August 2024

RHODE ISLAND ENERGY FACILITY SITING BOARD
PROJECT SITING REPORT

The Narragansett Electric Company
L14 and M13 Mainline 115 kV Rebuild Project

Tiverton and Portsmouth, Rhode Island

Volume I

PREPARED FOR:

THE NARRAGANSETT ELECTRIC COMPANY
280 MELROSE STREET
PROVIDENCE, RI 02907

FOR SUBMITTAL TO:

STATE OF RHODE ISLAND ENERGY FACILITY SITING BOARD
89 JEFFERSON BOULEVARD
WARWICK, RI 02888

PREPARED BY:

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This document has been reviewed for Critical Energy Infrastructure Information (CEII). [August 2024]

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GLOSSARY OF TERMS

AAC	All Aluminum Conductor
ACGIH	American Conference of Governmental and Industrial Hygienists
ACI	American Concrete Institute
ACSR	Aluminum Conductor Steel Reinforced
ACSS	Aluminum Conductor Steel Supported
Act	Energy Facility Siting Act
ANSI	American National Standards Institute
ASAPP	Archaeological Site Avoidance and Protection Plan
ASCE	American Society of Civil Engineers
ASF	Area Subject to Flooding
ASSF	Area Subject to Storm Flowage
BMPs	Best Management Practices
Circuit	A system of conductors (three conductors or three bundles of conductors) through which an electric current flows
CMP	Corrugated Metal Pipe
CO	Carbon monoxide
Company	The Narraganset Electric Company
Conductor	A metallic wire which serves as a path for electric current to flow.
CRMC	Rhode Island Coastal Resources Management Council
dBA	A-weighted decibels
Demand	The total amount of electric power required at any given time by an electric supplier's customers
Distribution Line or System	Power lines that operate under 69 kV
E2EM	Estuarine Intertidal Emergent
EFSB	Rhode Island Energy Facility Siting Board
EFSB Rules	Energy Facility Siting Board Rules of Practice and Procedure, effective; November 8, 2018
Electric Field	A field produced as a result of voltages applied to electrical conductors and equipment; usually measured in units of kilovolts per meter.
Electric Transmission	Facilities (≥ 69 kV) that transmit electrical energy from generating plants to substations, or from substation to substation
EMF	Electric and magnetic fields
Environmental Monitor	Inspects environmental conditions within the construction site, reviews the contractors' compliance with environmental permit conditions during the construction phase of a project, and makes recommendations for corrective actions to protect sensitive environmental resources proximate to a construction site
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GNSS	global navigation satellite system
HUC	Hydrologic Unit Code

Hz	Hertz, a measure of the frequency of alternating current; expressed in units of cycles per second.
ICES	International Committee on Electromagnetic Safety
ICNIRP	International Commission on Non-Ionizing Radiation Protection
ID	Identification
IEEE	Institute of Electrical and Electronic Engineers
IPaC	Information for Planning and Conservation
ISO	Independent System Operator
ISO-NE	ISO New England, Inc., the independent system operator of the New England electric transmission system.
K	Soil erodibility factor
kcmil	One thousand circular mils, approximately 0.0008 square inch, a measure of conductor cross-sectional area
kV	Kilovolt - one kV equals 1,000 volts
kV/m	Kilovolts per meter
Load	Amount of power delivered upon demand at any point or points in the electric system; load is created by the power demands of customers' equipment (residential, commercial and industrial)
MassDEP	Massachusetts Department of Environmental Protection
mG	milligauss, a measure of magnetic field intensity
NAAQS	National Ambient Air Quality Standards
NEP	New England Power
NESC	National Electric Safety Code
NO_2	Nitrogen dioxide
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	Ozone
OHWM	ordinary high-water mark
OPGW	Optical Ground Wire
Pb	Lead
POWER	POWER Engineers Consulting, PC
PEM	Palustrine Emergent
PFO	Palustrine Forested
PM	Particulate matter
Project	L14 and M13 115 kilovolt (kV) Mainline Project
PSS	Palustrine Scrub-shrub
Report	Project Siting Report
RIDEM	Rhode Island Department of Environmental Management
RIDOT	Rhode Island Department of Transportation
RIGIS	Rhode Island Geographic Information System
R.I.G.L.	Rhode Island General Law
RIHPHC	Rhode Island Historical Preservation & Heritage Commission

RIPDES	Rhode Island Pollution Discharge Elimination System
RISESCH	Rhode Island Soil Erosion and Sediment Control Handbook
RITBA	Rhode Island Turnpike and Bridge Authority
ROW	Right-of-Way. Corridor of land within which a utility company holds legal rights necessary to build, operate, and maintain power lines
SO_2	Sulfur dioxide
SRPW	Special Resource Protection Water
Study Area	A 5,000-foot-wide corridor measured 2,500 feet on either side of the subject Project ROW
TNEC	The Narragansett Electric Company
THPOs	Tribal Historic Preservation Offices
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
Transmission Line	An electric power line operating at 69,000 volts or more.
TTC	Temporary Traffic Controls
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USFS	United States Forest Service
USGS	United States Geological Survey
V/m	Volts per meter
VMP	Vegetation Management Procedures
Watercourses	Rivers, streams, brooks, waterways, lakes, ponds, swamps, bogs and all other bodies of water, natural or artificial, public or private

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1.0 INTRODUCTION

1.1 Project Overview

The Narragansett Electric Company (the Company) is proposing the L14 and M13 Mainline 115 kilovolt (kV) Rebuild Project (Project) which is located in Tiverton and Portsmouth, Rhode Island. The Company is seeking a determination from the Rhode Island Energy Facility Siting Board (EFSB) that the Project does not constitute an alteration of a major energy facility as defined by Rhode Island General Laws (R.I.G.L.) § 42-98-4(b) in that the Project will not result in a significant impact on the environment or public health, safety, and welfare pursuant to the EFSB Rules Section 1.6(F).

The Project is the rebuild of the existing L14 and M13 115 kV transmission lines (L14 and M13 Lines or Mainlines), a distance of approximately 7.9 miles through Tiverton and Portsmouth. The Project includes reconfiguring the existing 551-foot aerial span across the Sakonnet River from Tiverton to Portsmouth. See the Project Locus Map, Figure 1-1, Appendix A, and the Project mapping, Project Erosion and Sediment Control Plans, Appendix B.

The L14 and M13 Lines provide the only source of electricity to Aquidneck Island and Jamestown. The Project area includes the portion of the L14 and M13 Lines located in a ROW that begins approximately 0.1 mile east of the Canonicus Substation located at 421 Canonicus Street in Tiverton and continues in a southerly direction to the Dexter Substation at 182 Freeborn Street in Portsmouth.

1.2 Project Team

This Project Siting Report (Report) has been prepared by Company employees and consultants retained by the Company, including planners, engineers, and legal personnel. The description of the affected natural and social environments, and impact analyses were prepared by POWER Engineers Consulting, PC (POWER). Burns and McDonnell are responsible for the Project engineering and design documents. Exponent, Inc. prepared the modeling and calculation of electric and magnetic fields (EMF) and the analysis of the health effects of EMF.

1.3 Compliance with EFSB Requirements

This Report is being submitted to satisfy the applicable requirements of R.I.G.L. § 42-98-1 et seq., the Energy Facility Siting Act (the Act). It is in compliance with Section 4 of the Act, which states that, "No person shall site, construct, or alter a major energy facility within the state without first obtaining a license from the siting board pursuant to this chapter." Under the Act, transmission lines with a design rating of greater than or equal to 69 kV are classified as major energy facilities. The Report filing requirements and associated procedures for a major generating facility are established in the EFSB's Rules. The EFSB Rules Section 1.6(F) provides "[i]n the case of the construction of a power line of more than 1,000 feet but less than 6,000 feet in length with a capacity of 69 kV or more or the modification or relocation of a power line with a capacity of 69 kV or more, a notice of intent for such project shall be filed with the EFSB and the council of any town or city affected by said construction at least 90 days before commencing construction."

1.4 Organization of the Report

This Report has been prepared in accordance with the EFSB Rules to provide information on the potential impacts of the electric transmission system improvements proposed by the Company. The Purpose and Need for the Project is detailed in Section 2.0 of this Report. Section 3.0 provides a

detailed description of the components of the Project, summary of construction practices and sequencing, ROW maintenance practices, safety and public health considerations, estimated costs for the Project, and anticipated Project schedule. An analysis of the alternatives to the Project, together with reasons for the dismissal of those alternatives, is presented in Section 4.0. Detailed descriptions of the characteristics of the natural and social environments within and immediately surrounding the Project location are included in Sections 5.0 and 6.0, respectively. Section 7.0 of this report identifies the potential impacts of the Project on the natural and social environments. Section 8.0 summarizes proposed mitigation measures which are intended to offset or eliminate the potential impacts associated with the Project. This Report also contains supporting mapping, figures, reports, agency correspondence, and engineering design information as applicable.

2.0 PROJECT NEED

2.1 Introduction

The Company manages approximately 400 miles of overhead and underground transmission lines exclusively in the State of Rhode Island. The system needs are identified through a combination of data collection activities, including desktop review, ground inspections, aerial inspections, and third-party condition assessments. The Company utilizes the collected data to apply a proactive asset management strategy to upgrade or rebuild transmission facilities to improve reliability and the longevity of the system while reducing maintenance costs.

The L14 Line is a 12.3-mile line connecting Bell Rock Substations (New England Power Company [NEP] owned) and Jepson Substation (Company owned). The M13 Line is a 12.3-mile line connecting Pottersville Substation (NEP owned) and Jepson Substation (Company owned). The L14 and M13 Lines change ownership at the Massachusetts/Rhode Island state border.[1] The Project needs and scope cover only the Rhode Island portion of both lines.

2.2 Need

This Project focuses on improving the condition and performance of the L14 and M13 Lines between the Massachusetts/Rhode Island state border and Dexter Substation. The Lines provide the only source of electricity to Aquidneck Island and Jamestown, and they have been identified for refurbishment because of extensive outages as a result of lightning flashing over insulation and trees falling into the line caused by heavy snow. Since the lines were originally constructed in 1964, design criteria for the area have changed and designed wind-loads have increased due to the proximity of the coast. Because of the physical deficiencies on the line, the M13 line has experienced 12 momentary outages and three sustained outages, while the L14 line has experienced seven sustained outages and four momentary outages since 1998. As a result of the poor performance, these lines have been designated as two of the worst performing circuits in the Company's system.

Aerial inspections have identified conductor deficiencies along the entirety of the lines, including broken strands. All Aluminum Conductors (AAC) and Aluminum Conductor Steel Reinforced (ACSR) conductors also lose mechanical strength over their service life due to corrosion and annealing, leading to an increased likelihood of broken strands and eventual conductor failure.

There are a total of 292 single-circuit structures and nine double-circuit structures on the L14 and M13 Mainlines. The predominant structure type on the Mainlines is a single wood pole davit arm structure. The wood structures are exhibiting signs of deterioration such as discoloration, bowing, rotting, and woodpecker holes seen during ground inspections.

To address the deficiencies along the Mainlines and the aging infrastructure, the L14 and M13 Lines need to be upgraded and rebuilt. If the L14 and M13 Lines are not rebuilt, the area may face future reliability issues resulting from the asset conditions of the L14 and M13 Lines. The Project is needed to address the asset condition issues of the current Lines.

[1] The L14 and M13 Lines cross the Massachusetts/Rhode Island state border; NEP will be responsible for addressing reliability concerns on NEP owned infrastructure.

2.3 Conclusion

If the L14 and M13 Lines are not rebuilt, the area may face future reliability issues resulting from the asset conditions of the L14 and M13 Lines. The Project is needed to address the asset condition issues of the current lines.

3.0 PROJECT DESCRIPTION AND PROPOSED ACTION

3.1 Scope of the Project

This section of the Report summarizes the Project components, the Company's construction practices; the anticipated Project schedule, and the estimated Project costs.

If permits are obtained on schedule, Project activities will consist of the prioritized replacement of two lattice structures (Structures 40 and 41) on either side of the Sakonnet River with double-circuit steel pole structures installed on concrete caisson foundations, followed by the replacement of L14 and M13 structures within the ROW. Structures along the affected portion of the Lines (approximately 7.9 miles) will be replaced with single-circuit structures except for structures 48 through 58, which will be replaced by double-circuit steel pole structures. Dead-end and angle structures will be installed with concrete caisson foundations, and tangent structures will be direct-embed installations.

The Project involves the following improvements to the existing transmission assets:

- Rebuild the existing L14 and M13 Lines between Canonicus Street in Tiverton extending south a distance of approximately 7.9 miles to the existing Dexter Substation located off Freeborn Street in Portsmouth, which includes replacing 193 existing transmission structures.
    - Rebuild the existing overhead crossing of the Sakonnet River with a proposed distance of approximately 1,245 feet.
    - Replace the 24 existing transmission structures that cross the Montaup Country Club in Portsmouth with 12 double-circuit steel pole structures.[2]
- Reconductor with 1113.0 kcmil aluminum conductor steel supported (ACSS) overhead conductor.
- Replace existing overhead shield wire with new overhead 48 count fiber Optical Ground Wire (OPGW). Each structure will have dual shielding.
- Restore and stabilize the affected areas within the ROW.

3.2 Description of the Existing Transmission Lines

3.2.1 L14 and M13 115 kV Transmission Lines

The L14 and M13 Lines ROW is approximately 100-foot-wide in Portsmouth and Tiverton with a cleared width ranging between 75 to 100 feet. The height of the existing Mainline transmission structures generally ranges from 46 to 103 feet and consist of wood monopoles and steel H-frame structures with steel lattice towers near the Sakonnet River crossing. The height of the steel lattice towers near the Sakonnet River crossing range from 81 to 143 feet and the height of the steel lattice

[2] Existing transmission line structures in Montaup Country Club are single-circuit; these single-circuit structures will be removed and replaced with single double-circuited steel pole structures.

structure at Canonicus Switching Station is 101 feet. Typical segment cross-sections of the ROW can be found in Appendix C.

3.3 Construction and Maintenance Practices

3.3.1 Construction Sequence

The Project will be constructed using conventional overhead electric transmission line construction techniques. The Company and its consultants conducted detailed constructability field reviews to determine access and workspace requirements, and to evaluate measures to avoid or minimize environmental impacts. The construction sequence is listed below.

1. Removal of vegetation and mowing within the ROW in advance of construction.
2. Installation of soil erosion and sediment controls.
3. Access road and work pad maintenance, and access route construction.
4. Installation of transmission structure foundations.
5. Installation of replacement structures and installation of conductors and OPGW.
6. Removal and disposal of existing transmission line components.
7. Restoration and stabilization of the ROW.

3.3.2 Construction Methods

Each construction activity is further described below.

Removal of Vegetation and ROW Mowing in Advance of Construction

The Company implements its Vegetation Management Procedures (VMP) to maintain low-growing vegetation on its transmission ROW to provide safe clearances between vegetation and conductors as well as access to existing structures for maintenance and emergencies. Taller vegetation that may interfere with the operation and maintenance of the overhead wires is routinely managed, as well as growth of vegetation that may interfere with access to existing transmission structures. The Company is currently performing routine vegetation maintenance on its existing ROW as part of the normal maintenance cycle as well as in cooperation with the Newport and Narragansett Bay Railroad Company in Portsmouth, Rhode Island. Additionally, the Company has performed vegetation maintenance along the Project ROW to support equipment access for the subsurface investigation program, which was performed to support the engineering design of the Project.

Construction of the Project will require additional vegetation maintenance to provide safe vehicular and equipment access to existing structure locations and safe work sites for personnel within the ROW. This will include mowing of low-growing shrubs, vines and herbaceous vegetation, removal of taller trees below the conductors, and removal of danger and hazard trees as determined by the Company's Forestry group under the VMP. Danger and hazard trees must be removed to provide safe clearances between vegetation and transmission line conductors for the life of the asset to assist the reliable operation and maintenance of the transmission facilities.

Prior to vegetation removal and mowing, wetland boundaries will be clearly marked to prevent unauthorized encroachment into wetland areas. Appropriate forestry techniques will be implemented within wetlands to minimize ground disturbance. Other sensitive resources, such as cultural resource

features, will be flagged and encompassed with protective fencing prior to removal of vegetation on the ROW. Existing access routes within the ROW will be used by vegetation management personnel and equipment. Road improvements will be kept to a minimum during this phase of the work. Temporary construction mats will be used to gain access to and across wetlands, to minimize wetland disturbance, and to provide a stable platform for safe equipment operation. Typical construction mats used for construction access consist of timbers that are bolted together into 4-foot by 16-foot sections and placed over wetland areas to distribute equipment loads and minimize impacts to the wetland and soil substrates in accordance with the Company's *ROW Access, Maintenance, and Construction Best Management Practices* document (EG-303NE). Temporary construction mat roads placed in wetlands for vegetation removal will be installed, used for vegetation removal, and then removed by the contractor.

Mowing will occur on all access points and at work and pull pads. Limited tree removal will occur within the ROW, as needed. 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. The Company is planning to use the existing network of access roads previously established on the ROW to the greatest extent practicable. Small trees and shrubs within the limits work pads/grading and the ROW will be mowed as necessary with the intent of preserving root systems and low-growing vegetation to the extent practical. Brush, limbs, and cleared trees will be mowed or chipped. Chipped material will be removed from the site or applied to upland areas as an erosion control measure, with prior approval. Post-construction, the ROW will be allowed to naturally revegetate.

In certain environmentally sensitive areas such as wetlands, it may be necessary and desirable to leave felled trees and snags to decompose in place rather than to disturb soft organic substrates while removing them. Where the ROW crosses streams and brooks, vegetation along the stream bank will be selectively cut to minimize the disturbance to bank soils and to reduce the potential for Project-related soil erosion. A minimum of a 25-foot-wide riparian zone will be maintained along watercourses, to the extent feasible.

Installation of Soil Erosion and Sediment Controls

Following vegetation management activities, soil erosion and sediment control devices such as straw wattles/bales, siltation fencing, and/or chip bales will be installed in accordance with approved plans and permit requirements. The soil erosion and sediment control program for the Project will follow the procedures identified in the Rhode Island Soil Erosion and Sediment Control Handbook (RISESCH), the Rhode Island Department of Environmental Management (RIDEM) Wetlands Best Management Practices Manual, and EG-303NE.

The installation of sediment control devices, as listed and described in the Erosion and Sediment Control Plan Index, Appendix B, will be overseen by the Company's environmental compliance monitor. During construction, these devices will be periodically inspected by the environmental compliance monitor, and the findings will be reported regularly to the Company's Construction Supervisor. The soil erosion and sediment controls will be installed between the work site and environmentally sensitive areas such as wetlands, streams, drainage courses, roads and adjacent properties when work activities will disturb soils and result in the potential for soil erosion and sedimentation. The devices will function to mitigate construction-related soil erosion and sedimentation and will also serve as a physical boundary to demarcate the limits of disturbance and to contain construction activities within approved areas.

Where dewatering is necessary during excavations within or adjacent to wetland areas, water will be pumped into appropriate dewatering basins or filter bags. At all times, dewatering will be performed

in compliance with EG-303NE and all relevant permits and approvals. The dewatering basins and all accumulated sediment will be removed following dewatering operations, and the area will be seeded and mulched. Soil erosion and sediment controls will be used to contain excess soil.

Staging areas and equipment storage, where feasible, will be situated outside of 100-foot and 200-foot regulated contiguous areas, where feasible. Equipment refueling (except for fixed equipment such as drill rigs) will occur outside of environmentally sensitive areas and secondary containment will be utilized when refueling and when equipment containing fuel or oil is stored onsite. Where structures are located in or near wetlands, proper soil erosion and sediment controls will be installed to contain the work areas.

In accordance with Best Management Practice (BMPs), construction mats, soil erosion and sediment controls, and other preventative measures will be implemented, as appropriate, in resource areas temporarily disturbed by construction. Herbaceous vegetation in disturbed areas will be restored using a native wetland or conservation seed mix, where necessary. A wetland seed mix will be used in wetlands, where supplemental seeding may be required to promote re-establishment of wetland vegetation. In tree removal areas, enhancements may be proposed as mitigation for important wildlife features lost due to tree removal and construction activities. Potential enhancement activities include seeding, planting native shrub species, leaving snags, and placing woody debris, slash, or stone piles to create wildlife cover.

Construction and Improvements to Access Roads

The Company proposes to improve existing access roads and construct new access routes to reach replacement structures locations, and to provide the ability to construct, inspect and maintain the L14 and M13 Lines. Where feasible, the Company plans to use its existing network of access roads to construct the Project. Many of these existing access roads will require maintenance or upgrading to support construction vehicles and equipment. For example, clean gravel, clean washed stone or trap rock may be used to stabilize and level the roads for construction vehicles. Construction of new access roads and access road improvement and maintenance will be carried out in compliance with the conditions and approvals of the appropriate federal, state, and local regulatory agencies. Stabilized crushed stone aprons underlain by geotextile fabric will be used at all access road entrances to public roadways to clean the tires of construction vehicles and minimize the migration of soil off-site. In uplands and in state regulated 100-foot and 200-foot contiguous areas, access road improvements will be left in place to facilitate future access to the ROW for inspection, and operation and maintenance purposes.

Access across wetlands and streams, where upland access is not available, will be accomplished by the temporary placement of construction mats. Streams will be spanned with construction mats to avoid disrupting the bank and channel flow. Construction mats will be removed following completion of construction, and areas will be restored to reestablish pre-existing topography and hydrology. The use of construction mats allows for heavy equipment access within wetland areas. The use of construction mats minimizes the need to remove vegetation beneath the access way and helps to reduce the degree of soil disturbance by distributing the weight of equipment over a larger area, minimize soil compaction and rutting in soft wetland soils. The use of construction mats will also help to protect root masses and help the wetland revegetate faster.

Construction mats will be certified clean by the vendor prior to installation. Clean is defined as being free of plant matter (stems, flowers, roots, etc.), soil, or other deleterious materials prior to being brought to the Project site. Any equipment or construction mats that have been placed or used within areas containing invasive species within the Project site shall be cleaned of plant matter, soil, or other

deleterious materials at the site of the invasive species prior to being moved to other areas on the Project site to prevent the spread of invasive species from one area to another. Mats will be cleaned prior to removal at the completion of the Project.

Installation of Structure Work Pads and Staging Areas

Upland work pads will be constructed at structure locations by grading or adding gravel and clean washed stone to provide a level work surface for construction equipment and crews. Once construction is complete, the work pads in uplands will remain in place, and will be stabilized with topsoil and mulch and seeded to allow vegetation to re-establish. In uplands and in state regulated 100-foot and 200-foot contiguous areas, stone-covered work pads will remain in place on a case-by-case basis to facilitate future access for inspection, operation, and maintenance purposes. At locations in 100-foot and 200-foot contiguous areas where stone-covered work pads may remain in place, those work pads will be stabilized and reseeded or, as an alternative, constructed with temporary construction mats. In wetlands, these work pads will be constructed with temporary construction mats and will be removed after the completion of construction activities. Wetlands will be restored to pre-construction configuration and elevations to the extent practicable. If necessary, vegetation will also be restored within the wetland through native seeding.

Installation of Foundations and Structures

Structures will be installed either on reinforced concrete caisson foundations or direct embedment into buried steel casings, dependent upon the structure type and location. Angle and dead-end transmission structures and the river crossing structures are proposed to be installed on concrete caisson foundations.

The predominance of the proposed transmission structures will be direct-embed structures where the pole butt is inserted into an excavated hole in the ground. The overhead conductors are placed in a vertical configuration on one side of the transmission pole structure. To address engineering design requirements and construction feasibility, each direct-embed pole structure will be encased within a corrugated metal pipe (CMP). Inside the CMP, the pole structure will be backfilled with crushed stone and the outside of the CMP will be backfilled with flowable fill for additional strength to stabilize the pole structure and to prevent shifting of the pole structure to account for high winds, coastal storm events and freeze and thaw events. This engineering design will result in a more reliable and robust transmission grid.

Excavation for direct embedment structures will be performed using a soil auger or standard excavation equipment depending on field conditions. Excavations will range from approximately 15 to 18 feet in depth, with diameters averaging eight feet wide. A CMP will be placed vertically into the hole and backfilled. The poles will be field assembled and inserted by cranes into the embedded steel casings. The annular space between the pole and the steel casing will then be backfilled with crushed stone.

Some structures will require drilled concrete caisson foundations, typically 20 to 35 feet deep, with typical diameters in the range of approximately 6 and 10 feet with an average of 8 feet in diameter. These structures will include steel monopoles and steel H-frame steel structures. Caissons will be constructed by drilling a vertical shaft, installing a steel reinforcing cage, placing steel anchor bolts, pouring concrete, and backfilling. Typical structure details are provided in Appendix D. Structures will be lifted by a crane and placed and secured onto the anchor bolts. On the L14 and M13

Mainlines, there are 193 new transmission structures to be installed and 203 existing transmission structures to be removed.

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

Dewatering may be necessary during excavations or pouring concrete for foundations. Dewatering will be performed in compliance with the Company's EG-303NE. Handling and management of wetland soils will be performed in accordance with a wetland soils management plan to be prepared by the contractor and accepted by the Company. Rock that is encountered during foundation excavation will generally be removed by means of drilling with rock coring augers. 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. If overnight dewatering is required, the contractor will develop a plan for review and approval by the Company prior to commencing overnight dewatering activities to include full-time monitoring of overnight dewatering activities.

Dust suppression methods will be used during drilling operations, as deemed necessary, to minimize fugitive dust emissions. In addition, minimal quantities of earth will be moved or impacted during construction at each structure locations. Therefore, any impacts from fugitive dust particles will be of short duration and localized.

Installation of Conductor, Optical Ground Wire, and Shield Wire

Following the construction of transmission line structures, insulators will be installed to isolate the energized power conductors from the structure. OPGW, shield wire, and power conductors will then be installed using stringing blocks and wire stringing equipment. First, a temporary lead line will be installed on the structures within a given stringing section. The lead line will then be used to pull the final wire into place. The wire stringing equipment will be 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 are used to ensure public safety and uninterrupted operation of other utility equipment by keeping the wire away from other utility wires and clear of the traveled way at these crossing locations. Construction of temporary wire stringing and pulling sites on the ROW will be required to provide safe and level locations for equipment and personnel to perform wire stringing operation.

The Company plans to install overhead wires between Structures 41 and 40 (i.e., to cross the Sakonnet River) and may elect to use a helicopter, boat to tow the lead line across the river, or to string the wires from upland areas located on either side of the river. The Company may also use helicopter installation in other locations.

Removal and Disposal of Existing Transmission Line Components

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

Lead paint may be encountered during lattice tower removal. The Company will follow the Company's Safety and Environmental Guidance Documents for handling lead paint chip debris during the tower removal process. Towers will be dismantled and recycled while paint chip debris will be managed as hazardous waste.

The Company's Procurement Group manages the recycling and disposal of company facilities, equipment, and materials. The Procurement Group will oversee the recycling and disposal activities associated with the Project and incorporate these materials into the recycling program as appropriate.

Restoration and Stabilization of the ROW

Restoration efforts, including removal of construction debris, final grading, stabilization of disturbed soil, and the installation of permanent sediment control devices, will be completed following construction. All disturbed areas around structures and other graded locations will be seeded with an appropriate conservation seed mixture and/or mulched to stabilize the soils in accordance with applicable regulations. Temporary sediment control devices will be removed following the stabilization of disturbed areas. Existing stone walls will be restored to the pre-existing conditions, if affected during construction. The Company has identified locations on the ROW where access roads and work pads will remain in place but will be covered with topsoil and seeded to more fully restore sections of the ROW. Where authorized by property owners, permanent gates and access roadblocks will be installed at key locations to restrict unwarranted access and trespass onto the ROW by unauthorized persons or vehicles. Regulated environmental resources that are temporarily disturbed by construction will be restored in accordance with applicable permit conditions.

3.3.3 Construction Traffic and Mitigation

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

The Company's contractors will coordinate closely with the municipalities of Tiverton and Portsmouth, and the Rhode Island Department of Transportation (RIDOT) to develop Traffic Management Plans (TMP) and Temporary Traffic Controls (TTC) for work within state and local roads. At locations where construction equipment must be staged in the road, the contractors will follow a pre-approved work zone traffic control plan with appropriate police details. The Company will comply with required measures to ensure a safe environment for traffic flow and construction crews in and around the roadways. Appropriate safety measures will be implemented to allow safe traffic patterns for vehicles, bicyclists and pedestrians.

3.3.4 Construction Work Hours

Proposed construction work hours for the Project will be between 7:00 a.m. and 7:00 p.m. Monday through Friday when daylight permits and between 7:00 a.m. and 5:00 p.m. on Saturday and Sunday. Some limited construction may occur outside of standard work hours when needed to complete certain activities. For example, some work tasks such as pulling in new conductor or concrete pours, once started, must be continued to completion, and may go beyond normal work hours.

The Town of Tiverton and Town of Portsmouth have enacted local ordinances for construction noise. Both the Tiverton ordinance (Section 38-144) and the Portsmouth ordinance (Section 257-13) indicate that properly permitted construction activities are allowed between the hours of 7:00 a.m. and 9:00 p.m. each day; the Company's proposed work hours are within this timeframe. The Company may seek a variance from the municipalities for the tasks described above that may go beyond normal work hours and will consult with the Towns of Tiverton and Portsmouth.

In addition, the nature of transmission line construction requires line outages for certain procedures such as transmission line connections, equipment cutovers, or stringing under or over other transmission lines. Availability of these outages, which is dictated by the Independent System Operator – New England (ISO-NE) and is based on regional system load and weather conditions, can be limited. Such scheduled outages will have no effect on electric service to local customers. Work requiring scheduled outages and crossings of certain transportation and utility corridors may need to be performed on a limited basis outside of normal work hours, including on Sundays and holidays.

Prior to and during construction, the Company will notify affected landowners and abutting property owners, municipal officials, the Departments of Public Works, and Police and Fire Chiefs of the details of planned construction including the normal work hours and any extended work hours.

3.3.5 Environmental Compliance Monitoring

Throughout the construction-phase of the Project, the Company will retain the services of an environmental compliance monitor who will verify and report on compliance with all federal, state, and local permit requirements and the Company's policies and procedures. At regular intervals and after periods of prolonged or heavy precipitation or excessive snow melt, the environmental compliance monitor will inspect all locations to determine whether the environmental controls are installed and functioning properly. Prior to the start of construction, all Project personnel will be trained on Project environmental requirements and permit conditions, including erosion and sediment controls, rare species, storm water management, and cultural resources. Refresher training will be held as new crew members join the Project work force and as otherwise necessary. The Company will conduct regular construction progress meetings to reinforce the construction team's awareness of these environmental requirements. Pre-construction "look-ahead meetings" will take place in the field with appropriate Project personnel. The Company's environmental compliance monitor will attend these meetings to provide feedback on environmental requirements and compliance to construction personnel.

In addition to retaining the services of an environmental compliance monitor, the Company will require construction personnel to designate an individual to be responsible for the daily inspection and maintenance of environmental controls. This person will also be responsible for providing direction to the other members of the construction crew regarding matters such as wetland access, appropriate work methods and construction best management practices, driving safety, and good house-keeping practices on the ROW.

3.3.6 Safety and Public Health Considerations

The Company will design, build, and maintain the Project so that the health and safety of the public are protected. This will be accomplished through adherence to all applicable regulations, and industry standards and guidelines established for the protection of the public. Specifically, the Project will be designed, built and maintained in accordance with the Company's own standards as well as the National Electric Safety Code (NESC). The facilities will be designed in accordance with sound engineering practices using established design codes and guides published by, among others, the Institute of Electrical and Electronic Engineers (IEEE), the American Society of Civil Engineers (ASCE), the American Concrete Institute (ACI), and the American National Standards Institute (ANSI).

Practices which will be used to protect the public during construction will include, but not be limited to, establishing traffic control plans for construction traffic on busy streets to maintain safe driving conditions, restricting public access to work areas, noise and dust control, and coordination with the municipalities of Tiverton and Portsmouth during construction.

A discussion of the status of the health research relevant to exposure to EMF was prepared by Exponent, Inc. and is attached as Appendix E.

3.3.7 Public Outreach

The Company believes in, and has committed to, a fully open, transparent, and regular two-way dialogue with Project stakeholders throughout the life of its projects. The Company has already undertaken efforts in this regard - a comprehensive stakeholder outreach campaign to educate and inform neighborhood residents, municipal officials, and businesses about the full scope of work to be undertaken to support this Project. Pre-construction outreach activity has included notifications to abutters and conversations with Project stakeholders regarding a variety of topics including grants of access, environmental matting needs, proposed structure locations, vegetation management, etc. The Company is committed to maintaining those conversations throughout the Project.

To date, the Company has completed the following activities listed below in furtherance of its outreach efforts.

- Meetings with municipalities and relevant governmental organizations with interest in the Project scope.
- Community Open House events.
- Community outreach (e.g., door-to-door).
- A user-friendly, interactive website – www.portsmouth-tiverton-electric-upgrades.com.
- A Project hotline and email.
- Fact sheets, door hangers, FAQs, timelines, etc.
- Advertising.

The team will continue to maintain a high level of outreach to discuss the Project, receive comments, and answer questions throughout the construction phases.

State and Local Meetings

The Project team has met, and will continue to meet as needed, with all relevant governmental bodies with interest in, or impacted by, the Project scope. In advance of the filing, the Project team has met with Town representatives of Tiverton and Portsmouth, Rhode Island to outline the Project need, benefits and high-level details around the Project route, local impacts, and tentative Project schedule. In addition, the Project team has briefed RIDOT and other relevant state agencies. The Project team will continue to meet regularly with governmental stakeholders throughout the construction schedule to ensure a timely flow of information and provide opportunities for input.

Open Houses/Community Outreach

The Company is fully committed to providing the community with the opportunity to see the Project plans and responding to questions and concerns. There will be community open house meetings held in the Project footprint to provide interested parties with an opportunity to learn more about the Project and ask questions of Project subject matter experts. Thus far, two open house sessions were held for the Project on January 30, 2024, at the Fort Barton Elementary School in Tiverton and on January 31, 2024, at the Portsmouth High School in Portsmouth. In advance of construction starting, the Company is additionally evaluating the benefits of scheduling a pre-construction open house, in consultation with local officials from the Towns of Tiverton and Portsmouth. All information about Company-hosted meetings will also be made available on the Project website, communicated via mailings, and promoted through local advertising.

Project Website

A Project website was developed (www.portsmouth-tiverton-electric-upgrades.com). This website provides Project information, including background, updates, and contact resources. The Company will keep the Project website up to date for the duration of the Project. A dedicated e-mail address is available for interested parties to send questions or comments. The Project e-mail is listed in all Project outreach materials, including fact sheets, mailings, the website, and signage at community events. An interactive map is featured on the website so interested parties can review the Project footprint and progress.

Project Hotline

A local phone number will be designated as the Project Hotline for the Project as the Company approaches the start of construction. The Project Hotline number will be listed in all Project outreach materials, including fact sheets, mailings, the website, and signage at community events. A Project representative will staff the hotline and the Company pledges to respond within two businesses days to all inquiries – most often on the same business day whenever practical.

Abutter Communications

The Company representatives expect to meet individually with Project abutters who have questions specific to their properties through the life of the Project. In addition, the Project team will be sending letters via U.S. Mail to keep them abreast of Project developments throughout the Project schedule.

Door-to-Door Outreach

The Company will engage in a door-to-door outreach campaign, canvassing residents and businesses adjacent to Project activities. The purpose of this outreach is to provide information and answers to

questions. If a resident is not available, a Company representative will leave Project-related information at the door. A similar effort will be undertaken with affected businesses and facilities along the Project route.

Construction Communication Plan

Building off the existing outreach and communications plan, the Company will develop a comprehensive construction communication plan to update residents, businesses, fire, police, emergency personnel, and municipal officials on work schedules, work locations, and construction activities. In addition to the Project website, hotline, and email, this plan will include, as needed, work area signage, construction notifications, and direct contact with Project abutters.

The Company's Project representatives will be responsible for coordinating outreach during construction and serving as a single point of contact for the public. The Project website will be kept up to date throughout Project construction. Project information also will be communicated through various town and businesses websites as permitted.

Project Materials

The Company will also produce Project materials – fact sheets, frequently asked questions and other background materials for dissemination to affected Project abutters and elected officials. This Project information will also be placed on the Project website to optimize availability of the Project information.

3.3.8 Estimated Project Costs

The Company has prepared Project cost estimates as identified in Table 3-1. The cost estimates presented have an accuracy of +/- 30%. Estimated costs include costs of materials, labor and equipment, escalation, contingency and risk.

TABLE 3-1 ESTIMATED PROJECT COSTS

PROJECT COMPONENTS	ESTIMATED COST ($M)
L14 & M13 Mainline Rebuild	$53,000,000.00

3.3.9 Project Schedule

The overall construction of the Project is expected to take approximately 16 months to complete. The Company expects the licensing and permitting process to continue through Q4 2024, with final engineering completed during Q3 2024. Construction is anticipated to begin in early-December 2024 with construction complete at the end of May 2026, and final ROW restoration to occur through Q3 2027.

The Company has developed a preliminary schedule based on time estimates for planning and engineering, permitting and licensing, construction, and schedule outages (Table 3-2). The overall ready for load date is anticipated by Q4 2025.

TABLE 3-2 PRELIMINARY PROJECT SCHEDULE*

ACTIVITY	ESTIMATED START DATE	ESTIMATED COMPLETION DATE
Planning and Engineering	Q4 2022	Q2 2024
Permitting and Licensing	Q3 2023	Q3 2024
Construction	Q4 2024	Q2 2026
Facilities Ready for Load	Q2 2026	
Final Restoration and Stabilization	Two Growing Seasons through Q3 2027	

Note: *The construction schedule is dependent upon the availability of line outage windows, and the receipt of all applicable permits and approvals.

4.0 PROJECT ALTERNATIVES

4.1 Introduction

This section describes the alternatives to the Project that were considered to address the need for asset condition refurbishments on the L14 and M13 Lines. As described in Section 2.0, the Project need is to rebuild existing assets and improve reliability.

An important goal in the planning and development of the electric transmission system is to ensure that the solutions selected to meet the electrical system needs are the most appropriate in terms of cost and reliability, and that environmental impacts are minimized to the fullest extent possible. Analyses were undertaken to evaluate the feasibility of alternatives to the Project to ensure these objectives were met.

Section 4.2 describes the no-action alternative, Section 4.3 describes the underground line alternative, Section 4.4 describes the underground line alternative, and Section 4.5 describes the Project.

4.2 No-Action Alternative

The no-action alternative would leave the L14 and M13 Lines in their current condition, not meeting existing reliability and safety standards. In 2024, the M13 Line is ranked as the third worst performing circuit while the L14 Line is ranked as the eighth worst performing circuit out of the total 46 circuits on the Company's transmission system. The existing wood poles along the line are showing signs of significant asset deterioration due to rotting, woodpecker holes, bowing, and discoloration. Insulators on all structures throughout the line also show signs of flashing, chips, and breaks. The conductor damage indicates a high risk of failure due to historical operations and insufficient design against increased severe weather patterns. Failures along the line due to the current asset condition will not only impact customer interruptions but pose severe public safety risks. For these reasons, the No Action is not an acceptable alternative for maintaining a firm and reliable electric supply for customers as it would not address the need to bring the L14 and M13 Lines up to current codes and resolve the condition and reliability issues. The no-action alternative is not acceptable from either an operational or reliability perspective.

4.3 Line Remediation Alternative

The Company also examined the potential to replace the assets along the lines as they reach their full life expectancy. A project would be kicked off to replace all wood poles on the L14 and M13 Lines. The steel structures would be replaced as each of them reach 65 years old, which varies for each structure. This alternative would also only pursue reconductoring now on the Mainlines, since the conductor has exceeded life expectancy.

As discussed in Section 2.0, the assets along the L14 and M13 Lines are experiencing heavy deterioration and pose a significant reliability and safety risk to customers. Although some of the assets have not reached life expectancy, factors such as insufficient insulation, historical damage, and increased incidents of severe weather like snow and lightning compromise the health of the assets. Therefore, the life expectancy of the assets may be shorter than when manufactured.

Further, waiting to replace the assets until they have reached life expectancy results in higher costs to maintain the assets so that they do not prematurely fail.

Instead of impacting environmental resources once to address all the assets, replacing the assets as they reach life expectancy means resources would potentially need to be impacted several times to provide access to various assets.

Due to higher costs, increased environmental impacts, and operational disadvantages discussed above, replacing assets as they reach life expectancy was not considered further.

4.4 New Underground Route Alternative

The Company considered two configurations for new underground transmission cables. The Company first considered the feasibility of constructing two new parallel 115 kV transmission cables within the existing ROW. The Company easements associated with the L14 and M13 Mainline ROW extending from the Massachusetts/ Rhode Island border to the Dexter Substation convey rights for overhead transmission/ distribution facilities only, but do not convey rights for underground transmission. The Company would be required to obtain rights from each individual landowner located along the ROW corridor, which would likely result in extensive negotiations affecting the Project schedule and Project costs. The Rhode Island Turnpike and Bridge Authority (RITBA) and the RIDOT would need to approve the construction of the transmission cables on the Sakonnet River Bridge (e.g., bridge attachment) to cross the Sakonnet River. Previous experience has revealed that the RIDOT is unlikely to approve a utility crossing if there is a feasible alternative available to the project proponent. Impacts to the natural environment would be significantly more than the preferred alternative due to the need to excavate two, continuous trenches within the ROW to install the duct bank and manhole systems that would house the underground transmission cables.

The Company considered a second underground configuration which would involve identifying and securing a route to construct two parallel 115 kV underground cables. The most feasible route would be identifying a route along existing public (state and local) roadways. Detailed surveys would be required to identify and evaluate the existing inventory and density of underground and overhead utilities located along the roadway route(s) to determine if there is available real estate to install two series of concrete duct bank and manhole systems. Relocating existing buried utilities is a high probability. Impacts to the social environment would be significantly more than the preferred alternative because of the need for continuous construction with the public roadways affecting commuter traffic, and residential and commercial land uses along the public roadways. The cost of an underground alternative is at least ten times more costly that an overhead alternative.

For the reasons outlined above, the Company dismissed the underground alternative from further consideration.

4.5 Parallel Circuit Transmission Line Rebuild (Preferred Alternative)

The Company concluded that the proposed Project is the preferred alternative to meet the identified need. The proposed Project includes structure replacements along approximately 7.9 miles of the existing L14 and M13 Lines. The existing conductor will be replaced (reconductored) with new single 1113 kcmil ACSS conductor. The existing shield wire will be replaced with OPGW from the Massachusetts/Rhode Island state border to Dexter substation. The Company will be maintaining and upgrading access roads, signage and grounding along the full length of Project, as applicable. This option is the only alternative that addresses the need to bring the L14 and M13 Lines up to current codes and resolve the condition and reliability issues with the existing lines.

The proposed Project was determined to be the most economical solution that met the identified need.

4.6 Conclusion

The Company evaluated alternatives in the development of the Project as described above. Ultimately, the Company concluded that upgrading and reconductoring the existing L14 and M13 Lines is significantly preferred to the other alternatives because it will: (i) resolve the age, condition, and reliability concerns with the L14 and M13 Lines while meeting the need for the Project at the lowest possible cost; (ii) minimize environmental impacts; and (iii) be completed in the shortest timeframe.

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5.0 DESCRIPTION OF AFFECTED NATURAL ENVIRONMENT

This section describes the specific natural features that have been evaluated for potential impacts based upon published resource information available through the Rhode Island Geographic Information System (RIGIS) database, various state and local agencies, and field investigations of the Project ROW.

The Project involves the rebuild of the existing 115 kV transmission lines mostly within the Company's existing ROW easements and primarily within the maintained portion of the existing ROW. As a result, the Project is anticipated to have only limited and temporary impacts on the natural environment including, soils, vegetation, surface water, wetland and waterbodies, and wildlife. The Project is anticipated to have no impact on geology and therefore the geological characteristics are not included in the below assessment.[3]

5.1 Project Study Area

A Study Area was established to assess the existing environment both within and immediately adjacent to the existing ROW. This Study Area consists of a 5,000-foot-wide corridor, measured 2,500 feet on either side of the centerline of the ROW. The boundaries of this corridor were established to allow for a detailed desktop analysis of existing conditions within and adjacent to the Project ROW (Figure 5-1, Appendix A).

5.2 Topography, Drainage Basins, and Floodplains

The Project area consists of existing and maintained overhead electric transmission ROW. Topography within the ROW is variable with sections of relatively flat lands and sections of rolling hills with moderate slopes. Elevations range widely from approximately 10 to 150 feet above mean sea level throughout the ROW.

The Project lies wholly within the Narragansett Bay drainage basin. Sub-watersheds within major basins are further delineated into smaller watersheds identified by a unique level, Hydrologic Unit Code (HUC- 12), of which four are crossed by the Project. From north to south, the Project ROW traverse the Mount Hope Bay sub-watershed (HUC-12 010900040905), the Quequechan River sub-watershed (HUC-12 010900040803), the Sakonnet River sub-watershed (HUC-12 010900040910) and the Upper East Passage sub-watershed (HUC-12 010900040907) (RIGIS 2007). No drinking water supply watersheds are crossed by the Project.

Several Federal Emergency Management Agency (FEMA)-mapped 100-year floodplains are present within the Project area, as shown in on mapping in Appendix A and Appendix B. The floodplains are associated with wetland complexes adjacent to major drainageways such as the Sakonnet River and Founders Brook and along coastal floodplains associated with Mount Hope Bay.

[3] Per EFSB Rule 1.6(F)(3), which states to the extent the proposed project will have only negligible impact on any particular resource in the natural and social environment, the applicant may so state and need not provide a detailed analysis of the baseline conditions for that resource.

5.3 Soils

Because soils will be disturbed and graded for access roads, work pads and pull pads during Project construction, information concerning the physical properties, classification, agricultural suitability, and erodibility of soils near the Study Area (Figure 5-1, Appendix A) were obtained from the Natural Resource Conservation Service. The Soil Survey delineated map units that may consist of one or more soil series and/or miscellaneous non-soil areas that are closely and continuously associated on the landscape. In addition to the named series, map units include specific phase information that describes the texture and stoniness of the soil surface and the slope class. The soil series within the Study Area were identified. Common soil types found within the Study Area include Newport silt loam, 3 to 8% slopes, Udorthents-Urban land complex, Newport-Urban land complex, Paxton-Urban land complex, 3 to 15% slopes, Newport silt loam, 0 to 3% slopes, Canton and Charlton fine sandy loams, 3 to 15% slopes, very rocky, Newport silt loam, 8 to 15% slopes, and Freetown muck, 0 to 1% slopes. These soil types make up approximately 52% of the Study Area soils. Study Area hydric soil (organic, wetland soil) status is depicted on Figure 5-2, Appendix A.

5.3.1 Erosive Soils

The erodibility of soils is dependent upon the slope of the land and the texture of the soil. Soils are given an erodibility factor (K), which is a measure of the susceptibility of the soil to erosion by water. Soils having the highest K values are the most erodible. K values range from 0.02 to 0.69 and vary throughout the depth of the soil profile with changes in soil texture. Very poorly drained soils and certain floodplain soils usually occupy areas with little or no slope. Therefore, these soils are not subject to erosion under normal conditions and are not given an erodibility factor. Soil map units with moderate or higher erosion hazard within in the Study Area include Broadbrook silt loam, Bridgehampton silt loam, Mansfield mucky silt loam, Mansfield very stony mucky silt loam, Pittstown loam, Newport silt loam, Newport very stony silt loam, Paxton fine sandy loam, Newport loam, Udorthents-Urban land complex, Canton and Charlton fine sandy loams, Pittstown silt loam, Pittstown very stony silt loam, Stissing silt loam, Stissing very stony silt loam. These soil map units have a K factor value of 0.15 to 0.43 and make up approximately 38% of the Study Area.

5.3.2 Prime Farmland Soils

Prime farmland, as defined by the United States Department of Agriculture (USDA), is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Farmland of statewide importance is land, in addition to prime farmland, that is of statewide importance for the production of food, feed, fiber, forage and oilseed crops. Generally, farmlands of statewide importance include those lands that do not meet the requirements to be considered prime farmland, yet they economically produce high yield of crops when treated and managed with modern farming methods. Some may produce as high a yield as prime farmland if conditions are favorable.

Prime farmland and farmland of statewide importance located within the Study Area are identified in Table 5-1. Approximately 26% of the Study Area is made up of soils classified as Prime Farmland Soils, and approximately 11% of the Study Area is made up of soils classified as Farmland of Statewide Importance.

TABLE 5-1 PRIME FARMLAND AND FARMLAND OF STATEWIDE IMPORTANCE WITHIN THE STUDY AREA

SOIL MAP UNIT SYMBOL	NAME	PRIME FARMLAND	FARMLAND OF STATEWIDE IMPORTANCE
305B	Paxton fine sandy loam, 3 to 8 percent slopes	X	
306B	Paxton fine sandy loam, 0 to 8 percent slopes, very stony		X
325B	Newport loam, 3 to 8 percent slopes	X	
326C	Newport loam, 3 to 15 percent slopes, very stony		X
345B	Pittstown loam, 0 to 8 percent slopes	X	
Bc	Birchwood sandy loam	X	
BmB	Bridgehampton silt loam, till substratum, 3 to 8 percent slopes		X
BrA	Broadbrook silt loam, 0 to 3 percent slopes	X	
BrB	Broadbrook silt loam, 3 to 8 percent slopes	X	
CdB	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	X	
EfB	Enfield silt loam, 3 to 8 percent slopes		X
HnC	Hinckley-Enfield complex, 3 to 15 percent slopes		X
MmA	Merrimac fine sandy loam, 0 to 3 percent slopes	X	
NeA	Newport silt loam, 0 to 3 percent slopes	X	
NeB	Newport silt loam, 3 to 8 percent slopes	X	
NeC	Newport silt loam, 8 to 15 percent slopes		X
PaB	Paxton fine sandy loam, 3 to 8 percent slopes	X	
PmA	Pittstown silt loam, 0 to 3 percent slopes	X	
PmB	Pittstown silt loam, 3 to 8 percent slopes	X	
PsB	Poquonock loamy fine sand, 3 to 8 percent slopes	X	
QoC	Quonset gravelly sandy loam, rolling		X
Se	Stissing silt loam		X
Ss	Sudbury sandy loam	X	
StB	Sutton fine sandy loam, 3 to 8 percent slopes	X	
Wa	Walpole sandy loam, 0 to 3 percent slopes		X

Source: Natural Resource Conservation Service

5.4 Description of Uplands

The Project is located within a managed transmission line ROW where vegetation is maintained as low-growing shrub and herbaceous habitats. The Project ROW and surrounding areas are largely developed and as a result the majority of the ROW features upland area. Undeveloped portions of the ROW are predominately surrounded by upland forest characterized by broad-leaved deciduous tree species including northern red oak (*Quercus rubra*), eastern white oak (*Quercus alba*) and red maple (*Acer rubrum*). Within upland portions of the maintained ROW, routine vegetation management has favored the establishment of early successional shrubland. Shrub species commonly found within the managed ROW include roundleaf greenbrier (*Smilax rotundifolia*), rambler rose (*Rosa multiflora*), Virginia creeper (*Parthenocissus quinquefolia*), sweet fern (*Comptonia peregrina*), and blackberry

(*Rubus* spp.) interspersed with sweet pepperbush (*Clethra alnifolia*) and smooth arrowwood (*Viburnum dentatum*). Patches of herbaceous vegetation interspersed within shrub-dominated areas included species such as Canada goldenrod (*Solidago canadensis*), wrinkle-leaved goldenrod (Solidago rugosa), flat-top goldenrod (*Euthamia graminifolia*), and hay-scented fern (*Dennstaedtia punctilobula*).

In addition to the natural environment, there are a variety of upland land cover types adjacent to the ROW. Uplands adjacent to the L14 and M13 Lines ROW in Tiverton and Portsmouth are a mixture of residential suburban neighborhoods, commercial areas, agricultural lands, golf courses, conservation land, and shrubland.

5.5 Water Resources

5.5.1 Surface Waters

The Study Area lies entirely within the Narraganset Bay subbasin. Within the subbasin, the Project crosses two watersheds including Narragansett Bay-Frontal Rhode Island Sound in Fall River, Massachusetts and Tiverton and Portsmouth, Rhode Island and the Lower Taunton River watershed in Fall River, Massachusetts and Tiverton, Rhode Island (RIGIS 2007). Watersheds are further delineated into smaller sub watersheds identified by a unique level, Hydrologic Unit Code (HUC-12). The Project ROW crosses four sub watersheds, including Mount Hope Bay, Quequechan River, Sakonnet River, and Upper East Passage, as detailed in Table 5-2.

TABLE 5-2 HYDROLOGIC UNIT CODE-12 SUB WATERSHEDS CROSSED BY THE PROJECT

LINE SEGMENT	BEGIN STRUCTURE	END STRUCTURE	HUC12 CODE AND NAME
L14/M13 Mainline	19(78)	M9/L9	010900040905 Mount Hope Bay
L14/M13 Mainline	M10/L10	M11/L11	010900040803 Quequechan River
L14/M13 Mainline	M12/L12	M13/L13	010900040910 Sakonnet River
L14/M13 Mainline	M14/L14	M15/L15	010900040905 Mount Hope Bay
L14/M13 Mainline	M16/L16	M20/L20	010900040910 Sakonnet River
L14/M13 Mainline	M21/L21	M42/L42	010900040905 Mount Hope Bay
L14/M13 Mainline	M43/L43	M/L51X	010900040910 Sakonnet River
L14/M13 Mainline	M/L52	M75/L75	010900040905 Mount Hope Bay
L14/M13 Mainline	M76/L76	M90/L90	010900040907 Upper East Passage

Source: RIGIS

The named surface water resources and classifications within the Study Area are listed in Table 5-3. Pursuant to the Rhode Island Water Quality Regulations (250-RICR-150-05-1), the waters of the state of Rhode Island (meaning all surface water and groundwater of the State) are assigned a Use Classification which is defined by the most sensitive uses which it is intended to protect. Waters are classified according to specific physical, chemical, and biological criteria which establish parameters of minimum water quality necessary to support the water Use Classification. The water quality classification of the major surface waters within the Study Area are identified in the descriptions of the water bodies that follow.

1. All streams tributary to Class A waters shall be Class A.
2. All waters tributary to Class AA waters shall be Class AA.

3. All freshwaters hydrologically connected by surface waters and upstream of Class B, B1, SB, SB1, C, or SC waters shall be Class B unless otherwise identified in Section 1.25 of the Water Quality Regulation.
4. All other fresh waters, including, but not limited to, ponds, kettleholes and wetlands not listed in Section 1.25 of the Water Quality Regulation shall be considered to be Class A.
5. All seawaters not listed in Section 1.25 of the Water Quality Regulation shall be considered to be Class SA. All saltwater and brackish wetlands contiguous to seawaters not listed in Section 1.25 of this Part shall be considered Class SA.
6. All saltwater and brackish wetlands contiguous to seawaters listed in Section 1.25 of the Water Quality Regulation shall be considered the same class as their associated seawaters.

Special Resource Protection Waters (SRPWs) are high quality surface waters identified as having significant ecological or recreation uses. No SRPWs are located within the Study Area.

TABLE 5-3 NAMED SURFACE WATER RESOURCES WITHIN THE STUDY AREA

WATER BODY NAME	TOWN	USE CLASSIFICATION	FISHERY DESIGNATION	WATER BODY CROSSED
Tributary to Sin and Flesh Brook	Tiverton, RI	B1	Warm	Yes
Creamer Pond	Tiverton, RI	A	Unassessed	No
Sakonnet River	Tiverton, RI Portsmouth, RI	SB	No Designation	Yes
Mount Hope Bay	Tiverton, RI Portsmouth, RI	SB SA	No Designation	Yes
Founders Brook	Portsmouth, RI	A	Warm	Yes
Town Pond	Portsmouth	Not Listed, Determined A	Unassessed	No
Tributary to The Cove	Portsmouth	A	Warm	No
Barker Brook	Portsmouth	A	Warm	Yes

Notes:
Use Classification:
A: These waters are designated for primary and secondary contact recreational activities and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have excellent aesthetic value.
B1: These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However, all Class B criteria must be met.
C: These waters are designated for secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.
SA: These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.
SB: These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses (other than shellfish for direct human consumption), navigation, and industrial cooling. These waters shall have good aesthetic value.

Source: State of Rhode Island Water Quality Regulations 250-RICR-150-05-01. Available at https://rules.sos.ri.gov/regulations/part/250-150-05-1, accessed on February 23, 2024.

Pursuant to the requirements of Section 305(b) of the federal Clean Water Act, water bodies that are determined to be not supporting their designated uses in whole or in part are considered impaired and

scheduled for restoration. The causes of impairment are those pollutants or other stressors that contribute to the actual chemical contaminants, physical parameters, and biological parameters. Sources of impairment are not determined until a total maximum daily load (TMDL) assessment is conducted on a water body. Table 5-4 lists the impaired surface water resources in the Study Area based on the State of Rhode Island 2022 Impaired Waters Report (RIDEM 2022).

TABLE 5-4 IMPAIRED SURFACE WATER RESOURCES IN THE STUDY AREA

WATER BODY NAME	IMPAIRMENT	CATEGORY
Sucker Brook	Enterococcus	4A
	Copper	5
Mount Hope Bay	Dissolved Oxygen	5
	Total Nitrogen	5
	Fecal Coliform	4A
Founders Brook	Enterococcus	5
Sakonnet River	Fecal Coliform	4A

Notes:
Category 4A TMDL has already been completed. Waterbodies are listed and tracked under Category 4A when the TMDL has been completed by RIDEM and approved by United States Environmental Protection Agency.
Category 5 Impaired or threatened for one or more uses and requires a TMDL, development of TMDL needed.
Source: State of Rhode Island Water Quality Regulations 250-RICR-150-05-01. Available at https://rules.sos.ri.gov/regulations/part/250-150-05-1, accessed on February 23, 2024.

5.5.2 Wetlands and Waterbodies

On behalf of the Company, POWER wetland scientists completed a delineation of wetlands and waters of the United States on February 9 and 14, 2023; June 6, 2023; September 11-15, 2023; and October 3-6, October 10-13, and October 19, 2023. A total of 22 wetlands, 11 nontidal watercourses consisting of 8 perennial and 3 intermittent streams, as well as one tidal watercourse (the Sakonnet River) were identified and delineated. During field surveys, wetlands were identified and delineated in accordance with requirements of the Clean Water Act (33 United States Code §§ 1251 et seq., Section 404 and Section 401). Pursuant to the recently updated definition of "Waters of the United States" effective September 8, 2023, relatively permanent standing or continually flowing bodies of water, including wetlands with a continuous surface connection to those waters, are subject to the federal Clean Water Act. Wetlands display evidence of three wetland indicators – predominance of hydrophytic (wetland) vegetation, hydric soils, and surface hydrology. This three-parameter approach was used by the field team to identify and delineate the wetlands in accordance with the 1987 *Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the *subsequent Regional Supplement to the United States Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012). Apart from unusual or atypical situations, evidence of wetland must be exhibited by all three parameters for an area or position to be designated as wetland.

Field methodology for the delineation of State-regulated resource areas within the ROW was based upon vegetative composition, presence of hydric soils, and evidence of wetland hydrology. The study methods included both on-site field investigations and off-site analysis to determine the wetland and watercourse resource areas on the Project ROW. Wetlands outside the ROW but within the Study Area were identified based on a desktop review of United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data, Rhode Island wetlands data (RIGIS 1993), and Massachusetts Department of Environmental Protection (MassDEP) wetlands data (MassDEP 2017).

Figure 5-3 depicts wetland resources within the Study Area based on available NWI and state wetland data.

A two-person field team comprised of a wetland ecologist and an environmental specialist performed a field survey to identify, characterize, and map coastal and freshwater wetland and watercourse resources along the L14 and M13 Lines. The survey area also included an access road off Anthony Road in Portsmouth, Rhode Island

The field team utilized a Juniper Geode GNS2 global navigation satellite system (GNSS) receiver paired with an iPad (or similar device) running Esri Field Maps software with a Project-specific base map to provide real time sub-meter accuracy resource mapping. Wetland and stream boundary flags (pink and blue, respectively) were labeled with Resource Identification (ID) and Flag Number and hung on persistent vegetation in the field. The field-delineated wetlands included with permit plans (Appendix B) show the extent of field delineated wetlands, streams, and shoreline features.

Wetlands are resources which have ecological functions and societal values. Wetlands are characterized by three criteria: (i) the presence of undrained hydric soil, (ii) a prevalence (>50%) of hydrophytic vegetation, and (iii) wetland hydrology, where soils are saturated near the surface or flooded by shallow water during at least a portion of the growing season.

In accordance with the provisions of the Rhode Island Fresh Water Wetlands Act and Rules, the Coastal Resources Management Council (CRMC) Freshwater Wetlands in the Vicinity of the Coast, state-regulated freshwater wetlands include swamps, marshes, bogs, forested or shrub wetlands, emergent plant communities and other areas dominated by wetland vegetation and showing wetland hydrology. The wetlands have a regulated jurisdictional area which extends 100 feet outward from the edge of the wetland. The Rules also regulate activities in and around streams and open water bodies which include rivers, streams, ponds, Areas Subject to Storm Flowage (ASSF), Areas Subject to Flooding (ASF), and floodplains. The Study Area is primarily located within the Non-Urban River Protection Region 2. The rivers, streams, and drinking water supply reservoirs have a regulated jurisdictional area which extends 200 feet outward from the resource's bank.

POWER identified and mapped 22 wetlands within the survey area. Specific wetland features identified during the field review include both freshwater and coastal wetlands. The NWI wetlands and deepwater habitat classification system (Federal Geographic Data Committee 2013) defines wetland and deepwater habitat resources via a series of alpha-numeric codes which correspond to the classification nomenclature that best describes a particular wetland habitat type. Wetlands within the survey area were assigned the following NWI classification codes as determined by the wetland ecologist during the field review:

- Estuarine Intertidal Emergent (E2EM) wetlands include deepwater tidal habitats and adjacent tidal wetlands that are usually semi enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The substrate in these habitats is flooded and exposed by tides and includes the associated splash zone. These wetlands are dominated by emergent plants—i.e., erect, rooted, herbaceous hydrophytes, excluding mosses and lichens—as the tallest life form with at least 30% areal coverage. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
- Palustrine Emergent (PEM) wetlands are nontidal wetland systems dominated by emergent plants—i.e., erect, rooted, herbaceous hydrophytes, excluding mosses and

lichens—as the tallest life form with at least 30% areal coverage. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- Palustrine Forested (PFO) wetlands are nontidal wetland systems where trees are the dominant life form—i.e., the tallest life form with at least 30 percent areal coverage. Trees are defined as woody plants at least six meters (20 feet) in height.
- Palustrine Scrub-shrub (PSS) wetlands are nontidal wetland systems where woody plants less than six meters (20 feet) tall are the dominant life form—i.e., the tallest life form with at least 30 percent areal coverage. The "shrub" life form includes true shrubs, young specimens of tree species that have not yet reached six meters in height, and woody plants (including tree species) that are stunted because of adverse environmental conditions.

The 22 wetland resources identified within the survey area are individually summarized in Table 5-5. Information included in Table 5-5 includes field-verified wetland community type(s) assigned to wetlands per the NWI wetlands and deepwater habitat classification system (Federal Geographic Data Committee 2013). Hydric ratings of soils underlying wetland areas were determined from the USDA's Natural Resource Conservation Service's Web Soil Survey (2023) online interactive mapping system. Dominant vegetation types were identified by the wetland ecologist during the field review.

The wetlands and waterways delineation identified a total of 11 nontidal watercourses consisting of eight perennial and three intermittent streams, as well as one tidal watercourse (the Sakonnet River), as summarized in Table 5-6. The delineated resources had clearly defined bed and banks and exhibited indicators of year-round (perennial) or periodic (intermittent) flow.

Information included in Table 5-6 includes stream type and ordinary high-water mark (OHWM) width and height as determined during the field review.

Pond

The boundary of a pond is determined by the extent of its water which is delineated and surveyed. A pond is an area of open standing or slow-moving water present for six or more months during the year. Ponds make up approximately 123 acres of the Study Area. Named ponds located within the Study Area are listed in Table 5-3.

Scrub-shrub and Forested Swamp

Swamps are defined as freshwater wetland areas dominated by woody vegetation, where groundwater is at or near the surface for a significant part of the growing season. Scrub-shrub swamps are areas dominated by broad-leaved woody shrubs less than 20 feet in height and often have an emergent herbaceous layer. Typical species in shrub swamps in the Study Area include sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), southern arrowwood (*Viburnum dentatum*), and silky dogwood (*Cornus amomum*). Drier portions of shrub swamps are often densely overgrown with greenbrier (*Smilax rotundifolia*), multiflora rose (*Rosa multiflora*) and blackberry (*Rubus allegheniensis*). Common species in the herbaceous layer include sensitive fern (*Onoclea sensibilis*), spotted touch-me-not (*Impatiens capensis*), and cinnamon fern (*Osmundastrum cinnamomeum*). There are approximately 107 acres of shrub swamp within the Study Area.

Forested swamps are dominated by trees over 20 feet in height and generally occupy low-lying terrain subject to periodic flooding by adjacent waterbodies or other areas with shallow groundwater. Forested swamps in the Study Area are dominated by red maple (*Acer rubrum*), willow (*Salix* sp.), and black gum (*Nyssa sylvatica*) trees with an understory of alder (*Alnus* sp.), silky dogwood, sweet pepperbush, winterberry, cinnamon fern, common reed (*Phragmites australis*), and peat moss (*Sphagnum* spp.). There are approximately 279 acres of forested swamp within the Study Area.

Marsh and Wet Meadow

Marshes are freshwater wetlands where water is generally above the surface of a mucky substrate and where the vegetation is dominated by emergent herbaceous species. Emergent marsh vegetation is dominated by hydrophytic species such as common reed (Phragmites australis), cattail (*Typha* sp.), burreeds (*Sparganiaceae*), arums (*Araceae*), and water lilies (*Nymphaeaceae*). Wet meadows are typically drier than emergent marshes and occupy seasonally saturated mineral substrates dominated by woolgrass (*Scirpus cyperinus*), soft rush (*Juncus effusus*), goldenrod (*Solidago* sp.), sensitive fern (*Onoclea sensibilis*), and reed canary grass (*Phalaris arundinacea*). Within the Study Area there are approximately 160 acres of marsh or wet meadows.

Salt Marsh

Salt marshes are estuarine intertidal wetland systems which occur on the bay side of barrier beaches and the outer mouth of tidal rivers where salinity is not much diluted by freshwater input (Enser et al. 2011). The typical salt marsh profile, from sea to land, features a low, regularly flooded marsh dominated by salt marsh cordgrass (*Spartina alterniflora*); a higher, irregularly flooded marsh dominated by salt meadow cordgrass (*Spartina patens*) and saltgrass (*Distichlis spicata*); low hypersaline pannes characterized by saltwort (*Salicornia* sp.); and a salt scrub ecotone characterized by marsh elder (*Iva frutescens*.), groundsel-tree (*Baccharis halimifolia*), and switchgrass (*Panicum* sp.). Common reed also borders much of the high marsh found within the Study Area. There is approximately 90 acres of salt marsh within the Study Area.

River/Perennial Stream

A river is typically a named body of water designated as a perennial stream by United States Geological Survey (USGS). A perennial stream maintains flow year-round and is also designated as a solid blue line on a USGS topographic map. Eleven perennial waterbodies, including the Sakonnet River, are located within the Study Area based on a GIS analysis of National Hydrography Dataset. Eight perennial streams including the tidal Sakonnet River were identified during wetland surveys of the ROW.

Stream/Intermittent Stream

A stream is any flowing body of water or watercourse other than a river which flows during sufficient periods of the year to develop and maintain defined channels. Such watercourses carry groundwater discharge and/or surface water runoff. Such watercourses may not have flowing water during extended dry periods but may contain isolated pools of standing water. Seven intermittent streams were identified within the Study Area based on a GIS analysis of National Hydrography Dataset. Three intermittent streams were identified during wetland surveys along the ROW.

Floodplain

A floodplain is the land area adjacent to a river, stream or other body of flowing water which is, on average, likely to be covered with flood waters resulting from a 100-year frequency storm event as mapped by FEMA. Floodplain areas within the Study Area are shown on Figure 5-3, Appendix A. Several FEMA-mapped 100-year (Zone A/AE) and 500-year (Zone X) floodplains are present within the Project area. These floodplains are associated with large low-lying coastal wetland complexes adjacent to Mount Hope Bay and north and east of Boyds Lane and State Route 24 in Portsmouth, as well as low-lying areas bordering the tidal Sakonnet River. In addition, FEMA-mapped 100-year floodplains with additional hazard associated with storm waves (Zone VE) are present within the Project area bordering Mount Hope Bay and the Sakonnet River.

Area Subject to Storm Flowage

ASSFs are channel areas which carry storm, surface, groundwater discharge or drainage waters out of, into, and/or connect freshwater wetlands or coastal wetlands. ASSFs are recognized by evidence of scouring and/or other marked change in vegetative density and/or composition. Ten ASSFs were identified during wetland surveys on the ROW.

Area Subject to Flooding

ASF includes, but are not limited to, floodplains, depressions or low laying areas flooded by rivers, streams, intermittent streams, or areas subject to storm flowage which collect, hold, or meter out storm water and flood waters. ASFs do not connect to other freshwater or coastal wetlands as ASSFs do. One ASF was identified during wetland surveys on the ROW.

Vernal Pools

A vernal pool is a depressional wetland basin that typically goes dry in most years and may contain inlets or outlets, typically of intermittent flow. Most vernal pools are shallow intermittent bodies of water that fill in fall or spring with rain or snowmelt and dry up by mid-summer because they lack a permanent source of water. Vernal pools can be isolated depressions or found within wetlands such as red maple swamps (RIDEM 2024a).

Most vernal pools contain water for a few months in the spring and early summer and are dry by mid-summer. Because they lack a permanent water source and dry periodically, vernal pools lack a permanent fish population. Vernal pools provide breeding habitat for species, particularly amphibians, which depend upon pool drying and the absence of fish for breeding success and survival; these obligate vernal pool species include wood frog (*Lithobates sylvaticus*), spotted salamander (*Ambystoma maculatum*), marbled salamander (*L. opacum*), and fairy shrimp (*Eubranchipus* spp.).

Field investigations for potential vernal pools were performed during the wetland field surveys. The wetlands on the ROW were investigated to confirm the presence/absence of potential vernal pool habitats. No potential vernal pools were identified during wetland surveys on the ROW. Rhode Island has no publicly available mapping data for vernal pools.

TABLE 5-5 WETLANDS WITHIN SURVEY AREA

WETLAND ID	WETLAND CLASS[1]	MUNICIPALITY	HYDRIC SOIL RATING[2]	DOMINANT VEGETATION
PW01	PEM	Portsmouth, RI	No	Flat-top goldenrod (*Euthamia graminifolia*), Wrinkle-leaf goldenrod (*Solidago rugosa*)
PW02	PEM	Portsmouth, RI	No	Wrinkle-leaf goldenrod (*Solidago rugosa*), Lamp rush (*Juncus effusus*)
PW03	PEM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*), Spotted touch-me-not (*Impatiens capensis*)
PW04	PEM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*)
PW05	PEM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*)
PW06	PEM	Portsmouth, RI	No	Common reed (*Phragmites australis*), Southern arrowwood (*Viburnum dentatum*)
PW07	PEM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*), Common winterberry *(Ilex verticillata*)
PW08	PEM	Portsmouth, RI	Yes	Spotted touch-me-not (*Impatiens capensis*), Wrinkle-leaf goldenrod (*Solidago rugosa*)
PW09	PEM/PSS	Portsmouth, RI	Yes	Speckled alder (*Alnus incana*), Wrinkle-leaf goldenrod (*Solidago rugosa*)
PW10	PEM	Portsmouth, RI	Yes	Spotted touch-me-not (*Impatiens capensis*), Common reed (*Phragmites australis*)
PW11	E2EM	Portsmouth, RI	Yes	Saltwater cord grass (*Spartina alterniflora*)
PW12	E2EM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*), Pussy willow (*Salix discolor*)
PW13	E2EM	Portsmouth, RI	Yes	Common reed (*Phragmites australis*), Pussy willow (*Salix discolor*)
PW14	PEM	Portsmouth, RI	No	Common reed (*Phragmites australis*)
PW15	PEM	Portsmouth, RI	No	Common reed (*Phragmites australis*)
SM01	E2EM	Portsmouth, RI	No	Saltwater cord grass (*Spartina alterniflora*)
TW01	PEM	Tiverton, RI	No	Common reed (*Phragmites australis*)
TW06	PEM	Tiverton, RI	No	Hairy hedge-nettle (*Stachys pilosa*), Riverbank grape (*Vitis riparia*)
TW05	PEM	Tiverton, RI	No	Flat-top goldenrod (*Euthamia graminifolia*), Lamp rush (*Juncus effusus*)
TW04	PEM	Tiverton, RI	No	Woolly-fruit sedge (*Carex lasiocarpa*), Fringed sedge (*Carex crinita*)
TW03	PEM	Tiverton, RI	Yes	Soft rush (*Juncus effusus*), Flat-top goldenrod (*Euthamia graminifolia*),
TW02	PEM	Tiverton, RI	No	Common reed (*Phragmites australis*), Spotted touch-me-not (*Impatiens capensis*)

Notes: Acronyms and abbreviations are listed at the beginning of this report.
[1] Wetlands classified according to Cowardin et al. 1979.
[2] Hydric soil data derived from the USDA Natural Resource Conservation Service's online Web Soil Survey tool (2023).

TABLE 5-6 WATERCOURSES WITHIN THE SURVEY AREA

STREAM ID	MUNICIPALITY	STREAM TYPE	ORDINARY HIGH-WATER MARK (OHWM)	
			WIDTH (FT)	HEIGHT (FT)
PS01	Portsmouth, RI	Perennial	5	7
PS02	Portsmouth, RI	Intermittent	4	0.8
PS03	Portsmouth, RI	Perennial	75	3
TS01	Tiverton, RI	Perennial	9	1.5
TS02	Tiverton, RI	Intermittent	2	0.5
TS07	Tiverton, RI	Intermittent	3.5	2
TS06	Tiverton, RI	Perennial	3	6
TS05	Tiverton, RI	Perennial	3.5	1.5
TS04	Tiverton, RI	Perennial	7	1
TS03	Tiverton, RI	Perennial	8	2.5
Sakonnet River	Tiverton, RI	Perennial	1,300	5

5.5.3 Groundwater Resources

The RIDEM classifies all the State's groundwater resources and establishes groundwater quality standards for each class. The four classes are designated GAA, GA, GB, and GC. Groundwater classified as GAA and GA is to be protected to maintain drinking water quality. Groundwater classified GB are those groundwater resources which may not be suitable for public or private drinking water use without treatment due to known or presumed degradation resulting from overlying land uses. Class GC groundwater is known to be unsuitable for drinking water use due to waste disposal practices such as landfills. Class GB and GC areas are served by a public water supply (RIDEM 2023). The presence and availability of groundwater resources is a direct function of geologic deposits in the vicinity of the Project.

Groundwater resources within the Study Area are depicted on Figure 5-4. Rhode Island groundwater resources within the Study Area include GA and GB. The total acreage of groundwater resources within the study area is approximately 5,040 acres of this >99% is classified GA and <1% is classified as GB. Because GAA and GA are suitable for drinking water use without treatment, both classes are subject to the same groundwater quality standards.

The United States Environmental Protection Agency (USEPA) has designated Sole Source Aquifer status to aquifers that supply at least 50% of the drinking water for its service area and for which there are no reasonably available alternative drinking water sources should the aquifer become contaminated. The purpose of sole source aquifer designation is to manage land use practices within the aquifer recharge area to protect groundwater quality. There are no sole source aquifers in the Study Area.

5.6 Vegetation

The Study Area contains a variety of vegetative cover typical of Southern New England, including ruderal and oak-dominated forests, ruderal grassland/shrubland, urban/recreational grass, and agricultural land. This section of the report focuses on upland communities. Wetland communities are discussed in Section 5.5.2 of this report.

Vegetation communities in Rhode Island have been affected by human activities for more than 10,000 years. Prior to European settlers in the seventeenth century, Rhode Island's land cover was >90% forested. Clearing land for farming and logging reduced forest cover to only 25% by the mid-1800s. By the mid-1960s, abandoned farmlands had reverted to early successional forests, which once again covered approximately 65% of the state. Since that time, conversion of forest to other community types or non-vegetated areas has occurred due to development and land use changes. According to the most recent Rhode Island Forest Inventory Analysis compiled by the United States Forest Service (USFS), approximately 47% of Rhode Island's land area is forested (USFS 2019). The remainder of the State's undeveloped upland vegetated land cover is primarily comprised of natural and ruderal open uplands, urban/recreational grass, and agricultural land.

Rhode Island forests are dominated by a variety of hardwoods, with red maple the most abundant tree species whereas the oak-hickory forest type assemblage comprises 61% of the state's forested land cover (RIDEM 2020). The oak-hickory forest type is dominant in the northern part of the state with patches of pine forest found in the southern part of the state. Going from north to south, oak-hickory forests decrease and pine-dominated forest types increase, with the central part of the state consisting mostly of mixed oak and pine (USFS 2002).

5.6.1 Oak Forests

Forested cover types within the Study Area are typically dominated by oaks (*Quercus* spp.) with or without an eastern white pine (*Pinus strobus*) component. Although these woodlands may appear similar throughout the Study Area, differences in the structure and composition of species in these forests may occur between sites. Soil moisture holding capacity and slope aspect are important factors in determining the plant associations present at a particular site. Plant associations growing on hilltops and south facing slopes are likely to face moisture deficits during the summer. Sandy soils associated with glacial outwash deposits have lower moisture holding capacity in comparison with soils formed over deposits of glacial till. Forests established in these drier sites are often characterized by smaller and more widely spaced trees in comparison with more mesic sites.

Common associates of the hilltop oak/pine forests include black (*Q. velutina*), scarlet (*Q. coccinea*), and white oaks (*Q. alba*) as well as aspen and gray birch. The shrub/sapling understory includes such species as black cherry (*Prunus serotina*) and common greenbrier. Sheep laurel (*Kalmia angustifolia*) and sweet fern (*Comptonia peregrina*) occasionally occur in openings between oak stands with canopy openings and on rocky slopes. Understory herbaceous species include bracken fern (*Pteridium aquilinum*), tree clubmoss (*Dendrolycopodium obscurum*) and hayscented fern (*Dennstaedtia punctilobula*). These hilltop communities occur where excessively drained soils predominate, and on hilltops throughout the Study Area.

There is an increase in the diversity within plant communities on mid-slopes compared with dry hilltops. The increase in soil moisture produces this greater diversity in trees, shrubs and herbs. Mid-slope tree species in addition to oaks include black birch (*Betula lenta*), white ash (*Fraxinus americana*), American beech (*Fagus grandifolia*), maple (*Acer* sp.), and several species of hickory

(*Carya* spp.). Shrubs include witch hazel (*Hamamelis virginiana*), sassafras (*Sassafras albidum*), highbush blueberry, sweet pepperbush, and ironwood (*Carpinus caroliniana*). Greenbrier, poison ivy (*Toxicodendron radicans*), and tree clubmoss are also common in this community. Mid-slope oak/pine communities occur on mesic mid-slope and lower slope positions and adjacent to forested wetlands on the uncleared portion of the Study Area.

5.6.2 Ruderal Forest

Within the Study Area, ruderal forests are often associated with lands near residential subdivisions, commercial development, and highway corridors that have been subject to previous disturbance. Ruderal forests are often fragmented, undifferentiated upland forests, typically even-aged, resulting from succession following removal of native trees for agriculture, logging, or other land-clearing activities. Soil disturbance caused during native overstory removal tends to result in low-diversity regeneration, often with a non-native understory and early-succession tree species. Common crown species include red maple, eastern white pine, aspen (*Populus* sp.), and gray birch (*Betula populifolia*). Understory species are varied and may contain shrubs and vines such as multiflora rose, serviceberry (*Amelanchier canadensis*.), glossy buckthorn (*Rhamnus frangula*), ironwood (*Carpinus caroliniana*), common greenbrier, and grape (*Vitis* sp.).

5.6.3 Ruderal Grassland/Shrubland

Across Rhode Island, ruderal grasslands and shrublands occupy fallow farmlands, reverting woodlots, utility ROWs, and other areas maintained in an early successional ecological state. Ruderal grasslands and shrublands are anthropogenic communities of herbaceous or mixed herb/shrub vegetation resulting from succession following removal of tree cover. Within the Study Area, most ruderal grassland/shrubland habitat is associated with cleared and maintained portions of electric transmission ROWs.

Periodic vegetation management through mowing, selective cutting, or other methods to remove tree saplings within cleared and maintained ROWs favors the establishment and persistence of grasses, herbs, and shrubs. The species assembly and structure may vary considerably within a cleared and maintained ROW from low growing sparsely vegetated herbaceous fields to very dense shrub cover. Sweet fern (*Comptonia peregrina*), bayberry (*Myrica pensylvanica*), highbush blueberry, sheep laurel (*Kalmia angustifolia*), sweet, and arrowwoods (*Viburnum* sp.) are shrub species commonly found within the Study Area. On the mid-slope, common greenbrier and blackberry form dense, impenetrable thickets. Numerous herbs including goldenrod, asters (*Aster* sp.), bracken fern, hay scented fern, deer-tongue grass (*Dichanthelium clandestinum*), pokeweed (*Phytolacca americana*), and mullein (*Verbascum thapsus*) are also common.

Forest vegetation abuts managed ROWs in many places within the Study Area. Over time, pioneer species and/or saplings from adjacent forested areas may become established in ROWs, eventually triggering management activities. Maintenance of low-growing vegetation communities within ROWs is imperative to maintaining system reliability and safety.

5.6.4 Urban/Recreational Grass

Urban/recreational grass areas are managed grasslands planted in developed settings for recreation, erosion control, aesthetic, or other purposes and are prevalent in the residential and commercially developed portions of the Study Area, including residential areas south of Boyds Lane and the Montaup Country Club in Portsmouth as well as developed and/or residential areas along the Mainline in Tiverton. Urban/recreational grass areas include residential and commercial lawns, golf

courses, playing fields, parks, and highway shoulders and medians. Typically, these areas consist of a continuous grass cover which may include Kentucky bluegrass (*Poa pratensis*), red fescue (*Festuca rubra*), clover (*Trifolium* sp.), and plantains (*Plantago* sp.). Ornamental shrubs may also occur within the residential and parkland areas.

5.6.5 Agricultural Land

A small portion of the Study Area is agricultural land, including farmland immediately south of Boyds Lane and pasture north of Maniton Drive in Portsmouth. Based on a review of current and historic aerial imagery, this land includes hayfield/pasture and row crop production.

5.7 Wildlife

As previously described, the Study Area includes a variety of aquatic and terrestrial habitats. The wildlife assemblages present within the Study Area vary according to habitat characteristics. Typical wildlife species found commonly in the habitat types within the Study Area may include the following:

- Mammals such as white-tailed deer, foxes, raccoons, weasels, squirrels, and bats.
- A variety of birds such as passerine songbirds, waterfowl, birds of prey, and gamebirds.
- Amphibians and reptiles such as salamanders, frogs, toads, turtles, and snakes.
- Many different species of invertebrates.

There is an established osprey (*Pandion haliaetus*) nest on a platform adjacent to the ROW nearest structure L14-63 at the Aquidneck Land Trust Town Pond Trail in Portsmouth, Rhode Island. Osprey are protected under the Migratory Bird Treaty Act and a permit from the USFWS must be obtained prior to relocating active nests if deemed necessary for Project activities.

5.7.1 Fisheries

RIDEM has listed Designated Trout Waters for the 2024/25 season, which include Adamsville Brook and Pond, Eight Rod Farm Pond, Stafford Pond, and Tiverton Trout Pond in Tiverton, RI; and Upper and Lower Melville Ponds in Portsmouth, Rhode Island (RIDEM 2024b). No Designated Trout Waters occur within the Study Area.

Refer to Table 5-1 for the warm and cold water fishery designations associated with the surface water bodies within the Study Area. Although Rhode Island does not have a formal definition of cold water fishery, the term generally means the waterbody has the capacity to support, on a year-round basis, wild or stocked brook trout (*Salvelinus fontinalis*). Warm-water fisheries are waters which cannot support brook trout populations but have the capacity to support species such as brown bullhead (*Ameriurus nebulosus*), bluegill (*Lepomis macrochirus*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*M. salmoides*), and yellow perch (*Perca flavescens*).

5.7.2 Rare and Endangered Species

Correspondence regarding federally and Rhode Island State-listed species is included in Appendix F, Agency Correspondence.

Federally Listed Species

The current USFWS Endangered Species Consultation Procedure makes use of the online Information for Planning and Conservation (IPaC) Form (https://ecos.fws.gov/ipac/) which streamlines the USFWS environmental review process. POWER completed and submitted the IPaC Form on June 4, 2024 (Appendix F). Results indicated that the Project would have no effect on the endangered northern long-eared bat (*Myotis septentrionalis*). However, the endangered roseate tern (*Sterna dougallii*), and a candidate species, the monarch butterfly (*Danaus plexippus*), were listed as potentially occurring in the Project ROW.

The tricolored bat (*Perimytois subflavus*) was identified as a proposed endangered species within the Study Area; however, this is not a currently listed species at the time of submitting the Application enclosed herein. Results also indicated that no federally designated Critical Habitat occurs within the Study Area. Species descriptions and habitat requirements for the roseate tern and monarch butterfly are further described below.

Roseate Tern

Roseate tern may occur along ocean facing coastline. The onshore Project activities are not likely to affect the roseate tern due to the minimal anticipated shoreline disturbance from Project activities. Suitable shoreline nesting habitat for the roseate tern was not identified along the Sakonnet River nor Mount Hope Bay where the existing transmission line ROW intersects these shorelines.

The roseate tern is a medium-sized gull-like tern that is approximately 15 inches (38 centimeters) long and prefers shoreline habitat (USFWS 2022). The roseate tern is a specialist feeder, eating fish almost exclusively, and feeding by plunge diving. Habitat for the roseate tern includes nesting habitat along sandy shores and barrier islands and under hollows or dense vegetation. Roseate tern is identified in the 2020 Rhode Island Wildlife Action Plan as a species of greatest conservation need (RIDEM 2020). No more than five pairs of roseate terns have nested in Rhode Island since the 1950s. The last breeding record is of two individuals in 1984, although immature and summer roseate terns continue to be observed in Rhode Island, indicating that the species may still nest in small numbers. Roseate terns are seasonally common in Rhode Island as a migrant, typically during post-breeding dispersal, and have been consistently recorded construction at a few coastal sites including Trustom Pond, Charlestown Breachway, Great Salt Pond on Block Island, and at Napatree Point (RIDEM 2020).

Monarch Butterfly

Due to declining populations resulting from habitat loss and degradation, continued exposure of pesticides, and climate change, the monarch butterfly (*Danaus plexippus*) was listed as a candidate species for listing under the federal Endangered Species Act (ESA) on December 17, 2020. The USFWS conducted a 12-month review of the monarch's status and determined listing is warranted but precluded as of the 2022 notification of review (USFWS 2022). The USFWS continues to evaluate the monarch butterfly at the species level. As a candidate species, there are currently no Section 7 consultation requirements for federal agency actions (USFWS 2020).

Monarchs use milkweed as their host plant to lay their eggs. Larvae emerge after two to five days and develop over nine to 18 days using the milkweed to feed on. Larvae then pupate into a chrysalis and emerge six to 14 days later as an adult butterfly. During the breeding season, multiple generations of monarchs are produced with a life span of approximately two to five weeks.

In some regions, monarchs will breed year-round but in temperate climates such as the northeastern United States, monarchs will migrate and live for an extended period (six to nine months). Monarchs who overwintered in Mexico begin their northward migration in March and breed. Generation one monarchs, offspring of the overwintering generation, are born in the south and begin to migrate north in April to May. After an additional one or two generations, northward migrating monarchs arrive on their New England summer breeding grounds in June-July. These individuals will reproduce one or two additional generations over the summer into early fall. The last offspring of the northern population begin their southerly migration to Mexico in late summer through October. These monarchs, which originally migrated to Mexico, will overwinter and fly back to the southern breeding grounds at which point their offspring will start the generational migration cycle over again (USFWS 2021).

State-Listed Species

Pursuant to the Rhode Island Endangered Species Act, the Company has consulted with the Rhode Island Natural Heritage Program on June 29, 2023, and again on January 26, 2024. Based on correspondence and follow up communication with the RIDEM, no Rhode Island State-listed species have been documented on or near the Project ROW.

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6.0 DESCRIPTION OF AFFECTED SOCIAL ENVIRONMENT

This section provides a detailed description of the physical and social environment on- and off-site. The Company is providing information on the land uses within and proximate to the ROW, visual resources in the vicinity of the Project, and the public roadway systems in the area. The Project involves work activities on existing 115 kV transmission lines within established and maintained ROW, therefore the Project is anticipated to have no impacts on population trends or employment conditions of the Study Area. Therefore, in accordance with EFSB Rule 1.6(F)(3), the Company will not provide a detailed analysis of the baseline conditions for those resources.[4]

6.1 Land Use

This section describes existing and future land use within the Study Area. The scope of this discussion will address those features which might be affected by the Project.

Predominant land uses making up approximately 81% of the Study Area include deciduous and mixed forest; wetlands; medium and high density residential; developed recreation; water; and commercial uses as shown in Figure 6-1 (RIGIS 2024a).

6.1.1 Land Use Along the Transmission Line Corridor

The northern terminus of the L14 and M13 Lines is located approximately 0.1 miles east of the Canonicus Substation in Tiverton. The ROW extends west to the Canonicus Substation and from the substation runs south, crossing Hooper Street and traversing residential areas for approximately 0.17 miles. The ROW then turns southeast for approximately 0.15 miles, passing through residential areas and along the edges of wooded regions. Continuing generally south for approximately 0.37 miles, the ROW crosses forested areas and East Beardsworth Road Doris Ave. Approximately 125 feet north of Russel Drive the ROW turns southwest to 100 feet south of Merritt Ave, where the ROW turns south and crosses Warren Avenue. Approximately 145 feet south of Warren Avenue the ROW turns west for approximately 860 feet, crossing residential areas and Harris Drive. The ROW then turns south and runs for approximately 0.56 miles through residential and forested areas before turning west, crossing woodlands, for approximately 0.44 miles. Continuing west, the ROW crosses Main Road (Route 138) and Old Main Street. Approximately 135 feet east of Old Main Road, the ROW turns south and runs for approximately 1,500 feet, crossing Schooner Drive and residential areas. The ROW then turns west, paralleling Schooner Drive and traversing residential areas for approximately 950 feet before turning south. The ROW continues south crossing woodland and residential areas for approximately 1,830 feet. At that point, the ROW turns west crossing Riverside Drive before reaching the Sakonnet River. The ROW continues west across the Sakonnet River and into Portsmouth.

After crossing the Sakonnet River, the ROW continues west, generally parallels Route 24 and crosses forested area and the Montaup Country Club golf course. Continuing west to the Bertha K. Russel Preserve, the ROW then turns south, crossing railroad tracks operated by the Newport and Narragansett Bay Railroad Company, the Boyds Marsh conservation area and Founders Brook, to Boyds Lane. After crossing Boyds Lane, the ROW continues south crossing an agricultural field and crossing Founders Brook a second time. The ROW then turns east, crossing Route 24 for

[4] Per EFSB Rule 1.6(F)(3), which states to the extent the proposed project will have only negligible impact on any particular resource in the natural and social environment, the applicant may so state and need not provide a detailed analysis of the baseline conditions for that resource.

approximately 500 feet before turning south, The ROW continues south, generally paralleling Route 24, for 0.77 miles crossing forested and residential areas. Adjacent to the Portsmouth High School, the ROW turns west, crossing Route 24, for 1,250 feet. The ROW then continues south, generally paralleling Route 24 and traversing forested and residential areas for approximately 2,000 feet. The ROW then turns southeast, crossing Route 24, and continuing south to the Dexter Substation.

6.1.2 Open Space and Recreation

Several areas of public open space, including recreational areas, are present within the Project Study Area. The resources traversed by the Project ROW are described in the following paragraph. Table 6-1 identifies additional public open space and recreational areas located outside of the ROW but within the Study Area.

On the west side of the Sakonnet River in Portsmouth the ROW crosses the Montaup Country Club golf course. Continuing west, the ROW crosses the Bertha K. Russell Preserve located on the shore of Mount Hope Bay. This preserve is managed by the Audubon Society and is a tidal marsh popular for hiking and birdwatching, particularly for marsh and shore birds. A spur trail travels south from the Bertha K. Russell Preserve and connects to the Town Pond Trail in the Town Pond conservation area. The Town Pond is owned by RIDEM and the trail is managed by the Aquidneck Land Trust. This area was the site of a major restoration that converted it from a barren mudflat to an estuary providing opportunities for bird watching.

Founders' Brook Park is approximately 250 east of the Project ROW, located off of Old Boyd's Lane. This area honors the founders of the town, Anne Hutchinson, and the Portsmouth Compact of 1638. Founders' Brook is near the area where the first Puritan settlers landed when they travelled from Boston to Aquidneck Island

Butts Hill in Portsmouth is approximately 300 feet from the Project ROW, east of RI-24 and south of Sprague Street. The Hill is the site of a large earthen fort (approximately 250 by 500 feet), one of two elements of the Battle of Rhode Island National Historic Landmark, which was established in 1974. The site is also listed on the National Register of Historic Places (NRHP). Earthworks of the fort on Butts Hill are extant and in good condition, though a municipal water tower and wind turbine are within close proximity, and some residential encroachment has occurred.

TABLE 6-1 STATE AND LOCAL PUBLIC OPEN SPACE/CONSERVATION LANDS WITHIN THE STUDY AREA

NAME	MUNICIPALITY	DISTANCE TO PROJECT ROW
Pocasset School	Town of Tiverton	575 feet
Pocasset Hill Cemetery	Town of Tiverton	150 feet
Coastal Public Access location	Town of Tiverton	1,000 feet
Sakonnet Bridge Boat Ramp	Town of Tiverton	400 feet
Common Fence Point Playground	Town of Portsmouth	1,900 feet
Town Pond	Town of Portsmouth	250 feet
Hathaway Elementary School	Town of Portsmouth	1,600 feet
Portsmouth High School Recreation Area	Town of Portsmouth	450 feet
Turnpike Avenue Playground	Town of Portsmouth	1,050 feet
John F. Kennedy Park	Town of Portsmouth	1,100 feet

NAME	MUNICIPALITY	DISTANCE TO PROJECT ROW
Senior Center Baseball Field	Town of Portsmouth	1,500 feet
Lehigh Overlook	Town of Portsmouth	1,075 feet
Patriots Park	Town of Portsmouth	750 feet
Heritage Park	Town of Portsmouth	2,500 feet

6.1.3 Future Land Use

In order to assess future land use, an analysis of current zoning was undertaken. Typically, towns and cities manage future growth through zoning regulations which provide a degree of control over a community. The majority of the Study Area is zoned industrial, highway commercial, or residential in varying densities. High density residential areas within the Study Area include the Town of Tiverton generally north and west of Canonicus Substation, and in the Town of Portsmouth areas in the norther section of the town. The Town of Tiverton developed the Town of Tiverton Rhode Island Comprehensive Community Plan affirmed April 30, 2018. After a review of the Town of Tiverton Comprehensive Community Plan, electric transmission lines are mentioned as critical infrastructure potentially vulnerable to hazards like severe storms and lightning strikes. No actions are proposed related to electrical facilities as the plan notes current electrical equipment is operational and currently protected from floods, lightening, and power failure.

The Town of Portsmouth developed the Town of Portsmouth Rhode Island Comprehensive Community Plan, revised 2002. After of review of this plan, only the reliability of electrical power is mentioned in the Economic Development section, advising that the town consult with Eastern Utilities and the Public Utilities Commission on the current power grid and future needs.

6.2 Visual Resources

According to the Rhode Island Scenic Landscape Inventory list (RIGIS 2024b), no designated scenic areas are located immediately adjacent to or crossed by the Project. There are no National Recreational, National Scenic, or National Historic Trails within the Project Study Area. Additionally, none of the water bodies in the Project Study Area are listed as wild, scenic or recreational rivers. As described above, there are several areas of public open space, including recreational areas, present within the Project Study Area. State conservation and recreation areas and state scenic areas located within the Project Study Area include the Bertha K. Russel Preserve in Portsmouth. Other preservation and special management areas located within the Project Study Area include the Town Pond conservation area in Portsmouth.

6.3 Historic and Archaeological Resources

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to review federally funded or permitted projects for their potential impacts to historic and cultural resources. Potential resources addressed under this review include known and unknown properties that are listed or are determined eligible for listing on the NRHP. Once a review has been initiated, the agency, in consultation with the State Historic Preservation Officer and appropriate Tribal authorities, must identify historic properties, assess whether effects to the properties will be adverse, and then work to minimize, resolve, or mitigate any adverse effects.

Eligibility for inclusion on the NRHP is based on four criteria, at least one of which must be met (36 Code of Federal Regulations Part 60). In order to be eligible, historic resources must:

- be "associated with events that have made a significant contribution to the broad patterns of our history";
- be "associated with the lives of persons significant in our past";
- "embody the distinctive characteristics of a type, period, or method of construction, or … represent a master, or … possess high artistic values, or … represent a significant and distinguishable entity whose components may lack individual distinction"; or
- "have yielded, or may be likely to yield, information important in prehistory or history" (United States National Park Service 1990).

In addition to meeting at least one of these four criteria, an eligible property must retain integrity in its location, design, setting, materials, workmanship, feeling, and/or association. Resources can include both above-ground/architectural resources and archaeological sites; NRHP criteria and standards of integrity are applied to both types of resources.

The Company contracted POWER to conduct a cultural resources due diligence literature review for the Project in the fall of 2023. POWER coordinated with the Rhode Island Historical Preservation & Heritage Commission (RIHPHC) to identify previously recorded archaeological resources and is currently undertaking a review of publicly available records to identify historic above-ground resources, within the Project survey area. These reviews included both above-ground historic resources and archaeological resources that are listed or evaluated as eligible for listing in the State or National Registers as well as surveyed properties that have not been evaluated or listed, within a study area determined in consultation with the RIHPHC (1.0 kilometer for archaeology, 0.25 miles for above-ground structures). POWER archaeologists also conducted a pedestrian survey in the Project corridor, and completed an archaeological sensitivity assessment of the Project ROW to provide information about cultural resources that could be affected by the proposed Project.

6.3.1 Architectural Resources

The due diligence review identified 23 total listings on the NRHP within the two towns through which this Project runs: 15 listings in Portsmouth and eight in Tiverton. In addition, there are 47 properties in Portsmouth and 74 in Tiverton listed on the state register by RIHPHC. Within one kilometer of the Project corridor, there are nine total listings on the NRHP within the two towns and 20 total listings on the Rhode Island Historic Property Search. Of these 29 properties, 11 are in Portsmouth and 18 are in Tiverton. Five of these listings cross within the Project corridor, including the Main Road Historic District in Tiverton, the Sakonnet River Bridge No. 250, Sakonnet River Railroad Bridge No. 450, Riverside Drive Historic District in Tiverton, and the Battle of Rhode Island site in Portsmouth. The current status of each of these resources will be assessed and documented as an element of ongoing consultation with RIHPHC. POWER consulted with RIHPHC regarding the study radius for historic above-ground resources (both previously recorded and unrecorded), and as a result inventoried resources within 0.25 miles of the Project centerline. POWER will make recommendations to RIHPHC about the NRHP eligibility of all inventoried resources.

6.3.2 Archeological Resources

The due diligence review identified 29 previously recorded archaeological sites within the survey area: 16 Pre-Contact Native American sites and 13 historical period archaeological sites. POWER received a permit from RIHPHC to conduct Phase 1 subsurface archaeological survey in the Project corridor where construction impacts are proposed within areas determined to be of moderate or high archaeological sensitivity. The intensive archaeological field investigations have been completed by POWER and reporting has been submitted to RIHPHC.

Tribal Historic Preservation Offices (THPOs) for the Narragansett Indian Tribe, Mashpee Wampanoag Tribe, and Wampanoag Tribe of Gayhead (Aquinnah), received POWER's Phase 1 permit application from RIHPHC in December 2023, and did not issue any comments on the research design. The RIHPHC issued a State Archaeologist's Permit to POWER to conduct the Phase 1 survey. Representatives of the THPOs were notified of the field work schedule. Intensive archaeological surveys commenced in early Q2 and were completed in June 2024. THPOs were sent final reporting from the subsurface survey along with the RIHPHC.

6.4 Transportation

The transportation needs of the Project are served by a network of federal, state, and local roads and highways. The Project crosses 16 town roads and six state routes (Table 6-2).

TABLE 6-2 ROAD CROSSINGS

ROAD NAME	TYPE
Hooper Street	Town
Mill Street	Town
Kenyon Road	Town
E Beardsworth Road	Town
Doris Road	Town
Russel Drive	Town
Merritt Avenue	Town
Warren Avenue	Town
Harris Drive	Town
Frank Drive	Town
Paul James Drive	Town
Main Road (Route 138)	State
Old Main Road	Town
Schooner Drive	Town
Riverside Drive	Town
Anthony Road	Town
Boyds Lane	State
Route 24*	State
Route 24 on ramp	State
Sprague Street	State
Turnpike Avenue	State
Dexter Street	Town

*The Project crosses Route 24 three times.

6.5 Electric and Magnetic Fields

Electric fields are created by the voltage on electric conductors, whereas magnetic fields are created by the current on electric conductors. The Company, like all North American electric utilities, supplies electricity at 60 Hertz (Hz). Therefore, the electric utility system and the equipment and conductors connected to it produce 60 Hz (power-frequency) EMFs. These fields can be either measured using instruments or calculated using an electromagnetic model.

EMFs are present wherever electricity is used. This includes not only utility transmission lines, distribution lines, and substations, but also electrical wiring in homes, offices, and schools and electrical appliances and machinery.

Electric fields exist whenever voltages are present on transmission conductors; they are not dependent on the magnitude of current flow. The magnitude of the electric field is primarily a function of the configuration and operating voltage of the line and decreases with the distance from the source. The electric field may be shielded (i.e., the strength may be reduced) by any conducting surface, such as trees, fences, walls, buildings, and most types of structures. The strength of an electric field is measured in volts per meter (V/m) or kilovolts per meter (kV/m), where 1 kV/m = 1,000 V/m.

Magnetic fields are present whenever current flows in a conductor; they are not dependent on the voltage present on the conductor. The magnetic field strength is a function of both the current flow on the conductor and the configuration of the transmission line. The strength of magnetic fields also decreases with distance from the source. Since the flow of electricity or load on a transmission line varies with time of day based on the need for electric power in the region, the magnetic field associated with electric transmission lines also varies throughout the day and with seasonal changes in electric demand. Unlike electric fields, however, most common materials have little shielding effect on magnetic fields.

Magnetic fields are measured in units called Gauss. For the low levels normally encountered during daily activities, the field strength is expressed in a much smaller unit, the milliGauss (mG), which is one thousandth of a Gauss. Table 6-3 lists common household devices and typical magnetic field levels measured at the distances indicated from the source.

TABLE 6-3 COMMON SOURCES OF MAGNETIC FIELDS

SOURCES*	DISTANCE FROM SOURCE	
	6 inches (mG)	24 inches (mG)
Microwave Ovens	100-300	1-30
Dishwashers	10-100	2-7
Refrigerators	Ambient – 40	Ambient – 10
Fluorescent Lights	20-100	Ambient – 8
Copy Machines	4-200	1-13
Drills	100-200	3-6
Power Saws	50-1,000	1-40

Note:

* Different makes and models of appliances, tools, or fixtures will produce different levels of magnetic fields. These are generally-accepted ranges.

Source: Public Service Commission of Wisconsin 2017.

Table 6-4 is provided to illustrate guidelines suggested by various national and international health organizations for exposure to both electric and magnetic fields.

TABLE 6-4 60 HZ EMF GUIDELINES ESTABLISHED BY HEALTH AND SAFETY ORGANIZATIONS

ORGANIZATION	MAGNETIC FIELD	ELECTRIC FIELD
American Conference of Governmental and Industrial Hygienists (ACGIH) (occupational)	10,000 mG[a] 1,000 mG[b]	25 kV/m[a] 1.0 kV/m[b]
International Commission on Non-Ionizing Radiation Protection (ICNIRP) (general public, continuous exposure)	2,000 mG	4.2 kV/m
Non-Ionizing Radiation Committee of the American Industrial Hygiene Assoc. endorsed (in 2003) ICNIRP's occupational EMF levels for workers	4,170 mG	8.3 kV/m
International Committee on Electromagnetic Safety	9,040 mG	5.0 kV/m
U.K., National Radiological Protection Board [now Health Protection Agency]	2,000 mG	4.2 kV/m
Australian Radiation Protection and Nuclear Safety Agency, Draft Standard, Dec. 2006[c]	3,000 mG	4.2 kV/m

Notes:

[a] ACGIH guidelines for the general worker.
[b] ACGIH guideline for workers with cardiac pacemakers.
[c] https://www.arpansa.gov.au/regulation-and-licensing/regulatory-publications/radiation-protection-series/codes-and-standards/rpss-1.

6.6 Noise

The noise impacts associated with the Project are limited to temporary construction noise. No new noise generating equipment that would result in continuous noise is proposed.

The potential for noise impacts from Project construction is a function of the specific receptors along the route as well as the equipment and proposed hours of operation. The state of Rhode Island does not have regulations that set community noise exposure criteria or abatement measurements. Instead, noise abatement criteria are instituted by municipalities of Rhode Island. Project construction is anticipated to occur seven days a week during typical work hours, though in specific instances, at some locations, or at the request of a municipality, the Company may seek municipal approval to work at night.

The Tiverton and Portsmouth noise ordinances are shown in Table 6-5.

TABLE 6-5 MUNICIPAL NOISE ORDINANCE SUMMARY

MUNICIPALITY CODE	ALLOWED CONSTRUCTION HOURS		EXCEPTIONS
	Weekday	Weekend	
Tiverton	7:00 a.m. - 9:00 p.m.	7:00 a.m. - 9:00 p.m.	Town Council may grant sound variances after public hearing.
Portsmouth	7:00 a.m. - 9:00 p.m.	7:00 a.m. - 9:00 p.m.	Town Council may grant sound variances after public hearing.

Noise generated by construction is generally temporary and intermittent. Sound levels from construction activity typically are dominated by the loudest piece of equipment operating at the time. Therefore, at any given point along the work corridor, the loudest piece of equipment will be the most representative of the expected sound levels in the area.

Table 6-6 identifies the types of equipment to be used for each phase of the construction sequence and provides a range of typical sound levels from the equipment. The typical sound levels are provided at a distance of 50 feet from the source and have also been extrapolated for noise levels at 100, 200, and 300 feet. The estimated noise levels range from 80 A-weighted decibels (dBA) to 98 dBA at a distance of 50 feet from the construction activity. The closest residence along the Project ROW is approximately 100 feet away from the separated transmission lines, resulting in intermittent noise of up to 92 dBA during vegetation removal and ROW mowing, with lower levels of noise during other phases of Project construction. Typical sound levels of construction noise experienced at any given residence will be sporadic and of limited duration.

TABLE 6-6 TYPICAL CONSTRUCTION SOUND LEVELS

DESCRIPTION OF ACTIVITY	TYPES OF EQUIPMENT	TYPICAL SOUND LEVELS AT 50 FEET (dBA)	ESTIMATED SOUND LEVELS (dBA) AT VARIOUS DISTANCES FROM NOISE SOURCES		
			100 Feet	200 Feet	300 Feet
Vegetation Removal and ROW Mowing	• Grapple trucks • Bulldozers • Track-mounted mowers • Motorized tree shears • Log forwarders • Chippers, Chain saws • Box trailers	84 to 98	78 to 92	72 to 86	69 to 83
Erosion/Sediment Controls and Access Road Improvements and Maintenance	• Dump trucks • Bulldozers, excavators, backhoes • Graders, Forwarders • 10-wheel trucks with grapples, Cranes	80 to 93	74 to 87	68 to 81	65 to 78
Removal and Disposal of Existing Transmission Line Components	• Cranes • Flatbed trucks • Pullers with take-up reel • Excavators	80 to 90	74 to 84	68 to 78	65 to 75
Installation of Foundations and Structures	• Backhoes and excavators • Rock drills mounted on excavators • Cluster drills with truck mounted compressors • Concrete trucks • Cranes • Aerial lift equipment • Tractor trailers	80 to 90	74 to 84	68 to 78	65 to 75
Conductor and Shield Wire Installation	• Puller-tensioners • Conductor reel stands • Cranes • Bucket trucks • Flatbed trucks	80 to 93	74 to 87	68 to 81	65 to 78
Restoration of the ROW	• Bulldozers, Excavators • Tractor-mounted York rakes • Straw blowers • Hydro-seeders	80 to 90C	74 to 84	68 to 78	65 to 75

Source: https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

The Company expects construction to occur over a period of approximately 12 to 15 months, dependent upon the available outage windows. Temporary noise impacts from construction equipment will be mitigated by maintaining equipment in good working condition and by use of appropriate mufflers. Noise sources that may operate continually during the day, such as generators or air compressors, will be located away from populated areas to the extent possible. The Company and its contractors will also comply with RIDEM Diesel Engine Anti-Idling Program[5] and other Rhode Island anti-idling laws,[6] which limit vehicle idling to no more than five minutes, to the greatest extent feasible based upon the construction task, type of equipment/vehicle and weather conditions. Only necessary equipment will run during construction to minimize engine noise. With the implementation of these measures, noise impacts associated with the Project will be minimized.

[5] 250-Rhode Island Code of Regulations-120-05-45 Title 250 Part 45 - Rhode Island Diesel Engine Anti-Idling Program
[6] Rhode Island General Law (RIGL)§ 23-23-29.2. (Diesel motor vehicle engine idling), RIGL § 23-23-29.3. (Non-road diesel engine idling), and RIGL § 31-16.1-3. (Restrictions on idling for diesel engines)

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7.0 IMPACT ANALYSIS

This section analyzes potential impacts of the Project on the existing natural and social environments within the Study Area and the Area of Potential Effect. As with any construction Project, potential adverse impacts can be associated with the construction, operation, or maintenance of an electric transmission line. These impacts have been minimized to the greatest extent feasible through thoughtful design, construction, operation, and maintenance practices.

Potential impacts to the natural and social environments associated with the Project can be categorized based on construction-related (temporary) impacts and operation-related (permanent) impacts. Examples of potential temporary construction-related impacts include wetlands impacts due to construction mats, traffic impacts, and construction noise associated with the operation of heavy equipment. The Project will be constructed in a manner that minimizes the potential for adverse environmental impacts. A monitoring program will be conducted by the Company to verify that the Project is constructed in compliance with all relevant licenses and permits and all applicable federal, state, and local laws and regulations along with BMPs. Design and construction mitigation measures will be implemented so that construction-related environmental impacts are minimized or avoided.

Impacts to environmental resources and the social environment are expected to be minimal and are addressed in the following sections.

7.1 Summary of Environmental Effects and Mitigation

The Project will occur within an existing the Company ROW and will use existing access roads to the greatest extent possible, thereby largely avoiding and minimizing adverse environmental impacts. No long-term impacts to soil, bedrock, surface water, groundwater, or air quality will occur. Any potential sedimentation impacts, and other short-term construction impacts to wetlands and surface waters will be mitigated using soil erosion and sediment control BMPs and construction mats to protect wetland soils, vegetation root stock, and streams. Minor, temporary disturbances of wildlife may result from the establishment of construction work areas, equipment travel and construction crews working in the Project corridor. Any wildlife displacement will be negligible and temporary since wildlife will be expected to return and re-colonize the ROW after construction. An environmental compliance monitor will be part of the Project team to ensure compliance with all regulatory programs and permit conditions, and to oversee the proper installation and maintenance of the soil erosion and sediment control BMPs.

7.2 Summary of Social Effects and Mitigation

The Project involves existing transmission lines within existing ROW. No long-term impacts to residential, commercial, or industrial land uses will occur as a result of the Project. Any construction noise impacts are expected to be temporary and localized. No visual impacts will result from the Project. Traffic control plans will be employed as necessary at the ROW access points off local and state roads, and for the installation of conductors across roadways. The Project will not adversely impact the social and economic conditions in the Project area. To the contrary, the Project will ensure the continued reliability of the electric system.

7.3 Soils

Construction activities which expose unprotected soils have the potential to increase natural soil erosion and sedimentation rates. Soil compaction and decreased infiltration rates may result from

equipment operations. Standard construction techniques and BMPs will be employed to minimize any short-term impacts due to construction activity. These include the installation of straw bales, siltation fencing, compost filter sock, water bars, diversion channels, the reestablishment of vegetation and dust control measures as appropriate. These devices will be inspected by the Company's environmental compliance monitor frequently during construction and repaired or replaced if necessary. The Company will develop and implement a Soil Erosion and Sediment Control Plan (Appendix B), which will detail BMPs and inspection protocols.

Soil erosion and sediment control measures will be selected to minimize the potential for soil erosion and sedimentation in areas where soils are impacted. The Company will adhere to its R*OW Access, Maintenance, and Construction Best Management Practices* document (EG-303NE), the RISESCH, and the RIDEM Wetland BMP Manual. The Company will pay particular attention to the highly erodible soils that are encountered within the Study Area. On all slopes greater than eight percent which are above sensitive areas, impacted soils will be stabilized with straw or chipped brush mulch to prevent the migration of sediments.

Temporary soil erosion controls may be placed in the following types of areas, in accordance with site-specific field determinations:

- Across or along portions of cleared ROW, at intervals dictated by slope, soil erodibility, amount of vegetative cover remaining, and down-slope environmental resources.
- Along access ways within the transmission line ROW.
- Across areas of impacted soils on slopes leading to streams and wetlands.
- Around portions of construction work sites that must unavoidably be located in wetlands.

The temporary soil erosion controls will be maintained, as necessary, throughout the period of active construction until restoration has been deemed successful, as determined by standard criteria for storm water pollution control/prevention and soil erosion control. In addition to silt fence or straw bales, temporary soil erosion controls may include the use of mulch, jute netting (or equivalent), soil erosion control blankets, reseeding to establish a temporary vegetative cover, temporary or permanent diversion berms (if warranted), and/or other equivalent structural or vegetative measures. After the completion of construction activities in any area, permanent stabilization measures (e.g., seeding and/or mulching) will be performed as necessary.

During the periodic post-construction inspections, the Company will determine the appropriate time frame for removing these temporary soil erosion controls. This determination will be made based on the effectiveness of restoration measures, such as percent re-vegetative cover achieved, in accordance with applicable permit and certificate requirements.

7.4 Water Resources

7.4.1 Major Surface Waters

Potential impacts to surface waters if sediment transport is not controlled include temporary increased turbidity and sedimentation (locally and downstream) and subsequent alterations of benthic substrates, decreases in primary production and dissolved oxygen concentrations, releases of toxic substances and/or nutrients from sediments, and destruction of benthic invertebrates. For this Project, however, any impact of the Project upon major surface waters will be minor and temporary. Construction activities temporarily increase risks for soil erosion and sedimentation that may

temporarily degrade existing water quality; however, appropriate BMPs will be implemented and maintained to effectively control sediment. Temporary construction mats will be used to access structure locations within or adjacent to surface water features as conditions warrant. Sedimentation and turbidity within these watercourses will be minimized through the implementation and installation of BMPs prior to construction activities.

7.4.2 Wetlands and Waterbodies

The Company has planned and designed the Project to minimize and avoid potential impacts to wetlands. However, due to site constraints, construction logistics, and engineering constraints, minor impacts to wetlands are unavoidable. To minimize these potential impacts, wetland crossings were chosen to cross at previously impacted locations or at narrow points of the wetland. Construction mats will be used at all unavoidable wetland crossings. Where structures are located in or near wetland areas, erosion control measures in addition to construction mats, will be employed as needed to reduce sedimentation impacts on the wetland.

On the L14 and M13 Mainline, there are 33 new transmission structures to be installed in regulated wetlands and 35 existing transmission structures to be removed from regulated wetlands. Where feasible, the existing structures being replaced will be removed and the wetland areas restored with hydric soils obtained from its replacement foundation hole(s) resulting in no net loss of wetland. All reasonable attempts will be made to remove original pole structures in their entirety, including the pole butts, and if this is not feasible, the pole butt will be left in-place and cut 18 inches below the ground surface. Regardless, no additional material will be removed as a result of the removal of original pole structures.

The Project will require installation of temporary construction mat spans over three intermittent and five perennial streams. All stream crossings will be bridged with construction mats installed in accordance with EG-303NE.

Temporary impacts to wetlands will occur for the purposes of temporary construction matting for access roads, work pads, pull pads, and storage of construction mats. Where temporary impacts occur in wetlands from temporary construction matting, the wetlands will be restored to pre-construction conditions to the extent practicable. Where structures are to be replaced to meet current Company engineering standards and improve reliability in the region, replacement structures are slightly larger than the original wooden monopiles of the L14 and M13 Lines. Therefore, permanent impacts are associated with the structure replacements to occur in wetlands and include fill from larger structures with larger pole and foundation diameters. Table 7-1 summarizes the wetlands impacts based on preliminary design data.

TABLE 7-1 SUMMARY OF POTENTIAL IMPACTS ON WETLANDS

WETLAND ID (TYPE)[1]	TEMPORARY IMPACT (SQUARE FEET)	PERMANENT IMPACT (SQUARE FEET)
PW01	2,068	0
PW02	5,562	0
PW03	22,916	201
PW04	10,159	101
PW05	42,598	101
PW06	6,493	101
PW07	26,211	166

WETLAND ID (TYPE)[1]	TEMPORARY IMPACT (SQUARE FEET)	PERMANENT IMPACT (SQUARE FEET)
PW08	235	0
PW09	3,375	0
PW10	10,794	50
PW11	114,265	548
PW12	1,064	0
PW13	1,393	0
PW14	807	0
PW15	3,818	50
TW01	3,798	0
TW02	4,179	0
TW03	26,635	201
TW04	0	0
TW05	12,281	76
TW06	2,116	1

7.4.3 Groundwater Resources

The only potential impact to groundwater resources would result from inadvertent spillage or release of fuel, petroleum, hydraulic fluid, or other products. Potential impacts to groundwater resources within the Project ROW as a result of construction activity on the transmission line facilities will be negligible. Equipment used for construction will be properly inspected, maintained and operated to reduce the chances of spill occurrences of petroleum products. Within primary groundwater recharge areas, special safeguards will be implemented to assure the protection of groundwater resources. Construction equipment will be required to carry emergency spill containment and prevention devices (i.e., absorbent pads, clean up rags, five-gallon containers, and absorbent material) and fueling of equipment will occur in upland areas where practicable. In addition, maintenance equipment and replacement parts for construction equipment will be on hand to repair failures and stop a spill in the event of an equipment malfunction. In some scenarios, refueling in place will be allowed for equipment that cannot be moved from a fixed location. Appropriate precautions must be utilized and the Company's Environmental representatives must be consulted prior to initiating the refueling, such as secondary containment devices. Following construction, the normal operation and maintenance of the transmission line facilities will have no impact on groundwater resources.

7.5 Vegetation

Along most of the ROW and at structure sites, vegetation mowing will be required prior to construction of the Project. Vegetation removal and mowing occurred in Q4 2023 and Q1 2024 to facilitate access on the ROW to advance the Company subsurface geotechnical program to support the planning and engineering design for the Project. These activities will be limited to those areas necessary to provide access to existing and proposed Project structure locations, to facilitate safe equipment passage, to provide safe work sites for personnel within the ROW, and to maintain safe clearances between vegetation and transmission line conductors for reliable operation of the transmission facilities. Pruning and individual tree removal will be required in certain locations along the ROW to ensure adequate safety and operational clearances for the new transmission line. Tree removal and vegetation management (e.g., mowing) is to occur within the Company's existing ROW

easement to maintain minimum clearances from energized lines. Tree removal activities will take place within the Company's existing and approved ROW easement or on the Company fee-owned property. During and following construction, danger trees that have been determined to present a potential hazard to the integrity of the line will be marked and pruned or removed. Vegetative species compatible with the use of the ROW for transmission line purposes are expected to regenerate naturally, over time.

Off-ROW trees located just outside the maintained ROW edge will be assessed for their potential to damage the transmission lines. To ensure the safety and reliability of the line, danger and hazard trees may have to be pruned or removed. A danger tree is a tree located either on or off the ROW, which may contact electric lines if it were to fall, and hazard trees are danger trees that are structurally weak, broken, damaged, decaying or infested and that could contact the structures or conductors (or violate the conductor clearance zones).

After completion of work on the transmission facilities, the Company will stabilize, seed and mulch impacted areas with appropriate grass-type mixes and straw mulch. The Applicant will promote the re-growth of desirable species by implementing vegetative maintenance practices to control tall-growing trees and incompatible, invasive species that conflict with line clearances, thereby enabling native plants to dominate.

7.6 Wildlife

Minor, temporary disturbances of wildlife may result from equipment travel and construction crews working in the Project corridor. During construction, displacement of wildlife may occur due to disturbance associated with ROW mowing, tree removal, and the operation of construction equipment. Wildlife currently utilizing the forested edge of the cleared ROW may be affected by construction of the Project.

Larger, more mobile species, such as eastern white-tailed deer or red fox, will temporarily leave the construction area. Individuals of some bird species will also be temporarily displaced. Depending on the time of year of these operations, this displacement could affect breeding and nesting activities. Smaller and less mobile animals such as small mammals, reptiles, and amphibians may be affected during vegetation mowing/removal and the transmission line construction. The species impacted during the refurbishment of the transmission line are expected to be limited in number. Effects will be localized to the immediate area of construction around structure locations and along existing access roads. However, this is anticipated to be a temporary effect as it is expected that existing wildlife utilization patterns will resume, and population sizes will recover once work activities are completed.

Minor tree cutting and trimming is required for the Project. As results from the USFWS IPaC indicated, the Project would have no effect on the endangered northern long-eared bat (*Myotis septentrionalis*); therefore, no impacts to no maternity roost trees or hibernaculum are anticipated. The Company will take steps necessary to minimize disturbance to preferred pollinator habitat throughout the construction period, such as selecting non-milkweed dominated areas for on-site foundation spoils management. In-situ restoration of disturbed soils will allow natural revegetation, including recolonization of milkweed and other important nectar sources used by monarchs. No long-term impacts to general wildlife are expected to result from the Project.

7.7 Air Quality

There are two potential sources of air quality impacts associated with the Project – dust and vehicle emissions – neither of which are expected to be significant. Due to the transitory nature of the construction, air quality in the Project ROW will not be significantly affected by construction along the ROW. Emissions produced by the operation of construction machinery (nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter) are short-term and not generally considered significant.

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

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

- In Rhode Island, any diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of construction will either be USEPA Tier 4-compliant or will be retrofitted with USEPA-verified (or equivalent) emission control devices such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine.
- The Company requires the use of ultra-low sulfur diesel fuel in its diesel-powered construction equipment and limits idling time to five minutes except when engine power is necessary for the delivery of materials or to operate accessories to the vehicle such as power lifts.
- Vehicle idling is to be minimized during construction activities, in compliance with the Rhode Island Anti-idling Law, G.L. § 31-16.1 and § 23-23-29, and the Company's Environmental Guidance (EG-802RI) Vehicle Idling – Rhode Island.
- Require strict compliance with the RIDEM Diesel Engine Anti-Idling Program[1] and other Rhode Island anti-idling laws[2] to prevent equipment from idling and producing unnecessary noise while not in productive use.
- Exposed soils and access roads will be wetted and stabilized, as necessary, to suppress dust generation during construction.

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

Importantly, Rhode Island does not have any air quality nonattainment counties under the standards of the USEPA. The USEPA, under the Clean Air Act of 1970, 42 U.S.C. §§ 7401 *et seq.*, amended in 1977 and 1990, developed National Ambient Air Quality Standards (NAAQS) that include primary standards to protect human health and the health of sensitive subpopulations, including children, elderly, and those with chronic respiratory problems. NAAQS also contain secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health. Standards developed by the USEPA for the

NAAQS involving carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2).

7.8 Social and Economic

The Project will not adversely impact the overall social and economic condition of the Project area. The Project does not require, nor will it lead to long-term residential or business disruption. Temporary construction impacts, primarily related to construction traffic and equipment operation, are expected to be minor. As described in Section 3.0, the proposed work will be located entirely within an existing 115 kV transmission line ROW. By providing continued reliable supply of electricity, the Project will support existing and forecasted economic growth.

7.8.1 Land Use

Since the Project involves refurbishment of existing facilities within an existing and maintained ROW, there will be no permanent, long-term impacts to the existing residential, commercial or recreational land uses in the Project area.

The Project will continue to be compatible with the various land uses along the route. Because the Project occurs within an area dedicated for use for electrical facilities, it will not displace any existing land uses, nor will it affect any future development proposals. Short-term land use impacts may occur during the construction phase of the Project. The Company will provide notification of the intended construction plan and schedule to affected landowners and abutters so that the effect of any temporary disruptions may be minimized.

7.8.2 Consistency with Local Planning

The municipalities of Tiverton and Portsmouth have Comprehensive Community Plans which describe the local direction regarding future development and growth in each community. Each municipality's Comprehensive Plan was evaluated with regard to expressed town-wide goals. Because the Project consists of refurbishment and upgrades that will occur entirely within an existing cleared transmission line ROW, it will not alter existing land use patterns and will not adversely impact future planned development. The Project will provide a continued reliable supply of electricity for the growth and development envisioned by the Comprehensive Plans of the host communities.

7.9 Visual Resources

Visual resources include elements of the surrounding area that may be sensitive to changes to their visual setting; including historic sites, scenic landscapes, lighthouses, state parks/beaches, wildlife refuges, designated scenic areas, and other recreation and tourism areas. Effects to visual resources can be perceived by both residents (year-round and seasonal) and tourists.

Overall, the Project's visual impacts are limited by the location of the Project within an already-developed transmission ROW, and by the relatively limited need for tree removal in locations near sensitive receptors. New pole structures have been sited adjacent to existing structures, where feasible, to minimize the potential for visual impact. The Company will work with abutting landowners who experience a material change in view to identify reasonable and practical screening that could be provided on their properties, in "soft" form (e.g., compatible vegetation), "hard" form (e.g., fencing), or a combination of the two. With the implementation of these measures, the visual impacts of the Project will be minimized.

The heights of existing transmission structures ranges from 46 to 143 feet, with the tallest structures at the Sakonnet River crossing measuring approximately 143 feet in in height. The heights of the replacement structures will range in heights from 42 to 176 feet, with the average structure height being approximately 75 feet. The tallest proposed transmission structures will be the structures located at the Sakonnet River crossing and to the east of Paul James Drive in Tiverton, with heights of 172 and 176 above-ground, respectively.

Four representative viewpoint locations (Appendix G) were selected along the Project route for development of visual simulations in order to demonstrate how the constructed Project would appear to future viewers (proposed conditions). Viewpoint 1 is located off Boyds Lane where Anthony Road and Old Boyds Lane intersect in Portsmouth with a view to the south into the ROW. Viewpoint 2 is located in Portsmouth on Main Road at Montaup Country Club with a view to the west into the ROW. Viewpoint 3 is located at Riverside Drive in Tiverton, with a view to the southwest into the ROW. Viewpoint 4 is located at Carey Lane in Tiverton with a view to the southwest into the ROW.

The transmission structures are to be replaced to comply with the NESC, to meet current Company engineering standards, and to improve reliability and resiliency in the region. As a result, the replacement structures consist of larger diameter poles and foundations and are taller than the original wood poles of the L14 and M13 Lines. Overall, the potential for visual impact on landscape character and sensitive viewers has been minimized through use of an existing and primarily cleared transmission line ROW and replacement of existing transmission structures that would create weak or no visual contrast. Therefore, the Project will not materially change the existing appearance of the ROW, and no significant impacts to visual resources are anticipated as a result of the Project.

7.10 Cultural and Historic Resources

No architectural above-ground resources were identified within the Project ROW. Accordingly, the Project will not directly affect architectural above-ground resources. Potential visual impacts to NRHP eligible or listed resources will be assessed by RIHPHC using data provided by POWER in a historic above-ground resources inventory. This inventory was completed in June 2024 and was submitted to RIHPHC for review and comment in July 2024.

POWER began Phase I archaeological survey in January 2024 for the Project at the locations of proposed geotechnical borings in moderate to high sensitivity areas; the results of this testing have not been fully reviewed by RIHPHC, but no significant cultural materials were recovered and RIHPHC agreed to the Company commencing with the geotechnical boring program.

On behalf of the Company, POWER received a permit from the RIHPHC to conduct Phase 1 archaeological field survey in areas of proposed impacts on January 9, 2024. Intensive archaeological surveys commenced in early Q2 and were completed in June 2024. The results of these surveys were communicated to RIHPHC in July and August 2024. POWER cultural resources staff have maintained a dialogue with Tribal cultural resource monitors throughout the Project in order to identify and address Tribal concerns and to enable a collaborative approach to investigation strategy.

POWER identified low-density subsurface Native cultural material in multiple locations within the Project corridor, and a potentially historic landscape feature in one location. Significance of these resources is still being assessed but preliminary results suggest that Archaeological Site Avoidance and Protection Plan (ASAPP) measures at these locations in the form of compression controls to reduce ground disturbance by construction vehicles and equipment will be sufficient to avoid any adverse effects to the resources. Limited mitigation may be required in locations where impacts can’t

be avoided. The ASAPP has been filed with the RIHPHC and the USACE as part of the Section 106 of the National Historic Preservation Act consultation process.

7.11 Noise

Noise impacts are expected to be negligible. Temporary construction noise may be generated by the Project that will occur during normal daytime working hours. Proper mufflers will be required to control noise levels generated by construction equipment. Some work tasks such as concrete pours and transmission line stringing, once started, must be continued through to completion, and may go beyond normal work hours. Work requiring scheduled outages and crossings of certain transportation and utility corridors may need to be performed on a limited basis outside of normal work hours, including on Sundays and holidays. Prior to and during construction, the Company will notify landowners, abutting property owners, municipal officials, and local police and fire chiefs of the details of planned construction including the normal work hours and any extended work hours.

7.12 Transportation

The construction related traffic increase will be small relative to total traffic volume on public roads in the area. In addition, it will be intermittent and temporary, and construction related traffic will cease once the Project is completed. The addition of this traffic for the limited periods of time is not expected to result in any additional congestion or change in operating conditions along any of the roadways along the ROW. Where access to the ROW intersects a public way, the construction team will follow a pre-approved work zone traffic control plan. Although traffic entering and exiting the ROW at these locations is expected to be small, vehicles entering and exiting the site will do so safely and with minimal disruption to traffic along the public way. Traffic Management Plans will be submitted to the RIDOT for work activities proposed within state highway ROWs, and coordination with the municipalities will occur for work that may have the potential to affect public roadways. Following construction, traffic activity will be minimal and will occur only when the ROW or transmission lines must be maintained. As a result, no long-term impacts to traffic flow or roadways are expected.

7.13 Safety and Public Health

Following construction of the facilities, all transmission line structures will be clearly marked with warning signs to alert the public to potential hazards if climbed. Trespassing on the ROW will be discouraged by using existing gates and/or barriers at entrances from public roads. Because the proposed facilities will be designed, built, and maintained in accordance with the standards and codes as described in Section 3.3.6, the public health and safety will be protected.

7.14 Electric and Magnetic Fields

Magnetic field levels were calculated for two loading scenarios: expected annual average and annual peak loading. Magnetic field levels for average and peak loading conditions are summarized in Table 7-2 and 7-3, respectively. Table 7-4 summarizes electric field levels. Please refer to the ROW cross-sections Schematic 1 below. Along much of the L14 and M13 Mainline route, the magnetic field increases slightly by a maximum of <9 mG or decreases when compared with calculated pre-construction magnetic field levels. Electric field levels were calculated to not change by more than 0.5 kV/m at the ROW edges. The EMF levels from the existing and rebuilt transmission lines decrease rapidly with distance from the ROW.

The largest increase in magnetic-field levels at average loading occurs in XS-01, the very small (approximately 1,000 foot) portion of the route south of the Canonicus Substation. In this small portion of the route the magnetic field at average loading increases by 8.9 mG on the northern edge of the ROW and decreases by 1.0 mG on the southern edge of the ROW. For XS-02 (which represents the majority of the route from Canonicus Substation to Dexter Substation) the largest magnetic-field level at the edge of the ROW is 13 mG or less at average loading, an increase of 4.0 mG and 6.3 mG on the northern and southern side of the ROW, respectively. For XS-03 where the transmission lines are rebuilt in a double-circuit configuration, the magnetic-field at average loading is 8.7 mG or lower (a decrease of 5.2 mG and 3.8 mG on the northern and southern ROW-edges, respectively). Magnetic field levels decrease rapidly with distance from the edges of the ROW. At a distance of 100 feet from the ROW edges, calculated magnetic field levels were less than 1.0 mG for all rebuilt configurations, see Appendix E.

At both average and peak loading, EMF levels at the ROW edges are calculated to slightly increase or not appreciably change as a result of the Project rebuild. The Company has selected optimal phasing of the configuration of the conductors to minimize the magnetic field at either ROW edge. At both average and peak loading, all calculated EMF levels are far below the guidelines of international scientific and health agencies for electric fields (4.2 kV/m or greater) and magnetic fields (2,000 mG or greater).

A discussion of the Current Status of Research on Extremely Low Frequency Electric and Magnetic Fields and Health: Rhode Island Energy Transmission Line Projects – The Narragansett Electric Company (June 2, 2022) was prepared by Exponent, Inc. and is attached as Appendix E.

TABLE 7-2 MAGNETIC FIELD LEVELS (MG) AT AVERAGE LOADING

SEGMENT NUMBER	CONFIGURATION	–ROW EDGE (FACING L14 AND M13 LINES)	+ROW EDGE (FACING L14 AND M13 LINES)
XS-01	Existing	23	8.1
	Rebuilt (2025)	24	17
	Rebuilt (2030)	22	16
XS-02	Existing	5.7	9
	Rebuilt (2025)	12	13
	Rebuilt (2030)	11	12
XS-03	Existing	5.6	8.7
	Rebuilt (2025)	4.4	3.5
	Rebuilt (2030)	4	3.3

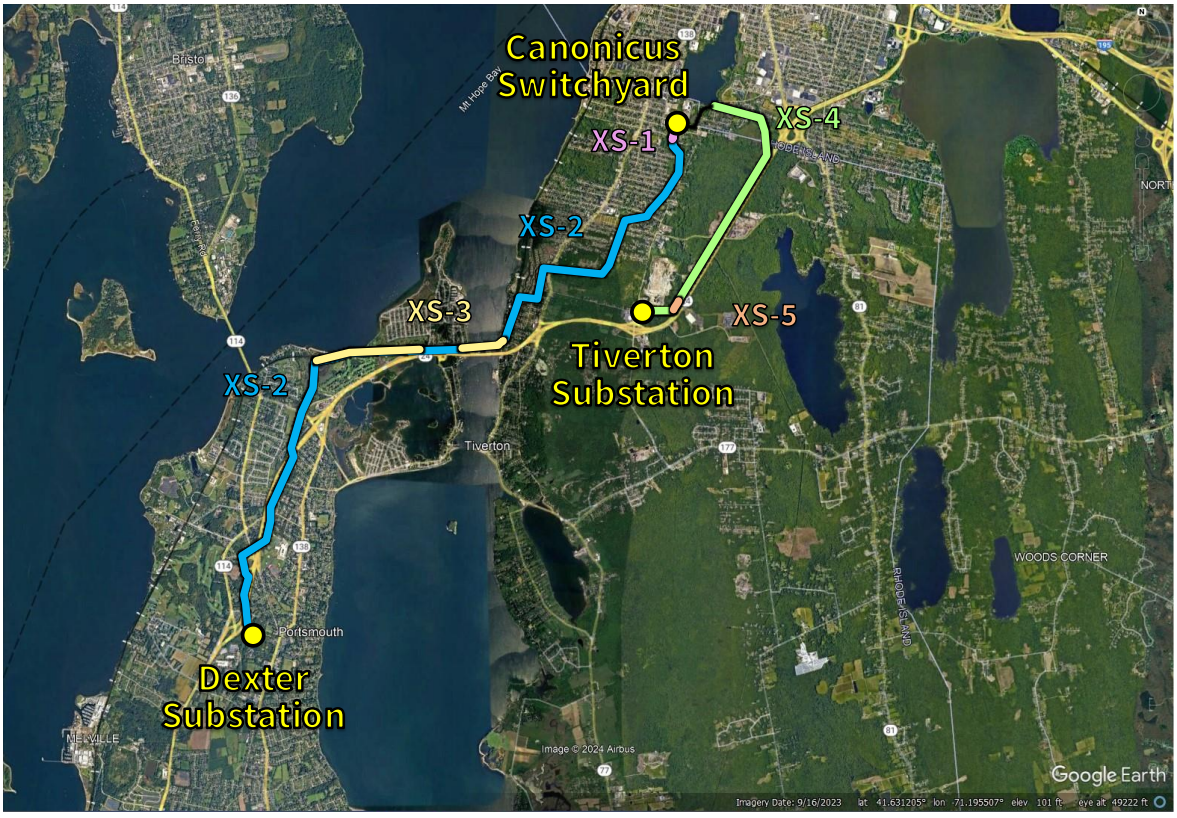
TABLE 7-3 MAGNETIC FIELD LEVELS (MG) AT PEAK LOADING

SEGMENT NUMBER	CONFIGURATION	–ROW EDGE (FACING L14 AND M13 LINES)	+ROW EDGE (FACING L14 AND M13 LINES)
XS-01	Existing	44	15
	Rebuilt (2025)	47	32
	Rebuilt (2030)	46	32
XS-02	Existing	11	17
	Rebuilt (2025)	23	24
	Rebuilt (2030)	23	24
XS-03	Existing	11	16
	Rebuilt (2025)	8.4	6.6
	Rebuilt (2030)	8.2	6.6

It is important to note that the EMF levels are all far below the guidelines reference levels recommended by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the International Committee on Electromagnetic Safety (ICES) (ICNIRP 2019).

TABLE 7-4 ELECTRIC FIELD LEVELS (KV/M) AT AVERAGE LOADING

SEGMENT NUMBER	CONFIGURATION	–ROW EDGE (FACING L14 AND M13 LINES)	+ROW EDGE (FACING L14 AND M13 LINES)
XS-01	Existing	1.4	0.3
	Rebuilt (2025)	1.3	0.8
	Rebuilt (2030)	1.3	0.8
XS-02	Existing	0.1	0.3
	Rebuilt (2025)	0.3	0.4
	Rebuilt (2030)	0.3	0.4
XS-03	Existing	0.1	0.3
	Rebuilt (2025)	>0.1	>0.1
	Rebuilt (2030)	>0.1	>0.1



SCHEMATIC 1. L14 AND M13 LINES ARE REPRESENTED BY CROSS-SECTIONS XS-01, XS-02, AND XS-03.

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8.0 MITIGATION MEASURES

Mitigation measures for this Project will be used to reduce the impacts of the work on the natural and social environments. The Project consists of upgrades of existing transmission lines within an existing ROW. As described in Section 7.0, there are no long-term impacts to mitigate as a result of this Project and primarily, mitigation efforts are focused on the short-term temporary construction phase of the Project. However, as mentioned, the installation of foundations and new replacement structures may constitute the incremental filling of salt marsh where the rebuild and replacement structures are larger diameter poles and foundations necessary to address construction within the coastal environment. These proposed fills are required to complete the Project, as the Lines are previously established along the ROW, and previously overlapping with coastal wetlands. In accordance with the CRMC and associated regulations (650-RICR-20-00-1.3.1.L.5.2.AA), the Company has proposed a potential salt marsh restoration site to comply with the minimum of 2:1 compensatory mitigation requirement for permanent alteration to a coastal wetland including saltmarsh, and to minimize and mitigate impacts. See Section 8.2.3 below.

8.1 Construction Phase

The construction phase of the Project will include the replacement of existing structures, conductor, and OPGW within an existing ROW. This work will require only minor disturbances to the surrounding natural environment.

The Company will implement several measures during construction which will minimize impacts to the environment. These include the use of existing access roads and structure pads wherever possible, installation of erosion and sedimentation controls, supervision and inspection of construction activities within resource areas by an environmental compliance monitor and minimization of disturbed areas. Stabilization of soil will occur when areas are disturbed. The following section details various mitigation measures which will be implemented to minimize construction related impacts.

When the existing transmission lines were originally constructed, and as the lines have been maintained over the years, access roads were established within most portions of the ROW. During construction of the Project, vehicles will utilize these existing access roads where practical to minimize disturbance within the ROW. Access through wetlands will be provided by using construction mats from the existing maintained portion of the ROW. Excavated soils will be stockpiled and spread in approved upland areas outside all biological wetland areas and floodplains in such a manner that general drainage patterns will not be affected. Construction access will be limited to the existing structure locations, work pads, and proposed access routes, and will be lined with erosion and sedimentation control BMPs where needed. Each area will be restored following erection of the structures and installation of the new wires and conductors.

Vegetation management and tree removal will be necessary along access routes and work pad locations. These activities will require minor vegetation maintenance including brush removal up to a width of 20 feet centered on the access road and pruning limbs to a height of 12 to 15 feet to maintain clearances and allow safe passage of construction equipment and vehicles.

The Company will adhere to a site-specific invasive species control plan which will require that all equipment and temporary construction matting brought on-site will be certified as clean. Temporary matting will be removed upon completion of the Project and the area under jurisdiction of the Rhode

Island Freshwater Wetlands Act will be restored back to pre-existing conditions and contours to the extent practicable.

8.1.1 Erosion and Sedimentation Control

Erosion and sediment control devices will be installed along the perimeter of identified wetland resource areas prior to the onset of soil disturbance activities to ensure that soil stockpiles and other disturbed soil areas are confined and do not result in downslope sedimentation of sensitive areas. Low growing tree species, shrubs and grasses will only be mowed along access roads, structure locations, and pull areas as necessary. As part of Rhode Island Pollution Discharge Elimination System (RIPDES) permitting, a site-specific Soil Erosion and Sediment Control Plan will be developed and implemented during the construction phase of the Project. The Soil Erosion and Sediment Control Plan will be maintained on-site and updated throughout the Project to reflect environmental inspection reporting and BMPs. Construction crews will be responsible for conducting daily inspections and identifying erosion controls that must be maintained or replaced as necessary.

Access roads and work pads located in uplands and within 100-foot and 200-foot regulated contiguous areas will be left in-place and will be stabilized with a top dressing of topsoil and seed.

8.1.2 Supervision and Monitoring

Throughout the entire construction process, the Company will retain the services of an environmental compliance monitor. The primary responsibility of the monitor will be to oversee construction activities, including the installation and maintenance of erosion and sedimentation controls, on a routine basis to ensure compliance with all federal and state permit requirements, the Company's policies, and other commitments. The environmental compliance monitor will be a trained environmental scientist responsible for supervising construction activities relative to environmental issues. The environmental compliance monitor will be experienced in the erosion control techniques described in this report and will have an understanding of wetland resources to be protected. During periods of prolonged or heavy precipitation and after excessive snow melt, the monitor will inspect all locations to confirm that the environmental controls are functioning properly.

In addition to retaining the services of an environmental monitor, the Company will require the construction team to designate an individual to be responsible for the daily inspection and upkeep of environmental controls. This person will also be responsible for providing direction to the other members of the construction crew regarding matters of wetland access and appropriate work methods. Additionally, all construction personnel will be briefed on Project environmental compliance issues and obligations prior to the start of construction, as part of the Project environmental training program. Regular construction progress meetings will provide the opportunity to reinforce the construction team's awareness of these issues.

8.1.3 Air Quality

During earth disturbing activities, the construction team will deploy dust mitigation measures as described in the Company's EG-303NE. Exposed soils will be wetted and stabilized as necessary to suppress dust generation, and crushed stone aprons will be used at all access road entrances to public roadways. Consequently, fugitive dust emissions are anticipated to be low.

The Company requires the use of ultra-low sulfur diesel fuel exclusively in the construction team's diesel-powered construction equipment. Vehicle idling is to be minimized during the construction phase of the Project, in compliance with the Rhode Island Diesel Engine Anti-Idling Program, Air

Pollution Control Regulation No. 45, authorized pursuant to Rhode Island General Laws § 31-16.1-3, § 23-23-29.2, and § 23-23-29.3. Vehicle idling for diesel and non-diesel-powered vehicles is limited to five minutes except for powering auxiliary equipment, for heating/defrosting purposes in cold weather, and for cooling purposes in hot weather. The construction team is responsible for complying with the state regulatory requirements along with the Company Environmental Guidance (EG-802RI) Vehicle Idling – Rhode Island.

- In Rhode Island, any diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of construction will either be USEPA Tier 4-compliant or will be retrofitted with USEPA-verified (or equivalent) emission control devices such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine.
- The Company requires the use of ultra-low sulfur diesel fuel in its diesel-powered construction equipment and limits idling time to five minutes except when engine power is necessary for the delivery of materials or to operate accessories to the vehicle such as power lifts.
- Vehicle idling is to be minimized during construction activities, in compliance with the Rhode Island Anti-idling Law, R.I.G.L. § 31-16.1-3, § 23-23-29.2, and § 23-23-29.3, and the Company's Environmental Guidance (EG-802RI) Vehicle Idling – Rhode Island.
- Require strict compliance with the RIDEM Diesel Engine Anti-Idling Program[1] and other Rhode Island anti-idling laws to prevent equipment from idling and producing unnecessary noise while not in productive use.
- Exposed soils and access roads will be wetted and stabilized, as necessary, to suppress dust generation during construction.

8.1.4 Noise

To minimize the effects of construction noise to abutters to the ROW and to the general public, the Company will implement the following mitigation measures:

- Requiring well-maintained equipment with functioning mufflers.
- Requiring muffling enclosures on continuously operating equipment such as air compressors and welding generators.
- Using a low-noise generator (e.g., WhisperWattTM or equivalent) to reduce noise impacts.
- Requiring strict compliance with the Massachusetts Anti-Idling Law, for work activities in Fall River, MA, and the Rhode Island Anti-Idling Law to prevent equipment from idling and producing unnecessary noise while not in productive use.
- If applicable, mitigating the impact of noisy equipment on sensitive locations by using shielding or buffering distance to the extent practicable.

8.1.5 Mitigation of Social Resource Impacts

The Company will minimize social resource impacts during construction by incorporating several standard mitigation measures. By use of an established transmission line ROW rather than creating a

new ROW, the potential for disruption due to construction activities will be limited to an area already dedicated to transmission line uses. Construction generated noise will be limited by the use of mufflers on all construction equipment and by limiting construction activities to the hours specified in the local ordinances. Dust will be controlled by wetting and stabilizing access road surfaces, as necessary, and by maintaining crushed stone aprons at the intersections of access roads with paved roads. The Company will minimize the potential for disturbance from the construction by notifying landowners and abutters of planned construction activities before and during construction of the line. Some short-term impacts are unavoidable, even though they have been minimized. By carrying out the work on the transmission lines in a timely fashion, the Company will keep these impacts to a minimum. The Company's contractors will prepare traffic management plans, for applicable roadway routes, which will minimize impacts associated with increased construction traffic on local roadways.

Regarding historic and archaeological resources, POWER will prepare an ASAPP outlining protective measures to be carried out during construction at locations of any observed cultural resources adjacent to proposed construction impacts, including archaeological sites and historic stone features. The Company will comply with the protective measures identified in the plan including contractor training, on-site monitoring by a qualified professional archaeologist, installation of avoidance fencing and signage, and use of compression control measures. Protective measures will be removed during final restoration.

8.2 Post-Construction Phase

Following the completion of construction, the Company will use standard mitigation measures on all transmission line construction projects to minimize the impacts of projects on the natural and social environment. These measures include revegetation and stabilization of disturbed soils, ROW vegetation management practices and vegetation screening maintenance at road crossings and in sensitive areas. Other measures will be used on a site-specific basis. The Company will implement the following standard and site-specific mitigation measures for the Project.

8.2.1 Restoration of Natural Resource Impacts

Restoration efforts, including final grading and installation of permanent erosion control devices, and seeding of disturbed areas, will be completed following construction. Construction debris will be removed from the Project site and disposed of at an appropriate landfill. Pre-existing grades, drainage patterns, ditches, roads, fences, and stone walls will be restored to their former condition, where appropriate. Permanent slope breakers and erosion control devices will be installed in areas where the disturbed soil has the potential to impact wetland resource areas.

The Company is also proposing minor grading for placement of mats to be used near the section of coastal bluff near Structures 53-56, as well as grading to smooth the top of the coastal bluff for access and to reduce impact on the property at the Montaup Country Club and associated golf course. On the seaward side of the bluff, a planting plan of coastal tolerant plant species may be recommended to stabilize the bluff and to provide wildlife enhancements after construction.

Vegetation maintenance of the ROW will be accomplished with methods identical to those currently used in maintaining the existing ROW. The Company's ROW vegetation maintenance practices encourage the growth of low-growing shrubs and other vegetation which provides a degree of natural vegetation control. In addition to reducing the need to remove tall growing tree species from the ROW, the vegetation maintained on the ROW inhibits erosion.

8.2.2 Mitigation of Social Resource Impacts

The Company will continue to coordinate with property owners to limit unwarranted access and trespass onto the ROW by installing permanent gates and barriers where not already installed along access roads entering the ROW from public ways.

In cases where an off-ROW tree needs to be pruned or removed for the Project, the Company will work with landowners to address the hazardous tree situation(s). Property owners who have a danger or hazard tree which poses a risk to the transmission line will be notified prior to tree removal and landscape or other type of visual mitigation may be provided, as necessary.

Recognizing the varying needs of its stakeholders, the Company is developing various communication methods to inform stakeholders throughout construction, including as needed: work area signage; advance notification of scheduled construction; personal contact with residents, community groups and businesses; and regular e-mail updates to residents (upon request) and local officials that will include information on upcoming construction activity.

The Company will assign dedicated personnel to the Project who will be responsible for continuing outreach responses during construction and who will provide a consistent point of contact for the public. As noted above, the Project website will be updated during the construction phase, and once a construction commencement date has been selected.

Major construction impacts are confined entirely within the existing 115 kV transmission line ROW, with only some minor construction impacts occurring immediately adjacent to the ROW, ensuring that the Project will not result in prolonged disruption to residential or business activities.

8.2.3 Compensatory Mitigation for Alteration to Coastal Wetland

As noted above, the Company understands that the State of Rhode Island under CRMC regulations at §1.1.2 of the Red Book requires a minimum of 2:1 compensatory mitigation for permanent alteration to a coastal wetland including salt marsh. To comply with the 2:1 mitigation requirement, the Company has selected and proposed the upland peninsula near structure L59X, within the existing ROW, to convert to salt marsh habitat. The total permanent alteration to coastal wetlands is approximately 550 square feet, resulting from the slightly larger poles and foundations. Therefore, the proposed mitigation area will be approximately 1,200 square feet to replace the ecological value of the salt marsh areas displaced by the larger diameter pole structures and to meet the 2:1 ratio requirement.

The area selected is surrounded by the existing salt marsh PW11 and the potential for survivability and success is highly favorable by expanding the current abutting habitat. Though the location selected is within the ROW, the area is located on state land. The Company is in communication with the RIDEM Division of Planning and Development Land Acquisition Program to notify them of the compensatory mitigation program at this location in Boyd's Marsh/Town Pond. The Company has submitted the salt marsh mitigation plan and is committed to implementing the plan as part of the ROW restoration and stabilization program, should all necessary approvals be obtained for the saltmarsh creation area. The plan is additionally inclusive of a proposed monitoring program to be implemented to evaluate and establish the success of the mitigation/restoration site.

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