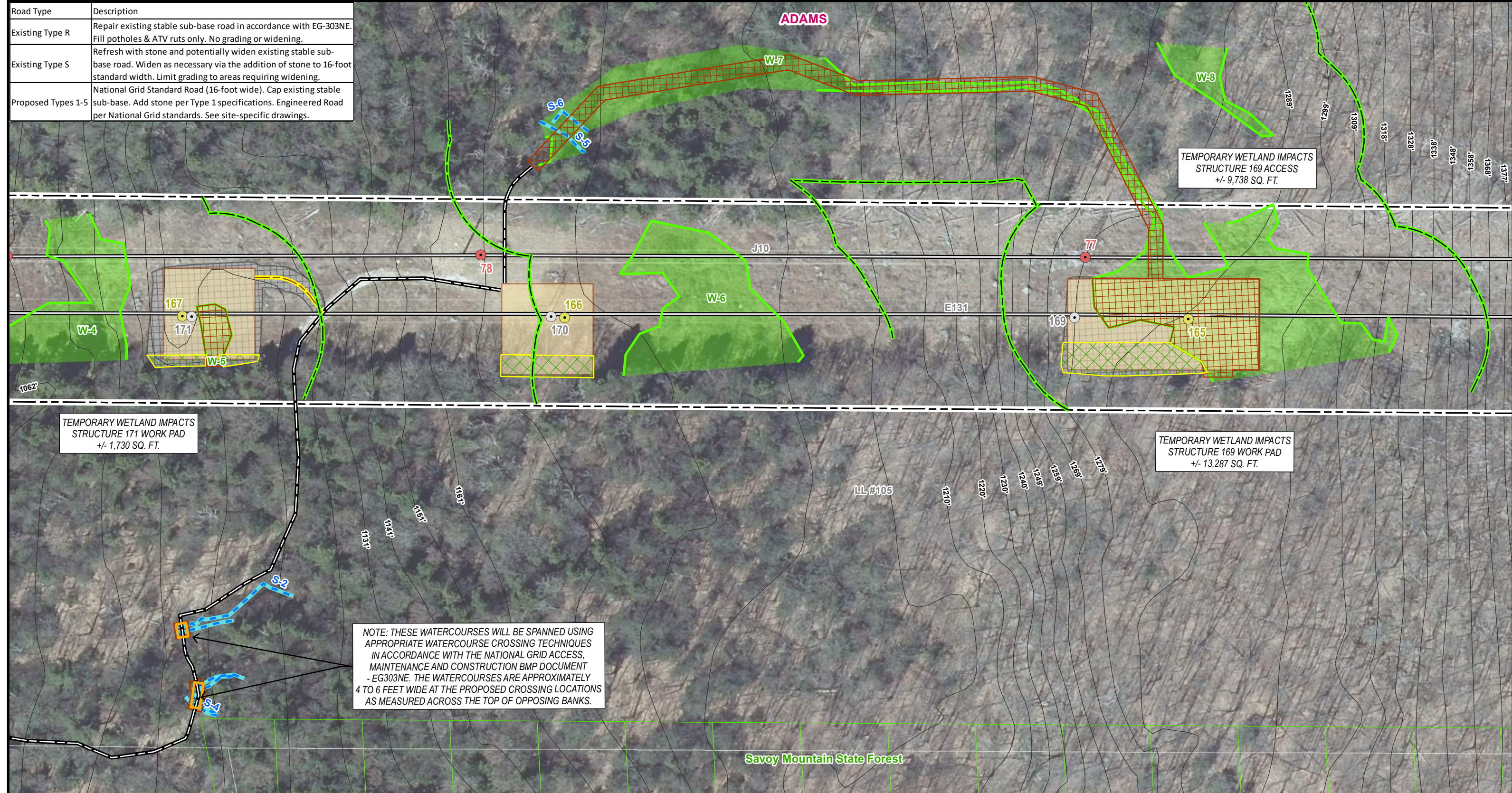
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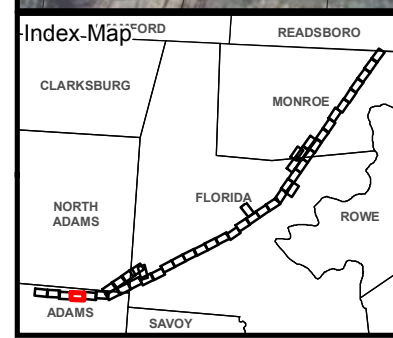


TEMPORARY WETLAND IMPACTS
 STRUCTURE 171 WORK PAD
 +/- 1,730 SQ. FT.

TEMPORARY WETLAND IMPACTS
 STRUCTURE 169 WORK PAD
 +/- 13,287 SQ. FT.

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

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

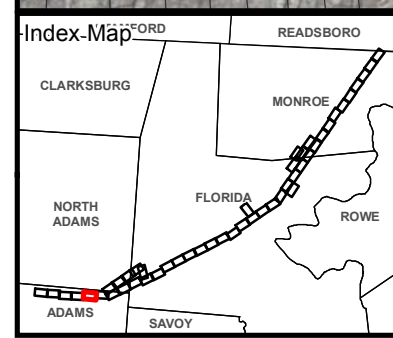
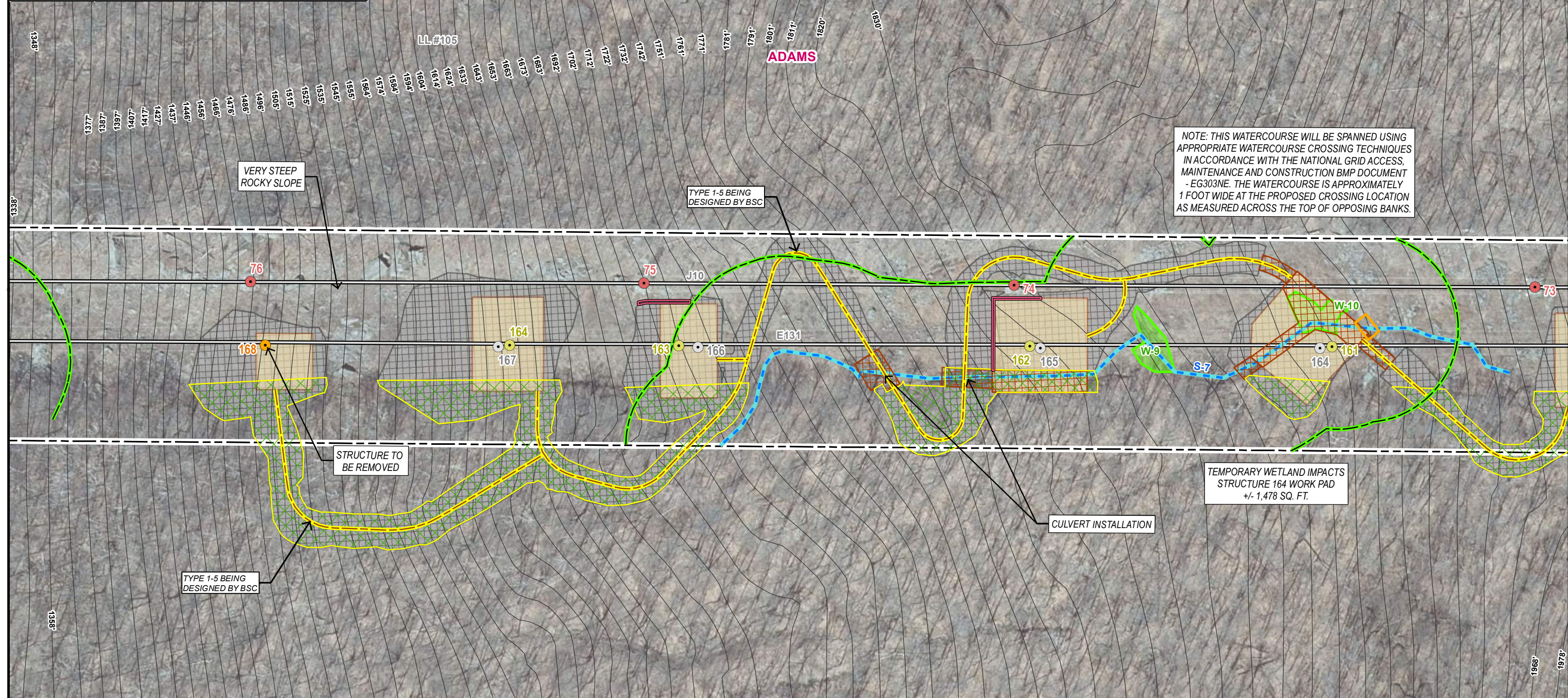
Adams, Massachusetts
 Page 4 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams, Massachusetts
Page 5 of 48

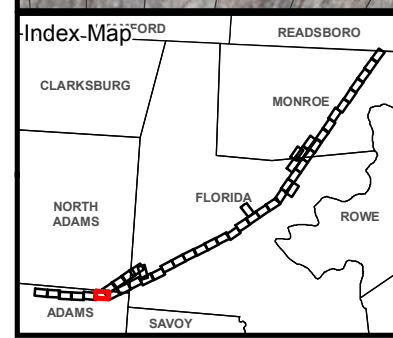
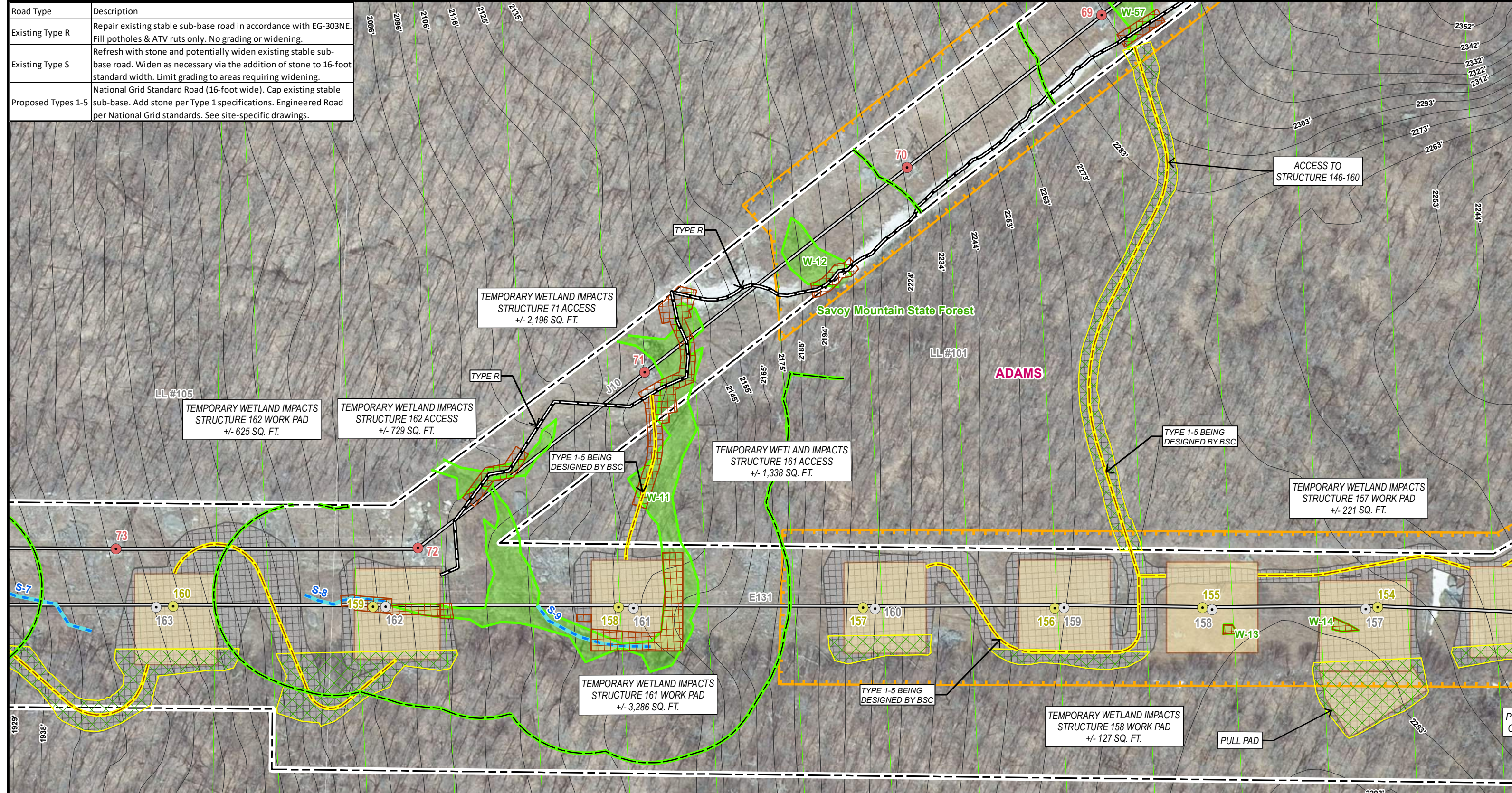
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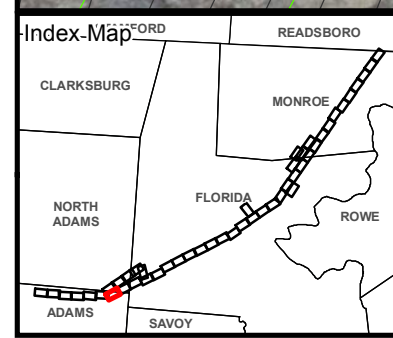
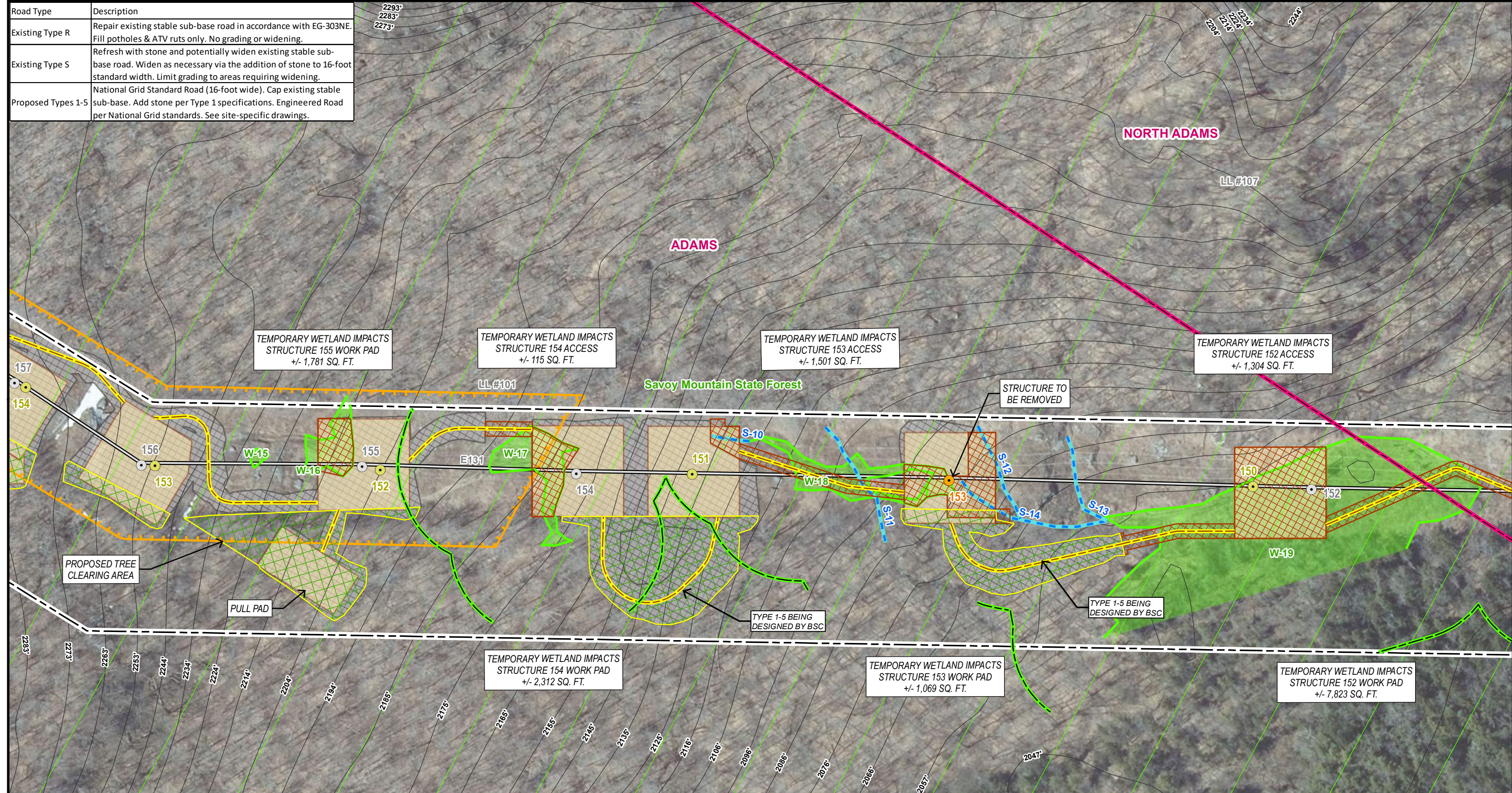
Environmental Resources Map

Adams, Massachusetts
 Page 6 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Adams/North Adams, Massachusetts
 Page 7 of 48

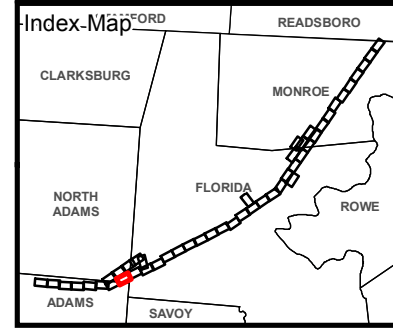
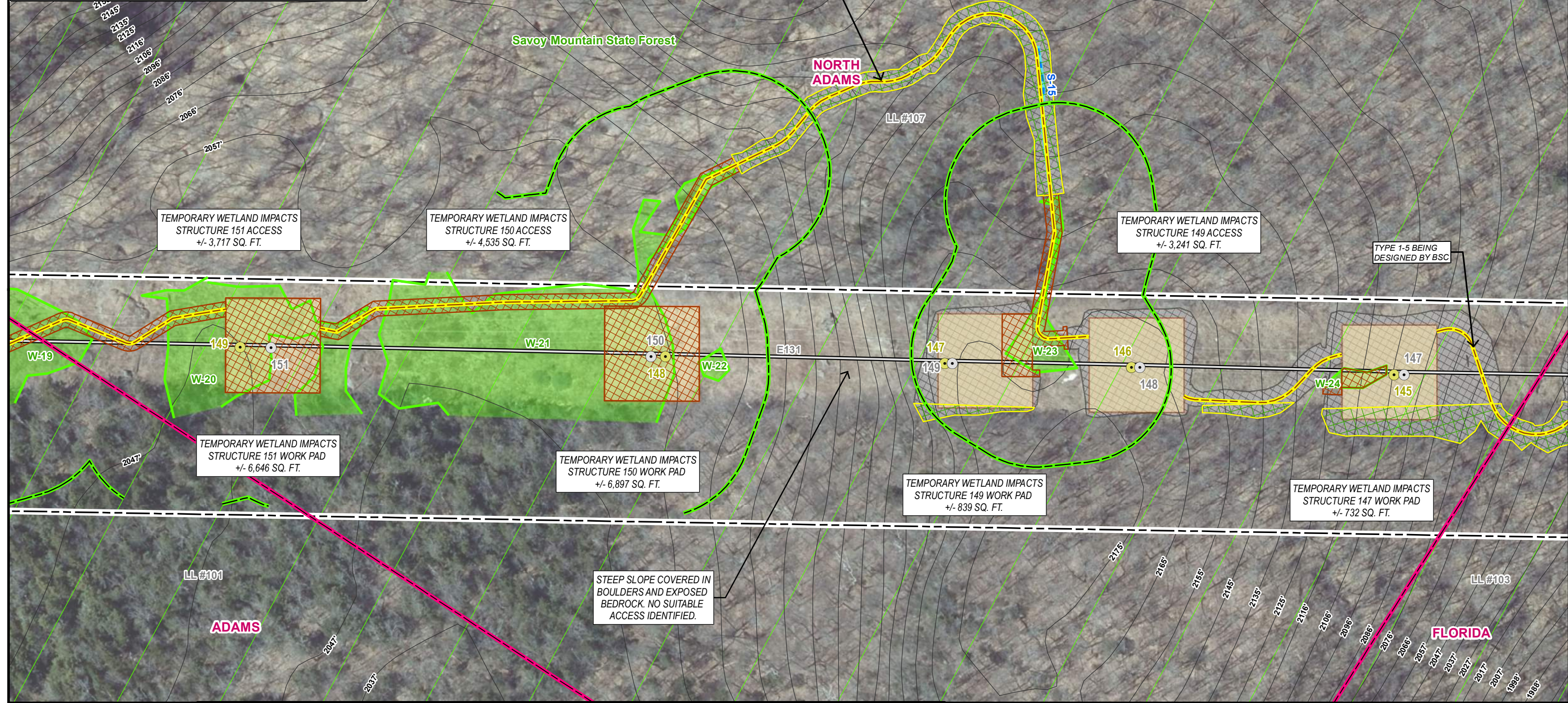
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1 inch = 100 feet
 0 50 100 Feet

**Indicates Layers Set to Transparency*

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

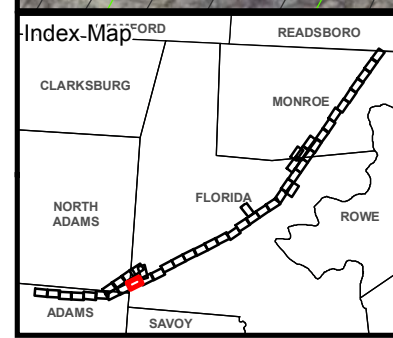
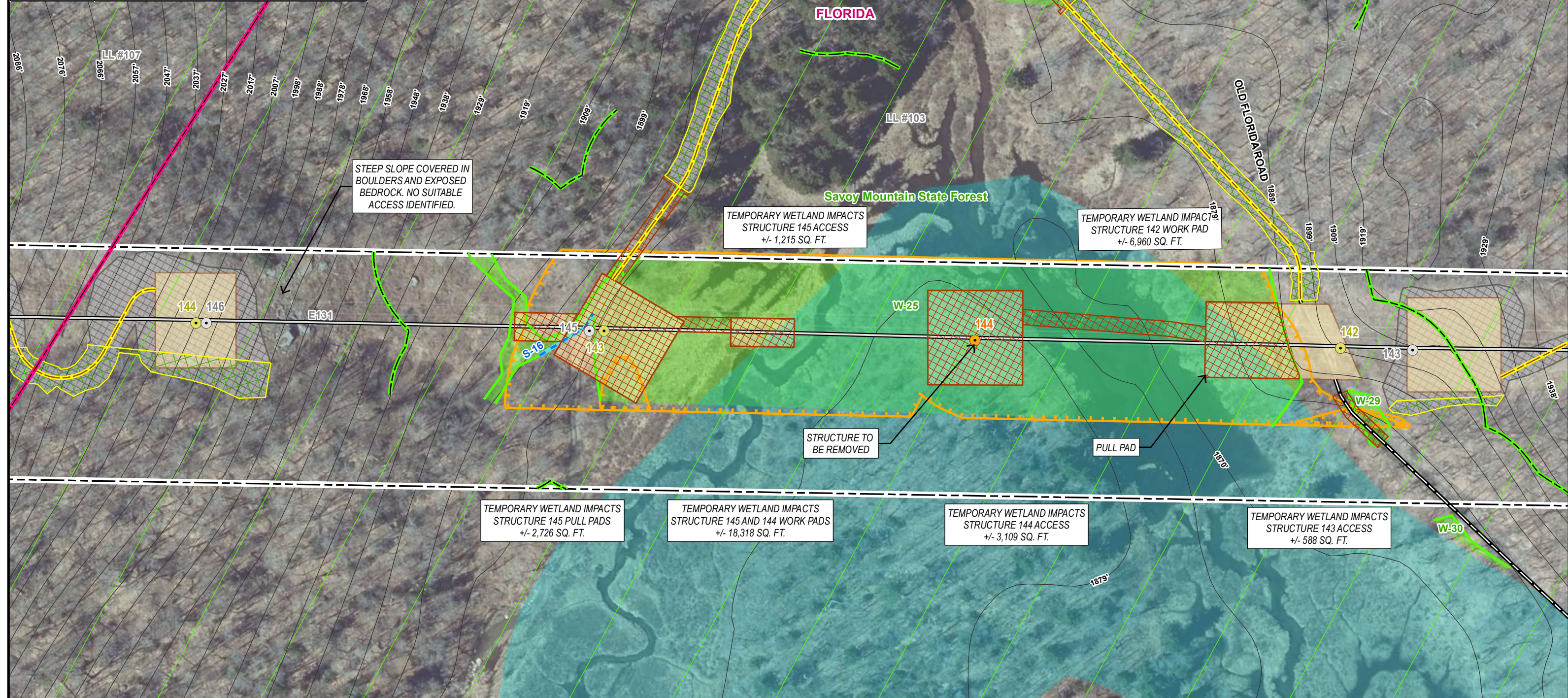
Adams/North Adams, Massachusetts
Page 8 of 48

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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**nationalgrid
Tighe&Bond**

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Legend

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Environmental Resources Map

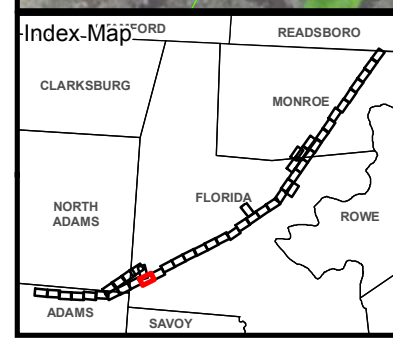
North Adams/Florida, Massachusetts
Page 9 of 48

1 inch = 100 feet

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nationalgrid Tighe&Bond

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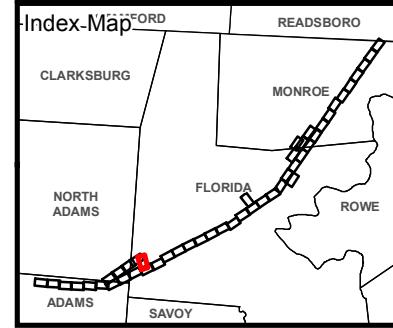
Environmental Resources Map

Florida, Massachusetts
Page 10 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 11 of 48

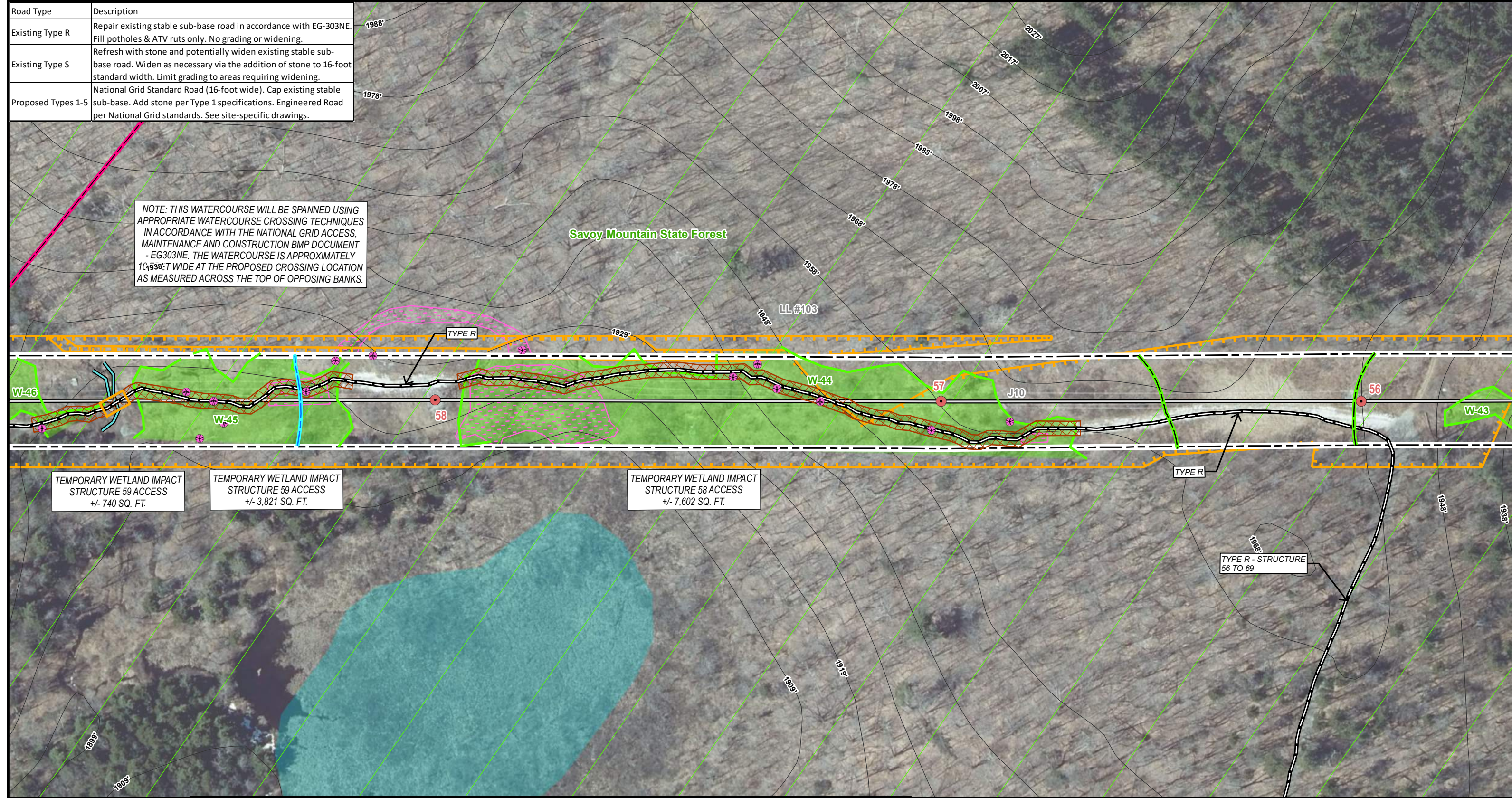
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nationalgrid Tighe&Bond

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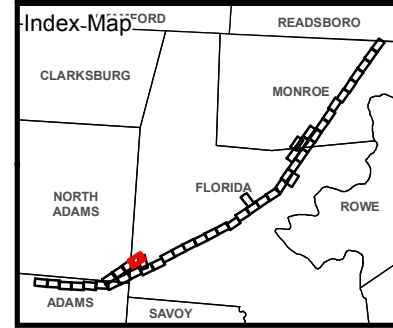


TEMPORARY WETLAND IMPACT
STRUCTURE 59 ACCESS
+/- 740 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 59 ACCESS
+/- 3,821 SQ. FT.

TEMPORARY WETLAND IMPACT
STRUCTURE 58 ACCESS
+/- 7,602 SQ. FT.

TYPE R - STRUCTURE
56 TO 69



Legend

<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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* 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Rare Plant Species MassDEP Oil and/or Hazardous 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*
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

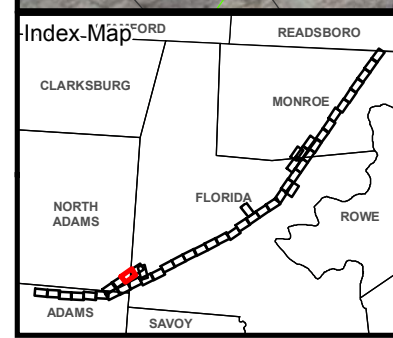
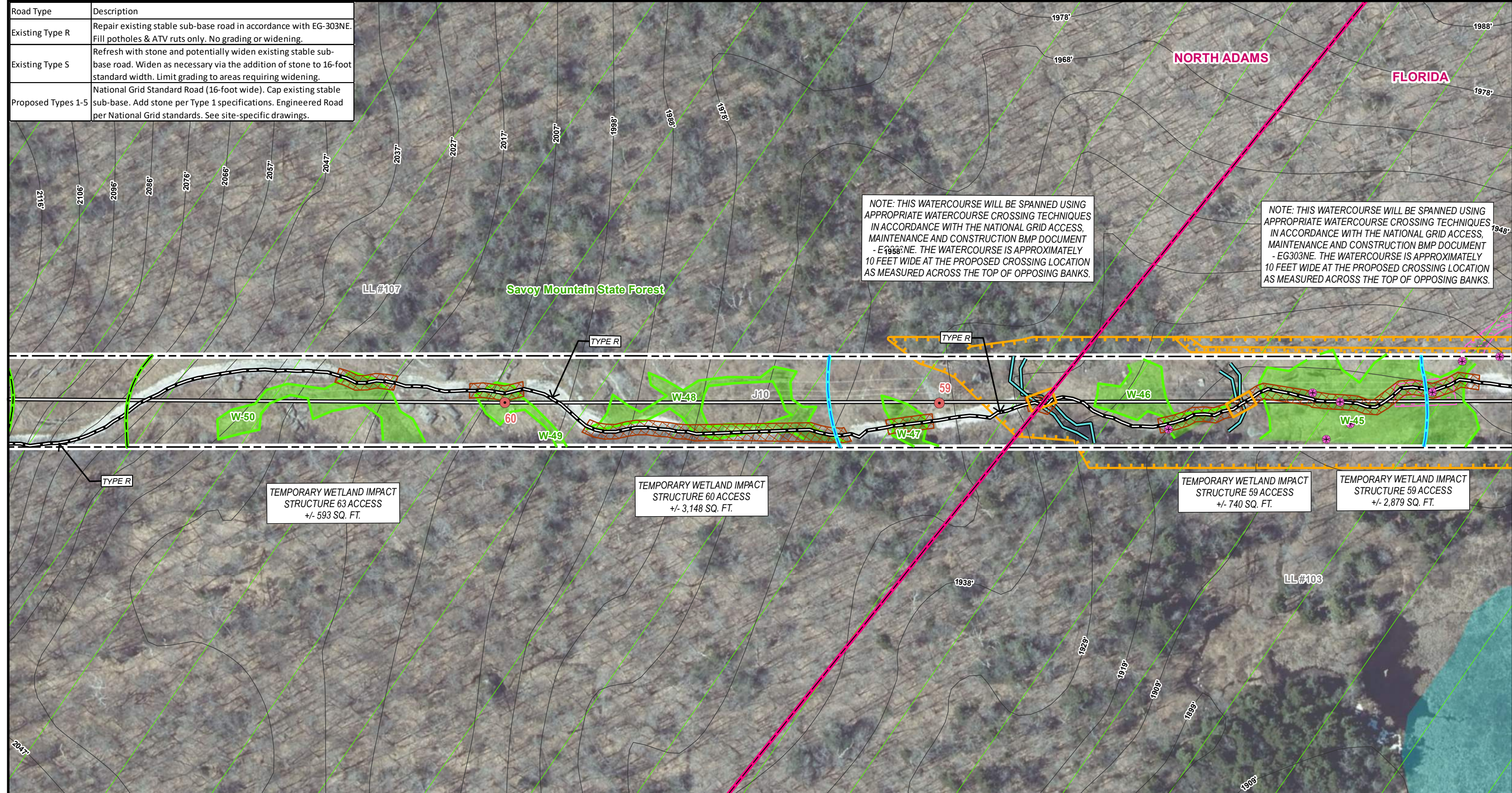
Florida, Massachusetts
Page 12 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

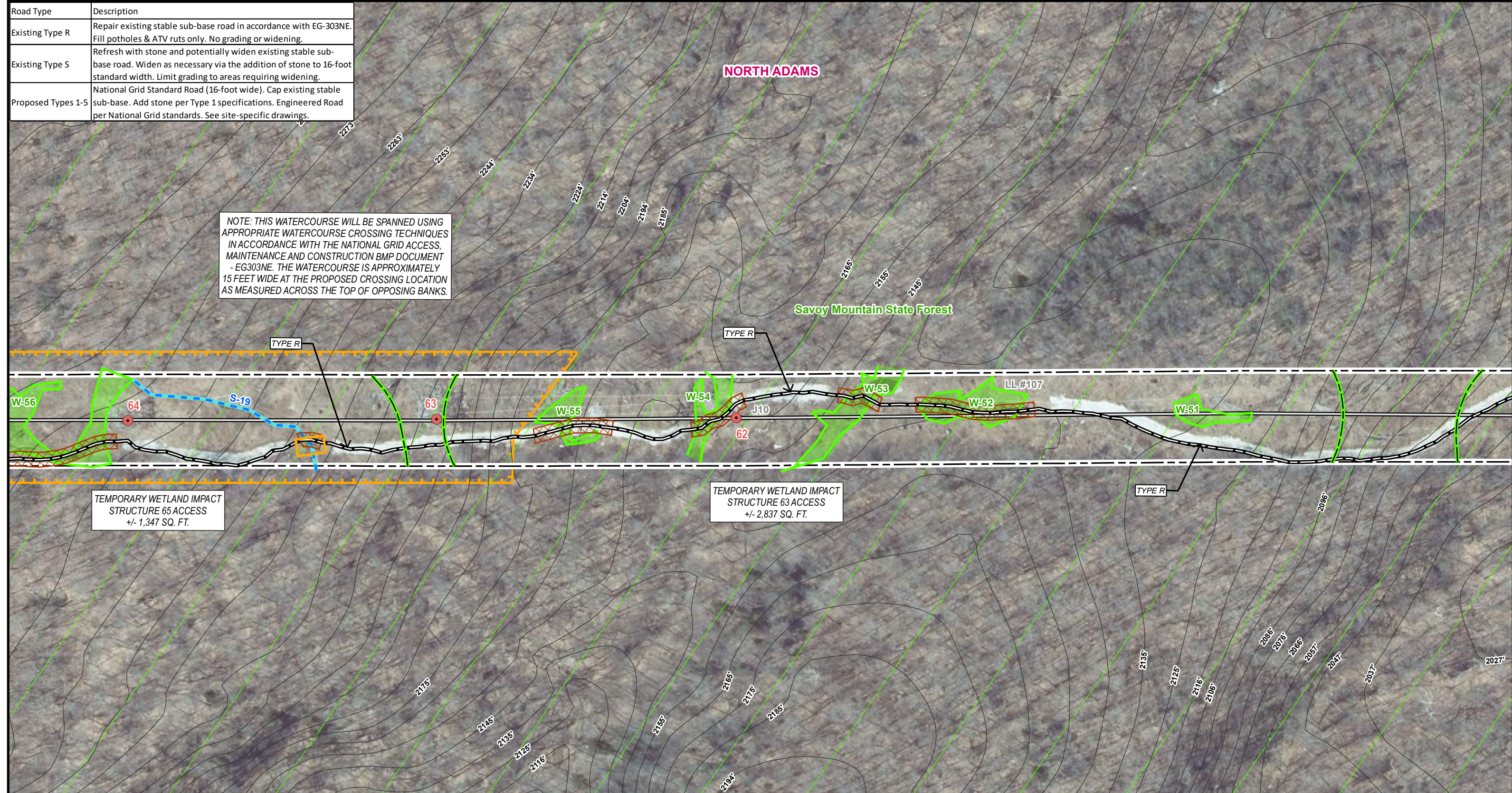
Florida, Massachusetts
 Page 13 of 48

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nationalgrid Tighe&Bond

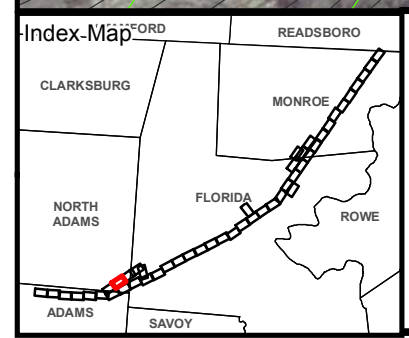
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TEMPORARY WETLAND IMPACT
 STRUCTURE 65 ACCESS
 +/- 1,347 SQ. FT.

TEMPORARY WETLAND IMPACT
 STRUCTURE 63 ACCESS
 +/- 2,837 SQ. FT.



Legend

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

Scale: 1 inch = 100 feet
 0 50 100 Feet

**Indicates Layers Set to Transparency*

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

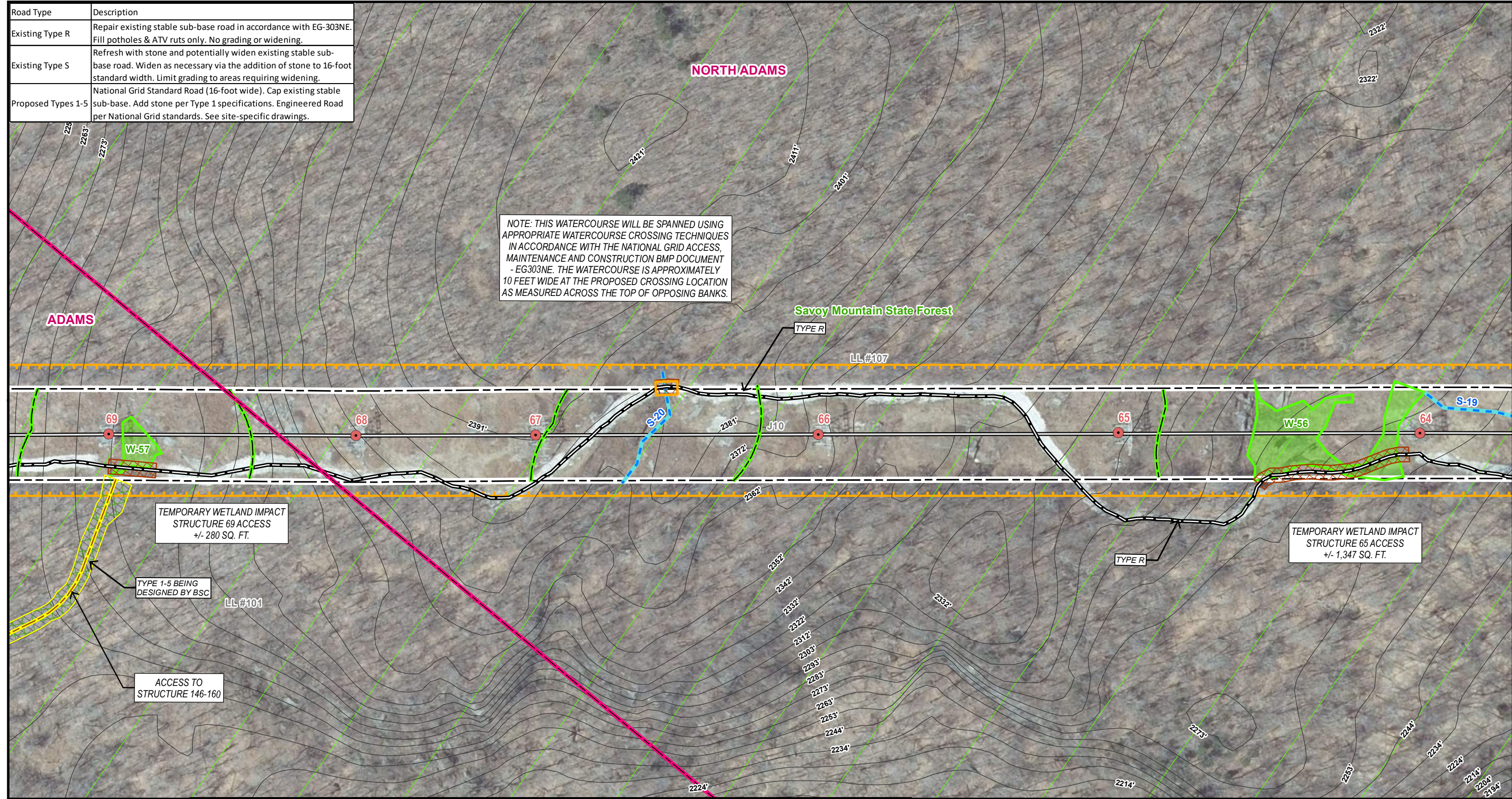
Florida, Massachusetts
 Page 14 of 48

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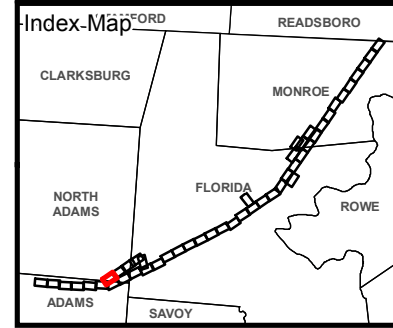
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TEMPORARY WETLAND IMPACT STRUCTURE 69 ACCESS +/- 280 SQ. FT.

TEMPORARY WETLAND IMPACT STRUCTURE 65 ACCESS +/- 1,347 SQ. FT.

TYPE 1-5 BEING DESIGNED BY BSC

ACCESS TO STRUCTURE 146-160



Legend

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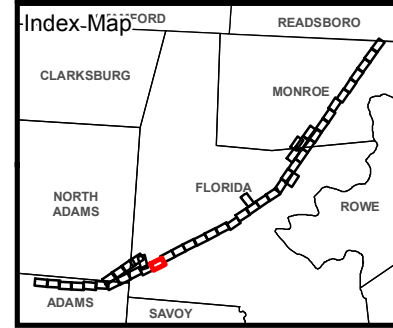
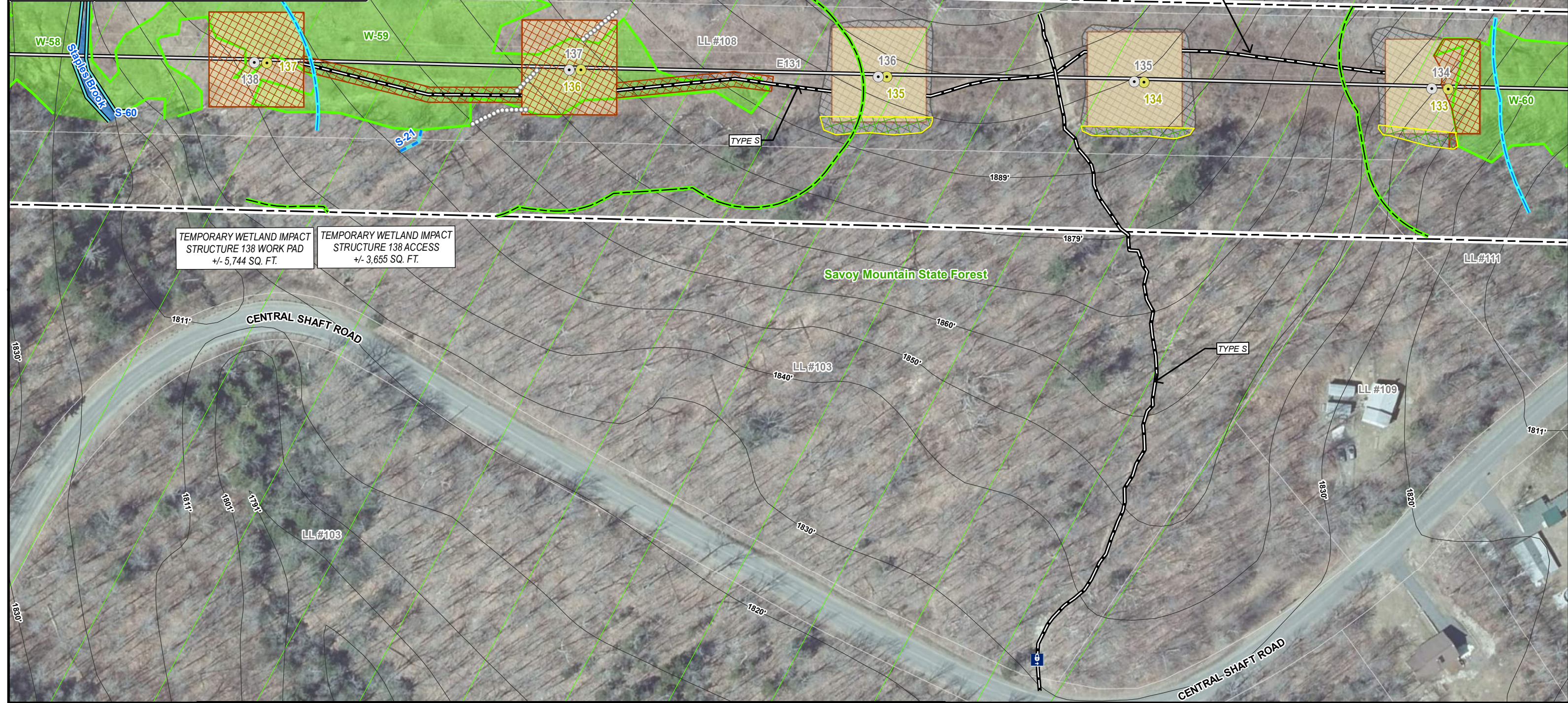
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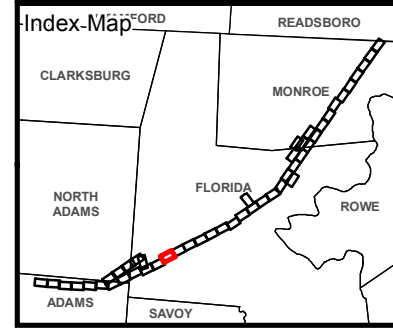
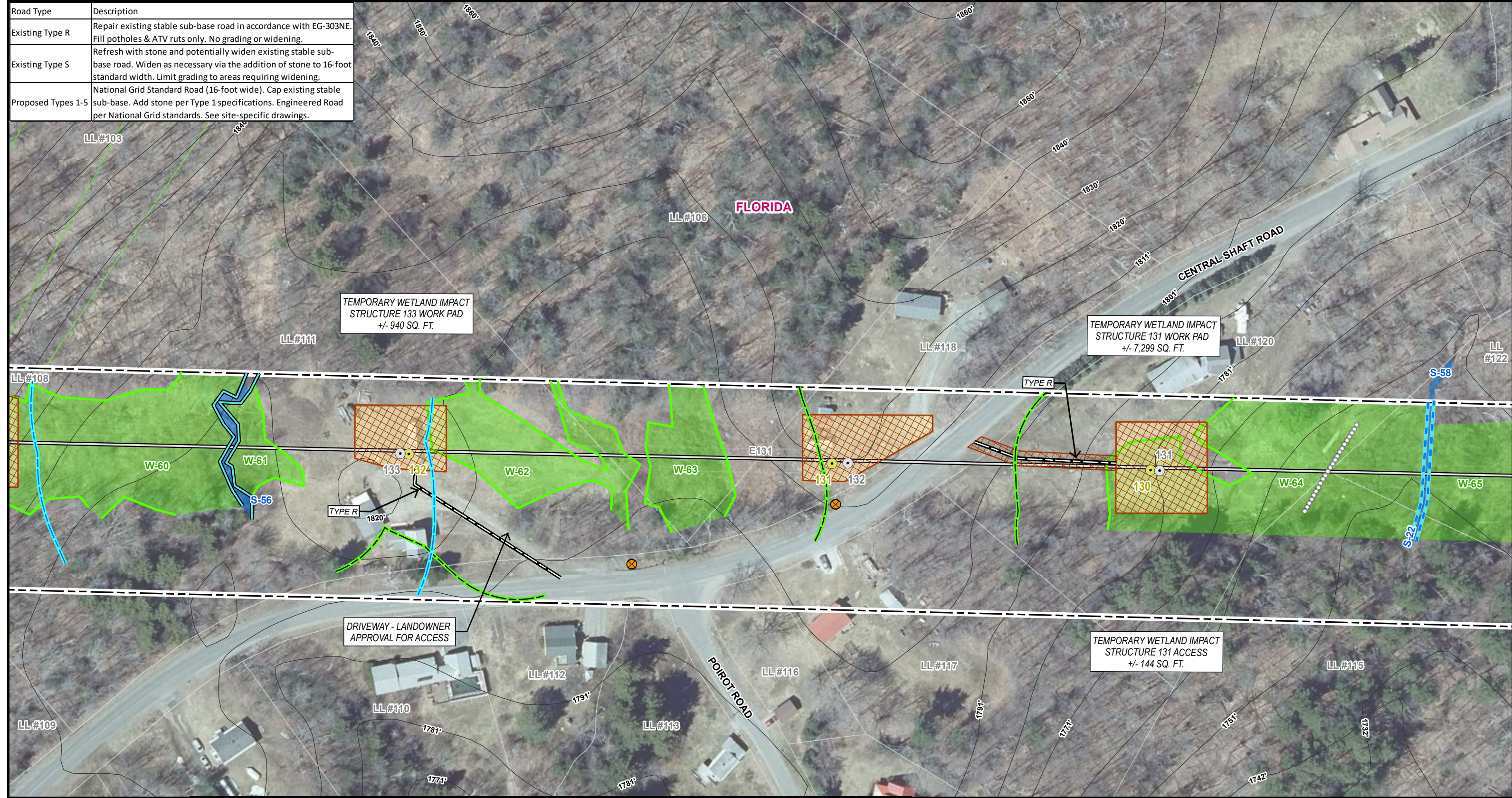
Florida, Massachusetts
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*Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 17 of 48

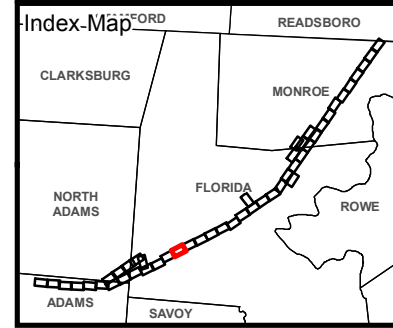
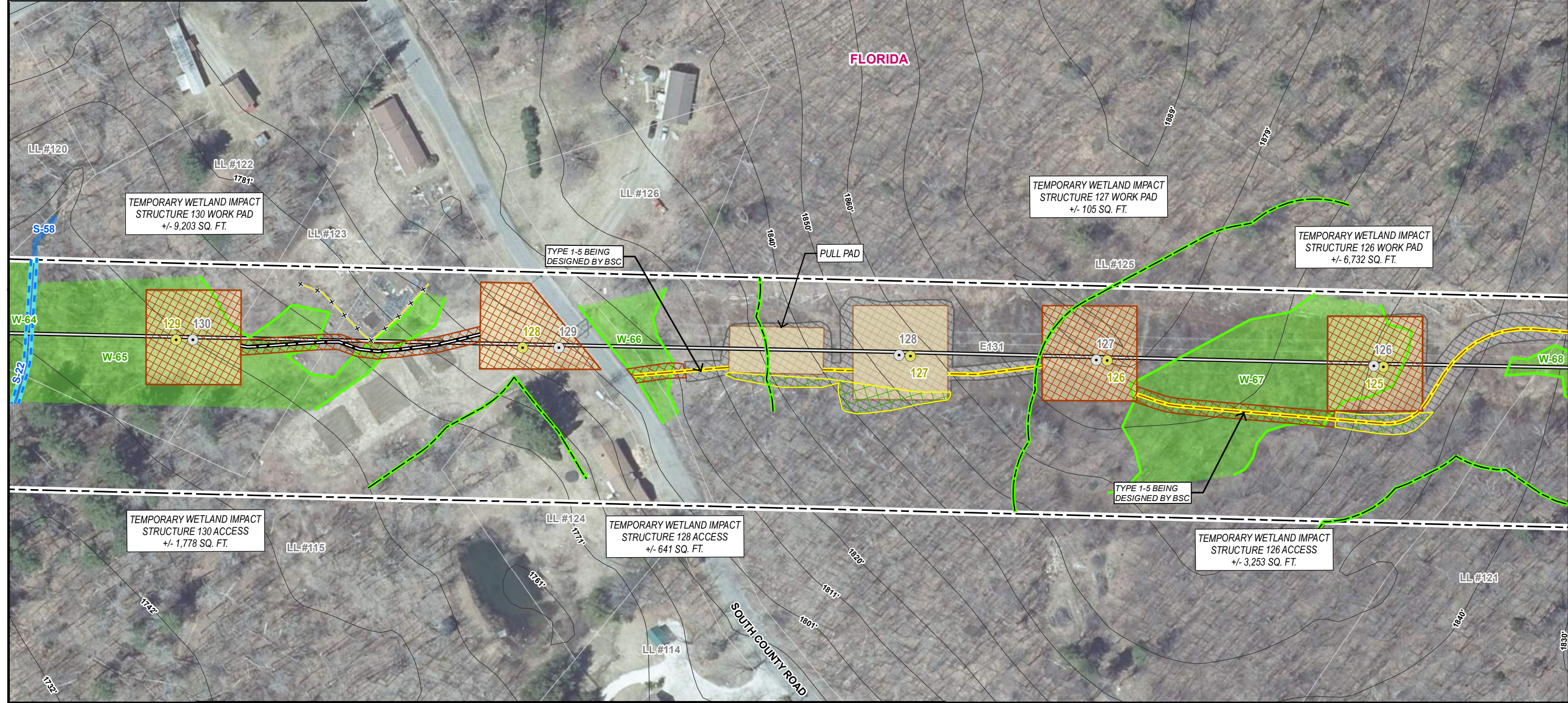
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Basemap: ESRI World Imagery Basemap
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
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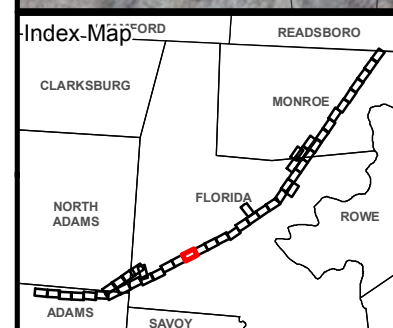
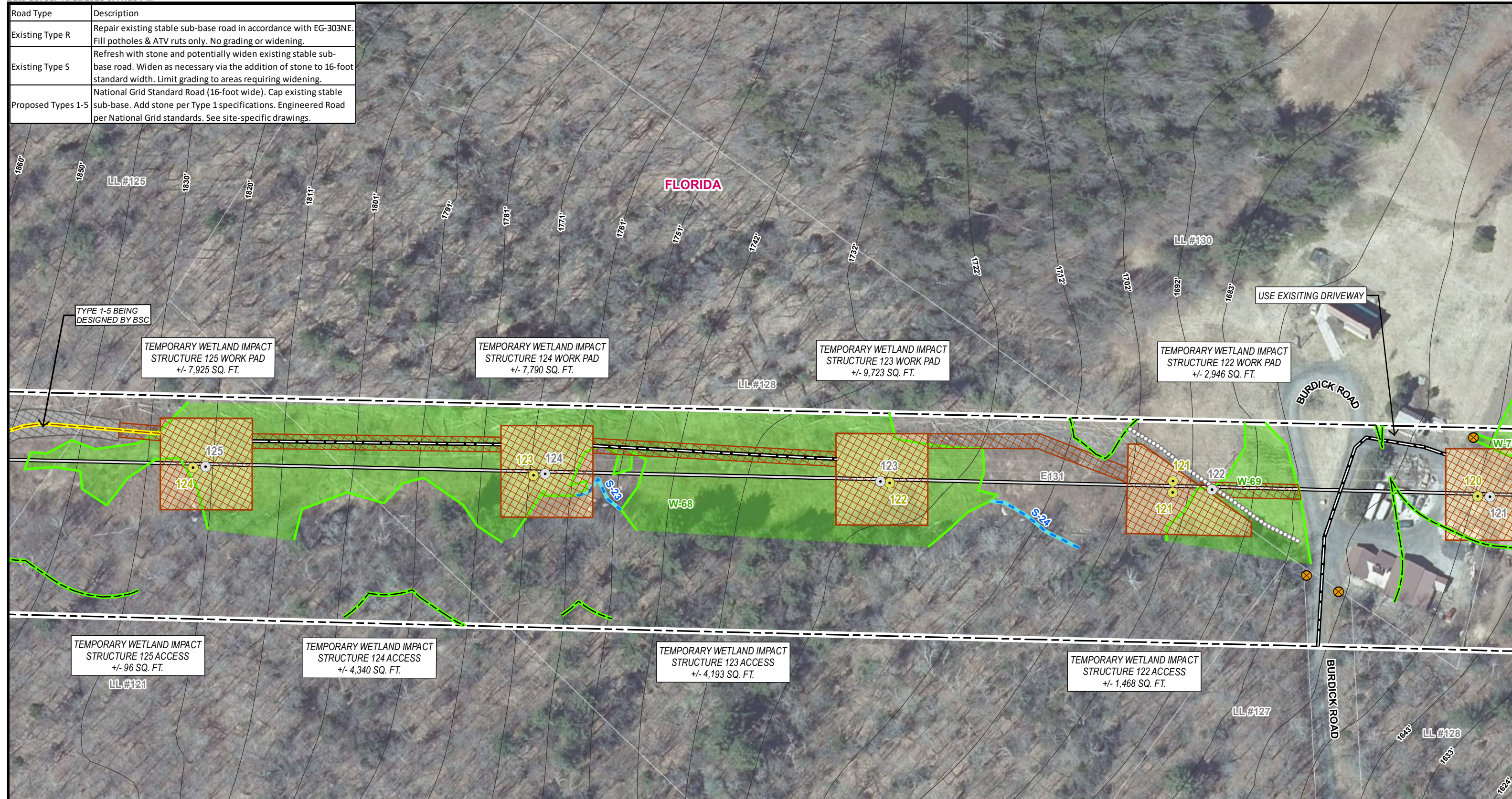
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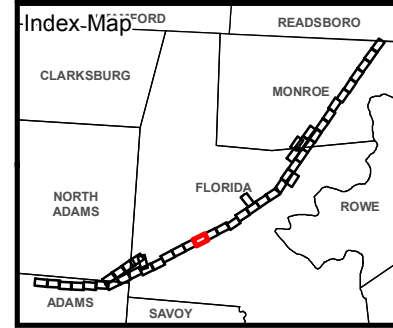
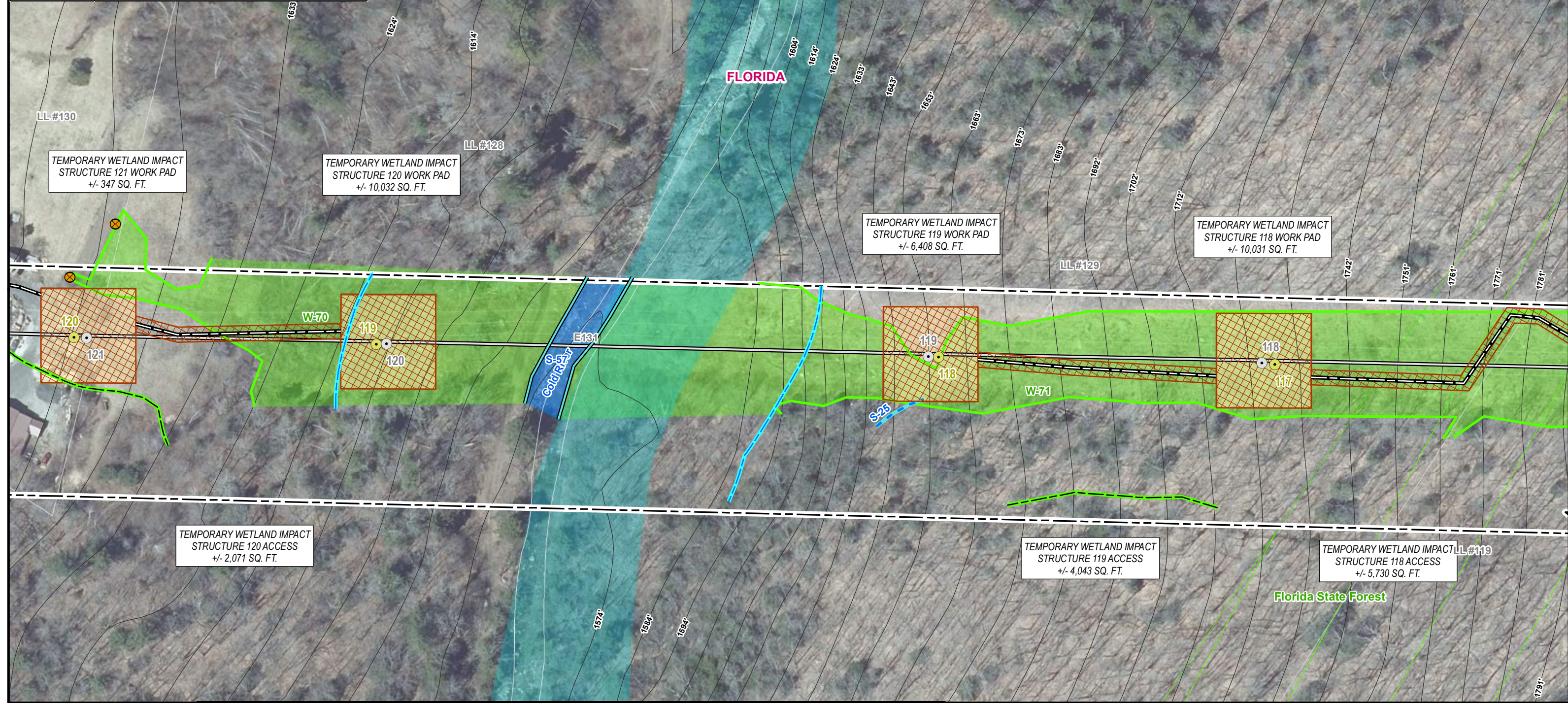
Environmental Resources Map

Florida, Massachusetts
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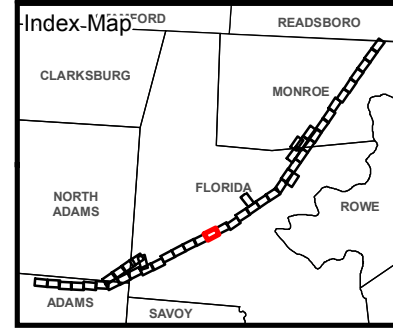
Florida, Massachusetts
 Page 20 of 48

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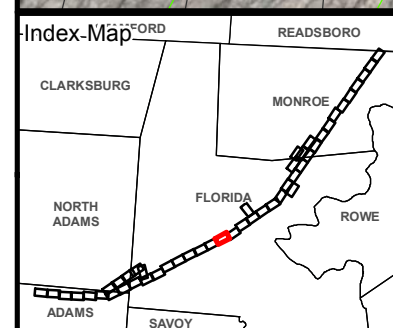
Environmental Resources Map

Florida, Massachusetts
Page 21 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 22 of 48

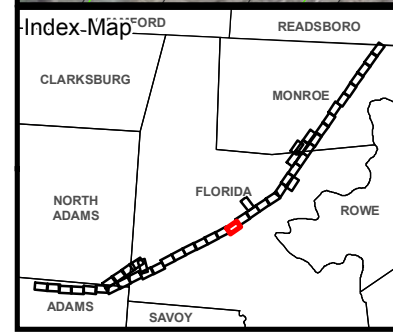
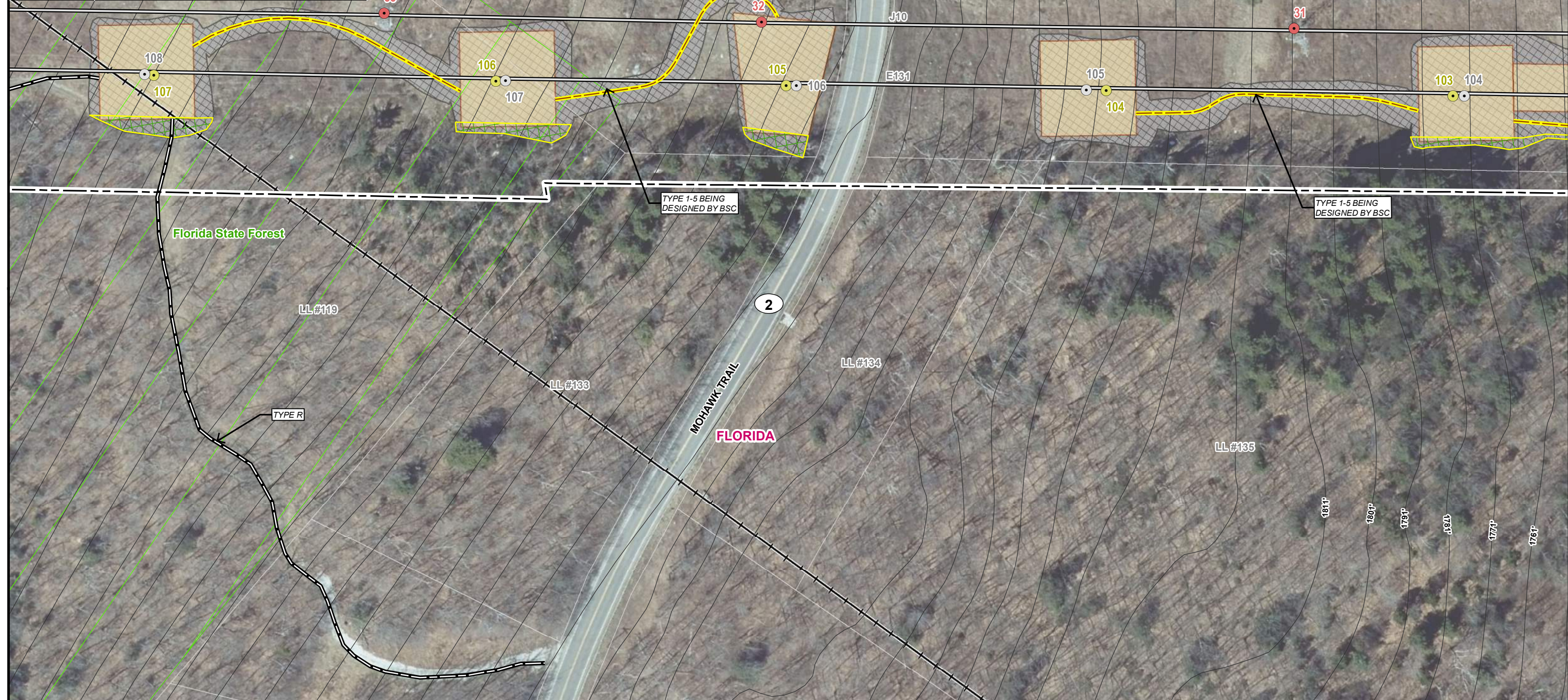
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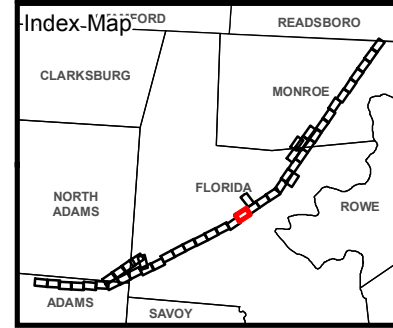
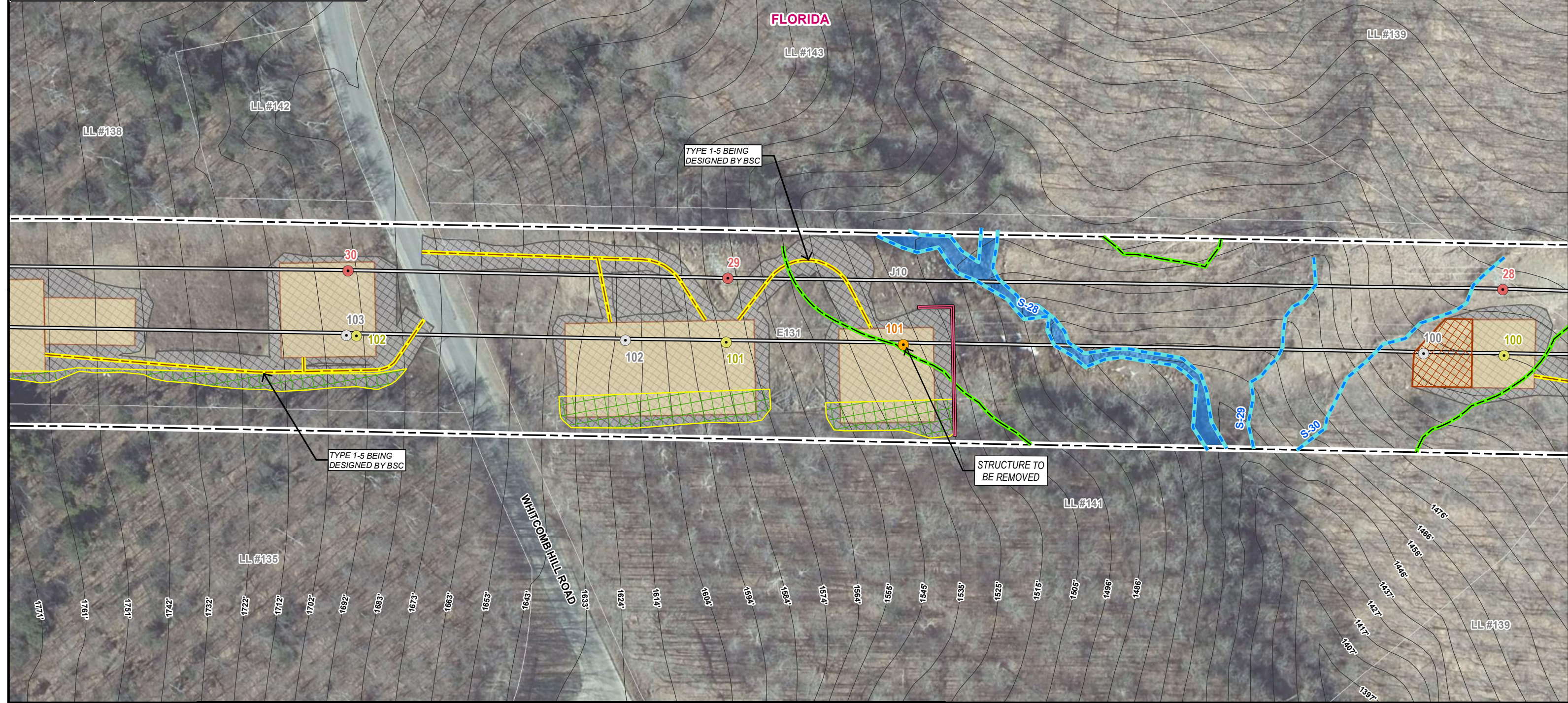
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Florida, Massachusetts
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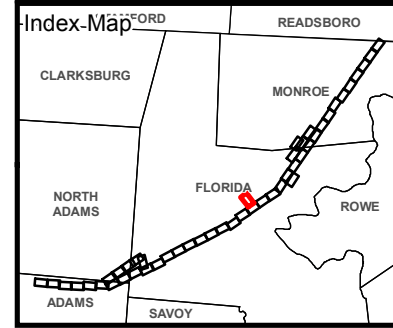
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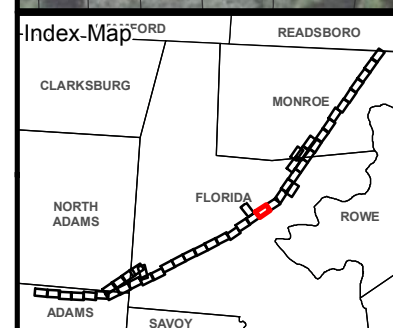
Florida, Massachusetts
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Legend

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

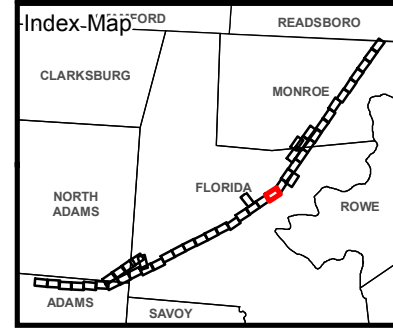
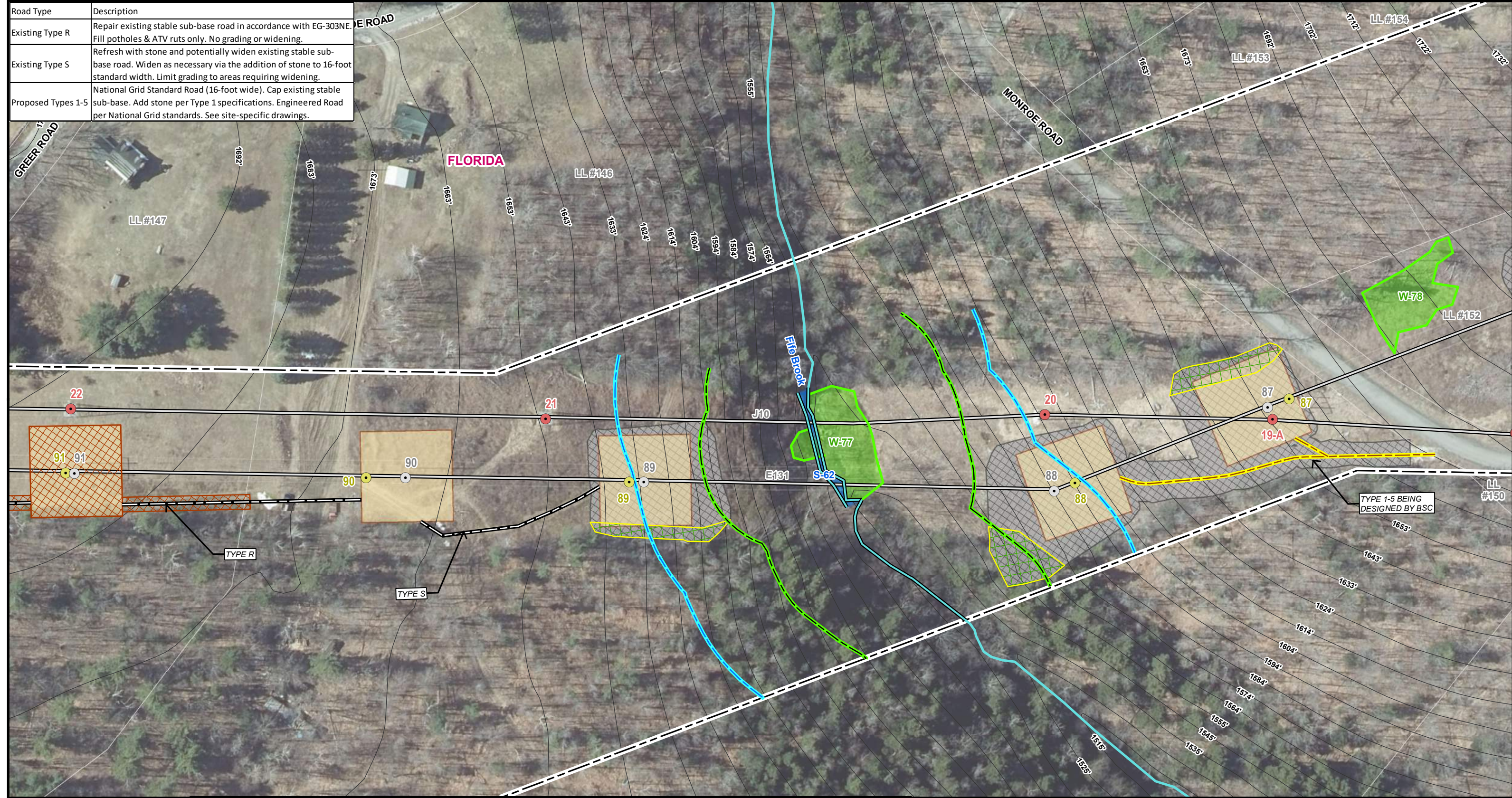
Florida, Massachusetts
Page 27 of 48

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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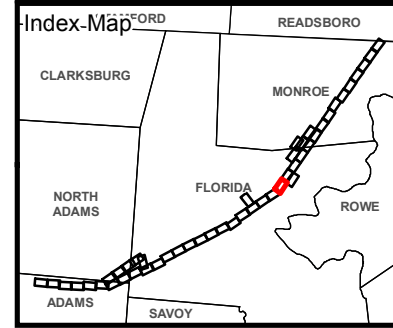
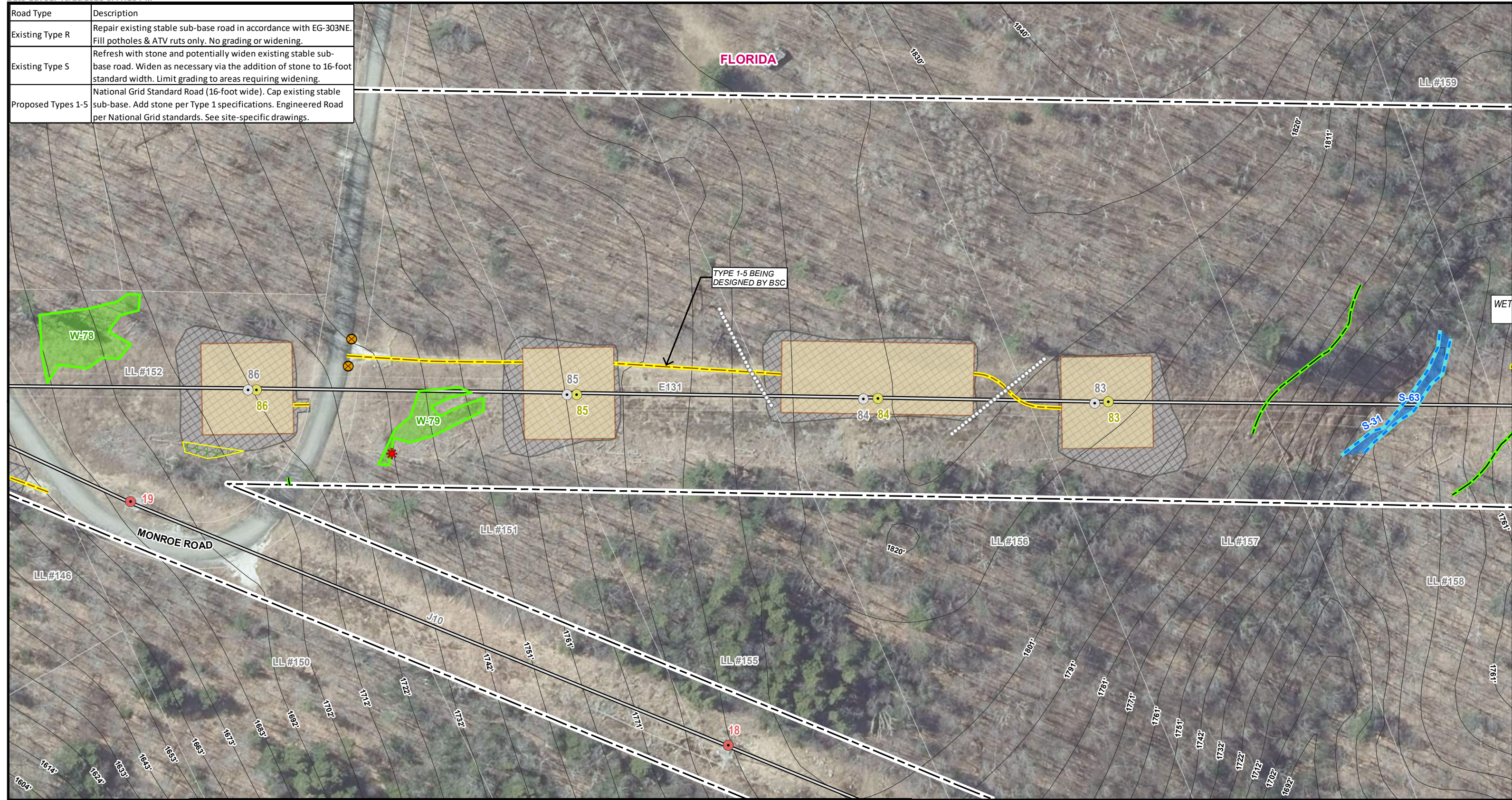
Environmental Resources Map

Florida, Massachusetts
Page 28 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 29 of 48

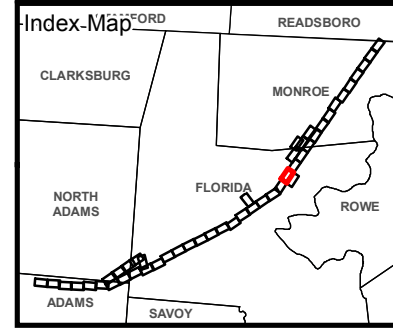
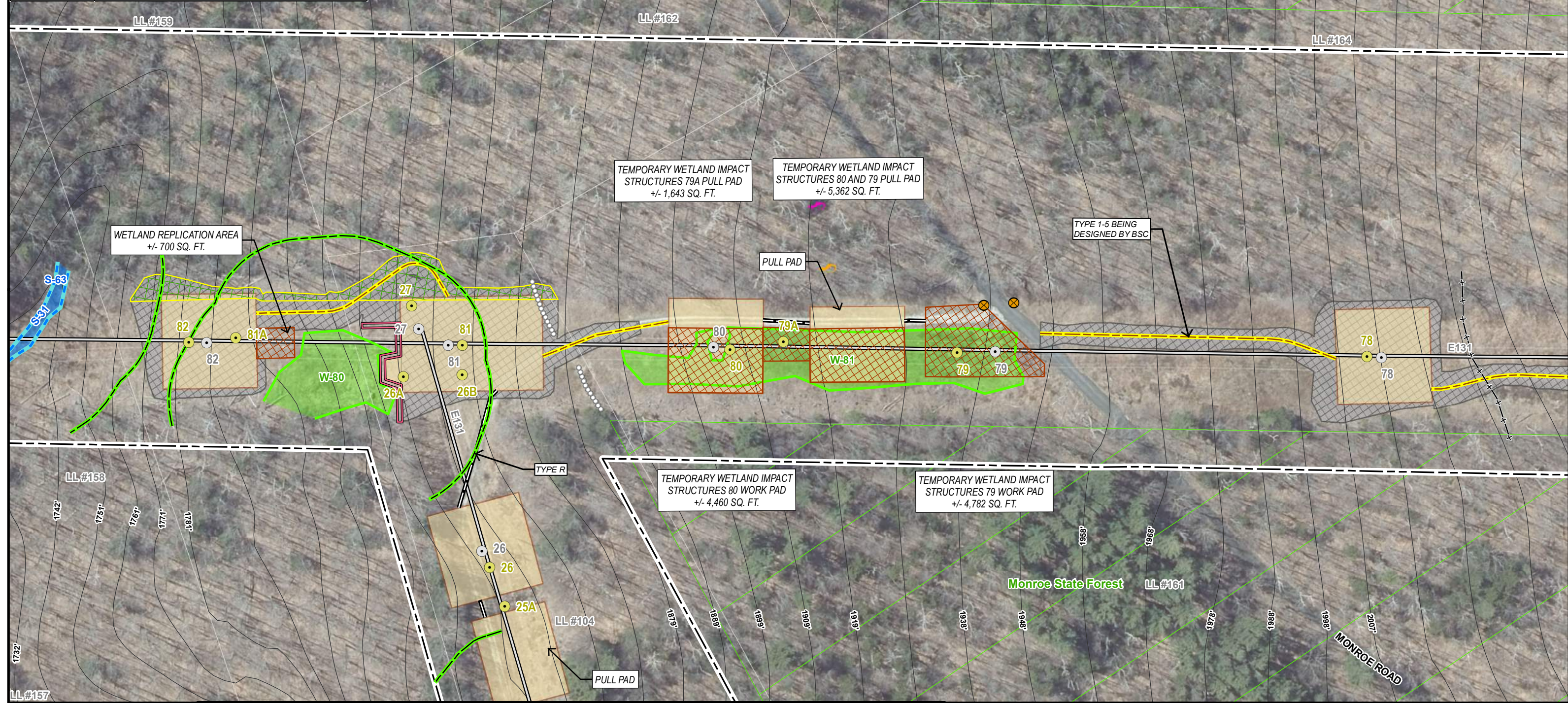
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 30 of 48

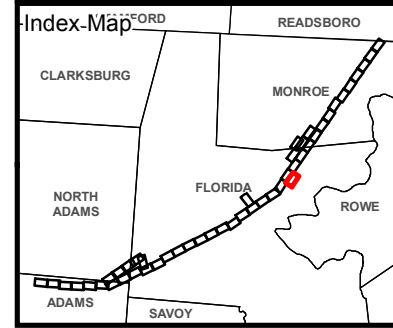
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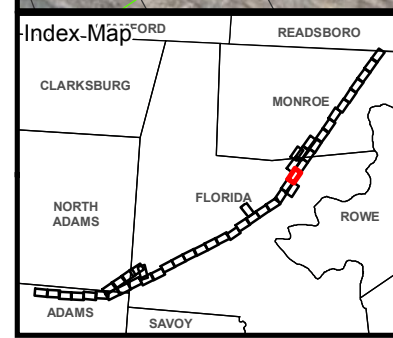
Florida, Massachusetts
Page 31 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 32 of 48

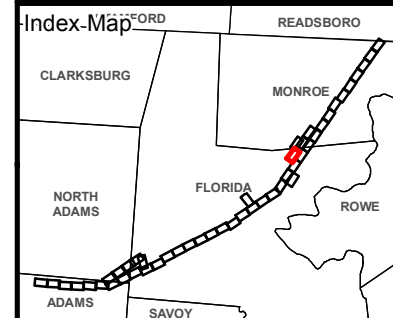
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E131 - ASSET CONDITION REFURBISHMENT PROJECT

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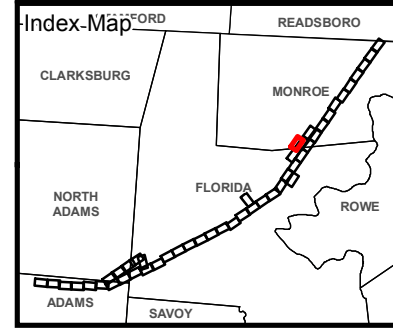
Florida, Massachusetts
Page 33 of 48

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0 50 100
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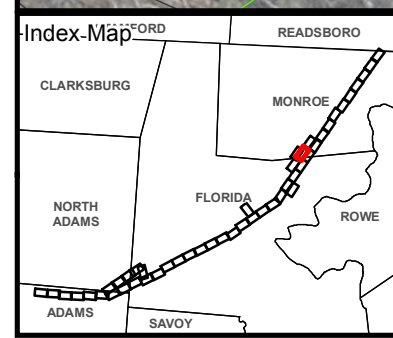
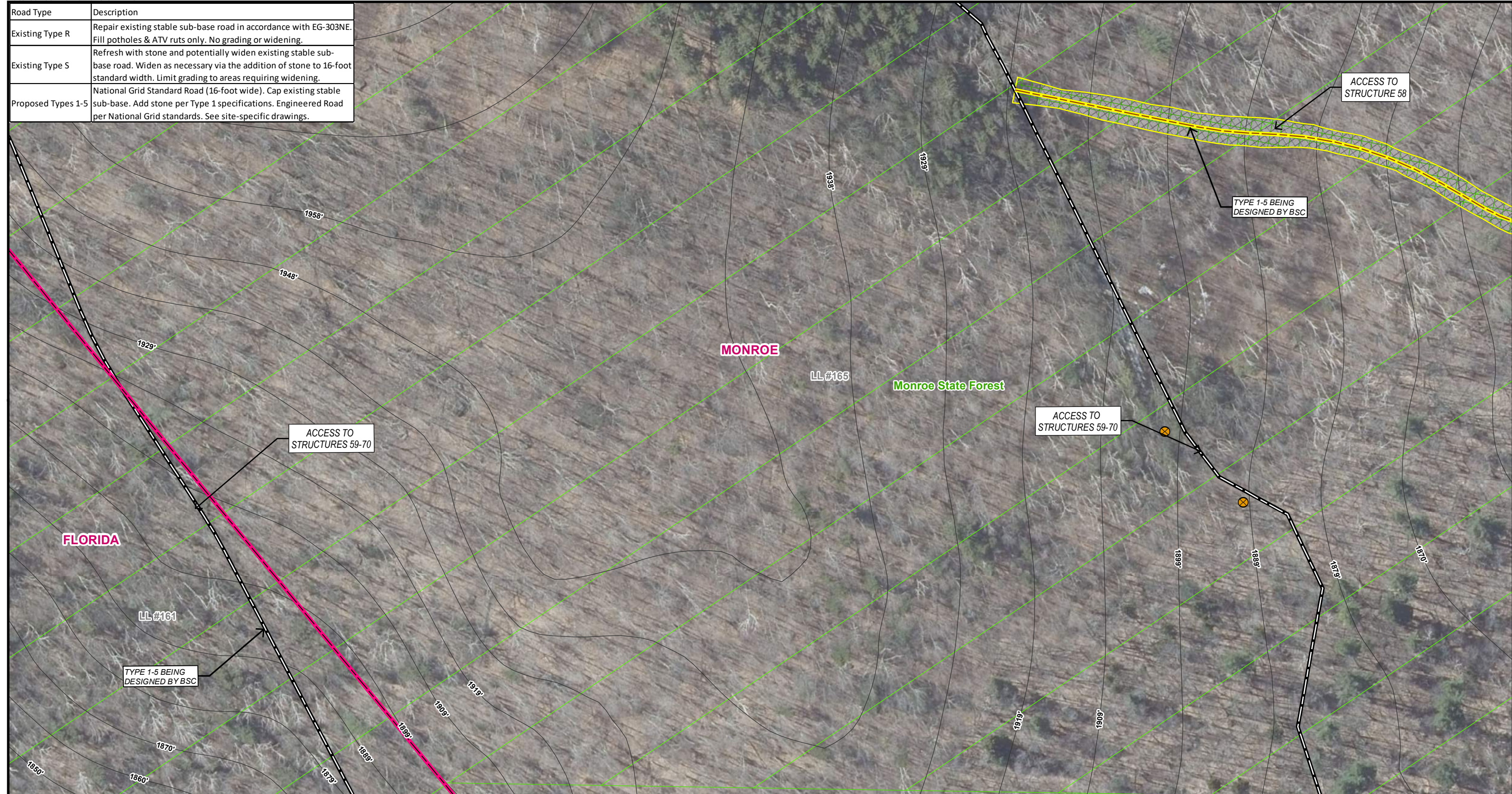
Florida/Monroe, Massachusetts
Page 34 of 48

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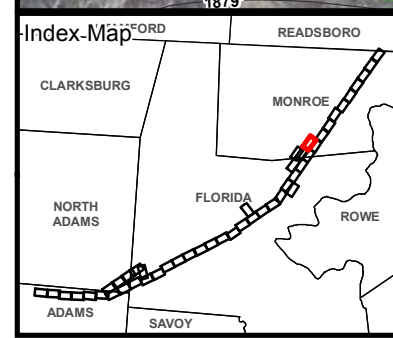
Florida/Monroe, Massachusetts
Page 35 of 48

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E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts
Page 36 of 48

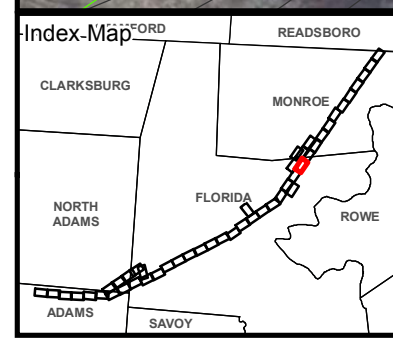
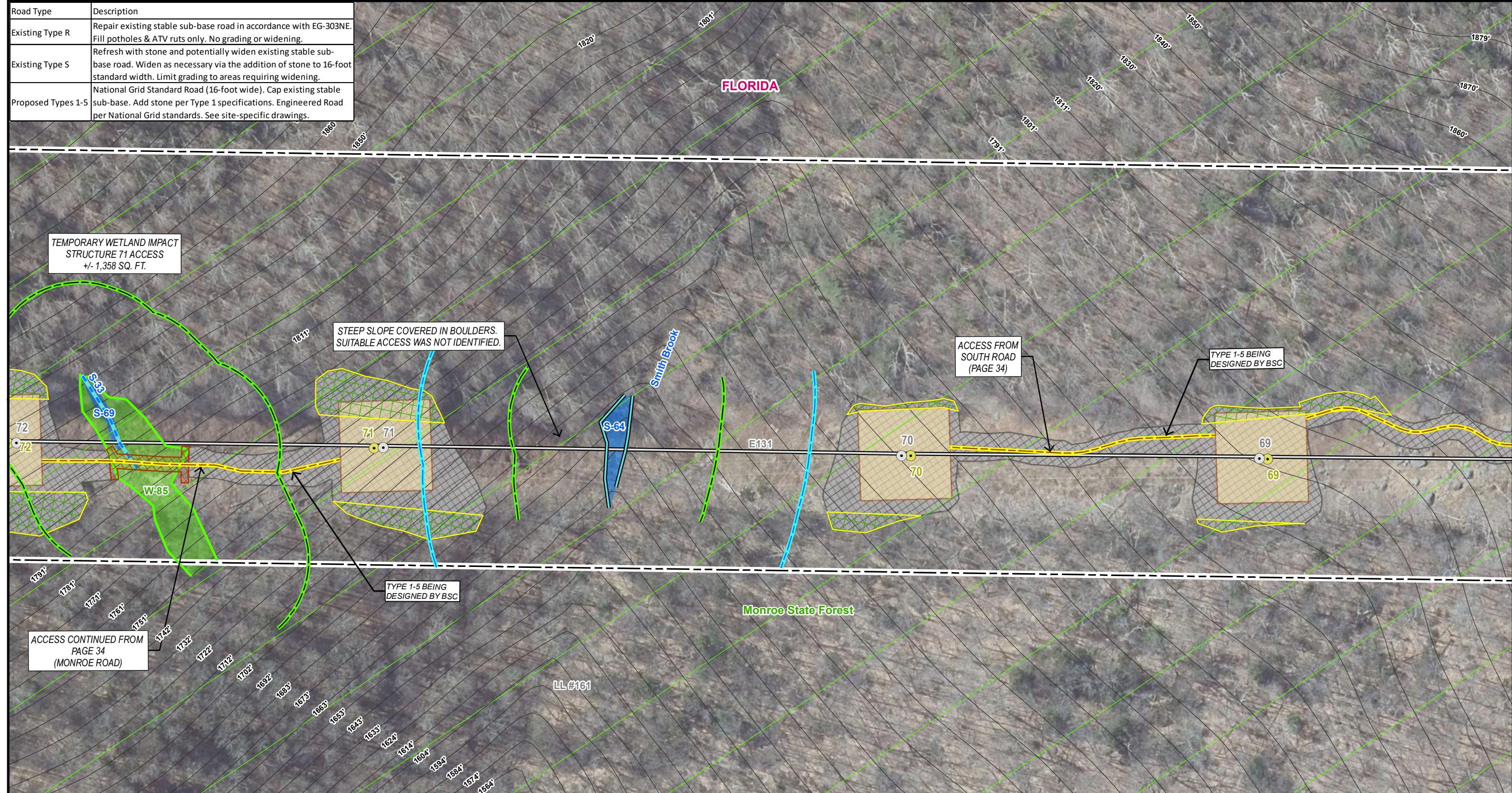
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1 inch = 100 feet
 0 50 100 Feet

*Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Florida, Massachusetts
Page 37 of 48

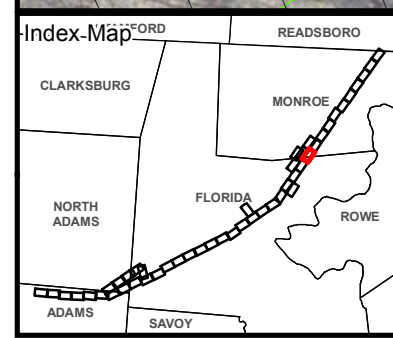
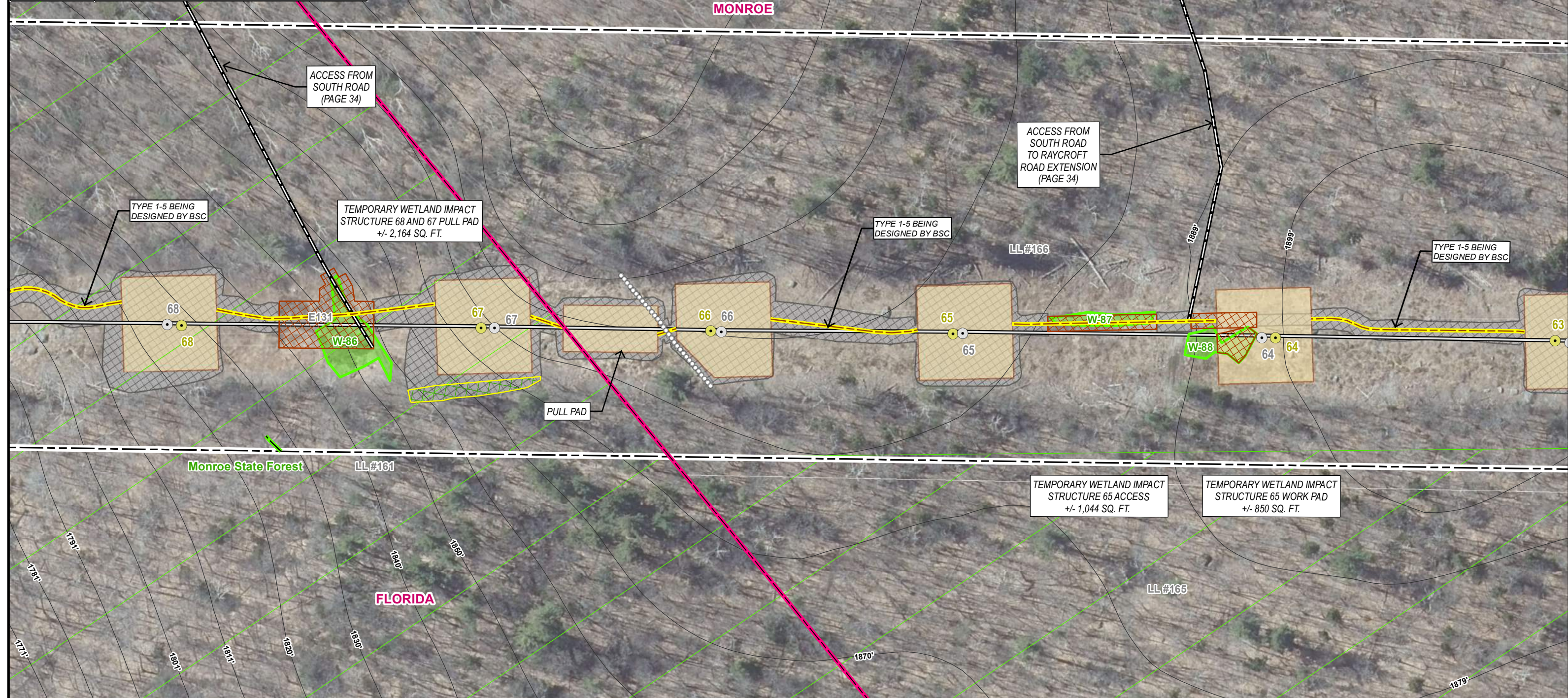
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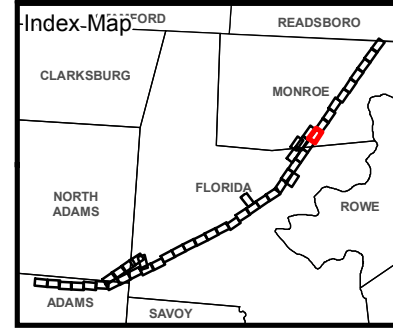
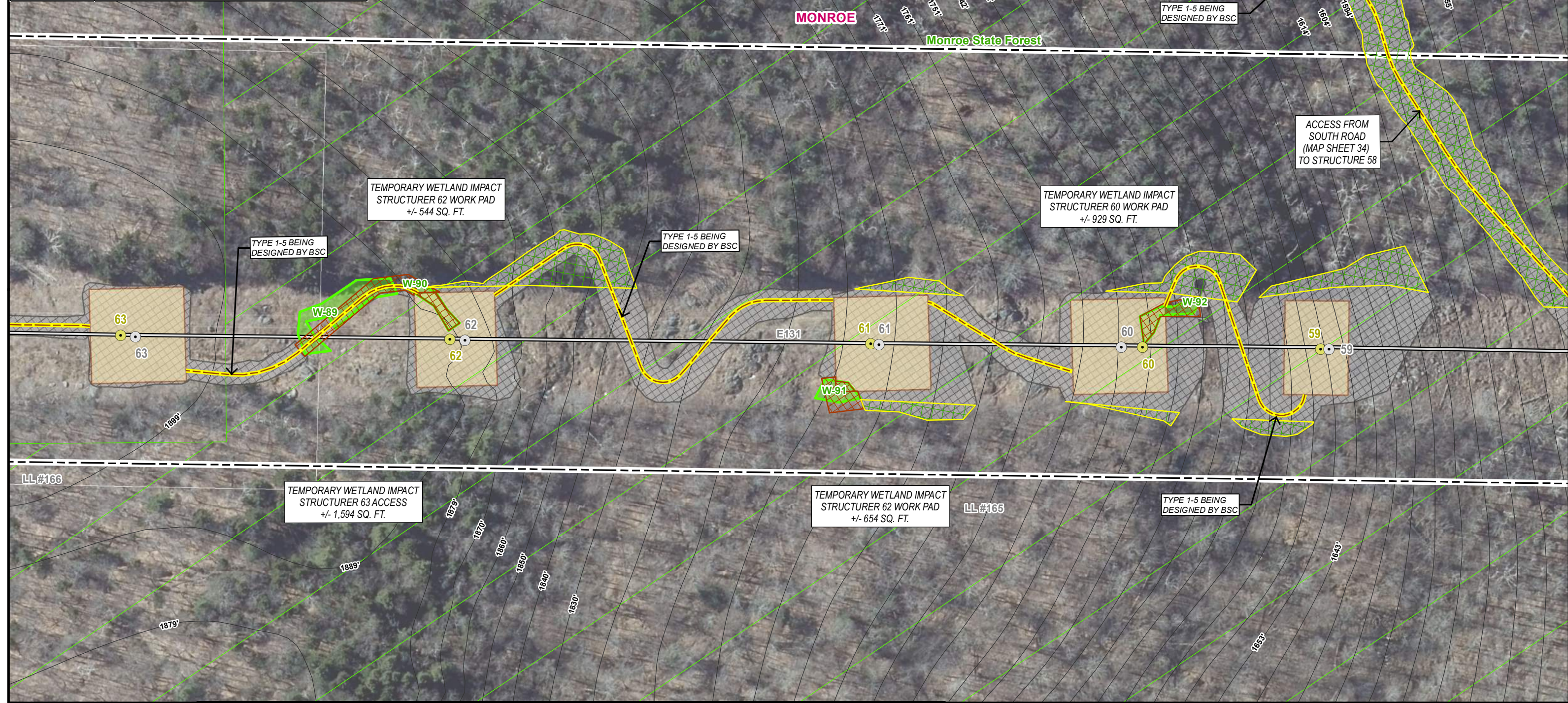
Environmental Resources Map

Florida/Monroe, Massachusetts
Page 38 of 48

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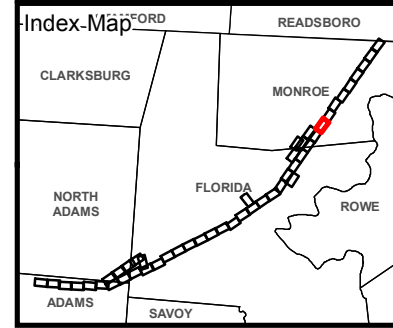
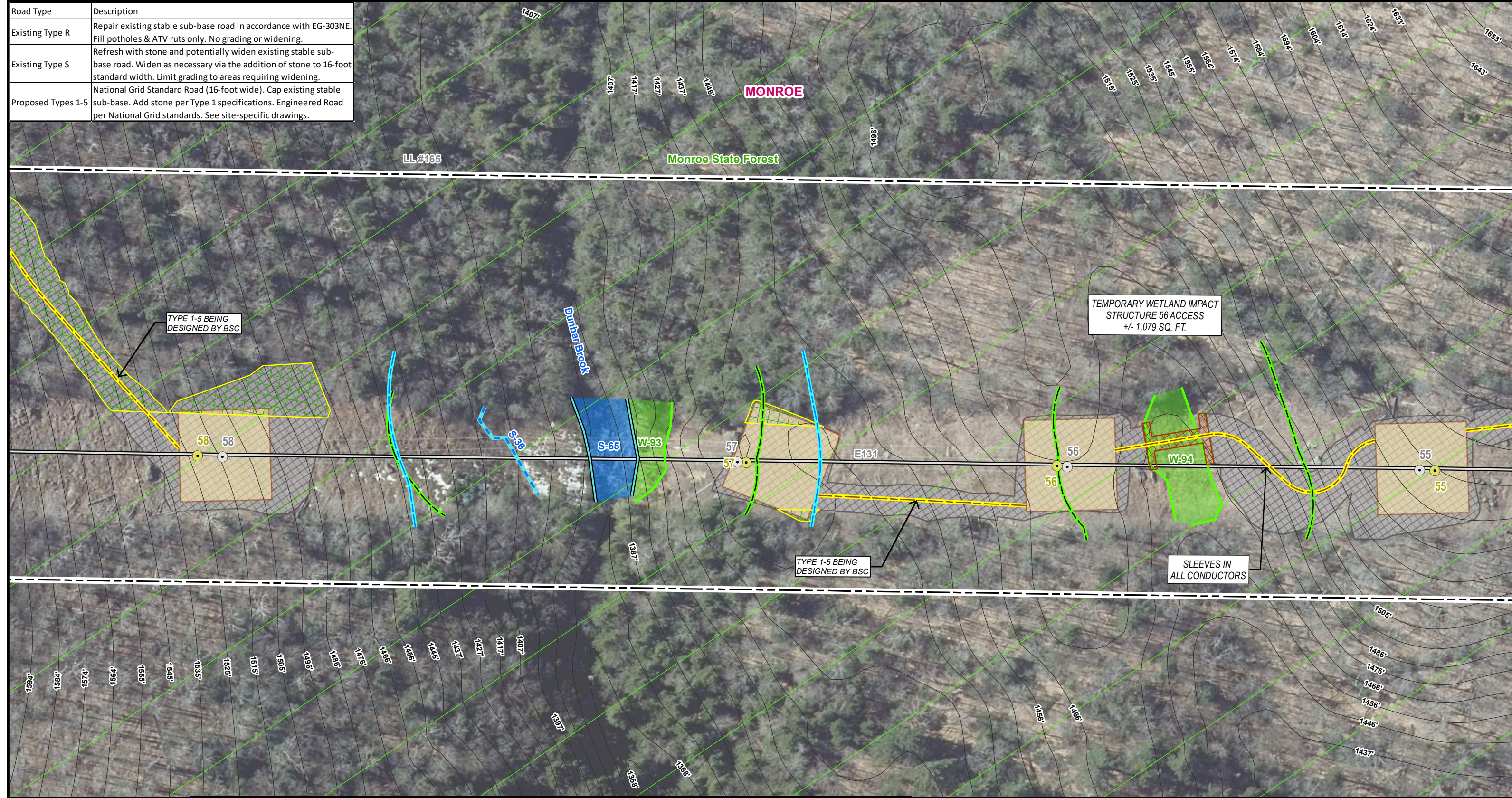
Environmental Resources Map

Monroe, Massachusetts
Page 39 of 48

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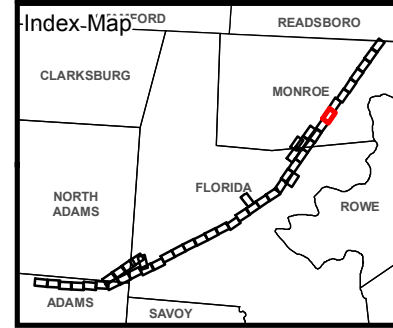
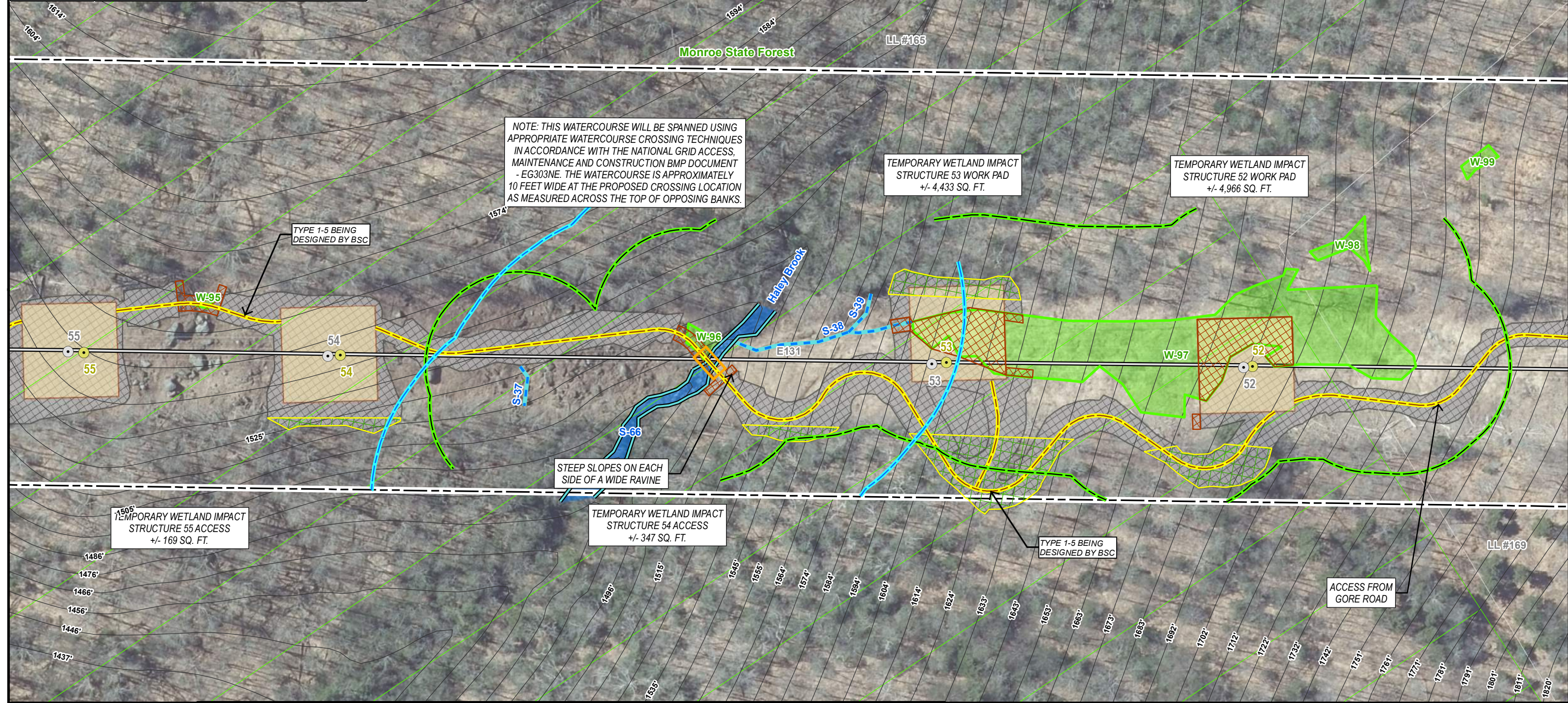
Environmental Resources Map

Monroe, Massachusetts
 Page 40 of 48

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Environmental Resources Map

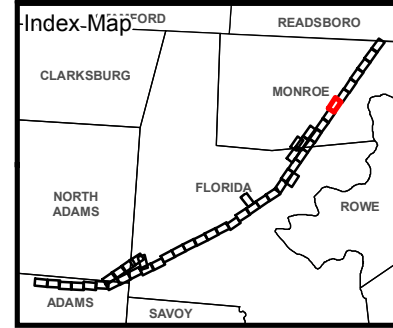
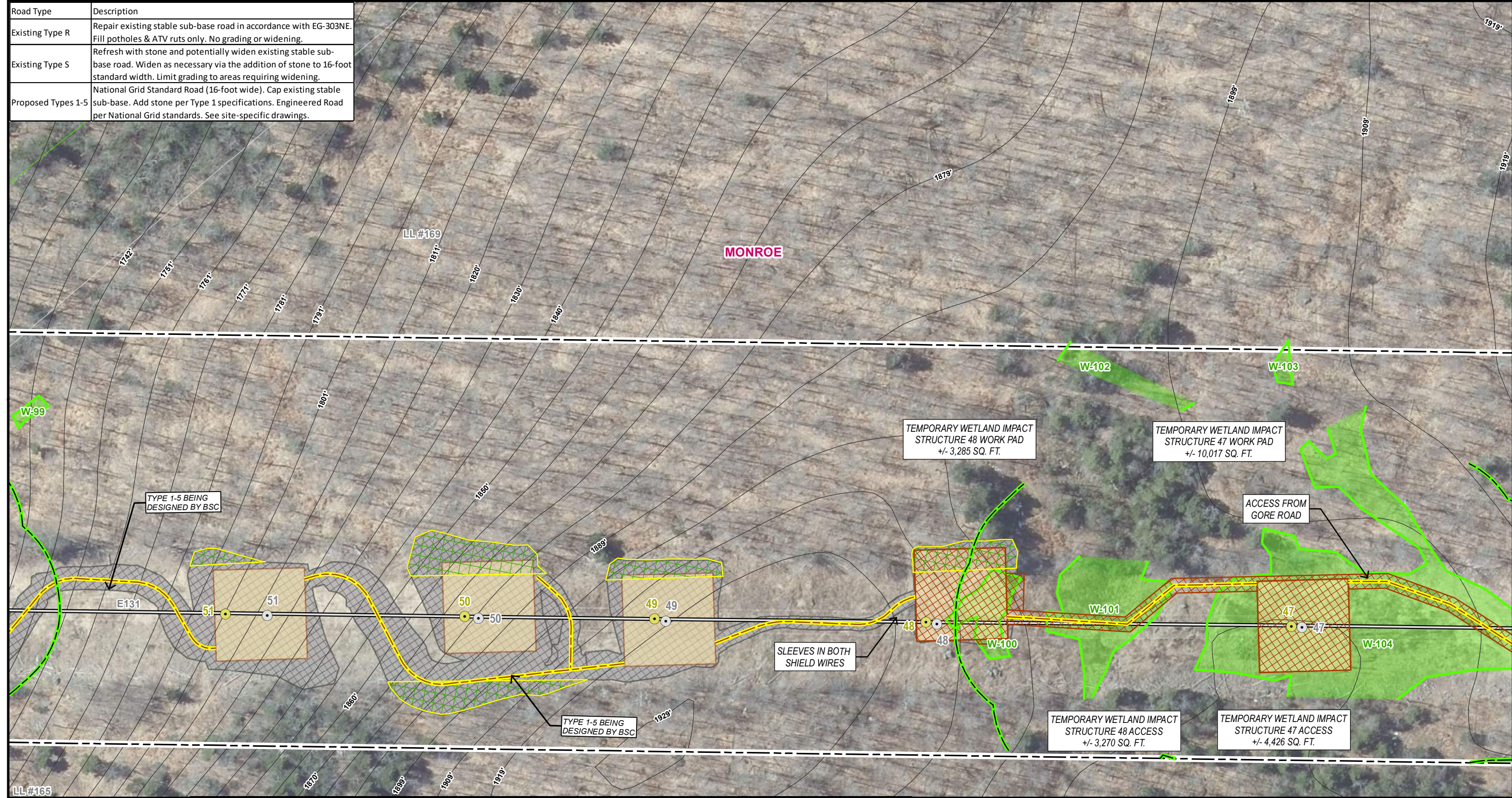
Monroe, Massachusetts
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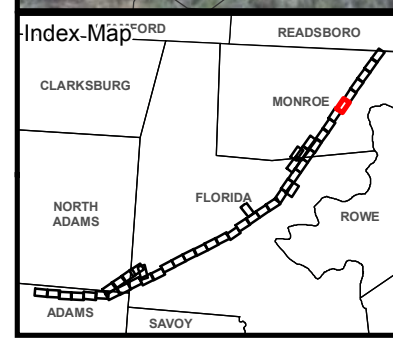
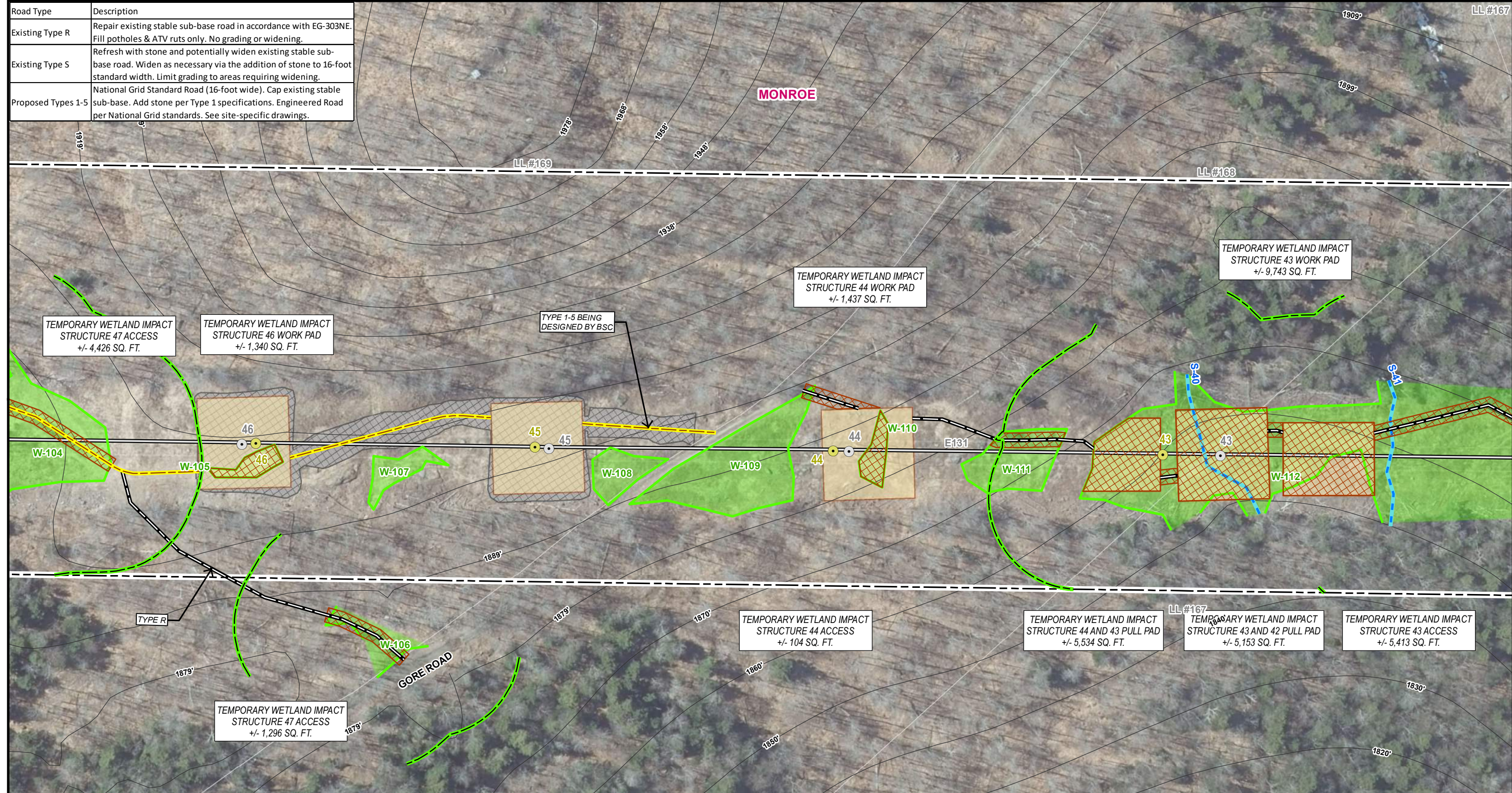
Monroe, Massachusetts
Page 42 of 48

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Monroe, Massachusetts
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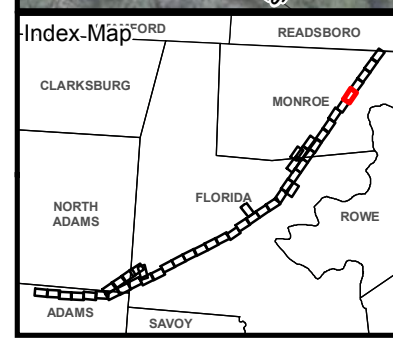
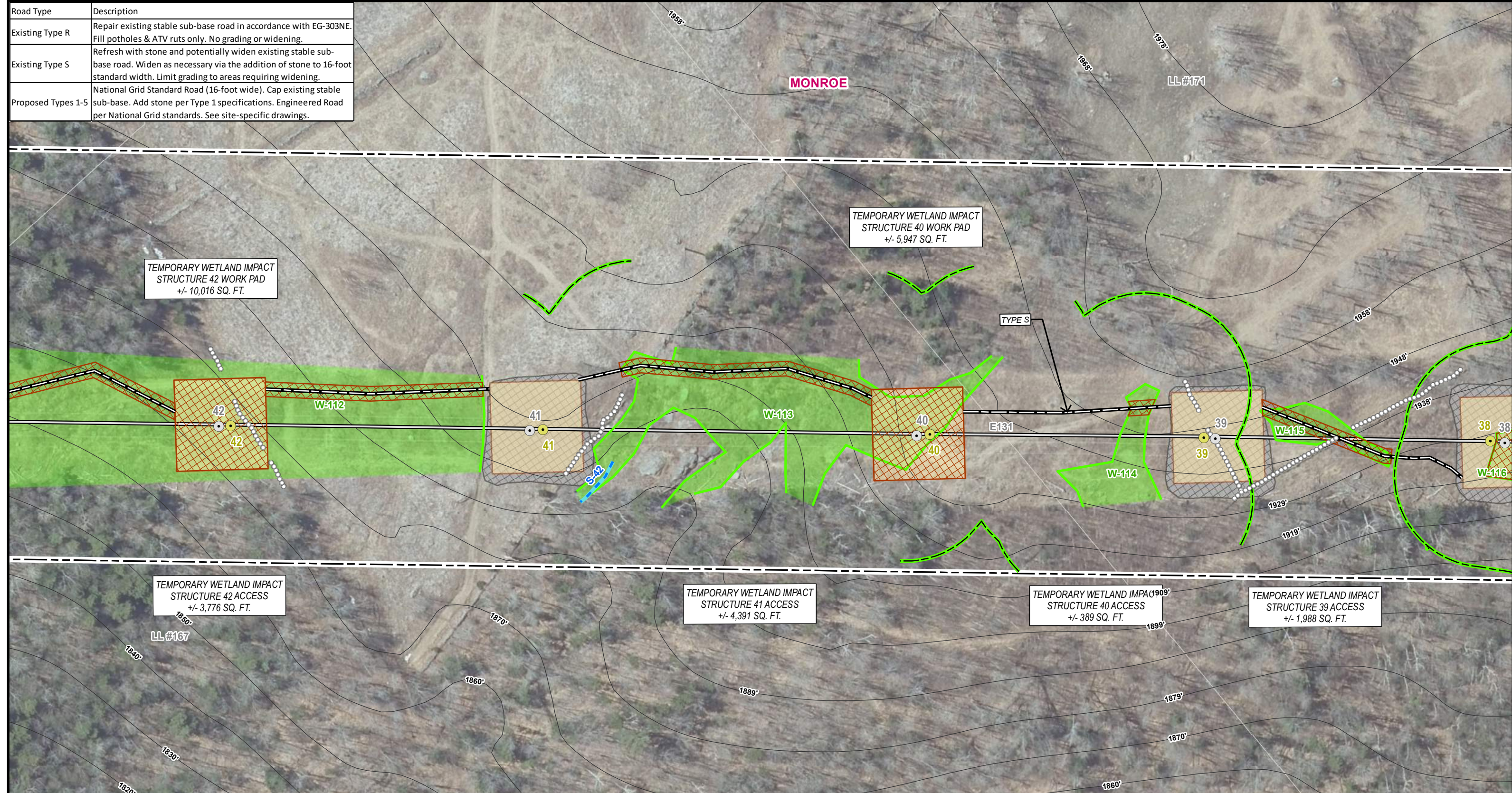
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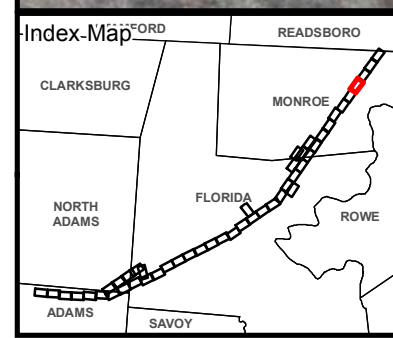
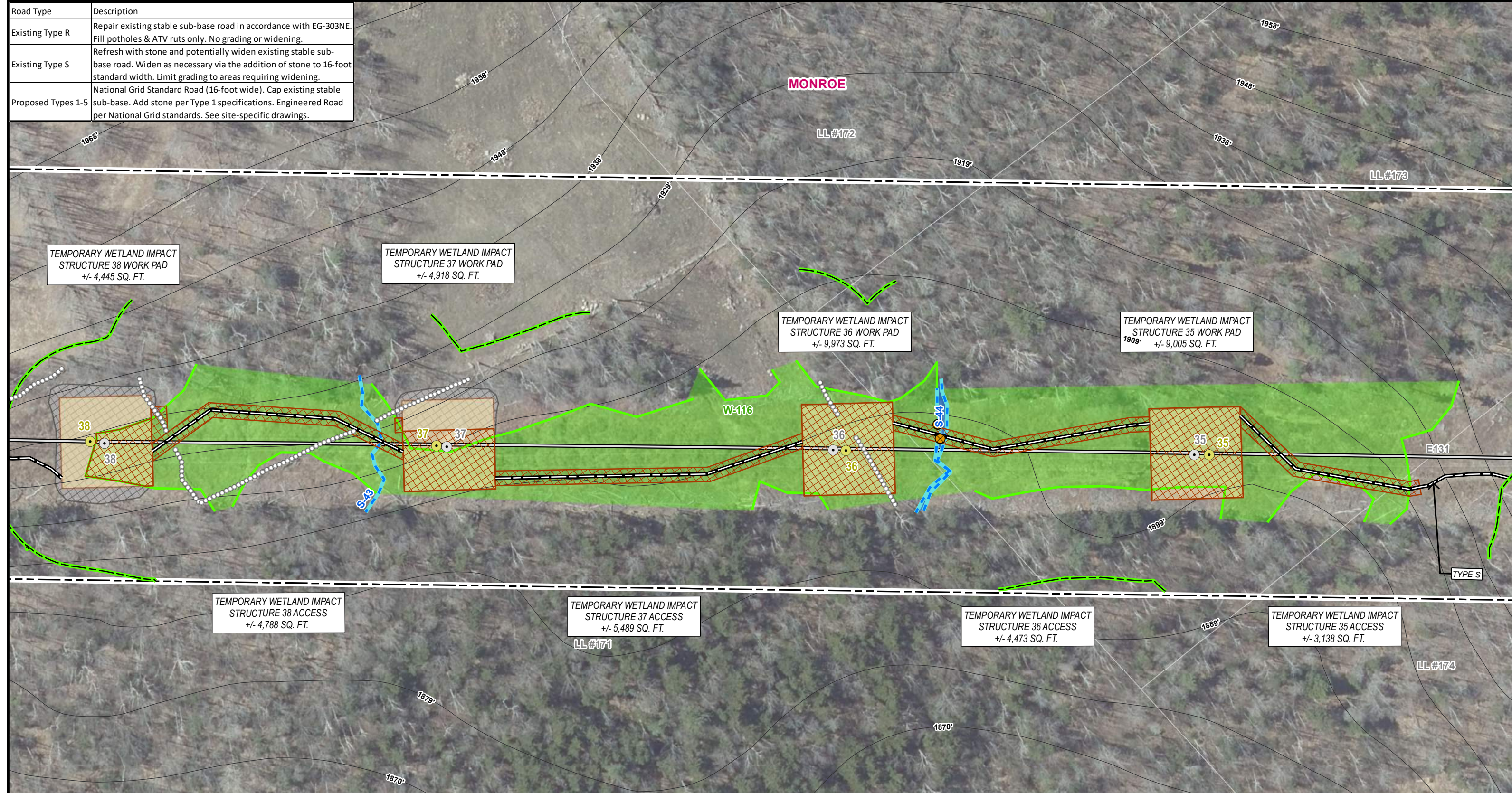
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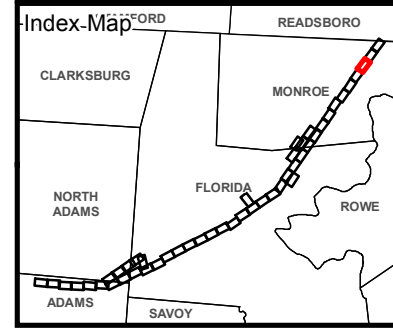
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<ul style="list-style-type: none"> Culvert Gate Delineated Vernal Pool NHESP Certified Vernal Pools NHESP Potential Vernal Pools Existing Structure Existing Structure to be Replaced Existing Structure to be Removed Proposed Structure 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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* 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Rare Plant Species MassDEP Oil and/or Hazardous 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*
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Scale: 1 inch = 100 feet
 0 50 100 Feet

*Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

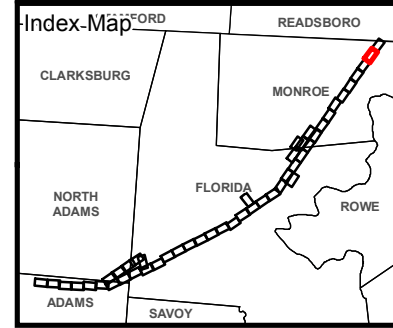
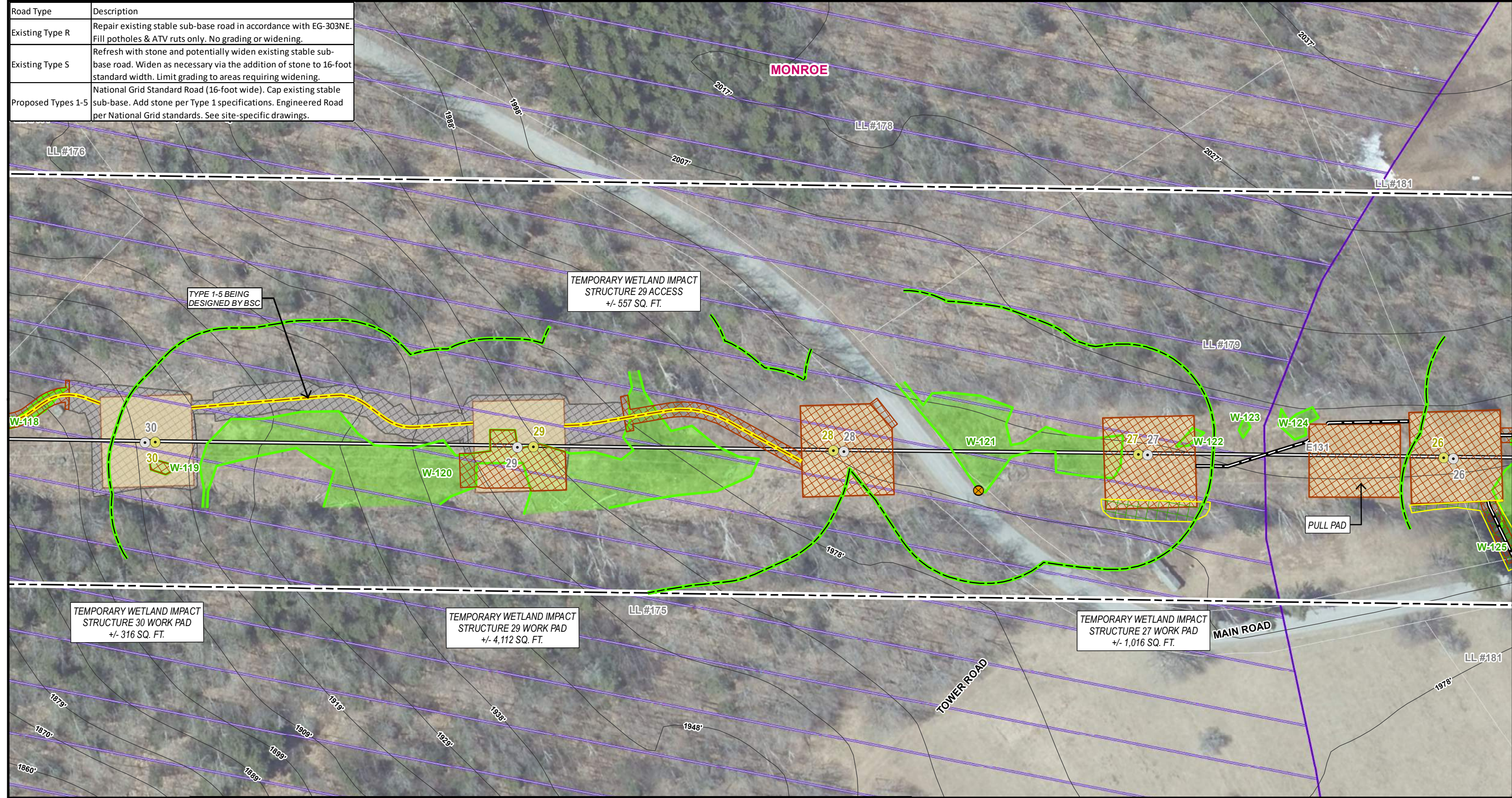
Environmental Resources Map

Monroe, Massachusetts
Page 46 of 48

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

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.



Legend

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*Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts
Page 47 of 48

1 inch = 100 feet
0 50 100 Feet

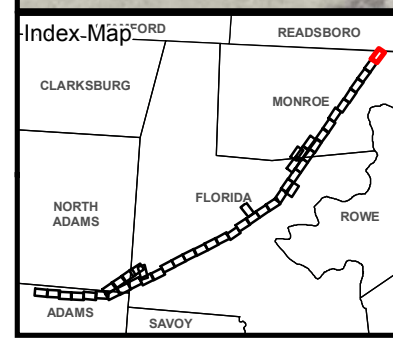
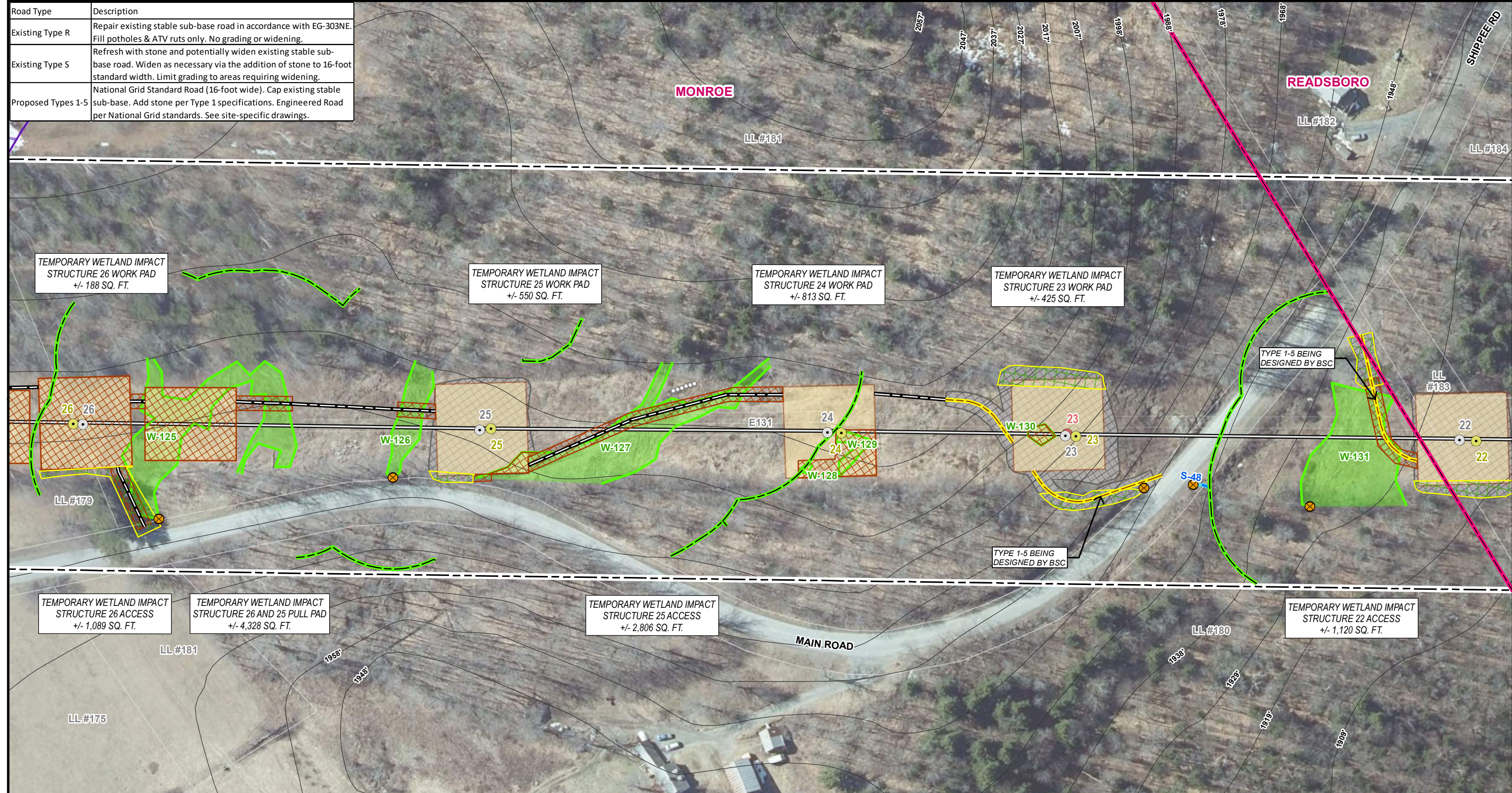
Basemap: ESRI World Imagery Basemap
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nationalgrid
Tighe&Bond

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*Indicates Layers Set to Transparency

E131 - ASSET CONDITION REFURBISHMENT PROJECT

Environmental Resources Map

Monroe, Massachusetts/Readsboro, Vermont

Page 48 of 48

1 inch = 100 feet
0 50 100 Feet

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

Tighe&Bond

APPENDIX C

The Commonwealth of Massachusetts

No. 6274



Whereas, New England Power Company -----

of Westborough -----, in the County of Worcester ----- and Commonwealth aforesaid, has applied to the Department of Public Works for license to construct and maintain two power transmission lines over and across the Hoosic River in the town of Adams, -----

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the Selectmen ----- of the Town ----- of Adams -----;

Now said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, ~~subject to the approval of the Governor,~~ authorizes and licenses the said New England Power Company -----

----- subject to the provisions of the ninety-first chapter of the General Laws/ and of all laws which are or may be in force applicable thereto, to construct and maintain two power transmission lines over and across the Hoosic River in the town of Adams, in conformity with the accompanying plan no. 6274.

Two transmission lines consisting of six power wires and two ground wires, may be constructed approximately 1,000 feet more or less westerly of East Road on said river, extending over and across said river suspended from wood poles, on the upland. Said crossing being in a northeasterly direction for a distance of 40 feet more or less between the river lines shown in the location shown on said plan and in accordance with the details there indicated.

Said transmission crossing shall provide a minimum clearance of 40 feet at 120 degrees Fahrenheit above the normal river level given as elevation 717.0 feet above mean sea level as indicated on said plans.

Nothing in this license shall be construed as authorizing encroachment on property not owned or controlled by the licensee, except with the consent of the owner or owners thereof.

Acceptance of this license shall constitute an agreement by the licensee to conform to all terms and conditions herein stated.

This license is granted subject to all applicable Federal, State, County and Municipal laws, ordinances and regulations, and upon the further express condition that any authorizations necessitated due to the provisions hereof shall be secured prior to the commencement of any work under this license, and upon the express condition that the height of said wires above the waters of said river shall be increased, their location changed or said wires placed in or under said river or removed entirely at any time after notice and hearing without claim for compensation for damages, and upon the further condition that provision shall be made for grounding of the current in the event of the breaking of the wires.

This license is granted upon the further express condition that the authorization contained herein may be modified or may be revoked, in whole or in part in the event of the licensee, its successors and assigns, failing to comply with said authorization or any provisions of the license or failing to maintain all authorized structures and installations in good condition, to the satisfaction of the Department of Public Works, or its successors. This condition permitting modification or revocation of the license shall also apply in the event of failure of the licensee, its successors and assigns, to secure approval under all other applicable laws, ordinances or regulations or failure to adhere to the conditions of such approvals upon receipt of evidence of such failure provided by an agency having jurisdiction. Revocation or modification of this license as provided herein shall be without liability to the Commonwealth or claim for compensation by the licensee, its successors and assigns.

The plan of said work, numbered -----6 2 7 4----- is on file in the office of said Department, and duplicate of said plan accompanies this License, and is to be referred to as a part hereof.

~~The amount of tide water displaced by the work hereby authorized shall be ascertained by said Department, and compensation therefor shall be made by the said~~
~~heirs, successors.~~

and assigns, by paying into the treasury of the Commonwealth

~~cents for each cubic yard so displaced, being the amount hereby assessed by said Department.~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within one year from the date hereof, in the Registry ----- of Deeds for the Northern District of the County of Berkshire.

In Witness Whereof, said Department of Public Works have hereunto set their hands this first ----- day of August ----- in the year nineteen hundred and seventy-four.

718

James Campbell
Malcolm E. Gray
Thomas J. [unclear]
Ed [unclear]

Department of
Public Works

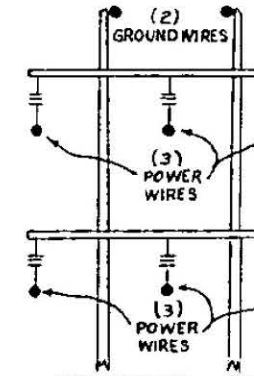
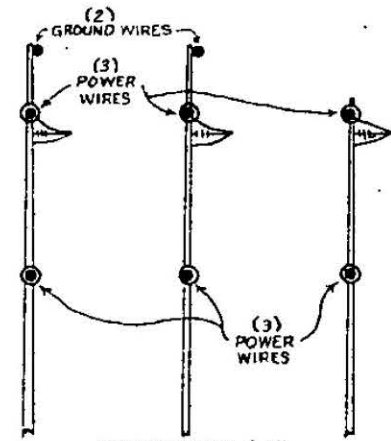
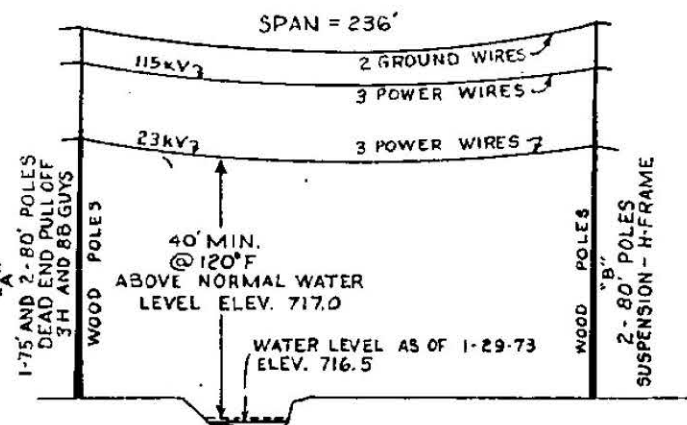
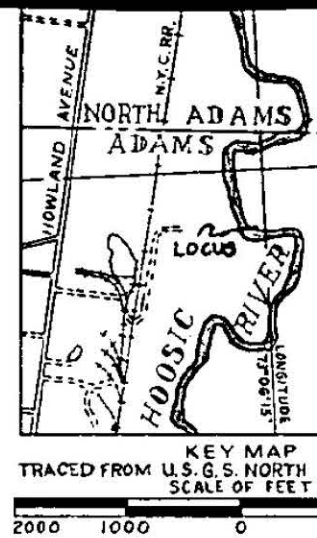
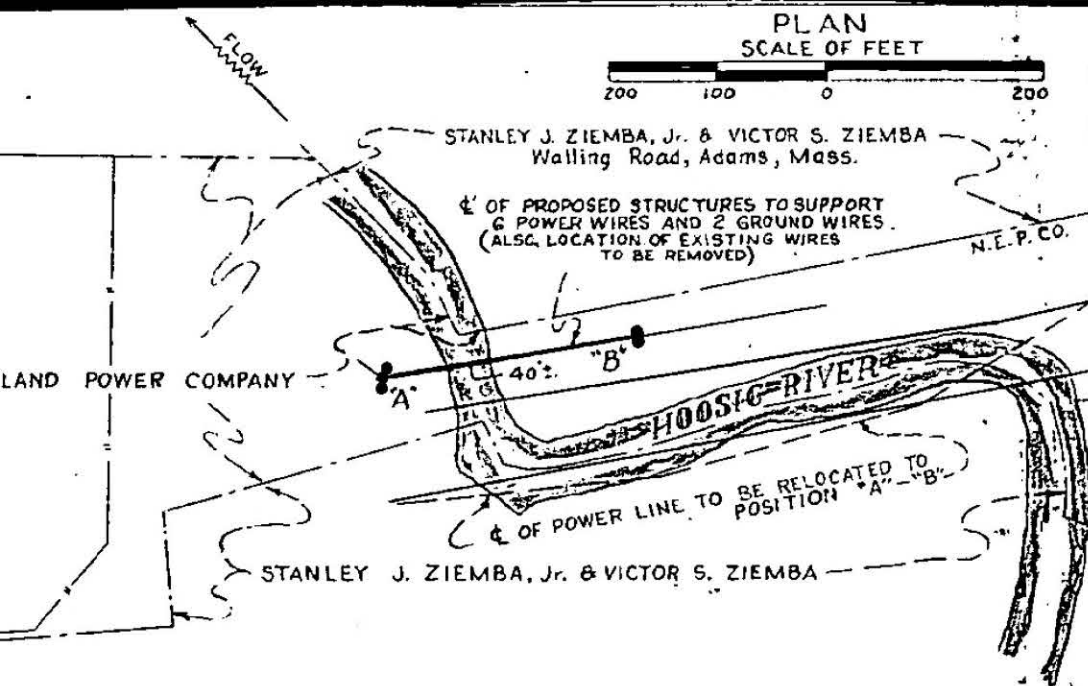
THE COMMONWEALTH OF MASSACHUSETTS

~~This license is approved in consideration of the payment into the treasury of the Commonwealth by the said of the further sum of the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in land of the Commonwealth.~~

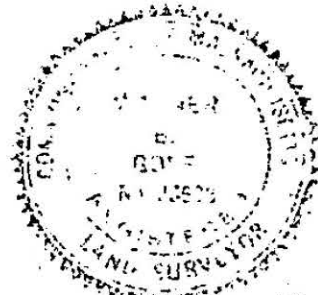
~~Approved by the Governor.~~

~~Boston, -----~~

~~Governor~~



NOTE
 Elevations are based on Mean Sea Level datum.
 Maximum flood level interpolated from September 1973 high water data = Elev. 734.0'
 All Power Lines shown are New England Power Company
 All Property Lines are approximate.



Warner B. Goff

David J. Wright

PLAN ACCOMPANYING PETITION OF
 NEW ENGLAND POWER COMPANY
 TO CONSTRUCT AND MAINTAIN
 TRANSMISSION LINES OVER AND ACROSS
 HOOSIC RIVER
 ADAMS, MASSACHUSETTS
 OCTOBER 9, 1973

LICENSE PLAN NO. 6274
 AFFORDED BY DEPARTMENT OF PUBLIC UTILITIES
 MASSACHUSETTS
 AUGUST 1, 1973
 COMMISSIONER OF PUBLIC UTILITIES
 [Signatures: James Campbell, Malcolm C. ...]
 PLS 1283



October 28, 2021

Brona Simon
State Historic Preservation Officer
State Archaeologist and Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: New England Power Company – Line E131 Asset Condition Refurbishment (ACR) Project
Amendment to Intensive (Locational) Archaeological Survey Permit
PAL #3846.01

Dear Ms. Simon:

On behalf of New England Power Company (NEP), The Public Archaeology Laboratory, Inc. (PAL) is requesting an amendment and extension to State Archaeologist's Permit #4081 to conduct additional intensive (locational) archaeological survey for the proposed Line E131 ACR Project. This survey is for newly identified and updated work areas that include access roads and pull pads. Enclosed please find the updated Project plans and a table identifying the specific work areas where PAL proposes testing.

The intensive survey will be completed in accordance with the methodologies presented in the permit application for this Project, and the results will be presented in a technical report that will include the results of testing completed earlier this year under the original permit. We will submit updated Environmental Resource maps for the entire Project along with the technical report.

If you have any questions or need further information, please do not hesitate to contact Ora Elquist, Principal Investigator, or me, at your convenience.

Sincerely,

A handwritten signature in blue ink that reads 'Gregory R. Dubell'.

Gregory R. Dubell, RPA
Energy Projects Manager

Enclosure

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)
Jeffrey Harris, Massachusetts DCR (w/encl. – via email)

Table 1. PAL Proposed Supplemental Testing, Line E131 Access roads and Updated Work Areas.

Town	Facility Type	Location	Estimated Test Pits
Adams	Access Rd	STR 176 to 173	27
	Access Rd	STR 173 to 172	2
	Access Rd	STR 170 to 169	3
	Access Rd	Btwn J10 and E131 ROW	12
	Access Rd	STR 158 to 157	3
	Pull pad	Btwn STR 157 and 156	4
North Adams	Access Rd	Btwn STR 151 and 152	3
Florida	Access Rd	Btwn STR 141 and 139	10
	Access Rd	Central Shaft Rd to STR 135	9
	Offset Work Pad	STR 129	2
	Pull pad	Btwn STR 128 and 127	4
	Access Rd	Btwn STR 127 and 126	2
	Access Rd	STR 90 to 89	3
	Access Rd	STR 83 to 85	6
Monroe	Access Rd	South Rd to STR 59-70	45
	Access Rd	South Rd to STR 58	35
	Access Rd	STR 49 to 48	5
	Access Rd	STR 44 to 43	2
	Access Rd	STR 41 to 40	3
	Access Rd	STR 34 to 33	3
	Access Rd	STR 29 to 28	4
	Access Rd	STR 27 to 26	3
	Pull pad	Btwn STR 26 and 27	6
	Access Rd	STR 25 to 26	4
Total Estimated Test Pits			204



April 7, 2022

Brona Simon
State Archaeologist
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: New England Power Company – Line E131 Asset Condition Refurbishment (ACR) Project
Amendment to Intensive (Locational) Archaeological Survey Permit
MHC #RC.69574; PAL #3846.01

Dear Ms. Simon:

On behalf of New England Power Company (NEP), The Public Archaeology Laboratory, Inc. (PAL) is requesting an amendment and extension to State Archaeologist's Permit #4081 to change the Principal Investigator of record and conduct additional intensive (locational) archaeological survey for the proposed Line E131 ACR Project. PAL is requesting that Suzanne Cherau replace Ora Elquist as the Principal Investigator of record on the intensive (locational) archaeological survey for the Project. Please find enclosed a signed State Archaeologist's Permit application to facilitate the Principal Investigator change.

The additional survey accounts for expansion of access road grading areas beyond what was previously proposed in PAL's amendment request on October 28, 2021. Enclosed please find the updated Project plans and a table identifying the specific work areas where PAL proposes additional testing. The intensive survey will be completed in accordance with the methodologies presented in the permit application for this Project, and the results will be presented in a technical report that will include the results of testing completed earlier this year under the original permit. We will include updated Environmental Resource maps depicting archaeological testing in the technical report.

If you have any questions or need further information, please do not hesitate to contact Suzanne Cherau, Principal Investigator, or me, at your convenience.

Sincerely,

A handwritten signature in blue ink that reads 'Gregory R. Dubell'.

Gregory R. Dubell, RPA
Energy Projects Manager

Enclosure

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)
Jonathan K. Patton, Massachusetts DCR (w/encl. – via email)

Table 1. PAL Proposed Additional Supplemental Testing, Line E131 Access Roads and Updated Work Areas Including Grading, April 2022.

Town	Facility Type	Location	Estimated Additional Test Pits
Adams	Access Rd	STR 176 to 173	13
	Access Rd	STR 173 to 172	3
	Access Rd	STR 173 to 171, mostly off ROW	27
	Access Rd	STR 171 to 169	9
	Access Rd and Work Pad Grading	Btwn J10 and E131 ROW	9
	Access Rd	From Busby Trail to STR 162	37
	Access Rd	STR 159 to 156	2
	Pull Pad grading	Btwn STR 157 and 156	4
North Adams	Access Rd	Btwn STR 149 and 148	6
Florida	Access Rd	Btwn STR 141 and 139	4
	Access Rd	Btwn STR 141 and J10 Line STR 56	43
	Access Rd	J10 Line STR 56 to STR 61	Needs assessment
	Access Rd	J10 Line STR 63 to STR 69	Needs assessment
	Access Rd	Central Shaft Rd to STR 131	4
	Access Rd	STR 130 to STR 129	3
	Access Rd	Monroe Rd to STR 97	35
	Access Rd	Greer Rd to STR 90	17
Monroe	Access Rd and Work Pad Grading	STR 49 to 48	5
	Work Pad Grading	East side of STR 44	2
	Work Pad Grading	STR 41 to STR 40	5
	Work Pad Grading	STR 40 to STR 39	8
	Work Pad Grading	STR 35 to STR 33	6
	Work Pad Grading	Main Rd to STR 29	6
	Work Pad Grading	STR 26 to 24	10
Total Estimated Additional Test Pits			253



December 20, 2022

Brona Simon
State Archaeologist
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Re: New England Power Company – Line E131 Asset Condition Refurbishment (ACR) Project
Intensive (Locational) Archaeological Survey Report and Historic Architectural Survey Report
MHC #RC.69574; PAL #3846.01

Dear Ms. Simon:

On behalf of the New England Power Company (NEP) please find enclosed the following technical report that was prepared by The Public Archaeology Laboratory, Inc. (PAL) for the Line E131 Asset Condition Refurbishment (ACR) Project, for your review:

Technical Report, Intensive (Locational) Archaeological Survey, New England Power Company, Line E131 ACR Project, Adams, North Adams, Florida, and Monroe, Massachusetts – November 2022; and

Report, Historic Architectural Reconnaissance Survey and Effects Assessment, New England Power Company, Line E131 ACR Project, Adams, North Adams, Florida, and Monroe, Massachusetts – November 16, 2022

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 Suzanne Cherau, Principal Investigator, Steve Olausen, Senior Architectural Historian, or me, at your convenience.

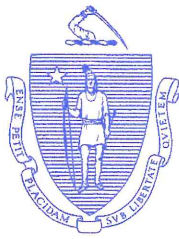
Sincerely,

A handwritten signature in blue ink that reads 'Gregory R. Dubell'.

Gregory R. Dubell, RPA
Energy Projects Manager

Enclosure

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)
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David Weeden, Mashpee Wampanoag Tribe (w/encl. – via email)
Jeffrey Bendremer, Ph.D., 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)
Jonathan K. Patton, Massachusetts DCR (w/encl. – via email)



The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

January 11, 2023

Deborah C. Cox
President
PAL
26 Main Street
Pawtucket, RI 02860

Attn: Suzanne Cherau

RE: New England Power Company, Line E131 Asset Condition Refurbishment Project, Adams, North Adams, Florida, and Monroe, MA. MHC #RC.69574. **PAL #3846.01.**

Dear Deborah:

Thank you for providing the Massachusetts Historical Commission (MHC) with a copy of the two reports, *Intensive (Locational) Archaeological Survey, Line E131 Asset Condition Refurbishment Project, Adams, North Adams, Florida, and Monroe, Massachusetts*; and *Line E131 Asset Condition Refurbishment, Monroe, Florida, North Adams, and Adams, MA, Historic Architectural Reconnaissance Survey and Effects Assessment*.

Please provide a copy of the reports to the US Army Corps of Engineers. Please provide copies of any comments received from interested or consulting parties to the Corps and to the MHC.

Please provide the MHC with a second copy of the archaeological report, the original MHC archaeological site inventory forms, and a CD with a Word file listing the report authors, date, title, page count, and archaeological abstract.

These comments are provided to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800), and 950 CMR 70. If you have questions, please contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Edward L. Bell".

Edward L. Bell
Deputy State Historic Preservation Officer
Senior Archaeologist
Massachusetts Historical Commission



July 11, 2023

Brona Simon
State Archaeologist
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

Attn: Edward Bell

Re: New England Power Company Line E131 ACR – Adams to Monroe, Massachusetts
Limited Archaeological Mitigation Proposal, ASAPP, and Permit Amendment Request
MHC #RC. 69574. PAL #3846.01

Dear Ms. Simon:

On behalf of the New England Power Company (NEP), please see enclosed for the following documentation to facilitate ongoing consultation regarding the proposed NEP Line E131 Asset Condition Refurbishment (ACR) Project from Adams to Monroe, Massachusetts:

- *Scope of Work, Line E131 ACR Project, Florida and Monroe, Massachusetts, Limited Archaeological Mitigation at 5 Archaeological Sites – July 11, 2023; and*
- *Limited Archaeological Mitigation and Development of Archaeological Site Avoidance, and Protection Plan: New England Power Company Line E131 ACR Project, Florida and Monroe, Massachusetts – July 11, 2023*

On April 19, 2022, the MHC amended and extended State Archaeologist Permit (SAP) #4081 to PAL to change the Principal Investigator and to conduct additional intensive (locational) archaeological survey for the above referenced Project. PAL is now requesting to amend SAP #4081 to conduct limited archaeological mitigation at proposed new structure locations that fall within five sites recommended as potentially eligible for the National Register of Historic Places. PAL is also requesting that Erin Flynn replace Suzanne Cherau as the Principal Investigator of record for the Limited Archaeological Mitigation and Archaeological Site Avoidance, Protection Plan (ASAPP) for the Project. Please find enclosed a signed State Archaeologist's Permit application to facilitate the Principal Investigator change.

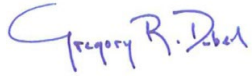
The remainder of the sites and site areas, including access roads, will also be protected under the Archaeological Site Avoidance and Protection Plan (ASAPP). The limited mitigation work will be completed in accordance with the methodologies presented in the attached scope of work. This methodology has been agreed upon in lieu of archaeological site examinations in consultation with the Native American Tribes, U.S. Army Corps of Engineers (USACE), and NEP. The results of the excavations will be presented in an addendum report.

*Simon, MHC
New England Power Company, Line E131 ACR Project
July 11, 2023*

Page | 2

If you have any questions or require additional information, please do not hesitate to contact Erin Flynn, Principal Investigator, or me, at your convenience.

Sincerely,



Gregory R. Dubell, RPA
Energy Projects Manager

Enclosures

cc: Mike Tyrrell, NEP (w/encl. – via email)
Michael Retter, NEP (w/encl. – via email)
Katy Wilkins, Tighe & Bond (w/encl. – via email)
Michael Wierbonics, U.S. Army Corps of Engineers (w/encl. – via email)
Jonathan K. Patton, Massachusetts Department of Conservation and Recreation (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.)
David Weeden, Mashpee Wampanoag Tribe (w/encl. – via email)
Jeff Bendremer, 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.)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Taxonomic Group</u>	<u>State Status</u>
<i>Carex baileyi</i>	Bailey's Sedge	Plant	Threatened

due to the duration of shading from timber matting to be placed over a portion of the local population in order to access the project from the J10 ROW.

Projects resulting in a Take of state-listed species may only be permitted if they meet the performance standards for a Conservation and Management Permit (CMP; 321 CMR 10.23). In order for a project to qualify for a CMP, the Applicant must demonstrate that the project has avoided, minimized and mitigated impacts to state-listed species consistent with the following performance standards: (a) adequately assess alternatives to both temporary and permanent impacts to the state-listed species, (b) demonstrate that an insignificant portion of the local population will be impacted, and (c) develop and agree to carry out a conservation and management plan that provides a long-term net benefit to the conservation of the state-listed species.

This Determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any person aggrieved by this decision shall have the right to an adjudicatory hearing at the Division pursuant to M.G.L. c. 30A, s.11 in accordance with the procedures for informal hearings set forth in 801 CMR 1.02 and 1.03. Any notice of claim for an adjudicatory hearing shall be made in writing, accompanied by a filing fee in the amount of \$500.00 and the information specified in 321 CMR 10.25 (3). The notice of claim shall be sent to the Division's Director, Mark S. Tisa, by certified mail, hand delivered or postmarked within twenty-one (21) days of the date of the Division's Determination.

Projects resulting in a Take of two (2) or more acres within Priority Habitat must file an Environmental Notification Form with the Massachusetts Environmental Policy Act ("MEPA") Office and complete all MEPA actions prior to completing the MESA permitting process, per 301 CMR 11.03 (2)(b).

No soil or vegetation disturbance, work, clearing, grading or other activities related to the subject filing shall be conducted anywhere on the project site until the MESA permitting process is complete. If you have any questions regarding this letter, please contact Lauren Glorioso, Endangered Species Review Biologist, at lauren.glorioso@mass.gov, 508-389-6361.

Sincerely,



Everose Schlüter, Ph.D.
Assistant Director

cc: Katy Wilkins, Tighe & Bond

Tighe&Bond

APPENDIX D

Climate Resilience Design Standards Tool Project Report

E131 ACR Project

Date Created: 8/10/2023 9:38:58 AM

Created By: HRivers19

Date Report Generated: 8/15/2023 9:23:23 AM

Tool Version: Version 1.2

Project Contact Information: Mike Tyrell (michael.tyrell@nationalgrid.com)

Project Summary

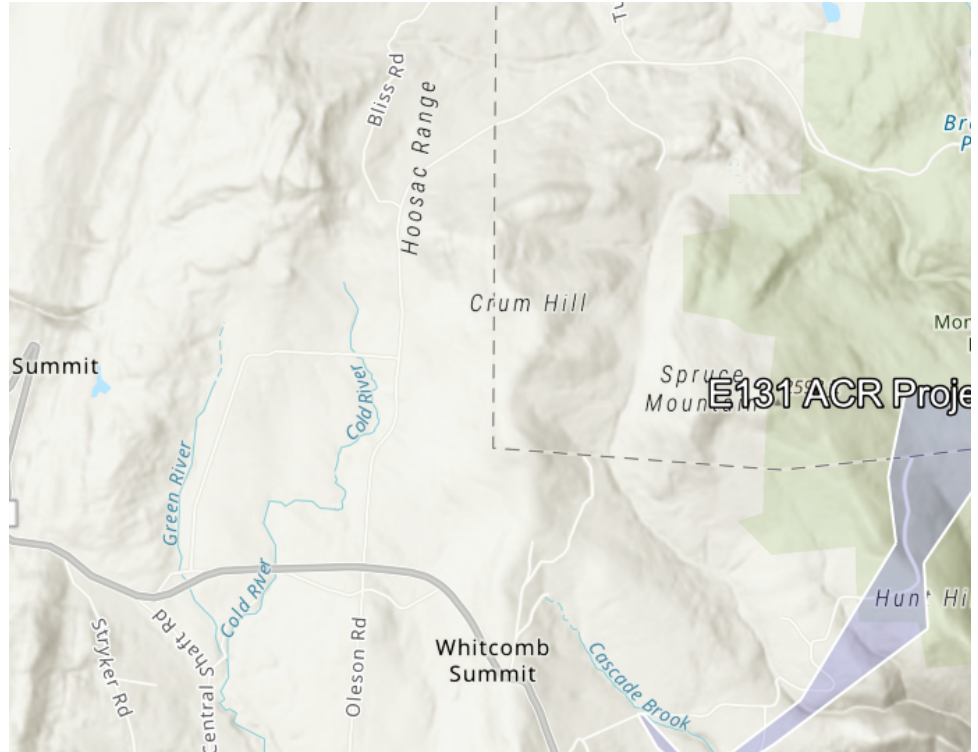
[Link to Project](#)

Estimated Capital Cost: \$139289000.00

End of Useful Life Year: 2075

Project within mapped Environmental Justice neighborhood: Yes

Ecosystem Service	Scores
Benefits	
Project Score	Low
Exposure	
Sea Level Rise/Storm Surge	Not Exposed
Extreme Precipitation - Urban Flooding	High Exposure
Extreme Precipitation - Riverine Flooding	High Exposure
Extreme Heat	High Exposure



Asset Preliminary Climate Risk Rating

Number of Assets: 1

Summary

Asset Risk	Sea Level Rise/Storm Surge	Extreme Precipitation - Urban Flooding	Extreme Precipitation - Riverine Flooding	Extreme Heat
Electric Utility Line Support Structures	Low Risk	High Risk	High Risk	High Risk

Climate Resilience Design Standards Summary

	Target Planning Horizon	Intermediate Planning Horizon	Percentile	Return Period	Tier
Sea Level Rise/Storm Surge					
Electric Utility Line Support Structures					
Extreme Precipitation					
Electric Utility Line Support Structures	2070			50-yr (2%)	Tier 3
Extreme Heat					
Electric Utility Line Support Structures	2070		90th		Tier 3

Scoring Rationale - Project Exposure Score

The purpose of the Exposure Score output is to provide a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool will calculate one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure. The rationale behind the exposure rating is provided below.

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
- Maximum annual daily rainfall exceeds 10 inches within the overall project's useful life
- No increase to impervious area
- 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 potentially 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
- 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
- No increase to the impervious area of the project site

Scoring Rationale - Asset Preliminary Climate Risk Rating

A Preliminary Climate Risk Rating is determined for each infrastructure and building asset by considering the overall project Exposure Score and responses to Step 4 questions provided by the user in the Tool. Natural Resource assets do not receive a risk rating. The following factors are what influenced the risk ratings for each asset.

Asset - Electric Utility Line Support Structures

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 provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.
- Inoperability of the asset would be expected to result in minor impacts to people's health, including minor injuries or minor impacts to chronic illnesses
- Cost to replace is between \$30 million and \$100 million
- There are no hazardous materials in the asset

Project Climate Resilience Design Standards Output

Climate Resilience Design Standards and Guidance are recommended for each asset and climate parameter. The Design Standards for each climate parameter include the following: recommended planning horizon (target and/or intermediate), recommended return period (Sea Level Rise/Storm Surge and Precipitation) or percentile (Heat), and a list of applicable design criteria that are likely to be affected by climate change. Some design criteria have numerical values associated with the recommended return period and planning horizon, while others have tiered methodologies with step-by-step instructions on how to estimate design values given the other recommended design standards.

Asset: Electric Utility Line Support Structures

Infrastructure

Sea Level Rise/Storm Surge

Low Risk

Applicable Design Criteria

Projected Tidal Datums: NOT APPLICABLE

Projected Water Surface Elevation: NOT APPLICABLE

Projected Wave Action Water Elevation: NOT APPLICABLE

Projected Wave Heights: NOT APPLICABLE

Projected Duration of Flooding: NOT APPLICABLE

Projected Design Flood Velocity: NOT APPLICABLE

Projected Scour & Erosion: NOT APPLICABLE

Extreme Precipitation

High Risk

Target Planning Horizon: 2070

Return Period: 50-yr (2%)

LIMITATIONS: The recommended Standards for Total Precipitation Depth & Peak Intensity are determined by the user drawn polygon and relationships as defined in the Supporting Documents. The projected Total Precipitation Depth values provided through the Tool are based on the climate projections developed by Cornell University as part of EEA's Massachusetts Climate and Hydrologic Risk Project, GIS-based data as of 10/15/21. For additional information on the methodology of these precipitation outputs, see Supporting Documents.

While Total Precipitation Depth & Peak Intensity for 24-hour Design Storms are useful to inform planning and design, it is recommended to also consider additional longer- and shorter-duration precipitation events and intensities in accordance with best practices. Longer-duration, lower-intensity storms allow time for infiltration and reduce the load on infrastructure over the duration of the storm. Shorter-duration, higher-intensity storms often have higher runoff volumes because the water does not have enough time to infiltrate infrastructure systems (e.g., catch basins) and may overflow or back up during such storms, resulting in flooding. In the Northeast, short-duration high intensity rain events are becoming more frequent, and there is often little early warning for these events, making it difficult to plan operationally. While the Tool does not provide recommended design standards for these scenarios, users should still consider both short- and long-duration precipitation events and how they may impact the asset.

The projected values, standards, and guidance provided within this Tool may be used to inform plans and designs, but they do not provide guarantees for future conditions or resilience. The projected values are not to be considered final or appropriate for construction documents without supporting engineering analyses. The guidance provided within this Tool is intended to be general and users are encouraged to do their own due diligence

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Total Precipitation Depth & Peak Intensity for 24-hr Design Storms: APPLICABLE

Asset Name	Recommended Planning Horizon	Recommended Return Period (Design Storm)	Projected 24-hr Total Precipitation Depth (inches)	Step-by-Step Methodology for Peak Intensity
Electric Utility Line Support Structures	2070	50-Year (2%)	8.5	Downloadable Methodology PDF

Projected Riverine Peak Discharge & Peak Flood Elevation: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Target Planning Horizon: 2070

Percentile: 90th Percentile

Applicable Design Criteria

Tiered Methodology: Tier 3

Projected Annual/Summer/Winter Average Temperatures: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Heat Index: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Growing Degree Days: NOT APPLICABLE

Projected Days Per Year With Max Temp > 95°F, >90°F, <32°F: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Number of Heat Waves Per Year & Average Heat Wave Duration: APPLICABLE

[Methodology to Estimate Projected Values](#) : Tier 3

Projected Cooling Degree Days & Heating Degree Days (base = 65°F): NOT APPLICABLE

Project Inputs

Core Project Information

Name:	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)?	2075
Location of Project:	Adams, Florida, Monroe, N. Adams
Estimated Capital Cost:	\$139,289,000
Who is the Submitting Entity?	Private Other National Grid Mike Tyrell (michael.tyrell@nationalgrid.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?	Permitting
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?	No
Brief Project Description:	The proposed line rebuild project will include the reconstruction of the main line with steel structures. This will involve replacing 176 structures along the approximate 13-mile stretch of the utility line right-of-way. 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:	N/A

Project Ecosystem Service Benefits

Factors Influencing Output

- ✓ Project provides recreation

Factors to Improve Output

- ✓ Incorporate nature-based solutions that may reduce storm damage
- ✓ 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	No
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	No
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? No
Are existing trees being removed as part of the proposed project? Yes

Project Assets

Asset: Electric Utility Line Support Structures
Asset Type: Utility Infrastructure
Asset Sub-Type: Energy (electric, gas, petroleum, renewable)
Construction Type: Major Repair/Retrofit
Construction Year: 2025
Useful Life: 50

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 provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

The infrastructure provides services to populations that reside within Environmental Justice neighborhoods or climate vulnerable populations.

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 be expected to result in minor impacts to people's health, including minor injuries or minor 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?

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)?

Reduced morale and public support

Report Comments

N/A

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APPENDIX E

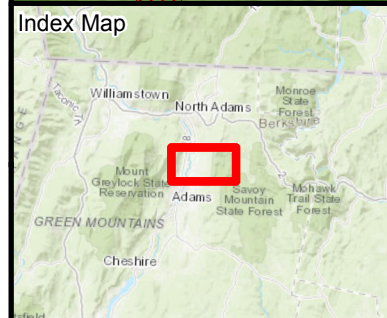
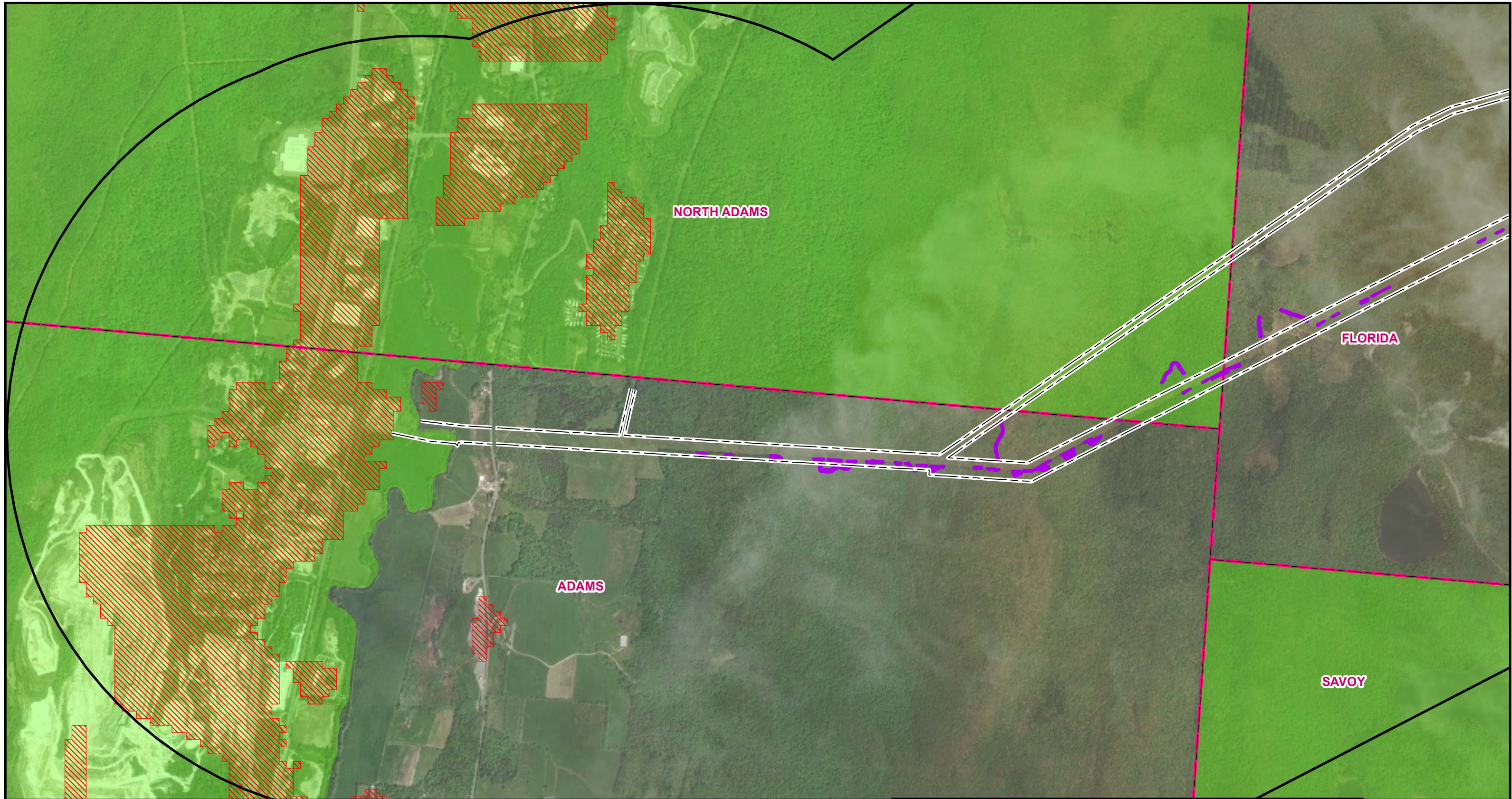
Statewide Environmental Justice Community Based Organizations

First Name	Last Name	Title	Phone	Email	Affiliation
Claire	B.W. Muller	Movement Building Director	508 308-9261	claire@uumassaction.org	Unitarian Universalist Mass Action Network
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@msaadpartners.com	Browning the GreenSpace
Sylvia	Broude	Executive Director	617 292-4821	sylvia@communityactionworks.org	Community Action Works
Heather	Clish	Director of Conservation & Recreation Policy	(617) 523-0655	hclish@outdoors.org	Appalachian Mountain Club
Johannes	Epke	Staff Attorney	617 850-1761	jepke@clf.org	Conservation Law Foundation
Nancy	Goodman	Vice President for Policy	Not Provided	ngoodman@environmentalleague.org	Environmental League of MA
Ben	Hellerstein	MA State Director	617-747-4368	ben@environmentmassachusetts.org	Environment Massachusetts
Robb	Johnson	Executive Director	(978) 443-2233	robb@massland.org	Mass Land Trust Coalition
Cindy	Luppi	New England Director	617-338-8131 x208	cluppi@cleanwater.org	Clean Water Action
Elvis	Mendez	Associate Director	508-505-6748	elvis@n2nma.org	Neighbor to Neighbor
Rob	Moir	Executive Director	Not Provided	rob@oceanriver.org	Ocean River Institute
Deb	Pasternak	Director, MA Chapter	617-423-5775	deb.pasternak@sierraclub.org	Sierra Club MA
Heidi	Ricci	Director of Policy	Not Provided	hricci@massaudubon.org	Mass Audubon

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	Pocasset Wampanoag Tribe
Elizabeth	Soloman	Not Provided	Not Provided	Solomon.Elizabeth@gmail.com	Massachusetts Tribe at Ponkapoag

Federally Recognized Tribes						
First	Last	Title	Phone	Email	Affiliation	Notes
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	Only for projects in: Berkshire County, Agawam, Amherst, Athol, Charlemont, Chicopee, Easthampton, Gardner, Greenfield, Hadley, Heath, Hubbardston, Ludlow, Monroe, Northampton, Orange, Palmer, Rowe, Royalston, Southwick, Springfield, Sunderland, Ware, Wendell, West Springfield, Westfield
Brian	Weeden	Chair	774-413-0520	Brian.Weeden@mwtribe-nsn.gov	Mashpee Wampanoag Tribe	

First Name	Last Name	Title	Service Area	Phone Number	Email	Affiliation
Jane	Winn	Executive Director	Adams, Alford, Becket, Cheshire, Clarksburg, Dalton, Egremont, 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



Legend

Approximate ROW	1-Mile Buffer
Proposed Tree Clearing Area	Municipal Boundary
Massachusetts EEA Hot Spot	State Boundary
Environmental Justice	

1 inch = 1,250 feet
 0 670 1,340
 Feet
**Indicates Layers Set to Transparency*

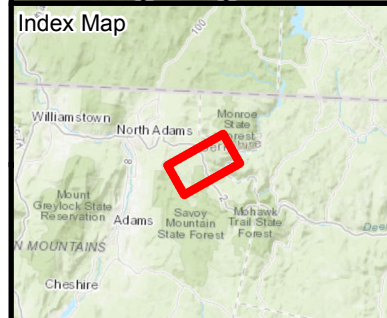
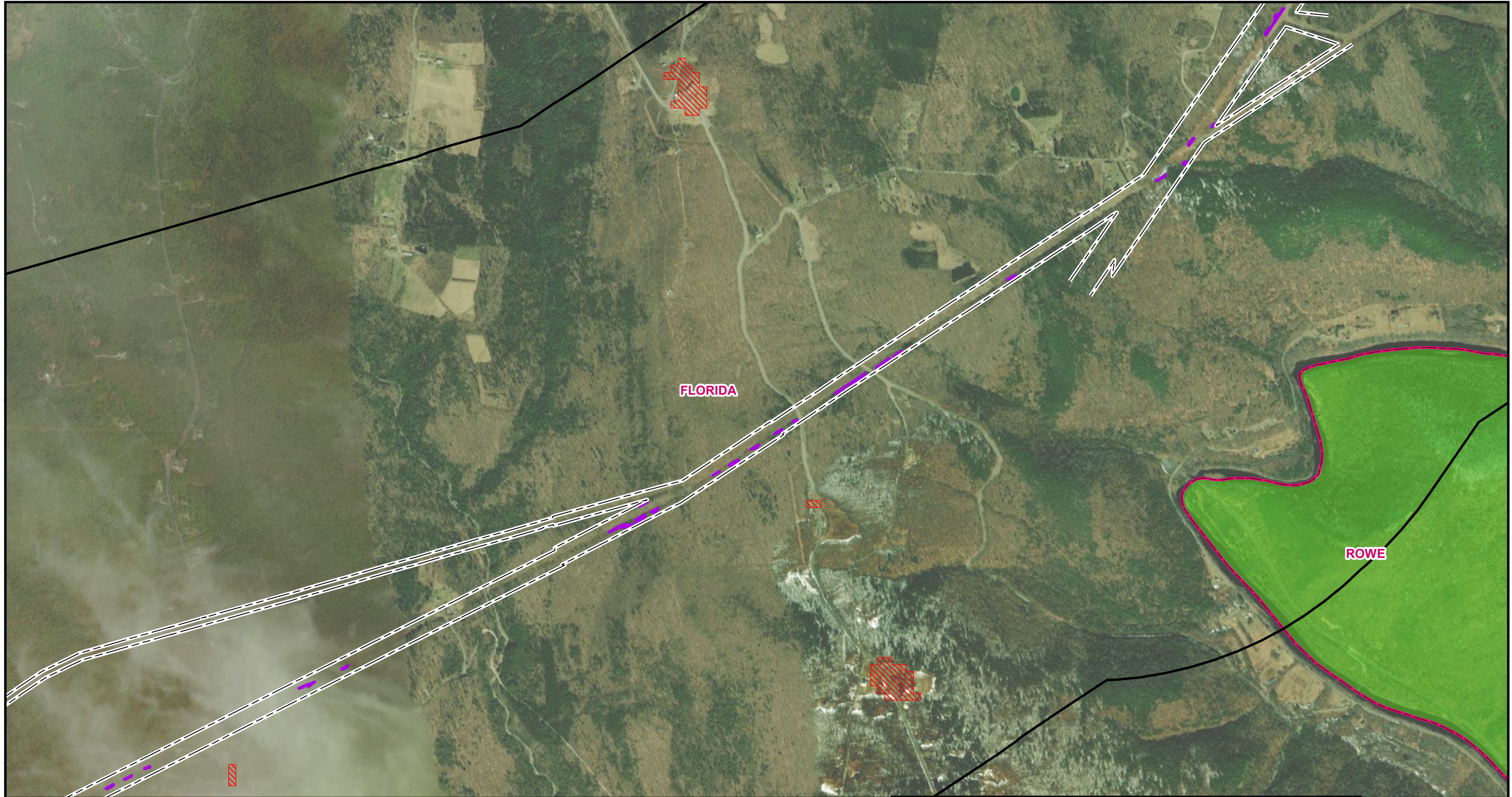
EEA HOT SPOT ANALYSIS

Line E131

Figure 1A
Page 1 of 3

Basemap: ESRI World Imagery
 Basemap
 EJ data: downloaded from MassGIS (2020)
 Hot spots downloaded from Massachusetts Executive Office of Energy and Environmental Affairs (2022).

nationalgrid
Tighe&Bond



Legend

Approximate ROW	1-Mile Buffer
Proposed Tree Clearing Area	Municipal Boundary
Massachusetts EEA Hot Spot	State Boundary
Environmental Justice	

1 inch = 1,250 feet
 0 670 1,340
 Feet
 *Indicates Layers Set to Transparency

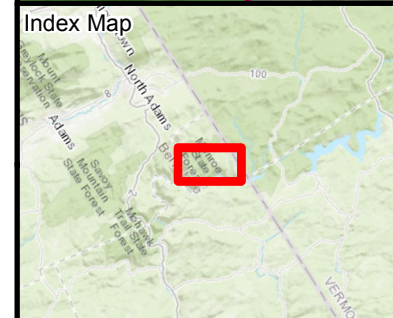
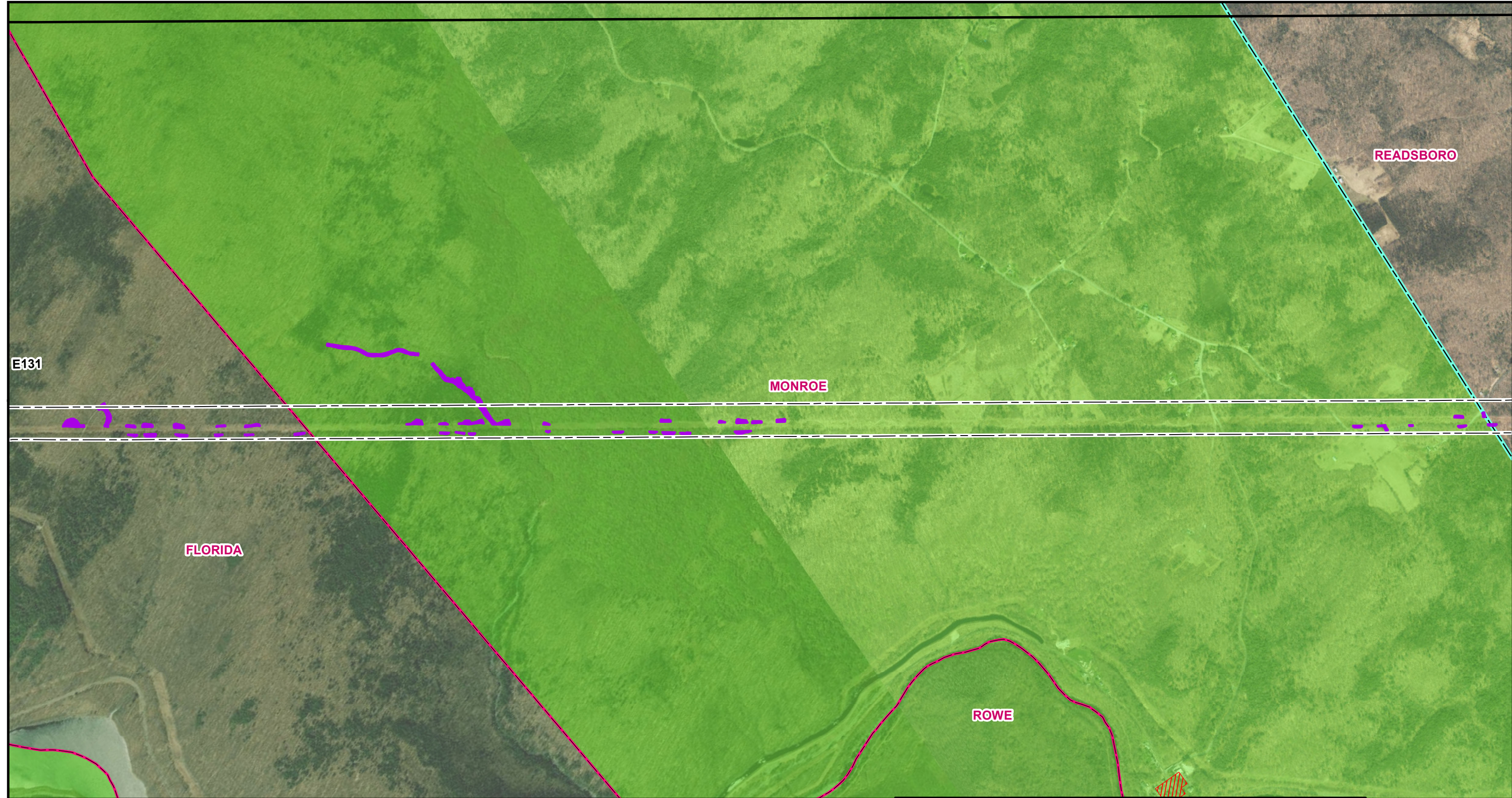
EEA HOT SPOT ANALYSIS

Line E131

Figure 1B
Page 2 of 3

Basemap: ESRI World Imagery
 Basemap
 EJ data: downloaded from MassGIS (2020)
 Hot spots downloaded from Massachusetts Executive Office of Energy and Environmental Affairs (2022).

nationalgrid
Tighe&Bond



Legend

Approximate ROW	1-Mile Buffer
Proposed Tree Clearing Area	Municipal Boundary
Massachusetts EEA Hot Spot	State Boundary
Environmental Justice	

1 inch = 1,250 feet
 0 670 1,340
 Feet

**Indicates Layers Set to Transparency*

EEA HOT SPOT ANALYSIS

Line E131

Figure 1C
 Page 3 of 3

Basemap: ESRI World Imagery
 Basemap
 EJ data: downloaded from MassGIS
 (2020)
 Hot spots downloaded from
 Massachusetts Executive Office of
 Energy and Environmental Affairs
 (2022).

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E131

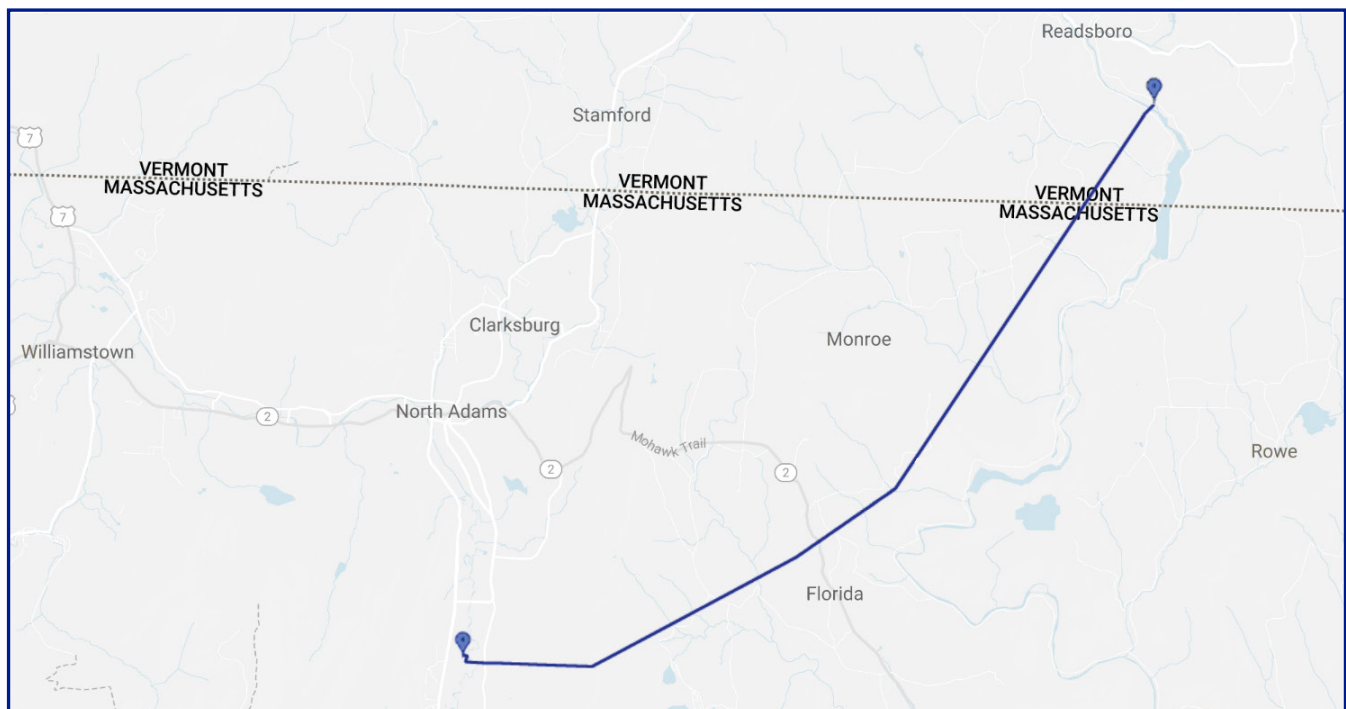
Asset Condition Refurbishment Project Fact Sheet

Readsboro, VT to Adams, MA

Overview

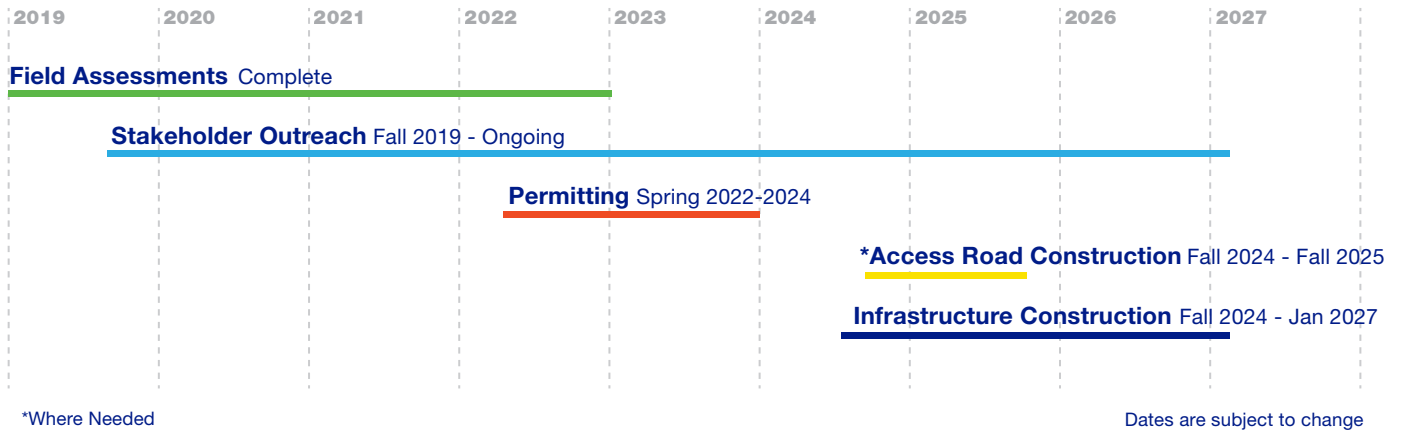
The E131 Asset Condition Refurbishment (ACR) Project is proposed to address the aging condition of existing transmission structures along the 12-mile transmission line right-of-way (ROW) beginning in Adams, MA through the Towns of North Adams, Florida, Monroe, and into Readsboro, VT. This Project addresses existing structures which are over 90 years old and are no longer fit for their purpose. The scope includes replacement of the current predominantly wood structures with new steel H-frame structures and foundations, and the addition of Optical Ground Wire (OPGW) to improve communications. Improvements to existing, and construction of new access routes are also required to facilitate construction and future maintenance. The new structures will be built within proximity to the existing structures to maintain the current ROW configuration. The new structures are expected to be minimally taller than the existing. Existing structures will be removed when the new structures are in place. To view diagrams of the proposed structure visit www.e131project.com.

Location



Schedule

Environmental permitting is underway, which includes the required federal, state and local board reviews and approvals. Pending permit approvals, construction is expected to begin in late 2024 and will take several years to complete. The schedule below is subject to change as the Project progresses.



Stay Informed

National Grid is committed to keeping you informed and encourages feedback from residents, businesses, community groups, and local officials.

If you have any questions, would like additional information or would like to receive email updates about the Project, please email info@e131project.com, call the Project Hotline at **877-616-3131**, scan the QR code, or visit the Project website at www.e131project.com



Trees and transmission lines

Requests for wood

E131 Asset Condition Refurbishment Project

Dear Neighbor:

We are reaching out to inform you of an upcoming opportunity to participate in the E131 ACR Wood Program. Selective tree removals are required to improve existing access routes, construct new access routes, and to install work pads. This will be done prior to construction for safety and Project efficiency.

National Grid takes great care when improving transmission line routes and locating access roads, foundations and structures. Prior to improving a transmission line, the right-of-way must be mowed and select trees cut to allow construction activities and continued transmission line operation. Prior to construction, the “clearing edge” of the right-of-way is surveyed and staked. Trees located at the edge of the right-of-way that can potentially interfere with the transmission line may also be removed, while low growing vegetation may be left in place if it does not interfere with construction activities.



Keeping trees away from transmission lines is vital for reliability and crucial to public and worker safety.

[continued on the back](#)

Wood Program

National Grid is in the process of developing a Wood Program for this Project to ensure the wood from cleared trees is put to the best use possible. Wood cleared on private properties will be offered to those individual landowners. Excess wood, if any, will be distributed according to the Wood Program which will be finalized before construction. If you are interested in learning more about the Wood Program, please reach us by calling the Project Hotline at **(877) 616-3131**, emailing **info@e131project.com**, or filling out our contact form by scanning the QR code or visiting our website at **<https://e131project.com>**.



Low-growing shrubs are compatible with transmission line rights-of-way.



Stay Informed

Learn more about the project scope, timeline, and ongoing activities by visiting the Project website at:

<https://e131project.com>

Tighe&Bond

APPENDIX F



E131 Asset Condition Refurbishment Project: Carbon Accounting

OCTOBER 9, 2023

PREPARED FOR

New England Power Company

PREPARED BY

SWCA Environmental Consultants

E131 ASSET CONDITION REFURBISHMENT PROJECT: CARBON ACCOUNTING

Prepared for

New England Power Company

Prepared by

SWCA Environmental Consultants

1101 Telegraph Road, Building B
West Chester, Pennsylvania 19380
www.swca.com

October 9 2023

EXECUTIVE SUMMARY

New England Power Company (NEP) is working to ensure New England's power grid is reliable today and resilient in the face of future demand increases, efforts to integrate low-carbon energy resources, and a potential climate-driven increase in the frequency and intensity of extreme weather events. To that end, NEP plans to upgrade the E131 line by replacing all wooden H-frame structures within the existing right-of-way (ROW) with new steel structures, replacing insulators and hardware, upgrading ground wires, installing three new switch structures, and replacing conductor in four sections. The Project will a) result in a more resilient transmission line by addressing safety, asset reliability, and repair requirements; b) improve communication between substations; and c) reduce overall environmental disturbance by reducing the frequency of maintenance-related activity along the ROW.

The Line E131 ROW will not be widened because of the Project and vegetation maintenance within the ROW will not be changed. However, the Project will require a) the cutting of approximately 11.31 acres of trees located primarily in the existing easement to accommodate construction activities; and b) the conversion of approximately 51.64 acres of exposed soil/low-growing grass/shrub to a mix of exposed soil, low-growing grasses, and gravel.

This analysis was prepared to ensure that the Massachusetts Environmental Protection Act office is informed of the expected change in greenhouse gas (GHG) emissions likely to be brought about by the Project. Following the Council on Environmental Quality's January 2023 Interim National Environmental Policy Act Guidance on Greenhouse Gas Emissions,¹ this includes an analysis of the net GHG emissions.

From a GHG accounting perspective, the Project is likely to bring about the following changes.

1. 3,375 U.S. tons of carbon dioxide equivalents (CO₂e) currently sequestered in live biomass, forest soil, dead wood, and litter may be released due to vegetation clearing and/or soil disturbance along access roads.
2. The conversion of vegetated habitat primarily for the purpose of improving access will reduce the rate of future GHG sequestration within the affected footprints, resulting in the Project-related increase of approximately 50 U.S. tons of CO₂e.
3. More than 150 U.S. tons of GHG will likely not be emitted because of Project-related increases in reliability, and Project-related increases in grid resiliency represent an unquantified GHG benefit of the Project.

Thus, the Project is expected to result in no more than a 3,275 U.S. ton increase in CO₂e emissions over its 30-year lifespan.

¹ 88 Federal Register 1196. Available at: <https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate>.

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1 REPORT PURPOSE AND NEED

New England Power Company (NEP) is working to ensure New England’s power grid is reliable today and resilient in the face of future demand increases, efforts to integrate low-carbon energy resources, and a potential climate-driven increase in the frequency and intensity of extreme weather events. To that end, NEP plans to upgrade the E131 line by replacing all wooden H-frame structures within the existing right-of-way (ROW) with new steel structures, replacing insulators and hardware, upgrading ground wires, installing three new switch structures and replacing conductor in four sections. The Project will a) result in a more resilient transmission line by addressing safety, asset reliability and repair requirements; b) improve communication between substations; and c) reduce overall environmental disturbance by reducing the frequency of maintenance-related activity along the ROW.

The Line E131 ROW will not be widened because of the Project and vegetation maintenance within the ROW will not be changed. However, the Project will require:

- The cutting of approximately 11.31 acres of trees located primarily in the existing easement to accommodate construction activities; and
- The conversion of approximately 51.64 acres of exposed soil/low growing grass/shrub² to a mix of exposed soil, low growing grasses and gravel.

This analysis was prepared to ensure that the Massachusetts Environmental Protection Act office is informed of the expected change in greenhouse gas (GHG) emissions likely to be brought about by the Project. Following the Council on Environmental Quality’s January 2023 Interim National Environmental Policy Act Guidance on Greenhouse Gas Emissions,³ this includes an analysis of the net GHG emissions.

2 METHODOLOGICAL OVERVIEW

This assessment is designed to provide the best practical estimate of the change in GHG emissions brought about by the Project. The estimate considers multiple biophysical and behavioral processes that will have a material effect on the actual Project-related change in GHG emission. It is acknowledged that the scientific community has studied some processes extensively and so their effects are characterized with a relatively high degree of precision; other processes have been subject to less study and so are characterized with less precision.

Project-related changes in GHG emissions are estimated as a function of three processes.

1. Some carbon currently sequestered in live biomass, forest soil, dead wood, and litter may be released due to vegetation clearing and/or soil disturbance along access roads.
2. The conversion of forest and/or exposed soil/low-growing grass/shrub habitat into exposed soil/low-growing grasses/gravel may reduce the rate of future GHG sequestration within the affected footprints.
3. Some GHG will not be emitted because reliability and resiliency of the electricity transmission grid is increased when the Project is implemented.

² This will occur primarily in existing, currently maintained ROW. The mix of exposed soil, low-growing grasses, and shrubs will be leveled as necessary and covered with gravel to facilitate equipment movement.

³ 88 Federal Register 1196. Available at: <https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate>.

The methods used to quantify the change in GHG emission associated with each process are outlined in Sections 2.1, 2.2, and 2.3, respectively.

2.1 Release of Currently Sequestered Carbon

2.1.1 Existing Forested Habitat

Living trees and plants absorb carbon dioxide (CO₂) from the air. As part of the photosynthetic process, the oxygen and carbon molecules are separated; the oxygen is released back into the air while the carbon becomes part of the tree or plant itself. In a functioning forest, the carbon removed from the air is stored in one of four pools: 1) aboveground live biomass, 2) belowground live biomass (roots), 3) soil organic carbon, or 4) dead wood and forest litter.

When trees are cleared from an area, some of the stored carbon that would otherwise remain sequestered may be released back into the atmosphere as carbon dioxide. To determine “how much” extra carbon is released when forests are disturbed, it is necessary to understand both the biophysical processes that cause carbon to be released from the various carbon pools as well as the human behaviors that often act to mitigate those tree-clearing-related releases.

For example, if an acre of forest is cut and used as timber, the resulting GHG emission estimate must account for not only the change in the amount of carbon released from the forested footprint, it must also account for the series of market changes that arise because unanticipated logs are introduced into the timber market, which will tend to reduce the amount of acreage cleared for timber at some other location. This “market based” effect is commonly referred to as “leakage.”⁴ To illustrate the leakage concept, consider the following hypothetical example.

1. Imagine a community that clears 50 acres of forest each summer to produce 500 cords of wood which they burn for home heating.
2. Now assume that a ROW project that affects 50 acres of forest results in 500 cords of firewood being unexpectedly introduced into the community’s firewood supply chain in the fall season.
3. The additional 500 cords of firewood entering the market in the fall will not cause the community to burn 1,000 cords of wood in the winter. Given the increased availability of firewood, they might increase usage to 600 cords and save the remaining 400 cords for the following year.
4. When the following summer arrives, the community will already have 400 cords of firewood available. As such, rather than clearing 50 acres of forest to meet their needs, they will only clear 10 acres to ensure that a total of 500 cords of firewood are available.

In this hypothetical example, absent any ROW management, 100 acres of forest would have been cleared by the community to create 2 years’ worth of firewood. Because ROW management increased the local firewood supply, the community cleared only 60 acres (50 in the first summer and 10 in the second summer). Along with the 50 acres cleared because of the ROW project, this brings the total amount of forest clearing over the two years to 110 acres. Thus, the ROW project caused total forest clearing to increase from 100 acres to 110 acres and carbon accounting is properly based on the 10-acre net increase in tree clearing brought about by the ROW project. In other words, because logs were placed into the

⁴ The Intergovernmental Panel on Climate Change (IPCC) *Special Report on Land Use, Land Use Change and Forestry* defines leakage as “...the indirect impact that...an activity in a certain place at a certain time has on carbon storage at another place or time” (IPCC 2000, section 2.3.5.2, p. 71). From an economics perspective, leakage occurs when a project causes a shift in market equilibria that results in market participants behaving in a manner that offsets (either partially or in its entirety) a change in GHG emission that would otherwise be brought about by a project. Streck (2022) is an informative primer on leakage.

firewood market, economic linkages offset 80 percent of the GHG releases that might otherwise be associated with the ROW management.

To estimate the effect of leakage in the context of this Project, it is noted that the Climate Action Reserve's Climate Forward Reforestation Methodology, Version 2.0 (2022), suggests that, when project logs are placed into markets, and so long as the projects do not occur on existing commercial forest land, leakage is likely to offset 24 to 50 percent of the GHG changes that would otherwise be associated with a project.

Herein it is assumed that, when project logs are used as timber, firewood, or other forestry products, leakage reduces the amount of GHG release that would otherwise be associated with that forest clearing by 50 percent (i.e., the upper end of the Climate Action Reserve's range). The upper end of the "leakage range" was selected based on a firewood and heating oil analysis by the Alaska Department of Conservation (2019) and an analysis of general energy use in U.S. buildings by the Energy Information Administration (EIA) (2021a). SWCA believes 50 percent is more likely to understate than overstate the true effect of leakage because the wood at issue will either be a) provided at no cost as part of firewood donation programs or b) provided at no cost to either landowners or vegetation management contractors to utilize for a productive use of their choosing. In contrast, the 24 to 50 percent range and the associated literature on leakage is generally based on modest price differentials instead of "zero costs."

2.1.2 Existing Exposed Soil/Low-Growing Grass/Shrub Habitat

As noted in the prior section, living plants absorb carbon dioxide from the air; the oxygen is released back into the air while the carbon becomes part of the plant itself. In a habitat characterized as exposed soil/ low-growing grasses/shrub, the carbon removed from the air is stored in one of four pools 1) aboveground live biomass, 2) belowground live biomass (roots), 3) soil organic carbon, or 4) litter.

The carbon stored in the the live aboveground portion of the low-growing grasses and/or litter is largely ephemeral in that it will cycle into the soil or into the air over a relatively short timeframe. In this type of habitat, carbon is only truly sequestered in either the belowground live biomass or as soil organic carbon.

It is also noted that, because none of the low-growing grasses affected by the Project will be put to any productive use, leakage is not an important issue in the context of work occurring in existing exposed soil/low-growing grass/shrub habitat.

2.2 Habitat Conversion

2.2.1 Existing Forest Habitat to Gravel-Covered Soil

The conversion of forest into gravel-covered soil will reduce the rate of future GHG sequestration within the affected forested footprint.

- Catanzaro and D'Amato (2019) estimate an average annual carbon sequestration rate for Massachusetts forests of 1.66 U.S. tons of carbon dioxide equivalents (CO₂e) per acre. Their estimate is based on Smith et al. (2006), who report that the annual rate of carbon sequestration in a typically aged (around 100 years old) New England maple-beech-yellow birch forest is around 0.41 metric tons of carbon per acre-year.⁵
- This assessment assumes that gravel-covered soils do not sequester CO₂e.

⁵ Smith et al. (2006) reports 0.41 metric tons of carbon per acre year. This is equivalent to 0.45 U.S. tons of carbon per acre year which is equivalent to 1.66 U.S. tons of CO₂e per acre.

To simplify calculations, it is conservatively assumed⁶ that any acreage not forested due to leakage would have been allowed to return to a forested state once cleared under baseline conditions. Under this assumption, and noting that the forest cleared because of the Project will be maintained as gravel-covered soil, losses of future sequestration when forest is converted to gravel-covered soil because of the Project need not be adjusted to account for leakage.

2.2.2 Exposed Soil/Low-Growing Grass/Shrub Habitat to Gravel-Covered Soil

The conversion of existing exposed soil/low-growing grass/shrub habitat into gravel-covered soil could alter the rate of future GHG sequestration within the affected soil/grass/shrub footprint. Any alteration will be a function of two opposing processes. First, the removal of the low-growing grasses will reduce the rate at which carbon is sequestered as belowground live biomass. Second, the introduction of gravel will reduce soil erosion and so reduce the rate at which carbon is released from the soil to the atmosphere.

The effect of covering an exposed soil and low-growing grass habitat with gravel has not, to the best of our knowledge, been studied. We assume that two opposing processes fully offset one another and so the Project brings about no net change in future sequestration rates within the exposed soil and low-growing grass habitat.

2.3 Grid Reliability and Resiliency

There are three main steps required to get electricity to a home or business: generation, transmission, and distribution. Generation refers to the process of converting energy including fossil fuels (coal, oil, and natural gas), nuclear reactions (fission), and renewable sources (such as solar, wind, geothermal and hydroelectric power) into electricity. Transmission refers to transporting electricity, typically over long distances, from the place where the electricity is created to the areas where it is needed. Distribution is the process of transferring electricity over the relatively short distance from the end of the transmission cables to an end user (Resources for the Future 2022).

The Project will occur along the existing E131 transmission corridor, which extends approximately 13 linear miles from the Harriman #8 Substation in Readsboro, Vermont, to the Adams #21 Substation in Adams, Massachusetts. The E131 Lines are part of New England's regional power grid, carrying network power flows and supplying distribution stations in Vermont and Massachusetts. ISO New England, the non-profit regional transmission organization responsible for administering the wholesale electricity markets and keeping electricity supply in balance with electricity demand, relies on the E131 line to move electricity from the places where electricity is generated to locations where electricity is in demand.

- When outages occur because of problems along the E131 line, GHG releases increase as back-up generating units are dispatched, food spoilage increases, and adverse impacts to industry are addressed. Therefore, each time the Project prevents an outage that otherwise would occur (i.e., when the reliability of the E131 line is increased), a spike in GHG emissions is avoided. This “reliability effect” is quantified by reviewing data describing the spike in GHG emission that occurs when the power goes out.
- If the limitations of the current, unimproved E131 line structures prevent ISO New England from linking low carbon intensity electricity to demand centers, it is necessary to use electricity generated by more carbon-intense means to bring supply and demand into balance. Any time the

⁶ Conservative assumptions are defined in this analysis as those more likely to overstate than understate any potential Project-related increase in GHG emissions.

Project prevents the need to utilize more carbon-intense electricity, a spike in GHG emissions is avoided. This “resiliency effect” is discussed by not quantified.

3 DETAILED CALCULATIONS

3.1 Release of Currently Sequestered Carbon

Table 1 illustrates the calculations used to estimate the amount of currently sequestered carbon released from the Project footprint because of the project. The reasoning behind each input and calculation is described in the remainder of this section.

3.1.1 Leakage Adjusted Acres

NEP is working with landowners, its contractors, local organizations, and the state to ensure that the wood created as a result of the Project is used in some productive enterprise. These actions not only benefit the community directly, they also reduce the level of GHG emissions that would otherwise be associated with the Project-related forest disturbance.

To determine the actual change in carbon emission brought about by Project-related forest disturbance, it is necessary to consider if and how people will use the trees felled as a result of the Project. This analysis identifies four potential fates for these trees.

1. Thirty one percent⁷ of Project-related forest disturbance is assigned the fate “wood retained by landowners.”
2. Wood not retained by landowners may be taken to sawmills (or other commercial wood users) at the discretion of National Grid’s vegetation management contractors. As previously noted, so long as felled wood is used for some useful enterprise, market behavior (i.e., leakage) will offset some of the GHG emissions that would otherwise be associated with the forest disturbance. However, because National Grid does not require its contractors to remove marketable wood to sawmills or other commercial wood users, this assessment conservatively assigns this fate to none of the wood felled as a result of the Project.
3. Twenty-five percent⁸ of the Project-related forest disturbance is assigned the fate “donated for use as firewood.”
4. Because of NEP’s efforts to assure that, to the maximum extant practical, Project-related wood is used in some productive enterprise, only 46 percent of the Project-related forest disturbance is assigned the fate “left in place.”

⁷ NEP has offered landowners the opportunity to retain felled wood for their private use. This analysis conservatively assumes that wood retained by landowners will be used as firewood. The fraction of wood assigned to this fate is based on the preliminary results of NEP’s ongoing coordination with landowners affected by the A1/B2 Project during which 8 of 26 landowners who have thus far responded (31 percent) have asked that felled wood be left for their personal use.

⁸ While discussions with firewood donation centers are ongoing, it is likely that the amount of wood donated will be limited by the capacity of these organizations to accept donations. As such, this analysis conservatively assumes only 25 percent of Project-related wood will be donated for use as firewood.

Table 1. Project-Related Release of Currently Sequestered Carbon

Existing Habitat	Carbon Pool	Acres	Leakage Adjusted Acres	Carbon At Risk of Release (U.S. tons per acre)	Proportion of At-Risk Carbon Released to the Air over 30 Years Due to the Project	Project-Related Release of Carbon from the Affected Footprint (U.S. tons)	Project-Related Release of CO ₂ e from the Affected Footprint (U.S. tons)
Forested	Aboveground Live Biomass	11.31	8.14	36.4	0.875	259.4	950.3
Forested	Belowground Live Biomass	11.31	8.14	7.7	0.591	37.1	135.8
Forested	Soil Organic Carbon	11.31	8.14	30.9	0.080	20.1	73.8
Forested	Dead Wood and Litter	11.31	8.14	17.6	0.969	138.9	508.9
Exposed Soil, Low-Growing Grass & Shrub	Aboveground Live Biomass	51.64	51.64	Not Applicable	0.000	0.0	0.0
Exposed Soil, Low-Growing Grass & Shrub	Belowground Live Biomass	51.64	51.64	7.7	0.850	338.0	1,238.4
Exposed Soil, Low-Growing Grass & Shrub	Soil Organic Carbon	51.64	51.64	30.9	0.080	127.7	467.7
Exposed Soil, Low-Growing Grass & Shrub	Litter	51.64	51.64	Not Applicable	0.000	0.0	0.0
Total						921.2	3,374.9

Because 56 percent of the 11.31 forested acres cleared as a result of the Project (6.33 acres) will be used into some productive enterprise. As discussed in Section 2.1.1, a 50 percent forest leakage adjustment implies that, because of NEPs actions, 3.165 acres of forest at some other location that otherwise would have been cleared, will remain forest. As such, the leakage-adjusted forested acreage reported in Table 1 is 8.14. This is calculated by subtracting 3.165 Acres of Forest Not Cleared Elsewhere Due to Leakage from 11.31 Acres of Project-Related Forest Clearing.

3.1.2 Carbon At Risk of Release

Existing literature was reviewed to estimate the amount of carbon currently sequestered in each carbon pool; this is defined as carbon at risk of release. The basis of each estimate is described in the following bullets.

- The U.S. Forest Service (USFS) (2018a)⁹ reports the amount of carbon stored as aboveground live biomass for three mature (80- to 100-year-old) New England hardwood forest types: 30.9 U.S. tons per acre (reported as 28 metric tons per acre) for northern hardwood, 35.3 U.S. tons per acre (reported as 32 metric tons per acre) for oak-pine, and 36.4 U.S. tons per acre (reported as 33 metric tons per acre) for oak-hickory.¹⁰ While it is likely that the average aboveground live biomass will be less than 36.4 U.S. tons per acre¹¹ in the acreage subject to Project-related forest disturbance, this assessment conservatively assumes 36.4 U.S. tons of carbon are stored in each acre of *aboveground live forest biomass* and so are at risk of release (See Table 1).
- The USFS (2018a) reports the amount of carbon stored as belowground live biomass for three mature (80- to 100-year-old) New England hardwood forest types: 5.5 U.S. tons per acre (reported as 5 metric tons per acre) for northern hardwood and 7.7 U.S. tons per acre (reported as 7 metric tons per acre) for oak-pine and oak-hickory. While it is likely that the average for belowground live biomass will be less than 7.7 U.S. tons per acre,¹² this assessment conservatively assumes 7.7 U.S. tons of carbon are stored in each acre of *belowground live forest biomass* and so are at risk of release (See Table 1).
- Catanzaro and D’Amato (2019) cite data from the USFS (2018a) in reporting the amount of carbon stored in forest soils for three mature (80- to 100-year-old) New England hardwood forest types: 30.9 U.S. tons per acre (reported as 28 metric tons per acre) for northern hardwood, 29.8 U.S. tons per acre (reported as 27 metric tons per acre) for oak-pine, and 23.1 U.S. tons per acre (reported as 21 metric tons per acre) for oak-hickory.¹³ As reported in Table 1, this assessment conservatively assumes 30.9 U.S. tons of carbon are stored in each acre of *forest soil* and so are at risk of release.

⁹ See instead page 4 of Catanzaro and D’Amato (2019) for a user-friendly summary of the USFS (2018a) data.

¹⁰ Table 5 on page 26 of Thompson et al. (2020) indicates that aboveground carbon can range from 0 up to 173 Mg per hectare (i.e., anywhere from 0 up to 77 U.S. tons per acre). Noting the broad range of Thompson et al. (i.e., 0 to 77 U.S. tons of carbon per acre) and that the Thompson et al. high end is associated with virgin forest (of which there is very little in Massachusetts), the USFS (2018a) estimates are judged to be consistent with Thompson et al. but more accurate for this assessment.

¹¹ The average is likely less than 36.4 U.S. tons per acre because most trees are likely less than 80 years old, and it is likely that not all trees will be oak or hickory.

¹² The average is likely less than 7.7 U.S. tons per acre because most trees are likely less than 80 years old, and it is likely that not all trees will be oak or pine.

¹³ Table 6 on page 32 of Thompson et al. (2020) reports that an acre of generic forest soil in Massachusetts may contain 124.4 U.S. tons of soil organic carbon; this is considerably more than the USFS (2018a) reports for mature hardwood forests in New England. Indeed, on pages 54 and 55 of their report, Thompson et al. note that the 124.4 estimate “is much higher than most other forest estimates from the region.” They go on to site studies at the Harvard Forest in central Massachusetts and at the Hubbard Brook experimental forest in New Hampshire where soil organic content was more in line with USFS reports. Thus, we consider the soil organic content estimates put forward in USFS (2018a) to be indicative of the best available information.

- Catanzaro and D’Amato (2019) cite data from the USFS (2018a) in reporting the amount of carbon stored as dead wood and forest litter for three mature (80- to 100-year-old) New England hardwood forest types: 17.6 U.S. tons per acre (reported as 5 metric tons per acre of dead wood and 11 metric tons per acre of litter) for northern hardwood, 17.6 U.S. tons per acre (reported as 4 metric tons per acre of dead wood and 12 metric tons per acre of litter) for oak-pine, and 8.8 U.S. tons per acre (reported as 5 metric tons per acre of dead wood and 3 metric tons per acre of litter) for oak-hickory. While it is likely that the average for dead wood and forest litter will be less than 17.6 U.S. tons per acre,¹⁴ this assessment conservatively assumes 17.6 U.S. tons of carbon are stored in each acre of **dead wood and forest litter** and so are at risk of release (See Table 1).
- The carbon stored in the live aboveground portion of the low-growing grasses and shrubs in a ROW is largely ephemeral in that it will cycle into the soil or into the air over a relatively short timeframe. Because there is little potential for a Project-related increase in the rate of carbon released from this pool, Table 1 reports “Not Applicable” for carbon at risk in the **aboveground live low-growing grass/shrub biomass** pool.
- While the acreage in this category currently exists as a mosaic of exposed soil, low-growing grasses, and shrubs, it is often adjacent to forest. Because root systems for the surrounding trees will periodically run underneath this area, this assessment conservatively adopts the belowground live biomass for forests in assuming 7.7 U.S. tons of carbon are at risk of release from each acre of **belowground live low-growing grass/shrub habitat** (See Table 1).
- While the acreage in this category currently exists as a mosaic of exposed soil, low-growing grasses, and shrubs, the area was once likely to have been forested habitat. This assessment conservatively adopts the Catanzaro and D’Amato (2019) estimates for forest soil in assuming 30.9 U.S. tons of carbon are at risk of release from each acre of **soil underlying the exposed soil and low-growing grass/shrub habitat** (See Table 1).
- The carbon stored in low-growing grass/shrub litter is largely ephemeral in that it will cycle into the soil or into the air over a relatively short timeframe. Because there is little potential for a Project-related increase in the rate of carbon released from this pool, Table 1 reports “Not Applicable” for carbon at risk in the **low-growing grass/shrub litter** pool.

3.1.3 Proportion of At-Risk Carbon Released to the Air over 30 Years

Existing literature was reviewed to estimate the proportion of carbon currently sequestered in each carbon pool likely to be released to the air over the 30-year Project lifespan. These estimates are reported in Table 1 and the basis of each estimate is described in the following bullets

- Not all carbon stored as **aboveground live forest biomass** will be released over the 30-year project lifespan. Russel et al. (2014) report that hardwood left to decay has a half-life of 10 years. This implies that, over 30 years, 87.5 percent of the carbon stored in this pool will be released to the air while 12.5 percent will remain sequestered. Thus, Table 1 reports that 87.5 percent of the at-risk carbon currently stored as **aboveground live forest biomass** will be released to the air because of the Project.
- Not all carbon stored as belowground live biomass will be released over the 30-year project lifespan. Lundholm et al. (2020) reported a weighted average half-life of 17.5 years. This implies that, over 30 years, 69.5 percent of the carbon stored in this pool will be released while 30.5

¹⁴ The average is likely less than 17.6 U.S. tons per acre because most trees are likely less than 80 years old, and it is likely that not all trees will be oak or pine.

percent remains sequestered. Additionally, approximately 85 percent of the carbon released when belowground biomass decays will enter the atmosphere. The remaining 15 percent is metabolized by heterotrophs in the soil and eventually contributes to soil organic carbon through a biophysical process known as fragmentation (Bond-Lamberty and Gower 2008). Thus Table 1 reports that 59.1 percent of the at-risk carbon currently stored as *belowground live forest biomass* will be released to the air because of the project. This is calculated as the product of a 69.5 percent release and a 0.85 probability that release will be to the air.

- Activities that expose sub-surface soils to the air, such as tree cutting, may result in the release of some carbon that would otherwise remain sequestered in the soil. Thompson et al. (2020) report that tree cutting associated with commercial forestry does not likely release carbon from forest soil. Thompson et al. note that their conclusion is consistent with the observation that, when measured, the carbon content of soils in yards did not differ from the carbon content of soils in forests adjacent to those yards. However, on page 55 of their report, Thompson et al. also note that, in assuming commercial tree clearing does not cause any release of carbon stored in forest soils, they may have understated potential carbon releases. This concern was based on “a metaanalysis of harvest impacts on soil carbon in temperate forests worldwide [which] found that, on average, harvesting reduced soil carbon stocks by 8%, though the impacts can be ephemeral.” Thus Table 1 conservatively reports that 8 percent of the at-risk carbon currently stored in *forest soils* will be released to the air because of the Project.
- Carbon stored in the dead wood and forest litter pool is constantly being released into the air or soil and constantly being replenished as trees die and leaves or needles drop. Because Section 3.2 (Changes in Future Carbon Sequestration Rates) uses net carbon sequestration rates for each habitat, this assessment appropriately accounts for carbon loss by assigning all carbon stored in the dead wood and forest litter pool the fate of “potentially released to the air because of the project.” Russel et al. (2014) report that hardwood left to decay has a half-life of 10 years. This implies that, over 30 years, 87.5 percent of the carbon stored in dead wood (4 metric tons per acre) will be released to the air while 12.5 percent will remain sequestered. This assessment assumes that all of the forest litter (12 metric tons of carbon per acre) will decay over 30 years. Thus Table 1 reports that 96.9 percent of at-risk carbon currently stored as *dead wood or forest litter* will be released to the air because of the Project.¹⁵
- The carbon stored in the live aboveground portion of the low-growing grasses and shrubs is largely ephemeral in that it will cycle into the soil or into the air over a relatively short timeframe. Because there is little potential for a Project-related increase in the rate of carbon released from this pool, Table 1 assigns a zero probability of a Project-related increase in the amount of carbon released from the *aboveground live low-growing grass/shrub biomass* to the air.
- Approximately 85 percent of the carbon released when belowground biomass decays will enter the atmosphere; the remaining 15 percent is metabolized by heterotrophs in the soil and eventually contributes to soil organic carbon through a biophysical process known as fragmentation (Bond-Lamberty and Gower 2008). Thus Table 1 identifies the probability of release from *belowground live low-growing grass/shrub biomass* to the air as 0.85.
- Activities that expose sub-surface soils to the air, such as grading, may result in the release of some carbon that would otherwise remain sequestered in the soil. Following the logic and literature described in the assessment of forest soils, Table 1 conservatively reports that 8 percent

¹⁵ The proportion of carbon stored in dead wood and forest litter that will be released to the air is 96.9 percent. This is calculated as the proportion of carbon stored in dead wood multiplied by the proportion released over 30 years, plus the proportion of carbon stored in litter, or $0.25 \times 0.875 + 0.75$.

of the at-risk carbon currently stored in *soils underlying exposed soil/low-growing grass/shrub habitat* will be released to the air because of the Project.

- The carbon stored as low-growing grass/shrub litter is largely ephemeral in that it will cycle into the soil or into the air over a relatively short timeframe. Because there is little potential for a Project-related increase in the rate of carbon release from this pool, Table 1 assigns a zero probability to a Project-related increase in the probability of carbon release from the *low-growing grass/shrub litter* to the air.

3.1.4 **Project-Related Release of Carbon and CO₂e from the Affected Footprints**

The Project-related release of carbon from the affected footprint is calculated as the product of three Table 1 inputs: a) *leakage adjusted acres*; b) *carbon at risk of release denominated as U.S. tons per acre*; and c) *the proportion of at-risk carbon released to the air over 30 years due to the Project*.

The Project-related release of CO₂e from the affected footprint is calculated as *the Project-related release of carbon from the affected footprint ÷ 0.27292 tons of carbon per ton of CO₂*.

3.2 **Habitat Conversion**

When mature trees and vegetation are removed and replaced with gravel-covered access roads, the rate of future carbon sequestration is reduced. In this assessment, the loss of future carbon sequestration is calculated as follows.

1. Forest covers 11.31 acres of the Project area. Catanzaro and D'Amato (2019) estimate an average annual net carbon sequestration rate for Massachusetts forests of 1.66 U.S. tons of CO₂e per acre.¹⁶ This assessment assumes that, once forested soil is covered with gravel, it will stop sequestering carbon. Over the 30-year project life, this implies the future loss of 49.8 U.S. tons of CO₂e sequestration (calculated as 11.31 affected forest acres × 1.66 tons of CO₂e sequestration lost annually × 30 years).
2. As noted in Section 2.2.2, the conversion of existing exposed soil and low-growing grass habitat into gravel-covered soil could alter the rate of future GHG sequestration within the habitat footprint in two ways. First, the removal of the low-growing grasses will reduce the rate at which carbon is sequestered as belowground live biomass. Second, the introduction of gravel will reduce soil erosion and so reduce the rate at which carbon is released from the soil to the atmosphere. We assume that these processes fully offset one another and so the Project brings about no net change in future CO₂e sequestration.

3.3 **Reliability and Resiliency**

The Project is being implemented because many of the E131 assets have reached the end of their design life and inspections indicate they need repair. When implemented, the Project will a) result in a more resilient transmission line by addressing safety, asset reliability, and repair requirements; b) improve communication between substations; and c) reduce overall environmental disturbance by reducing the frequency of maintenance-related activity along the ROW.

¹⁶ Smith et al. (2006) reports 0.41 metric tons of carbon per acre year. This is equivalent to 0.45 U.S. tons of carbon per acre year which is equivalent to 1.66 U.S. tons of CO₂e per acre.

3.3.1 Increased Reliability

From 2017 through 2021 (inclusive) the E131 line experienced five “incidents.” While none of them resulted in sustained customer outages, each likely resulted in momentary power fluctuations as the transmission system compensated for the line interruption. In the remainder of this section these momentary power fluctuations are referred to as flickers.

Absent the Project, a combination of asset aging and an increased frequency and intensity of climate events is expected to increase the rate of incidents with some potentially resulting in customer outages. The Project will reduce the potential for future outages and flickers associated with the E131 line; this is referred to as an increase in reliability.

Kenward and Raja (2014) report that between 2003 and 2014, weather-related power outages¹⁷ affected an average of 15 million U.S. homes or businesses each year. These outages, which result primarily from damages to transmission lines, substations, and lower-level distribution lines, are estimated to cost the economy \$18 billion to \$33 billion annually (Moore 2021). Kenward and Raja (2014) and the U.S. Government Accountability Office (2021) further report that between 2003 and 2014 the rate of outages more than doubled, and that the increased frequency was driven by a combination of aging infrastructure and an increasing frequency of extreme weather events such as hurricanes, ice storms, floods, heat waves, droughts, and wildfires. Lastly, there is a consensus that extreme weather and climate-related events are expected to become more frequent and intense in the future, which, unless steps are taken to harden the grid, will cause the frequency of weather-related power outages to continue to increase in the future (Kenward and Raja 2014; Moore 2021; U.S. Government Accountability Office 2021).

Efforts similar to the Project have been identified by the President’s Council of Economic Advisers, the U.S. Department of Energy’s Office of Electricity Delivery and Energy Reliability, the White House Office of Science and Technology and ISO-NE as cost effective ways to increase grid reliability¹⁸. This increased reliability will reduce the probability of power outages which, in turn, will not only benefit the U.S. economy, but it will also reduce outage-related spikes in GHG emissions that occur when society reacts to a power outage¹⁹.

1. Moss and Bilich (2022) evaluated the GHG implications of citizens responding to power interruptions by installing and using back-up generation units (BUGs). They report that, in response to recent reductions in the reliability of California’s grid, the Bay area and South Coast generating capacity of BUGs increased rapidly such that, when outages occur, BUGs compensate for approximately 20 percent of the lost power. Further, most BUGs are diesel-fired and release GHG at rates similar to the 1.4 metric tons of CO₂e per megawatt hour (MWh) associated with Massachusetts’ local dispatchable generators. To put that in the context of a modest outage, a typical household uses about 1.2 kilowatt hours (KWh) each hour,²⁰ so a small outage that affects only 5,000 customers for only 4 hours may result in 4,800 KWh being generated by BUGs, which i

¹⁷ Kenward and Raja define an outage as the loss of power for 4 or more hours.

¹⁸ See President’s Council of Economic Advisers, U.S. Department of Energy’s Office of Electricity Delivery and Energy Reliability, and the White House Office of Science and Technology 2013.

¹⁹ A 2019 article in the USA Today, titled *The New York City Blackout was Actually Bad for the Environment*, reports that “you might think that when the lights go out, the amount of greenhouse gases emitted as people go about their day would go down. But you’d be wrong. The [carbon] footprint grows because whenever you have a power failure you have all kinds of inefficiencies and waste that cascades through the system.”

²⁰ The EIA (2023) reports that an average house uses 893 KWh per month. This equates to approximately 1.2 KWh per hour.

s equivalent to 4.8 MWh.²¹ This, in turn, likely resulted in the release of approximately 6.7 metric tons of CO₂e.

2. When the power goes out, residences and commercial operations lose refrigeration. Risk of spoilage causes homes and commercial operations to dispose of food that would otherwise be eaten. The U.S. Environmental Protection Agency (EPA) (2021) reports that, for every pound of food wasted in the United States, between 1 and 2 pounds²² of CO₂e are unnecessarily emitted into the atmosphere as part of the production process needed to replace that food. In addition, when placed into landfills, a pound of food waste will generate about 5 pounds of CO₂e during decomposition (Brown et al. 2007). While approximately half of those GHGs will be captured (Landfill Gas Expert 2019), the remaining 2.5 pounds of CO₂e are released. Thus, between the two sources of CO₂e, each pound of food wasted results in approximately 4 pounds of CO₂e being released unnecessarily into the atmosphere. The July 13, 2019, New York City outage, which lasted only 3 hours and affected 73,000 customers, is estimated to have resulted in the loss of 29 metric tons of food²³ or about 0.0004 metric tons²⁴ of food per customer. Applying that to an outage affecting 5,000 customers implies the loss of 2 metric tons of food. Noting that each metric ton of food lost results in 4 metric tons of CO₂e release, it is estimated that an outage affecting 5,000 customers for just a few hours would likely result in the release of 8 U.S. metric tons of CO₂e.
3. Hussain (2019) reports that, in industrial and manufacturing operations, even seemingly small power flickers can have a significant impact. This is because manufacturers are especially vulnerable to equipment damage during outages and the electrical surges that may occur when power is restored. Ericson and Lisell (2020) refer to these types of impacts (e.g., damage to machinery and process interruptions resulting in failed output) as “fixed costs” associated with an outage and estimate that, regardless of duration, medium-sized manufacturing operations can incur costs of up to \$30,000 with smaller operations incurring losses in the hundreds of dollars. To the extent these losses are driven by the need to replace damaged equipment, remanufacture products that were being manufactured when the power went out, and/or bring production processes back up to temperature, those monetary losses are associated with otherwise unnecessary increases in CO₂e emissions. Even a flicker that affects 0.04 percent of New England²⁵ is estimated to result in the otherwise unnecessary release of approximately 5 U.S. tons of CO₂e.²⁶ Noting that, in the 5 years from 2017 through 2021, problems on the E131 line caused one

²¹ KWh of loss is calculated as 5,000 affected customers × 4-hour blackout duration × 1.2 KWh per hour × 20 percent compensation via BUGs. To convert to MWh note that 1 MWh = 1,000 KWh.

²² EPA (2021) reports that each year, 161 to 335 billion pounds of food is wasted, resulting in approximately 374 billion pounds of CO₂e being unnecessarily emitted.

²³ As reported in USA Today (2019); the unit is assumed to be a metric ton.

²⁴ This is equivalent to only 0.88 pounds per customer.

²⁵ There are 14.85 million residents of New England. An outage affecting 5,000 customers is affecting 0.04 percent of the New England population.

²⁶ The estimate was derived using the following set of calculations. First, note that New England will require at least 125,000 gigawatt hours (GWh) annually from 2023 forward and the industrial sector represents about 26 percent of total retail electricity consumption in the United States (EIA 2022) or about 32,500 GWh annually in New England (calculated as 0.26 × 125,000 GWh), which is equivalent to 32,500,000,000 KWh annually. Dividing by 8,760 hours per year, 32,500,000,000 KWh equates to 3,710,000 kilowatts (KW) of demand from New England industries. Next, note that Balducci et al. (2002) used interruption cost data for 32 standard industrial classification groups that were aggregated and weighted based on relative shares of sector GDP and estimated that, for a 1-hour interruption, industry incurs a loss of \$26.35/KW in 2022 dollars. Thus, a power outage affecting 0.04 percent of the ISO New England service area (calculated as 5,700 customers affected ÷ 14.85 million New England residents) would cost approximately \$39,000 in GDP (calculated as 3,710,000 KW × 0.04 percent of facilities affected × \$26.35 per KW). Finally, note that every million dollars of U.S. GDP is associated with approximately 270 metric tons CO₂e (Climate Watch 2022). Thus, \$39,000 of lost GDP is associated with 10 metric tons of CO₂e. If half of the at-risk CO₂e is associated with damaged equipment, partially completed products that will need to be replaced, and/or extra energy required to restart industrial processes, then each outage prevented also prevents the release of 5 metric tons of CO₂e.

flicker annually, it is likely that Project-related reliability increases will prevent the release of at least 150 tons of CO₂e over the Project's 30-year lifespan.²⁷

3.3.2 Increased Resiliency

While the full grid analysis required to estimate the change in dispatches brought about by a more resilient E131 line is beyond the scope of this assessment, the following information is illustrative of GHG benefits likely to be associated with the Project-related increase in resiliency and the potential to reduce reliance on carbon intense electricity.

- From 2014 to 2018, approximately 23 oil- and gas-fired units located in Massachusetts were used to ensure reliable electricity supply during periods of peak electric demand; that is, these units operated as dispatchable units with capacity utilization factors generally under 5 percent.²⁸ In Massachusetts, two-thirds of these units burn primarily oil, and more than 90 percent are over 30 years old, meaning they tend to release more GHG and criteria pollutants for every unit of electricity generated than would be released if newer technology were deployed. Moreover, many of these plants are in low-income and minority communities where vulnerable populations already bear health and environmental burdens (PSE Healthy Energy 2020).²⁹
- The EIA's State Electricity Profile for Massachusetts reports that, in 2020, Massachusetts electric power industry combusted petroleum to generate 36,111 MWh and released 48,502 U.S. tons of CO₂ (EIA 2021b). This equates to 1.34 U.S. tons of CO₂e per MWh of electricity generated³⁰ by combusting petroleum. An additional 0.14 U.S. tons of CO₂e per MWh will have been released in the process of extracting, refining, and transporting that petroleum product to the facility (Gordon and Feldman 2016) which brings the total GHG emissions per MWh of electricity produced to about 1.5 U.S. tons of CO₂e per MWh.
- Assuming a typical capacity of 25 MWh and an average run time of about 13.3 hours (as reported in PSE Healthy Energy 2020), each time one of these carbon-intense generation resources is dispatched, it results in the release of approximately 500 U.S. tons of CO₂e that would not be released if the grid had the flexibility to meet demand with renewable or stored energy resources. This is equivalent to 454 metric tons.

Based on the preceding assessment, if the Project enabled the use of low-carbon-intensity electricity just a few times per year, the Project would be neutral from a GHG accounting perspective.

²⁷ This estimate is considered a lower bound for three reasons. First, the New England population is increasing. Second, it is expected that climate change will increase the frequency and intensity of extreme weather events which will, in turn, increase the frequency of weather-related flickers and outages all else equal. Finally, if not replaced, the existing E131 line will continue to age which will reduce its reliability.

²⁸ Capacity utilization is a facility's actual output divided by the output the facility could generate if it ran all year at full capacity.

²⁹ PSE Healthy Energy (2020) reports having "aggregated power plant operational data on a unit basis from EIA and EPA datasets. We obtained hourly, daily, and annual data on generation (MWh), emissions (CO₂, NO_x and SO₂), and fuel consumption (MMBtu) for the years 2014 to 2018 from the EPA's Air Markets Program Database (AMPD). Although these emissions data are available at greater temporal resolution than from EIA, data are not available for all plants, so we backfilled our emissions data using reported EIA annual data for the years 2014 to 2017. Peaker units were identified as having greater than 5 MW capacity and less than 15 percent annual utilization." They further note that their data assembly was not independently verified.

³⁰ Calculated as 48,502 U.S. tons of CO₂ ÷ 36,111 MWh of electricity generated by combusting petroleum.

4 SUMMARY

NEP plans to improve the E131 line by replacing and upgrading older assets. The goal is to increase the resiliency of the transmission lines by addressing safety, asset reliability, and repair requirements. This will improve communication between substations and reduce overall environmental disturbance by limiting the need for unplanned maintenance.

The Line E131 ROW will not be widened because of the Project and vegetation maintenance within the ROW will not be changed. However, the Project will require a) the cutting of approximately 11.31 acres of trees located primarily in the existing easement to accommodate construction activities; and b) the conversion of approximately 51.64 acres of exposed soil/low-growing grass/shrub to a mix of exposed soil, low-growing grasses, and gravel.

From a GHG accounting perspective, the Project is likely to bring about the following changes.

1. Approximately 3,375 U.S. tons of CO₂e currently sequestered in live biomass, forest soil, dead wood, and litter may be released due to vegetation clearing and/or soil disturbance.
2. The conversion of vegetated habitat primarily for the purpose of improving access will reduce the rate of future GHG sequestration within the affected footprints, resulting in the Project-related increase of approximately 50 U.S. tons of CO₂e.
3. More than 150 U.S. tons of GHG will likely not be emitted because of Project-related increases in reliability, and Project-related increases in grid resiliency represent an unquantified GHG benefit of the Project.

Thus, the Project is expected to result in no more than a 3,275 U.S. ton increase in CO₂e emission over its 30-year lifespan.

5 LITERATURE CITED

- Alaska Department of Conservation. 2019. Estimating FNSB Home Heating Elasticities of demand using the Proportionally-Calibrated Almost Idea Demand System (PCAIDS) Model: Postcard Data Analysis. Available at: <https://dec.alaska.gov/media/17115/estimation-of-pcaids-model-04302019-final.pdf>. Accessed January 17, 2023.
- Balducci, P.J., J.M. Roop, L.A. Schienbein, J.G. DeSteele, and M.R. Weimar. 2002. Electric Power Interruption Cost Estimates for Individual Industries, Sectors, and U.S. Economy. Pacific Northwest National Laboratory. Available at: https://www.pnnl.gov/main/publications/external/technical_reports/pnnl-13797.pdf. Accessed October 9, 2023.
- Bond-Lamberty, B., and S. Gower. 2008. Decomposition and Fragmentation of Coarse Woody Debris: Re-visiting a Boreal Black Spruce Chronosequence. *Ecosystems* 11(6):831–840. Available at: https://www.researchgate.net/publication/225747510_Decomposition_and_Fragmentation_of_Coarse_Woody_Debris_Re-visiting_a_Boreal_Black_Spruce_Chronosequence. Accessed July 11, 2023.
- Brown S., C. Kruger, and S. Subler. 2007. Greenhouse Gas Balance for Composting Operations. *Journal of Environmental Quality* 37:1396–1410.
- Catanzaro, P., and A. D’Amato. 2019. Forest Carbon: An essential natural solution for climate change. Available at: https://masswoods.org/sites/masswoods.org/files/Forest-Carbon-web_1.pdf. Accessed August 15, 2022.
- Climate Action Reserve. 2022. Reforestation Methodology, Version 2.0. Available at: <https://climateforward.org/program/methodologies/reforestation>. Accessed August 28, 2022.
- Climate Watch. 2022. United States Emissions per GDP. Available at: https://www.climatewatchdata.org/countries/USA?end_year=2019&start_year=1990. Accessed November 1, 2022.
- Energy Information Administration (EIA). 2021a. Price Elasticity for Energy Use in Buildings in the United States. Available at: https://www.eia.gov/analysis/studies/buildings/energyuse/pdf/price_elasticities.pdf. Accessed January 17, 2023.
- . 2021b. Massachusetts Electricity Profile 2020. Available at <https://www.eia.gov/electricity/state/archive/2020/massachusetts/>. Accessed October 9, 2023.
- . 2022. Electricity explained: Use of electricity. Available at: <https://www.eia.gov/energyexplained/electricity/use-of-electricity.php>. Accessed October 27, 2022.
- . 2023. FAQs – How much electricity does an American home use? Available at: <https://www.eia.gov/tools/faqs/faq.php?id=97&t=3>. Accessed October 9, 2023.
- Ericson, S., and L. Lisell. 2020. A Flexible Framework for Modeling Customer Damage Functions for Power Outages. *Energy systems*. 11:95-11. DOI: 10.1007/s12667-018-0314-8.
- Gordon, D., and J. Feldman. 2016. Breaking Down the Barrel: Tracing GHG Emissions through the Oil Supply Chain. Available at: <https://carnegieendowment.org/2016/02/09/breaking-down-barrel-tracing-ghg-emissions-through-oil-supply-chain-pub-62722>. Accessed August 27, 2022.

- Hussain, A. 2019. A Day without Power, Outage Costs for Businesses. Available at: <https://www.bloomenergy.com/blog/a-day-without-power-outage-costs-for-businesses/>. Accessed September 27, 2022.
- Intergovernmental Panel on Climate Change (IPCC). 2000. *Special Report on Land Use, Land Use Change, and Forestry*, edited by R.T. Watson, I.R. Noble, B. Bolin, N.H. Ravindranath, D.J. Verardo, and D.J. Dokken. Available at: http://www.grida.no/climate/ipcc/land_use/index.htm. Accessed September 27, 2022.
- Kenward, A., and U. Raja. 2014. Blackout: Extreme Weather, Climate Change and Power Outages. Available at: <https://www.ourenergypolicy.org/wp-content/uploads/2014/04/climate-central.pdf>. Accessed September 27, 2022.
- Landfill Gas Expert. 2019. Fugitive Emissions of Methane and Landfill Gas Explained. Available at: <https://landfill-gas.com/fugitive-emissions-of-methane-landfill-gas>. Accessed September 29, 2022.
- Lundholm, A., K. Black, E. Corrigan, and M. Nieuwenhuis. 2020. Evaluating the Impact of Future Global Climate Change and Bioeconomy Scenarios on Ecosystem Services Using a Strategic Forest Management Decision Support System. *Frontiers in Ecology and Evolution* 8:200. Available at: <https://www.frontiersin.org/articles/10.3389/fevo.2020.00200/full>. Accessed July 17, 2023.
- Moore, A. 2021. Lights Out: Climate Change Could Plunge America into Darkness. Here's Why. Available at: <https://cnr.ncsu.edu/news/2021/03/lights-out-climate-change-could-plunge-america-into-darkness-heres-why/>. Accessed September 27, 2022.
- Moss, S., and A. Bilich. 2022. Diesel Back-Up Generator Population Grows Rapidly in the Bay Area and Southern California. Available at: <https://www.bloomenergy.com/wp-content/uploads/diesel-back-up-generator-population-grows-rapidly.pdf>. Accessed September 27, 2022.
- President's Council of Economic Advisers, U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability, and the White House Office of Science and Technology. 2013. *Economic Benefits of Increasing Electric Grid Resilience to Weather Outages*. Available at: https://www.energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf. Accessed September 27, 2022.
- PSE Healthy Energy. 2020. Massachusetts Peaker Power Plants: Energy Storage Replacement Opportunities. Available at: <https://www.psehealthyenergy.org/our-work/energy-storage-peak-er-plant-replacement-project/massachusetts/>. Accessed August 27, 2022.
- Resources for the Future. 2022. Renewables 101: Integrating Renewable Energy Resources into the Grid. Available at: <https://www.rff.org/publications/explainers/renewables-101-integrating-renewables/>. Accessed August 28, 2022.
- Russell, M.B., C.W. Woodall, S. Fraver, A.W. D'Amato, G.M. Domke, and K.E. Skog. 2014. Residence times and decay rates of downed woody debris biomass/carbon in eastern US forests. *Ecosystems* 17:765–777.
- Smith, J.E., Heath, L., Skog, K.E., and R.A. Birdsey. 2006. Methods for calculating forest ecosystem and harvested carbon with standard estimates for forest types of the United States. Gen. Tech. Rep. NE-343. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 216 pp.

- Streck C. 2022. Shades of REDD+: We Have to Talk About Leakage. Available at: Shades of REDD+We Have to Talk About Leakage - Ecosystem Marketplace. Available at: <https://www.ecosystemmarketplace.com/articles/shades-of-reddwe-have-to-talk-about-leakage/>. Accessed August 29, 2022.
- Thompson, J.R., Laflower, D., Plisinski, J., and M.G. Maclean. 2020. Land Sector Report: A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study. Available online at <https://www.mass.gov/doc/land-sector-technical-report/download>. Accessed August 28, 2022.
- U.S. Environmental Protection Agency (EPA). 2021. From Farm to Kitchen: The Environmental Impacts of U.S. Food Waste. Available at: https://www.epa.gov/system/files/documents/2021-11/from-farm-to-kitchen-the-environmental-impacts-of-u.s.-food-waste_508-tagged.pdf. Accessed September 27, 2022.
- U.S. Forest Service (USFS). 2018a. Forest Inventory and Analysis DataMart. Available at: <https://apps.fs.usda.gov/fia/datamart/datamart.html>. Accessed July 17, 2023.
- . 2018b. Forests of Massachusetts, 2017. Available online at: <https://www.fs.usda.gov/research/treesearch/56674>. Accessed July 14, 2023.
- U.S. Government Accountability Office. 2021. Electricity Grid Resilience: Climate Change Is Expected to Have Far-Reaching Effects and DOE and FERC Should Take Actions. Available at: <https://www.gao.gov/assets/gao-21-346.pdf>. Accessed September 27, 2022.
- USA Today. 2019. The New York City blackout was actually bad for the environment. Available at: <https://www.usatoday.com/story/money/2019/07/16/blackout-how-climate-affected-new-york-power-outage/1734529001/>. Accessed October 9, 2023.

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APPENDIX G

APPENDIX G
NEW ENGLAND POWER COMPANY
ENVIRONMENTAL GUIDANCE
EG-303NE

ROW Access, Maintenance and Construction Best Management
Practices for New England

EG-303NE - NEP BMP Guidance

