COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of New England Power Company d/b/a National Grid for Approval to Construct a New Double Circuit Overhead Transmission Line in Warwick, Royalston, Winchendon, Gardner, Westminster, Fitchburg, Leominster, and Sterling; and Two Associated Tap Lines in Athol, Royalston, and Gardner, Massachusetts, Pursuant to G.L. c. 164, § 69J	EFSB 23-02
Petition of New England Power Company d/b/a National Grid for Approval to Construct and Operate a New Double Circuit Overhead Transmission Line in Warwick, Royalston, Winchendon, Gardner, Westminster, Fitchburg, Leominster, and Sterling; and Two Associated Tap Lines in Athol, Royalston, and Gardner, Massachusetts, Pursuant to G.L. c. 164, § 72	D.P.U. 23-45

FINAL DECISION

On the Decision:

Yonathan Mengesha
Tim Reilly
Nathaniel Strosberg
Brian Wilmer

Connor C. Tarr
Presiding Officer
June 4, 2026

The Siting Board translates materials into other languages to assist people with limited English proficiency. The Siting Board has reasonably attempted to provide an accurate translation of the original material, but due to the nuances in translating to a foreign language, slight differences may exist. While the Siting Board has provided translated versions, the English version is the official version of the Siting Board's decision.

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GLOSSARY

A1/B2 Lines	47 miles of 69 kilovolt double-circuit overhead transmission lines owned and operated by National Grid in Warwick, Royalston, Winchendon, Gardner, Westminster, Fitchburg, Leominster and Sterling
ACECs	Areas of Critical Environmental Concern
ACSS	Aluminum Conductor, Steel Supported
Andrew-Dewar	NSTAR Electric Company d/b/a Eversource Energy, EFSB 19-03/D.P.U. 19-15 (2021)
Bank	Inland Bank
Beverly-Salem	New England Power Company d/b/a National Grid, EFSB 19-04/D.P.U. 19-77/19-78 (2021)
BLSF	Bordering Land Subject to Flooding
BMPs	Best Management Practices
BVW	Bordering Vegetated Wetland
Cluster Studies	The Western Massachusetts Cluster Studies performed by NEP from 2019 to 2022
Colonial 2016	Colonial Gas Company d/b/a National Grid, EFSB 16-01 (2016)
Colonial 2019	Colonial Gas Company d/b/a National Grid, EFSB 18-01/D.P.U. 18-30 (2019)
Company	New England Power Company d/b/a National Grid ("NEP")
dBA	A-Weighted Decibels
DCR	Massachusetts Department of Conservation and Recreation
Department	Massachusetts Department of Public Utilities
DEIR	Draft Environmental Impact Report (MEPA)
DER	Distributed energy resources
EEA	Executive Office of Energy and Environmental Affairs
EENF	Expanded Environmental Notification Form (MEPA)
EFSB Petition	G.L. c. 164, § 69J Petition filed by National Grid
EMF	Electric and magnetic field
Eversource	NSTAR Electric Company d/b/a Eversource Energy
Existing Lines	Existing 47 miles of 69 kilovolt double-circuit overhead transmission lines and structures
FEIR	Final Environmental Impact Report

GCEP	NSTAR Electric Company d/b/a Eversource Energy, EFSB 22-03/D.P.U. 22-21 (2024)
GHG	Greenhouse gas
GIS	Geographic Information System
G.L. c.	Massachusetts General Laws chapter
GWSA	Global Warming Solutions Act, St. 2008, c. 298
Inspection Report	National Grid 2019 Report detailing a study of the physical condition of the existing A1/B2 Lines and Tap Lines
IPAC	Information for Planning and Consultation
kV	Kilovolt
LUWW	Land Under Waterbodies and Waterways
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MBTA	Massachusetts Bay Transportation Authority
MEPA	Massachusetts Environmental Policy Act
MF	Magnetic fields
mG	Milligauss
Mid Cape Reliability	NSTAR Electric Company d/b/a Eversource Energy, EFSB 19-06/D.P.U. 19-142/19-143 (2022)
mt	metric tons
MVA	Mega Volt-Amp
New Lines	New A1/B2 double circuit transmission lines operated at 69 kV and capable of operating at 115kV and structures
NHESP	Natural Heritage and Endangered Species Program
NOI	Notice of Intent
Notice	Notice of Adjudication and Public Comment Hearing
NWAs	Non-Wires Alternatives
OPGW	optical ground wires
OSHA	U.S. Occupational Safety and Health Administration
Park City Wind	Park City Wind, LLC, EFSB 20-01/D.P.U. 20-56/20-57 (2023)
Petitions	National Grid's EFSB Petition and Section 72 Petition
Project	47 miles of 69 kV double-circuit overhead transmission lines designed to support future operation at 115 kV, along an existing Company managed right-of-way, and two associated Taps in

	Massachusetts (also referred to as the "A1/B2 Asset Condition Refurbishment Project")
Project Area	The area served by the Existing Lines and Tap Lines
RA	Riverfront Area
Restructuring Act	Electric Utility Restructuring Act of 1997, St. 1997, c. 164
Roadmap Act	An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, St. 2021, c. 8
ROW	Right-of-way
Section 72 Petition	G.L. c. 164, § 72
Siting Board	Massachusetts Energy Facilities Siting Board
SouthCoast Wind	SouthCoast Wind Energy LLC, EFSB 22-04/D.P.U. 22-67/22-68 (2024)
Study Area	Route evaluation area surrounding the existing A1/B2 Lines ROW between the Pratts Junction Substation in Massachusetts and the Vernon Substation in Vermont
Sudbury	Boston Edison Company v. Town of Sudbury, 356 Mass. 406 (1969)
Sudbury-Hudson	NSTAR Electric Company d/b/a Eversource Energy, EFSB 17-02/D.P.U. 17-82/17-83 (2019)
Tap Lines	(1) a line connecting the Royalston Switching Station to the Chestnut Hill Substation (6 miles); and (2) a line connecting the Gardner Switching Station to the Crystal Lake Substation (1.2 miles)
TMP	Traffic Management Plan
Town of Sudbury	Town of Sudbury v. Energy Facilities Siting Board, 487 Mass. 737 (2021)
USACE	United States Army Corps of Engineers
WPA	Wellhead Protection Areas

SUMMARY OF THE FINAL DECISION

New England Power Company d/b/a National Grid (the "Company") proposes to replace an existing double circuit transmission line, tap lines (that serve adjacent substations and distribution customers), and structures ("Existing Lines") with a new double circuit overhead transmission line, tap lines, and structures in the same transmission corridor in Warwick, Royalston, Athol, Winchendon, Gardner, Westminster, Fitchburg, Leominster, and Sterling, Massachusetts (the "Project"). The Existing Lines continue north of Warwick Massachusetts through portions of New Hampshire and Vermont, terminating at the Company's Vernon Substation #13 in Vermont. The Company proposes to construct the Project to be capable of operating at 115 kilovolts, although it would initially operate at 69 kilovolts, as does the existing line. The Existing Lines, originally constructed in 1909, reconductored in the 1920s, and reinsulated in 2004, are among the oldest transmission lines in New England and are supported by the original lattice structures. The Existing Lines are among the Company's worst performing transmission lines, with numerous short-term and extended outages in recent years due in large part to the original structure design, which makes the Existing Lines particularly susceptible to lightning damage and avian interaction.

The Company would replace 575 steel double circuit lattice tower structures with weathering steel, double circuit monopole structures, and associated conductors. The Company proposes to replace two smaller transmission tap lines and associated structures: (1) a six-mile two-circuit parallel tap line connecting the A1/B2 line to the Chestnut Hill Substation in Athol; and (2) a 1.2 mile two-circuit tap line connecting the A1/B2 line with the Crystal Lake Substation in Gardner. The Company would remove the existing lines, taps, and structures, once the replacement transmission lines and tap lines are constructed. The Company estimates that the cost to construct the Massachusetts portion of the Project would be $414.7 million (in 2024 dollars).

The Final Decision finds that the Company has demonstrated that there is a need to replace the existing transmission line, tap lines, and structures with a new double circuit overhead transmission line, tap lines, and structures in the existing transmission corridor to ensure reliable service. The Final Decision also finds that the Project is superior to the other alternatives identified with respect to meeting the identified need and providing a reliable energy supply for the Commonwealth with minimum impact on the environment at the lowest possible cost.

The Siting Board reviewed the environmental impacts of the Project and finds that with the implementation of the specified mitigation and conditions, and compliance with all applicable local, state and federal requirements, the environmental impacts of the Project would be avoided, minimized, and mitigated. The environmental impacts for the Project would result primarily in construction-related impacts and the removal of up to 131.2 acres of trees within the Existing Lines right of way and access easements. The Company committed to various carbon and forest mitigation measures in coordination with the Department of Conservation and Recreation and MassAudubon for Project-related tree removal impacts. The Project's improvement of grid reliability and resilience, and its ability to help interconnect pending non-emitting generation and storage resources, would yield a cumulative net carbon benefit during construction and operation of the Project. The Final Decision finds that subject to specified mitigation and conditions set forth in this Decision, the Project is consistent with the current health, environmental, and resource use and development policies of the Commonwealth.

Pursuant to G.L. c. 164, § 69J, the Massachusetts Energy Facilities Siting Board hereby APPROVES, subject to the conditions set forth below, the Petition of New England Power Company d/b/a National Grid to replace an existing double circuit transmission line, tap lines, and structures with a new double circuit overhead transmission line, tap lines, and structures in an existing transmission corridor in Warwick, Royalston, Athol, Winchendon, Gardner, Westminster, Fitchburg, Leominster, and Sterling, Massachusetts.

I. INTRODUCTION

A. Description of the Proposed Project

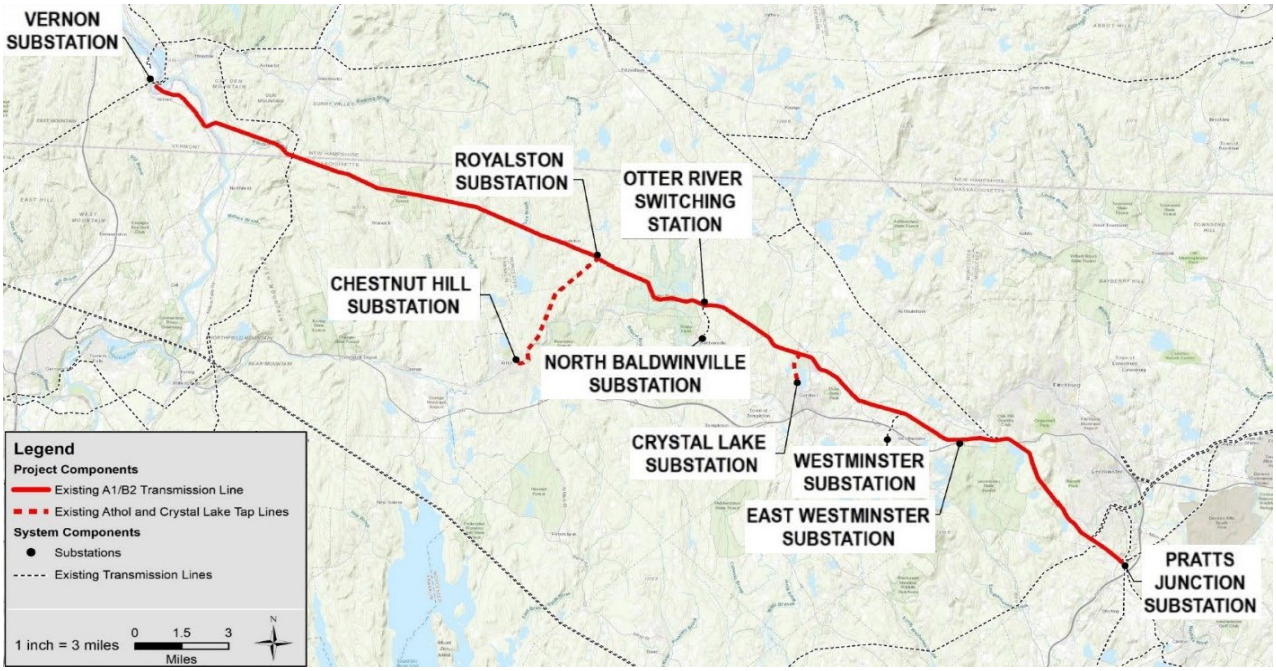
On May 1, 2023, the New England Power Company, doing business as National Grid ("NEP" or the "Company") filed a petition with the Energy Facilities Siting Board ("Siting Board") pursuant to G.L. c. 164, § 69J ("EFSB Petition"), and a petition with the Department of Public Utilities (the "Department") under G.L. c. 164, § 72 ("Section 72 Petition") (together, the "Petitions"), for approval to construct, operate, and maintain a new double circuit overhead transmission line in Warwick, Royalston, Winchendon, Gardner, Westminster, Fitchburg, Leominster and Sterling ("A1/B2 Lines"); and two associated tap lines in Athol, Royalston, and Gardner (Exhs. NG-1, at 1; NG-3, at 1). The Company proposes to rebuild, operate, and maintain approximately 47 miles of existing 69 kilovolt ("kV") double-circuit overhead transmission lines ("Existing Lines") with new lines capable of operating at 115 kV ("New Lines), along an existing Company-managed right-of-way ("ROW"), and two associated tap lines, all in Massachusetts (collectively the "Project") (Exh. NG-2, at 1). The Company's complete A1/B2 Project would be a total of 53.5 miles; the additional portions of construction would occur in Vermont and pass through New Hampshire, outside of the jurisdiction of the Siting Board, before entering Warwick, Massachusetts within a Company managed ROW (Exh. NG-2, at 1). The Existing Lines pass through the municipalities of Warwick, Royalston, Winchendon, Gardner, Westminster, Fitchburg, Leominster, and Sterling; and the associated taps pass through Athol, Royalston, and Gardner (Exh. NG-2, at 1). The ROW in Massachusetts terminates at the Pratts Junction Substation in Sterling (Exh. NG-2, at 1).

The Company would replace 575 steel double circuit lattice tower structures with weathering steel, double circuit, davit arm monopole structures (Exh. NG-2, at 1, 24). The Company also proposed to replace two smaller transmission tap lines and associated structures that feed into the corridor: (1) a line connecting the Royalston Switching Station to the Chestnut Hill Substation; and (2) a line connecting the Gardner Switching Station to the Crystal Lake Substation ("Tap Lines") (Exh. NG-2, at 1). NEP would replace 158 wood pole single circuit structures with steel pole single circuit structures (Exh. NG-2, at 2). Once the New Lines and Tap Lines are constructed, the Company would remove the Existing Lines, Tap Lines, and structures (Exh. NG-2, at 67). The Project would be reconductored with 795 MCM Aluminum Conductor, Steel Supported ("ACSS") and with two Optical Ground Wires[1] ("OPGW") (Exh. NG-2, at 1-2). The entire Project would cost approximately $474.1 million, while the portion of the Project constructed in Massachusetts would cost approximately $414.7 million (in 2024 dollars) (Exh. EFSB-C-3(S2)). [2]

[1] Optical Ground Wire is a type of cable that combines the functions of grounding and communications (Exh. NG-2, at 1, n.1).

[2] The $414.7 million would be for the Massachusetts portion of the Project, with the total Project cost across all three states estimated as approximately $474.1 million, in 2024 dollars, with an assumed accuracy level of -25%/+25% (Exh. EFSB-C-3(S2)).

Figure 1: Map of the Proposed Project.



Source: Exh. NG-2, at 3.

B. Procedural History

The EFSB Petition was docketed as EFSB 23-02 and the Section 72 Petition as D.P.U. 23-45. On October 4, 2023, the Chair of the Department issued an Order, pursuant to G.L. c. 164, § 69H(2), referring to the Section 72 Petition for consolidation and review with the EFSB Petition, and docketed the consolidated Petition as EFSB 23-20/ D.P.U. 23-45. See Referral and Consolidation Order EFSB 23-02/D.P.U. 23-45 (2023). The Siting Board conducted a single adjudicatory proceeding and developed a single evidentiary record for the Petitions.

On March 11, 2024, the Siting Board issued a Notice of Adjudication and Public Comment Hearing ("Notice"), setting public comment hearing dates of April 10, 2024, and April 11, 2024, for three hybrid public comment hearings. The Presiding Officer directed the Company to translate the Notice into Spanish (Publication Letter dated March 11, 2024). The Company published the Notice as follows: (1) in English in the Athol Daily News, the Worcester Telegram & Gazette, the Fitchburg Sentinel & Enterprise, The Gardner News, the online edition of Winchendon Courier, The Clinton Item, The Holden Landmark; and (2) in Spanish in El Mundo

and El Planeta (online only) (Affidavit of Kristin M. Reynolds, dated April 10, 2024). The Presiding Officer's publication letter also prescribed the service and posting requirements for the notice, and repositories for public access of the Company's filing. The Company indicated that it complied with the Presiding Officer's requirements (Affidavit of Kristin M. Reynolds, dated April 10, 2024). The Project route includes Environmental Justice ("EJ") populations based upon Minority and Income criteria (Exh. NG-2, at 63).

On April 10, 2024, the Siting Board conducted a hybrid public comment hearing in Athol and a hybrid second public comment hearing in Gardner. On April 11, 2024, the Siting Board conducted a third hybrid public comment hearing in Fitchburg.[3] The Siting Board provided Spanish interpretation at all three hybrid public comment hearings. The Siting Board received various comments regarding the Project, ranging from construction impacts, inquiries regarding local solar integration, concerns of work site cleanliness, rare species impacts, and capacity of the upgraded conductors. The Siting Board did not receive any written comments or petitions for intervention/limited participant status.

The Siting Board issued two rounds of Information Requests to the Company on June 7, 2024, and July 25, 2024, to which the Company filed timely responses. On September 10, 2024, the Siting Board held an evidentiary hearing with the Company. At the evidentiary hearing, the Company presented ten witnesses: (1) Jessica Farrell, NEP consulting engineer, Transmission Line Engineering; (2) Dean LaTulipe, NEP consulting engineer, Transmission Planning; (3) Jeremy Sherman, NEP project manager; (4) Joshua Holden, NEP lead construction planner; (5) Bethany Rocha, NEP lead specialist, Stakeholder Management; (6) Michael Tyrrell, NEP lead environmental scientist, Licensing and Permitting; (7) Jason Magoon, NEP senior supervisor, Vegetation Management; (8) Theresa Portante, BSC Group, lead environmental consultant; (9)

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[3] The Presiding Officer determined these three locations represent access for the largest portion of the affected EJ Populations, access for the highest density populations along the proposed route, the capability to effectively hold a hybrid hearing for the public, and other contributing factors described above. Therefore, Fitchburg, Gardner, and Athol ensure the public has the opportunity to be heard and for meaningful public participation along the proposed route.

Priyanka Shrestha, BSC Group, environmental permitting specialist; and (10) Christopher Long, Gradient, director, Electric and Magnetic Field Practice Area (Tr. 1, at 8).

On September 18, 2024, the Company provided timely responses to the eleven Record Requests generated at the evidentiary hearing. The Company provided 149 exhibits, entered into the evidentiary record, which include the Petitions, responses to Information Requests and Record Requests, and hearing exhibits. On October 4, 2024, the Company provided a brief ("Company Brief") in support of the Project. On May 7 and 12, 2026 the Company filed multiple supplemental responses to information requests and record responses. [4]

Siting Board staff prepared a Tentative Decision and distributed it to the Siting Board members and all parties for review and comment on May 22, 2026. On May 29, 2026the Company filed written comments.

The Siting Board scheduled a hybrid Siting Board meeting for June 2, 2026, to receive comments, deliberate, and vote on the Tentative Decision. The Siting Board issued a Notice of Siting Board Meeting in English and Spanish. The Presiding Officer sent the Notice to the service list for this proceeding in English and Spanish.

The Siting Board conducted a hybrid Siting Board meeting to consider the Tentative Decision on June 2, 2026, with Spanish interpretation provided. At the Siting Board meeting, the Siting Board heard comment from the Company. After deliberation, the Siting Board voted to approve the Tentative Decision, subject to conditions, with amendments. The Siting Board directed staff to prepare a Final Decision, as set forth below.

II. JURISDICTION AND STANDARD OF REVIEW UNDER G.L. C. 164, § 69J

G.L. c. 164, § 69J[5] provides that the Siting Board should approve a petition to construct if the Siting Board determines that the petition meets certain requirements, including that the plans

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4 The Presiding Officer moves and admits the supplemental responses into the record.

5 On November 20, 2024, Governor Healey signed into law An Act Promoting a Clean Energy Grid, Advancing Equity and Protecting Ratepayers, St. 2024, c. 239 ("2024 Climate Act" or the "Act"). The 2024 Climate Act establishes a consolidated permit program, including authority under G.L. c. 164, § 69T, for the Siting Board to issue state

for the construction of the applicant's facilities are consistent with the policies stated in G.L. c. 164, § 69H, to provide a reliable energy supply for the Commonwealth, with a minimum impact on the environment, at the lowest possible cost, and are consistent with current health, environmental protection, and resource use and development policies of the Commonwealth. See Town of Sudbury v. Energy Facilities Siting Board, 487 Mass. 737, 746-747 (2021) ("Town of Sudbury"). Pursuant to G.L. c. 164, § 69J, a project applicant must obtain Siting Board approval for the construction of proposed energy facilities before a construction permit may be issued by another state agency.

G.L. c. 164, § 69G defines a "facility" to include "a new electric transmission line having a design rating of 115 [kV] or more which is ten miles or more in length on an existing transmission corridor, except [for] reconductoring or rebuilding of transmission lines at the same voltage" or "a new electric transmission line having a design rating of 69 [kV] or more and which is one mile or more in length on a new transmission corridor." The Company's New Lines consist of approximately 47-miles of 69 kV electric transmission line to be replaced with 115 kV-capable electric transmission line, plus the Tap Lines which pass through Athol, Royalston, and Gardner (Exh. NG-2, at 1). The New Lines are a "facility" with respect to Section 69J because the lines have a design rating of 115 kV and are more than ten miles long in an existing transmission corridor; therefore, the Project is subject to Siting Board jurisdiction.

The Siting Board requires that an applicant demonstrate that its proposal meet the following requirements: (1) that additional energy resources are needed (see Section III); (2) that, on balance, the proposed project is superior to alternative approaches in terms of reliability, cost, and environmental impact, and in its ability to address the identified need (see Section IV); (3) that

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and local permits for large clean energy infrastructure facilities, and for smaller projects under more limited circumstances. The 2024 Climate Act indicates that "regulations shall apply to all jurisdictional projects submitted to the [Siting Board] on and after July 1, 2026." St. 2024, c. 239, §132. On February 27, 2026, the Siting Board promulgated regulations implementing many of the provisions of the 2024 Climate Act; those regulations apply to proceedings, initiated July 1, 2026, and afterwards. Therefore, this proceeding is governed by rules in place before the effective date of the 2024 Climate Act provisions and related rules.

the applicant has considered a reasonable range of practical facility siting alternatives and that the proposed facilities are sited in locations that minimize costs and environmental impacts while ensuring a reliable energy supply (see Section V); (4) that environmental impacts of the Project are minimized and the project achieves an appropriate balance among conflicting environmental concerns as well as among environmental impacts, cost, and reliability (see Section VI); and (5) that plans for construction of the proposed facilities are consistent with the current health, environmental protection, and resource use and development policies of the Commonwealth (see Section VII).

III. NEED FOR THE PROPOSED PROJECT

A. Standard of Review

The Siting Board reviews the need for proposed transmission facilities to meet reliability, economic efficiency, or environmental objectives. G.L. c. 164, §§ 69H, 69J. When demonstrating the need for a proposed transmission facility based on reliability considerations, a petitioner applies its established planning criteria for construction, operation, and maintenance of its transmission and distribution system. Compliance with the applicable planning criteria can demonstrate a "reliable" system. New England Power Company d/b/a National Grid, EFSB 19-04/D.P.U. 19-77/19-78, at 10 (2021) ("Beverly-Salem"); NSTAR Electric Company d/b/a Eversource Energy, EFSB 19-03/D.P.U. 19-15, at 7 (2021) ("Andrew-Dewar"); NSTAR Electric Company d/b/a Eversource Energy, EFSB 17-02/D.P.U. 17-82/17-83, at 15 (2019) ("Sudbury-Hudson").

Accordingly, to determine whether system improvements are needed, the Siting Board: (1) examines the reasonableness of the petitioner's system reliability planning criteria; (2) determines whether the petitioner uses reviewable and appropriate methods for assessing system reliability over time based on system modeling analyses or other valid reliability indicators; and (3) determines whether the relevant transmission and distribution system meets these reliability criteria over time under normal conditions and under certain contingencies, given existing and projected loads. NSTAR Electric Company d/b/a Eversource Energy, EFSB 22-03/D.P.U. 22-21, at 15-16 (2024) ("GCEP"); NSTAR Electric Company d/b/a Eversource

Energy, EFSB 19-06/D.P.U. 19-142/19-143, at 10 (2022) ("Mid Cape Reliability"); Beverly-Salem at 10. See also Town of Sudbury at 748-749.

B. Description of Existing System and Need Overview

The Company stated that to maintain the integrity of the regional transmission system, NEP must ensure that adequate transmission capacity exists to meet existing and projected load requirements, and that reliability, safety, and environmental objectives are met (Exh. NG-2, at 11). The Existing Lines serve portions of Massachusetts, Vermont, and New Hampshire (Exh. NG-1, at 1, 3). The Existing Lines connect multiple substations and tap lines in Massachusetts including: the Royalston Substation; Athol Taps and Chestnut Hill Substation; Otter River Switching Station, North Baldwinville Taps, and North Baldwinville Substation; Crystal Lake Taps and Substation; Westminster Taps and Substation; East Westminster Substation (Exh. NG-2, at 12-13). See Figure 2 below. Approximately 24,000 electric customers in twelve Massachusetts cities and towns[6] are served from substations connected to the Existing Lines ("Project Area") (Exh. NG-2, at 16; Company Brief at 27). The Existing Lines are the only transmission supply to the Project Area substations and served a 2022 summer peak load of approximately 89.3 megawatts ("MW") (Exh. NG-2, at 16). The Existing Lines interconnect a significant amount of distributed energy resources ("DER") in central and western Massachusetts and connect to hydrogeneration facilities in Vermont that serve the Project Area (Exh. NG-2, at 12).

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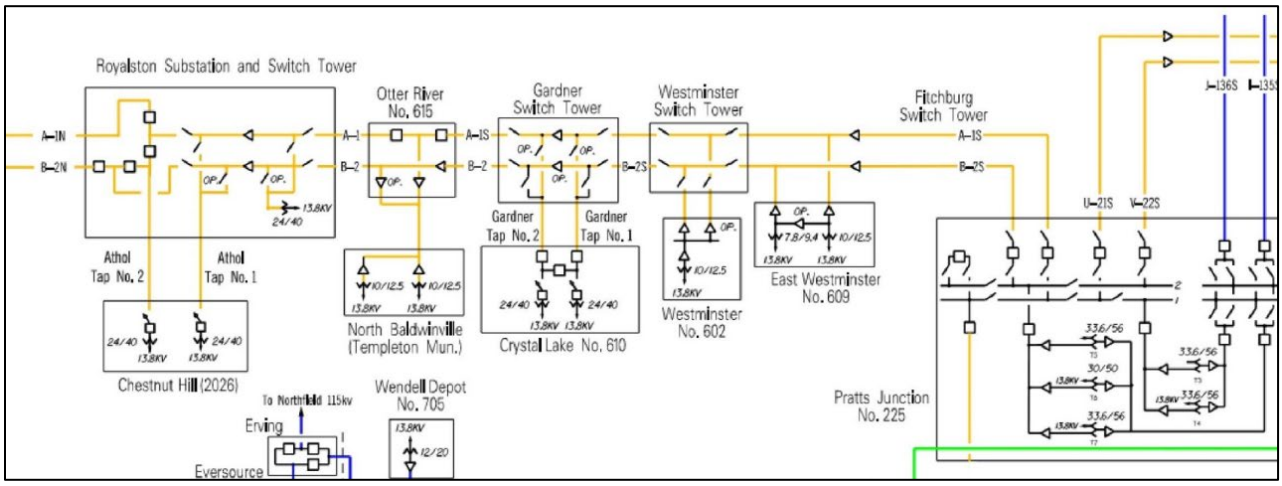
66 The Existing Lines serve customers in Athol, Gardner, Hubbardston, New Salem, Orange, Petersham, Phillipston, Royalston, Templeton, Warwick, Westminster, and Winchendon (Exh. NG-2, at 16, Table 2-1). These communities comprise the Project Area.

Figure 2: One-Line Diagram of A1/B2 Grid Connections



Source: Exh. NG-2, at 15, section of Figure 2-2.

The Existing Lines are supported by steel lattice towers, approximately 50 to 60 feet tall (Exh. NG-2, at 16). The Company placed the A1/B2 Lines in service in 1909 to bring power from the Vernon (Vermont) hydropower station to the Worcester area (Exhs. NG-2, App. 2-1, at 2; NG-2, at 11). The Company stated that the lines were "re-coppered" around 1920 and that lightning masts as well as a shield wire were included at that time to mitigate lightning-related outages (Exh. NG-2, at 18). The existing conductors consist of 2/0 copper wire protected primarily with three strand #4 copper clad steel shield wire (Exh. NG-2, at 16). In addition, during the 1980s NEP installed 88-kV insulators to enhance reliability, and in the early 2000s NEP replaced all post insulators with 115 kV post insulators, as well as installed insulator covers and tower bridge mounted bird deterrents to prevent nesting[7] (Exh. NG-2, at 18). The Company contends that in the intervening years, it has consistently maintained the tower bridge bird deterrents and insulator covers to reduce avian-related outage issues (Exh. NG-2, at 18).

The Athol Taps consist of a mix of wood single circuit H-Frame and Chair Frame structures, approximately 34 to 70 feet tall (Exh. NG-2, at 18). The existing transmission

[7] Nesting deterrents primarily include multiple prongs that prevent birds from being able to land.

conductor on both Athol Taps consists of 2/0 copper wire; the shield wires are steel (Exh. NG-2, at 18). The Crystal Lake Taps consist of wood single circuit double-arm suspension structures approximately 39 to 48 feet tall (Exh. NG-2, at 18). The existing transmission conductor on the Crystal Lake Taps consists of 2/0 copper wire and lacks a shield wire (Exh. NG-2, at 18).

The Company cited four main reasons the Existing Lines need to be rebuilt: (1) they have been in service since the early 1900s and have a long history of poor performance related to the original design of their structures; (2) there is physical damage on approximately 40 percent of the structures; (3) according to ISO-New England's Western and Central Massachusetts 2029 Needs Assessment, issued in May 2020, multiple substations along the A1/B2 corridor are subject to low voltage conditions under certain N-1 and N-1-1 contingency conditions; and (4) they have insufficient thermal capacity to interconnect proposed distributed energy resources ("DER") such as large solar facilities and battery energy storage systems ("BESS") (Exh. NG-2, at 11, 26; Tr. 1, at 54-55). These reasons are described below.

1. Operating History of the Existing Lines

The Company identified a persistent, long-standing history of poor performance on the A1/B2 Lines, despite several refurbishments, relocations, and modifications to resolve individual performance issues, as a key driver for the Project (Exhs. NG-2, at 18; EFSB-N-19). The Existing Lines, constructed in 1909, have been, and currently are, among the least reliable lines on the NEP transmission system, consistently experiencing an unusually high rate of outages associated with lightning strikes, vegetation contacts, avian interference, and thunderstorms (Exh. NG-2, at 21, 23; Tr. 1, at 54). The A1 Line had the highest incident count of all 176 NEP lines between 2017 and 2021, while the B2 Line ranked seventh (Exh. NG-2, at 11, 18, 21). In 2023, multiple outages on the A1/B2 Lines resulted in extended customer outages, each lasting over 29 hours (Exh. EFSB-N-10). In total, the A1/B2 Lines have experienced 59 outages over the past ten years – 44 momentary outages[8] and 15 sustained outages (Exh. EFSB-R-1).

[8] According to the Company, momentary outages may have significant impacts on customers with sensitive equipment that can be taken offline or damaged by momentary voltage fluctuations (Exh. NG-2, at 22).

Table 1: A1/B2 Lines Outage Counts, by Cause, 2017-2021.

Line	Cause					
	Lightning	**Weather**	**Vegetation**	**Other**	**Unknown**	**Total**
A1	5	4	2	2	8	21
B2	6	3	2	0	3	14
Total	11	7	4	2	11	35

Source: Exh. NG-2, at 22.

2. Condition of Existing Structures and Design Issues

In 2019, the Company conducted a study of the physical condition of the A1/B2 Lines and Tap Lines, titled "Inspection Report: A1/B2 Asset Condition Refurbishment" ("Inspection Report") (Exh. NG-2, at 23). The Company identified physical issues on 221 of the 575 existing A1/B2 Lines' structures; 12 of the 48 structures for the Crystal Lake Taps; and 139 of the 201 structures for the Athol Taps (Exh. NG-2, at 24). The physical issues consist primarily of deterioration of the existing lattice tower structures, damage to or deterioration of the bird deterrent systems and, to a lesser extent, deterioration of the wood pole structures on the Athol and Crystal Lake Taps (Exh. NG-2, at 4). In addition, wood structures were found to have woodpecker damage, missing or damaged pole caps, and crossarm deterioration (Exh. NG-2, at 23-24, App. 2-1).

Beyond the identified structures physical issues, the 2019 Inspection Report noted shielding angles greater than the 30 degrees recommended in the Rural Utilities Service Bulletin,[9] as well as "very close and high trees" along the entire ROW (Exh. NG-2, at 24). The Company stated that the lattice towers supporting the existing A1/B2 Lines were not originally built to include a shield wire; however, lightning masts were later added onto the existing structures (Exh.

[9] The Company refers to Bulletin 1724E-200 of the Rural Utilities Service which recommends different shielding angles dependent on structure height: 92 feet, 30 degrees; 66 feet, 26 degrees; 116 feet, 21 degrees (Exh. NG-2, at 24).

NG-2, at 24). The Company stated that the frequency of lightning-related outages reflects the insufficient shielding angle on the existing A1/B2 Lines, as circuits with a greater shielding angle are more likely to be directly struck by lightning, causing a flashover (Exh. NG-2, at 24).

The Inspection Report also noted that high trees along the entire ROW contribute to the high frequency of tree-related outages on the Existing Lines (Exh. NG-2, at 24). In many areas, the abutting land along the ROW is densely vegetated with tall-growing species that can easily exceed the height of the existing structures (Exh. NG-2, at 24). When these trees fall or drop limbs during periods of high winds, they make contact with the existing conductors and cause either momentary or sustained outages (Exh. NG-2, at 24).[10] Due to the general horizontal configuration of the Existing Lines, when a tall growing tree located outside the bounds of the ROW falls across the width of the ROW, there is a high probability that the vegetation will contact multiple phases and potentially both circuits supported by the existing structures (Exh. NG-2, at 24). The increased elevation of the conductors proposed for the New Lines will reduce, though not completely eliminate, the risk of outages due to vegetation falling from outside the ROW (Exh. EFSB-R-2).

According to the Company, the design of the proposed structures is such that the resulting structures will be more robust than the existing structures and better able to withstand the effects of storms, resulting in fewer outages (Exh. EFSB-N-9). The Company stated that the Project has been designed in accordance with current safety codes and design guidelines, along with NEP standards, which have evolved significantly since the original construction of the Existing Lines (Exh. EFSB-N-9). The Company indicated that the proposed structures are designed to withstand loading conditions related to the combined effects of ice and wind, extreme wind events, and extreme concurrent ice and wind events, respectively, as required by the National Electrical Safety Code (Exh. EFSB N 9). While the damaged structures could be repaired on a structure-by-structure basis, the Company asserted that such repairs would not address existing design issues, which can only be remedied by replacing the existing structures (Exh. NG-2, at 24-25; Company Brief at 32-33).

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10 The Company indicated that it currently follows the National Grid Vegetation Management Plan on the Existing Line ROW and would continue to do so with construction of the Project (Exh. NG-2, at 85).

3. Low Voltage Violations

ISO New England ("ISO-NE") issued the "2029 Needs Assessment for Western and Central Massachusetts Area" ("2029 Needs Assessment") in May 2020, which analyzed future load conditions, reliability, resource changes, and retirement of resources (Exh. NG-2, at 28). The assessment did not consider the requirements for interconnection of proposed DERs as it focused on the reliability of the transmission system serving western and central Massachusetts for projected system conditions in 2029 (Exh. NG-2, at 28). ISO-NE reviewed the transmission system under N-0, N-1, and N-1-1 conditions[11] for several possible operating scenarios with respect to generating unit unavailability conditions and import levels from outside the ISO-NE system (Exh. NG-2, at 28-29). The assessment performed thermal analysis studies, voltage analysis studies, and short circuit analysis studies (Exh. NG-2, at 29).

ISO-NE identified time sensitive voltage violations in the 2029 Needs Assessment at East Westminster, Westminster, Crystal Lake, North Baldwinville, and Royalston Substations, as well as the Otter River Switching Station (Exh. NG-2, at 29). ISO-NE further determined that the violations identified in its 2029 Needs Assessment exist at the 2022 summer peak 9-0/10[12] net load level of 25,500 MW (Exh. EFSB-N-18). However, the Company noted that it did not consider the 2029 Needs Assessment to be the main driver of the need of the Project (Exhs. NG-2, at 29; EFSB-N-18, at 1). The Company presented the proposed Project in September 2021 to ISO-NE, which subsequently re-ran its thermal and voltage analyses with the Project in service; ISO-NE found that the Project would eliminate the voltage violations that were previously identified along the A1/B2 Lines (Exh. NG-2, at 29). Because ISO-NE found that there would be no criteria violations observed with the Project in service in its additional analysis, ISO-NE determined it unnecessary to conduct a 2029 Solutions Study for the Project Area (Exh. NG-2, at 29).

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11 Transmission planning studies typically assess the reliability of the transmission system under N-0 (all-facilities-in), N-1 (all-facilities-in, first contingency), and N-1-1 (first contingency, 30 minutes of allowable system adjustments, second contingency) conditions (Exh. NG-2, at 11, n.9).

12 90/10 extreme weather scenario is one that has a ten percent chance of being exceeded in any one year for its peak-day weather. GCEP at 31.

4. DER Interconnections

At the time NEP filed its Petitions, developers had proposed over 550 MW of DER projects that would interconnect at more than 30 National Grid substations in central and western Massachusetts, including five substations along the A1/B2 transmission corridor (Exh. NG-2, at 25). Between 2019 and 2022, the Company conducted a series of three system impact studies, known as the Western Massachusetts Cluster Studies ("Cluster Studies"), to determine whether DER projects would result in a significant adverse impact on the reliability, stability, and operating characteristics of the New England bulk power transmission system, and the NEP transmission system (Exh. NG-2, at 25). The Cluster Studies evaluated thermal, voltage, stability, and short-circuit risks for three successive groups of proposed DER projects also known, respectively, as the Group 1, 2, and 3 Cluster Studies (Exh. NG-2, at 26).

Based on the Cluster Studies, the Company determined that the 40.7 MW of DER projects in Group 1 could interconnect along the Existing Lines without requiring transmission system upgrades (Exh. NG-2, at 26). However, for a subset of the Cluster Studies, the Group 2 projects (as evaluated in May 2020), comprising 47.2 MWs of DERs, the Company determined that these projects would cause both thermal overloads and high voltage violations for specific elements of the A1/B2 Lines under various N-0, N-1 and N-1-1 contingencies and could not be permitted to interconnect without additional transmission capacity (Exh. NG-2, at 26-27; Appendix 2-3, at 40). These DER projects subsequently withdrew from the ISO-NE interconnection queue and were either abandoned or resubmitted for evaluation as part of the Group 3 Cluster Study (Exh. NG-2, at 27). The Group 3 Cluster Study (conducted in June 2022) similarly found thermal overloads under contingency conditions that would prevent interconnection of the 20.5 MWs[13] of DERs evaluated without additional capacity on the A1/B2 Lines (Exh. NG-2, at 27-28). The Group 3 Cluster Study noted that the A1/B2 Project's proposed rebuilding of the A1/B2 Lines with 795 ACSS conductor, together with upgrades in Vermont at NEP's Vernon Substation, would provide

[13] During the proceeding, the Company's provided an updated figure of 29.18 MWs of DERs seeking interconnection along the A1/B2 Lines (Exh. EFSB-N-13).

sufficient additional capacity to enable interconnection of the Group 3 DER projects (Exh. NG-2, at 27-28).

The Company indicated that the thermal ratings of the New Lines will be 218 MVA (Summer Normal and Long-Term Emergency) when operated at 69 kV compared to the 43 MVA (Summer Normal) and 53 MVA (Summer Long Term Emergency) ratings of the Existing Lines (Exh. EFSB-R-3). The New Lines will be able to accept 175 MVA (Normal) and 185 MVA (Emergency) more DER than the Existing Lines (Exh. EFSB-R-3). Thus, rebuilding the Existing Lines will provide sufficient capacity to resolve the thermal overloads and the higher available capacity will be available for any interconnecting projects, including future DERs (Exhs. EFSB-N-6; EFSB-N-7).

C. Analysis and Findings on Need

The record shows that the A1/B2 Lines are the oldest and least reliable lines in the Company's transmission system. The Company argues that the main impediment to reliable service along the A1/B2 ROW lies in the condition and design characteristics of the existing structures. Specifically, despite the addition of lightning masts and shield wire to mitigate lightning related outages, the Existing Lines still experience a high number of outages due primarily to lightning strikes, avian impacts, and other weather-related conditions. The Company points to lightning strikes, confirmed, as accounting for at least one-third of outages in the 2017-2021 period. The low mast height of the Existing Lines structures results in insufficient shielding angle, which is most effectively addressed by replacement of the structures. Despite the Company's use of its ongoing vegetation management program, the dense vegetation and tall trees, both within and along the ROW, have contributed to the inherent reliability vulnerabilities of the century-old A1/B2 design.

The record shows that pending DER projects seeking to interconnect to the substations supplied by the Existing Lines would cause thermal violations and cannot be safely interconnected without additional capacity on the Existing Lines. The results of the Cluster Studies confirm the need for the replacement of the Existing Lines with higher capacity transmission lines. ISO-NE also identified time sensitive voltage violations at five substations along the A1/B2 Lines as well as a switching station. The ISO-NE 2029 Needs Assessment also supports the view that the

Existing Lines are not reliable given identified voltage violations under various contingency conditions.

In conclusion, the century-old Existing Lines are obsolete and in a deteriorated condition, suffer from demonstrated poor performance that goes well beyond the ability of NEP's normal maintenance and repairs to resolve, and are not adequate for interconnecting additional DERs that would support the Commonwealth's clean energy objectives. The Siting Board finds that: (1) the Company's system reliability planning criteria is reasonable; (2) the Company used reviewable and appropriate methods for assessing system reliability over time based on system modeling analyses or other valid reliability indicators; and (3) the relevant transmission and distribution system meets these reliability criteria over time under normal conditions and under certain contingencies, given existing and projected loads. Therefore, the Siting Board finds that the Existing Lines are inadequate to meet applicable reliability standards and require a solution, whether a replacement or other means of providing necessary system resources.

IV. ALTERNATIVE APPROACHES TO MEETING THE IDENTIFIED NEED

A. Standard of Review

G.L. c. 164, § 69J requires a project proponent to present alternatives to the proposed facility, which may include: (1) other methods of transmitting or storing energy; (2) other sources of electrical power; or (3) a reduction of requirements through load management. In implementing its statutory mandate, the Siting Board requires a petitioner to show that, on balance, its proposed project is superior to such alternative approaches in terms of cost, environmental impact, and ability to meet the identified need. In addition, the Siting Board requires a petitioner to consider reliability of supply as part of its showing that the proposed project is superior to alternative project approaches. SouthCoast Wind Energy LLC, EFSB 2204/D.P.U. 2267/22-68 (2024) at 39 ("SouthCoast Wind"); GCEP at 30; Beverly-Salem at 17.

B. Alternative Approaches to Meeting the Identified Need

1. No-Build Alternative

The Company stated that due to the current poor performance and insufficient thermal compacity for DER interconnection, as well as low voltage conditions under N-1 and N-1-1

contingencies, a no-build alternative would not address any of the issues identified (Exh. NG-2, at 32-33). Therefore, the Company did not consider this alternative further (Exh. NG-2, at 33).

2. Non-Wire Alternatives

The Company stated the main driver for Project need is asset-condition related, specifically structure decay; therefore, any non-wire alternative, which inherently relies on the continued operation of the Existing Lines, would not resolve outages from lightning strikes, tree falls and dropped limbs, as well as avian interference (Exh. NG-2, at 33). The Company indicated that these asset condition issues would remain, even at existing load levels (Exh. NG-2, at 32). In addition, the Company's evaluation of DER interconnections in the Cluster Studies showed that the requested DER interconnections in Groups 2 and 3 would create additional high voltage and thermal violations (Exh. NG-2, at 26-27; Appendix 2-3, at 40). Based on the above, the Company concluded that a non-wires alternative would not address the Project need, and it eliminated further consideration of this approach (Exh. NG-2, at 32-33).

3. Critical Asset Repair Alternative

The critical asset repair alternative consists of a targeted structure repair and replacement program that aims to address most pressing needs identified in the 2019 Inspection Report as Priority Level 2 and 3 asset condition issues (Exhs. NG-2, at 33; EFSB-PA-6). Examples of items needing repair or replacement include:

- Member buckling on horizontal diagonals
- Light corrosion of structure bayonettes
- Missing/damaged bird deterrents
- Damaged guy wires
- Rusty hardware and davit arm collars
- Damaged/broken guy wires
- Woodpecker damage on some wooden structures
- Missing/damaged pole caps
- Damage or leaning insulators
- Copper conductor on mainline is very aged

- The ROW "appears to be considerably overgrown" with very dense and tall tree growth

Source: Exh. NG-2, Appendix 2-1.

The Company provided an "investment grade" cost estimate of $60.7 million for the identified work scope (Exh. PA-6). The Company asserted that a targeted repair program like the Critical Asset Repair Alternative is a low-cost, low-impact strategy for extending the life of transmission lines that are otherwise fit-for-service (Exh. NG-2, at 33). However, it maintained that this is not an appropriate solution for the Existing Lines as it would not address the underlying reliability issues associated with the poor shielding angle of the existing circuits and the propensity for avian related outages driven by the structure geometry (Exh. NG-2, at 33; Company Brief at 40-41). Additionally, this option would not provide the additional capacity needed to interconnect proposed and future solar PV and BESS projects and would not address existing voltage issues (Exh. NG-2, at 33; Company Brief at 41). Because of these concerns, the Company dismissed this alternative from further consideration (Exh. NG-2, at 33).

4. Reconductoring and Repair of the Existing Lines.

The Company investigated maintaining the existing structures in place and reconductoring the line with a higher capacity conductor (Exh. NG-2, at 33). According to NEP, structure replacement would occur on an "as-needed" basis, like the critical asset repair alternative (Exh. NG-2, at 33). The Company explained that this alternative would provide the additional capacity needed to interconnect proposed DER (Exh. NG-2, at 34). However, the Company noted two major faults with this approach: first, it would be unlikely to reduce the incidence of line outages associated with lightning strikes, downed trees, thunderstorms, and avian interference; and second, the benefits of high-speed communications between substations would not be realized since the reconductoring and repair alternative would not include installation of OPGW (Exh. NG-2, at 34).

According to the Company's preliminary analysis, the reconductoring and repair alternative would be unable to maintain all structures intact due to clearance issues as well as their deteriorating condition (Exh. NG-2, at 34). The Company noted that approximately 25 percent of the existing structures would need replacement for the new conductor with sufficient clearance, and an additional ten percent of the structures would require full replacement due to structural

issues (Exh. NG-2, at 34). The Company estimated this option would have an investment grade cost estimate of $221.2 million (Exh. EFSB-PA-6).

The Company argued that if the existing structures are repaired rather than replaced, both existing electric customers and the proposed solar PV and BESS projects would continue to experience line outages at a much higher than average rate for the foreseeable future (Company Brief at 42). Additionally, the Company asserted that this approach does not adequately address the key structure design issues and the poor reliability of the Existing Lines and dismissed it from further consideration (Exh. NG-2, at 34; Company Brief at 42).

5. Transmission Alternatives

a. 69 kV and 115 kV Line Rebuild Options

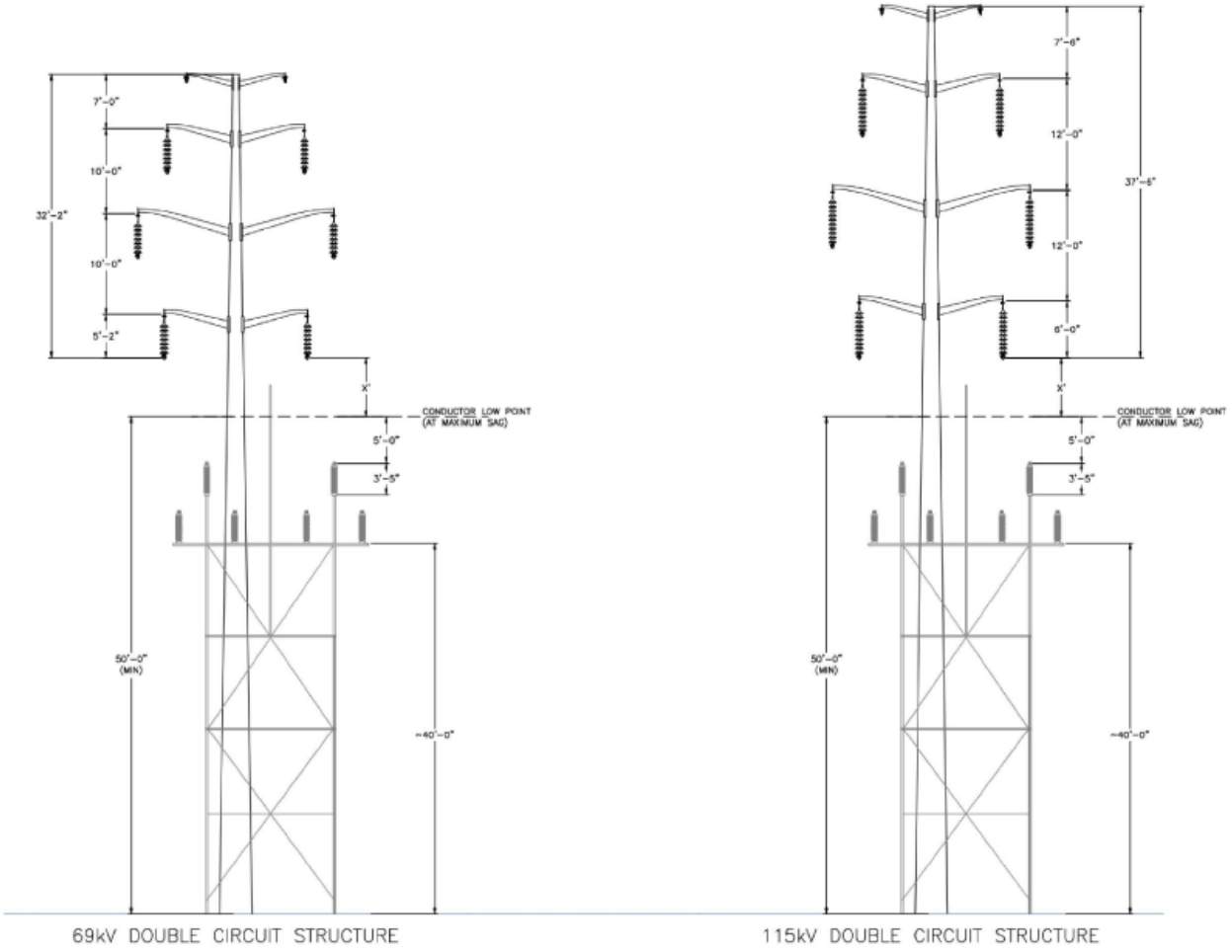
The Company considered a 69 kV as well as a 115 kV line rebuild design alternative within the Existing Line ROW (Exh. NG-2, at 35). Either design would use structures whose elevation would allow appropriate clearance to be maintained between the existing and proposed conductors to facilitate re-energization as needed during construction (Exh. NG-2, at 36). The 115 kV-capable structures would have an additional 5.5 feet in height, compared to a 69kV design, to accommodate additional insulators (i.e., the 69 kV design carries seven insulators compared to the 115 kV structure which would carry ten insulators on each insulator string) (Exh. NG-2, at 36).

The Company explained that both the 69 kV and 115 kV capable line rebuild options would address design issues associated with the poor performance of the Existing Lines (Exh. NG-2, at 38). The Company stated that in both designs, the new structures would contain an approximately 15 degree shielding angle, consistent with the current industry practice of limiting the shielding angle to 30 degrees or less (Exh. NG-2, at 38). In addition, a change in structure configuration from the existing horizontal lattice towers to vertical monopole structures would reduce the potential for avian-related outages (Exh. NG-2, at 38).[14] Figure 3, below, shows a

[14] The Company noted birds tend to construct nests on the bridge of the existing lattice towers, which results in increased opportunities for avian interaction near the structures and associated momentary outages on the circuits (Exh. NG-2, at 38).

comparison of the two proposed structure types of the Project relative to the existing structure heights of the Existing Lines.

Figure 3: 69 kV and 115-Capable Structures versus Existing Structures (A1/B2 Lines).



Source: Exh. NG-2, at 37.

The Company confirmed that both structure designs would support 795 ACSS "Drake" conductors (Exh. NG-2, at 35, 40). The Project will include replacing the existing shield wire with optical ground wire which combines the functions of grounding and communications (Exh. EFSB-PA-4). The installation of OPGW lays the foundation for future implementation of grid enhancement technologies along the A1/B2 transmission corridor (Exh. EFSB-PA-4). Ultimately, the Company determined that the only viable option would require replacing the existing structures

to address the underlying causes of failure (Exh. NG-2, at 35). In addition, the Project would provide the additional thermal capacity and voltage support required to interconnect proposed DER and support projected electric load growth without the need for additional line upgrades in the foreseeable future driven by regional commitments to address climate change through electrification and a deeper integration of renewable resources (Exh. NG-2, at 32).

The Company noted that no reliability needs exist currently within NEP's ten-year planning horizon that would necessitate the operation of the Project at 115 kV (Exh. EFSB-N-3). However, should future planning studies demonstrate that operation at 115 kV is needed, the Company would propose any remaining upgrades required for such operation at that time (Exh. EFSB-N-3). The Otter River, Royalston, Chestnut Hill, Vernon, and Deerfield substations currently operate without 115 kV upgrades in place; however, the Company noted plans to upgrade these substations in the future that could involve 115 kV operation (Exh. EFSB-N-2). The Company estimated the total difference in cost between the 69 kV option compared with the 115 kV-capable design would be approximately $5.02 million, or less than 1.5 percent of the estimated cost of the Project (Exh. NG-2, at 39).

The Company described several advantages of the 115 kV capable design. The 115 kV structures would provide increased resilience to lightning and tree-related events (Exh. NG-2, at 40). The Company also explained that the increased height of the 115 kV design would reduce the probability of faults resulting from off-ROW vegetation striking the energized lines (Exh. NG-2, at 38). In addition, the additional insulation and phase spacing of the 115 kV design would further improve lightning resilience (Exh. NG-2, at 38). The Company calculated the thermal rating (Long Term Emergency) of the 69 kV design as 218 megavolt-ampere ("MVA") versus 366 MVA for the 115 kV design, or 66 percent more capacity for the same conductor size (Exh. NG-2, at 38). The Company also highlighted that the 115 kV operation provides superior voltage regulation due to the lower impedance of 115 kV, meaning avoided need for additional transmission switching stations, capacitor banks, reactors, or dynamic voltage control devices to support new load or DER (Exh. NG-2, at 38).

NEP stated that the 69 kV design would not significantly reduce environmental impacts compared with the 115 kV design, except for the minor reduction in structure heights (Exh. NG-2,

at 39). Additionally, the Company noted that building the Project now as a 115 kV-capable line would obviate the need for a future 115 kV upgrade project, along with future environmental impacts, and much more significant costs (Exh. NG-2, at 39; Company Brief at 47).

C. Analysis and Findings on Alternative Approaches

The record shows the only feasible solution to the identified need requires replacement of the Existing Lines' structures, as no other alternatives considered by NEP (no-build, non-wires alternative, critical asset repair, or reconductoring and repair alternatives) address the root cause of line failure. The Company has demonstrated that due to the age and physical characteristics of the structures, no other alterations could resolve the reliability issues described. Either the 69 kV or 115 kV option would provide the necessary change in structure configuration, increase in phase spacing, and introduce the use of monopole structures to ensure reliability on the New Lines, and is the superior solution. The record shows that either option would solve the additional thermal and voltage violations on the Existing Lines.

The record shows the 115 kV structures would provide added protection against voltage and thermal violations and provide a significant amount extra capacity to accommodate future load growth and DER interconnections, at relatively modest additional cost – if built that way from the outset. The 115 kV structures would allow for an increased shielding angle, extra spacing between conductor phases, and longer suspension insulator strings, resulting in increased resilience during lightning events. Although 115 kV operation is not needed immediately, the added cost difference of the 115 kV option would equal about 1.5 percent of Project budget and require increasing structure heights by only 5.5 feet. The 115 kV structures and the 69 kV structures would both use the same conductors and shield wire, with no difference in cost (Exh. NG-2, at 40). This is a cost-effective investment in comparison with potentially needing to rebuild the Existing Lines yet again in the future. Therefore, the Siting Board finds that the 115 kV design solution is appropriate, and the record shows no Project alternative would be superior to the proposed Project. The remainder of the Decision focuses solely on a detailed analysis of the Proposed Project – as a 115 kV-capable rebuild option.

V. ROUTE SELECTION

A. Standard of Review

G.L. c. 164, § 69J requires a petition to construct to include a description of alternatives to the facility, including "other site locations." Thus, the Siting Board requires an applicant to demonstrate that it has considered a reasonable range of practical siting alternatives and that its proposed facilities are sited in locations that minimize cost and environmental impacts while ensuring a reliable energy supply. To do so, an applicant must meet a two-pronged test. First, the applicant must establish that it developed and applied a reasonable set of criteria for identifying and evaluating alternative routes in a manner that ensures that it has not overlooked or eliminated any routes that, on balance, are clearly superior to the proposed route. Second, the applicant generally must establish that it identified at least two noticed sites or routes with some measure of geographic diversity. SouthCoast Wind at 45-46; GCEP at 37-38; Beverly-Salem at 29. But see Colonial Gas Company d/b/a National Grid, EFSB 16-01, at 28-29 (2016) ("Colonial 2016"); Colonial Gas Company d/b/a National Grid, EFSB 18-01/D.P.U. 18-30, at 40-42 (2019) ("Colonial 2019"), where the Siting Board found the company's decision not to notice an alternative route to be reasonable.

B. Company's Approach to Route Selection

In its routing analysis, the Company sought to identify technically feasible route alternatives that would maintain system function, minimize impacts on the natural and social environments, and minimize construction and operation costs (Exh. NG-2, at 41; Tr. 1, at 89). The Company's analysis followed this sequence: (1) defining a Routing Study Area and developing a general set of route selection criteria; (2) identifying a variety of potential routes using the most recent available mapping, databases, and aerial photography, focusing on identifying existing linear corridors located within or adjacent to the Existing Lines transmission corridor and the existing Athol and Crystal Lake Taps (including existing electric transmission, railroad, natural gas pipeline, and highway and roadway corridors); (3) screening the potential routes against the route selection criteria to assess whether any would be a potentially superior route to the Existing Lines and Tap Lines ROWs; and (4) evaluating the existing linear corridors while minimizing construction constraints, costs, and environmental impacts (Exh. NG-2, at 41).

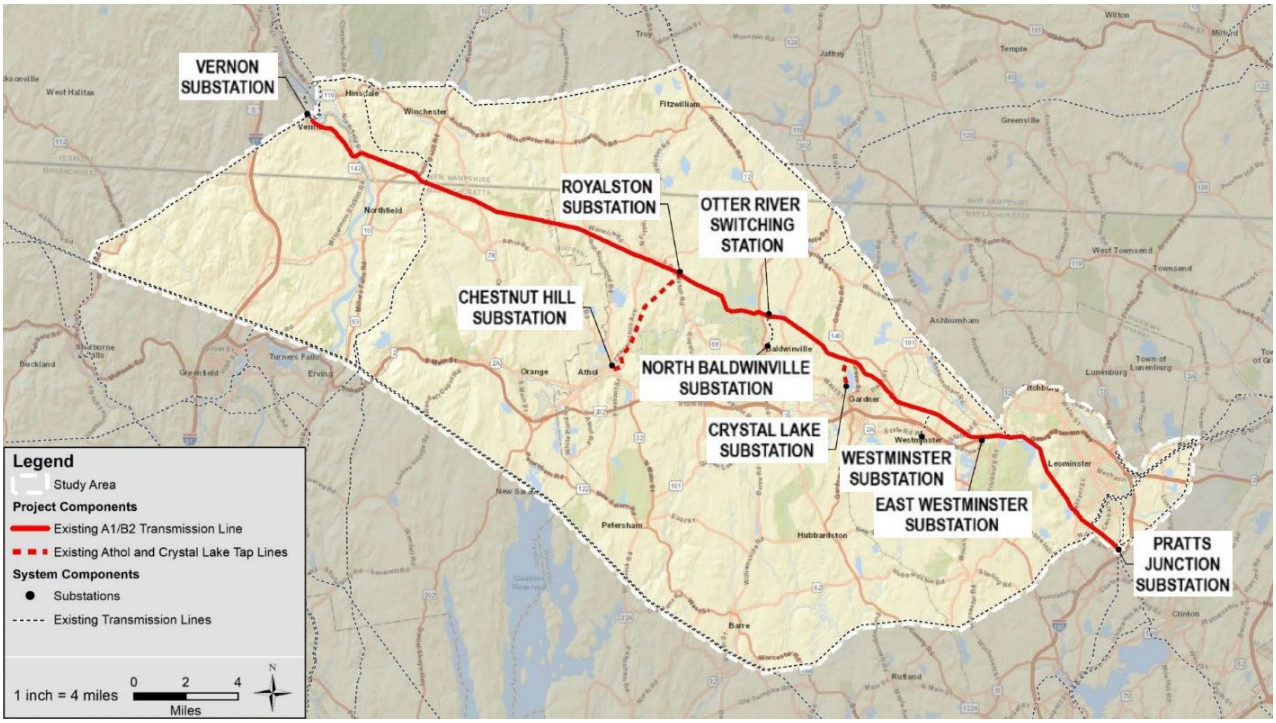
1. Defining Routing Study Area and Establishing General Route Selection Criteria.

The Company established a study area surrounding its Existing Lines ROW between the Pratts Junction Substation in Massachusetts and the Vernon Substation in Vermont (the "Study Area") (Exh. NG-2, at 42). The Company defined the Study Area within the following boundaries: NEP's E205 and D4 transmission ROWs (to the south of the Existing Lines ROW); and NEP's I135/J136 ROW, NSTAR Electric Company d/b/a Eversource Energy's ("Eversource") 379 ROW, NEP's G33 ROW, and NEP's K137W/L138W ROW collocated with Eversource's 314/343 transmission ROWs (to the north and south-east of the Existing Lines ROW)[15] (Exh. NG-2, at 42). According to the Company, the majority of the Study Area consists of exempt properties,[16] residential areas, and open lands interspersed with pockets of forest, mixed use, commercial, industrial, transportation corridors, and agricultural lands (Exh. NG-2, at 42). Figure 4, below, shows the Study Area.

[15] The Study Area is approximately 784 square miles (Exh. NG-2, at 42).

[16] An Exempt Property is a property that qualifies for exemption from taxation under various provisions of the law, and includes public land and facilities, hospitals, schools, churches, and cultural institutions (Exh. NG-2, at 42, citing G.L. c. 59, §5).

Figure 4: Map of Project Routing Study Area.



Source: Exh. NG-2, at 43.

According to the Company, it considered operational requirements to construct an overhead line, including vertical and horizontal clearance codes, depths and setbacks from other active utilities, service to intermediate substations, and final connections to substations (Exh. NG-2, at 44). Based on these operational considerations and additional construction and environmental considerations, the Company established the following criteria for potential routes:

- Maintain system function, operability, and reliability
- Maximize the use of existing linear corridors
- Minimize impacts on environmental resources
- Minimize cost
- Limit construction constraints
- Minimize impacts to densely developed areas

Source: Exh. NG-2, at 44.

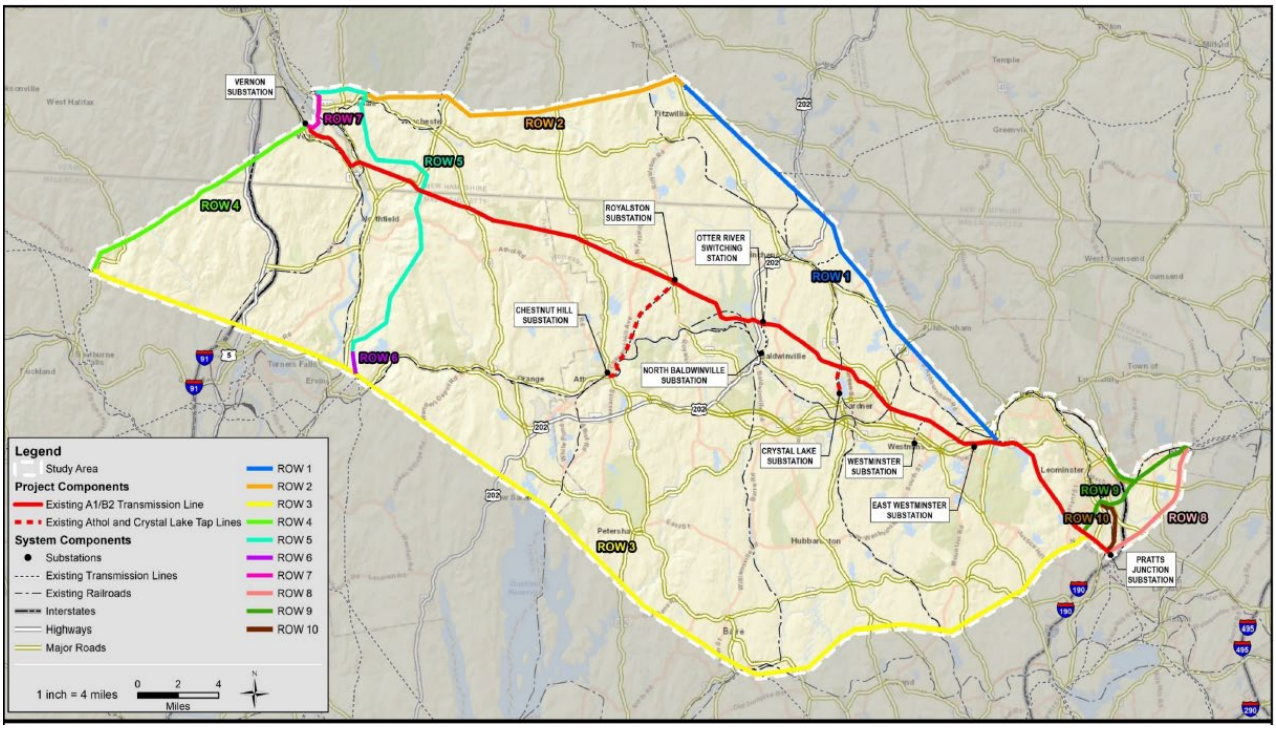
The Company explained that its primary routing consideration was the need to maintain reliable delivery of electricity to customers in twelve Massachusetts cities and towns and

intermediate and final connections to the substations serviced by the A1/B2 Lines and Tap Lines (Exh. NG-2, at 44).

2. Identifying Potential Route Alternatives

Using its route evaluation criteria, the Company mapped existing linear corridors within the Study Area to develop potential routes (Exh. NG-2, at 45). The Company identified numerous linear corridors through a macro-review of United States Geological Survey topographic maps, Geographic Information System ("GIS") data, and aerial imagery within the Study Area, including those associated with electric transmission lines, natural gas pipelines, railroads, and highways and major roadways (Exh. NG-2, at 45). The Company applied the route evaluation criteria to identify existing linear corridors that could serve as a potentially superior alternative route for some or all the Project (Exh. NG-2, at 53). The Company identified ten existing overhead electric transmission line corridors as potential route options (Exh. NG-2, at 45).

Figure 5: Potential Route Options within the Study Area.



Source: Exh. NG-2, at 47.

3. Screening

The Company explained that its primary routing consideration was the need to maintain reliable delivery of electricity to customers in twelve Massachusetts cities and towns and intermediate and final connection substations serviced by the A1/B2 Lines and Tap Lines (Exh. NG-2, at 44). Given this specific requirement, the Company opted to use a qualitative screening process rather than a more typical quantitative route scoring approach (Tr. 1, at 151-152).

The Company's initial screening of existing linear corridors focused on identifying corridors that could provide system function and service to the twelve communities served by the A1/B2 Lines and allow for general accessibility for future maintenance or repair (Exh. NG-2, at 53). The Company indicated that corridors that did not share the generally southeast-to-northwest orientation of the A1/B2 Lines, or provide access to an intermediate substation, were eliminated during initial screening (Exh. NG-2, at 53). The Company eliminated ROW 5 and ROW 7 as potential alternatives as they are confined to Vermont (Exh. NG-2, at 53).

Of the linear corridors remaining for consideration, the Company explained that potential route variations consisted of railroad, highway, major roadways, and the local roadway network (Exh. NG-2, at 54). The Company reviewed the remaining linear corridors and determined no feasible route alternatives were available for the Existing Lines transmission corridor in its entirety (Exh. NG-2, at 53; Company Brief at 52). The Company then evaluated potential route variations with a focus on minimizing engineering, construction, and future operating constraints, as well as potential natural and social/developed environmental constraints (Exh. NG-2, at 54).

4. Selecting the Company's Project Route

The Company concluded that no candidate routes provided improvements in the route evaluation criteria or benefits when compared to the proposed route which uses the Existing Lines and Tap Lines ROW (Exh. NG-2, at 59). NEP argues that no route option would be shorter, less costly, or have less overall impact on human and natural environments while still maintaining existing function (Exh. NG-2, at 59; Company Brief at 54). The Company decided against developing a noticed alternative route as it would require significant funds as well as cause

unnecessary concerns among abutters when the Company does not intend on constructing the Project in those areas (Exh. NG-2, at 59; Company Brief at 54-55).

NEP added that the Existing Lines and Tap Lines ROW have been historically accessed and maintained for the purpose of NEP's operations (Exh. NG-2, at 59). While access route improvements would be necessary as part of the Project, NEP explained that using the Existing Lines and Tap Lines ROWs would also result in the use of an established network of access routes and land already encumbered for this use (Exh. NG-2, at 59). Finally, NEP stated that the Project route would not require the acquisition of new or expansion of existing transmission line ROW, except for acquisition of access easements from two private landowners (Exh. NG-2, at 59).[17] Consequently, the Company is not proposing to construct the Project on any alternative routes other than along the Existing Line and Tap Line corridors (Exh. NG-2, at 41). The Company concluded that it is feasible to construct the Project using alternative routes; however, this would result in increased costs, schedule delays, and new and/or increased impacts to human and natural environments (Exh. NG-2, at 53-59).

C. Geographic Diversity

The Company claims that any feasible alternative route must continue to serve the existing substations and twelve Massachusetts sites and town along the A1/B2 Lines corridor, and due to these constraints, routes with significant geographic diversity would not meet the Project need (Exh. NG-2, at 41; Company Brief at 50). That notwithstanding, the Company represented that its route selection process evaluated a reasonable array of potential routes and confirmed that no clearly superior route exists (Exh. NG-2, at 58). The Company argues that they selected the route that best balanced considerations of reliability, environmental impacts, and cost (Exh. NG-2, at 41; Company Brief at 50).

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[17] The Company related that additional easement access rights are required to cross the property at 150 Great Wolf Drive in Fitchburg and that it negotiated those rights with the owner, anticipating being able to acquire the additional access easement rights (Exhs. EFSB-LU-11; EFSB-LU-25). Further, the Company indicated that additional permits may be required for the wire crossings at the CSX railroad crossings in Sterling, Gardner, and Athol, and that it would obtain the permits as necessary (Exh. EFSB-LU-11).

D. Analysis and Findings on Route Selection

The Siting Board requires that applicants consider a reasonable range of practical siting alternatives and that proposed facilities are sited in locations that minimize cost and environmental impacts. In past decisions, the Siting Board has found various criteria to be appropriate for identifying and evaluating route options for transmission lines and related facilities. These criteria include natural resource impacts, land use impacts, community impacts, cost, and reliability. GCEP at 86; Park City Wind, LLC, EFSB 20-01/D.P.U. 20-56/20-57, at 53 (2023) ("Park City Wind"); Beverly-Salem at 38-39.

The Company followed a methodological approach to identifying a technically feasible route from the Study Area, using existing ROWs (specifically, electric transmission lines, natural gas pipelines, railroads and highways and major roadways). The Company's screening focused on whether the routes would be able to provide service to the twelve communities and existing substations served by the Existing Lines. The record shows that using alternatives routes or variations other than the Existing Line corridor consisting of existing linear corridors would result in increased costs, schedule delays, and new or increased impacts on human and natural environments. The Company determined that no potential alternate routes meet the route evaluation criteria or provide benefits comparable to rebuilding the Existing Lines and Tap Lines within their existing ROWs, the Project route.

The Company's Route Selection approach in this case employed a qualitative screening process rather than quantitative, route-scoring method that is common in Siting Board cases. The Siting Board finds that the unique needs in this case of having to connect multiple intermediate substations and the A1/B2 Lines terminal points at the Vernon Substation and the Sterling Substation, support the logic of using the Existing Lines and Tap Lines corridors. This case did not necessitate the additional quantitative analysis seen in many other Siting Board cases that employ a formal route scoring methodology. Although the Company's qualitative route screening methodology is acceptable in this case, we advise the Company and other Applicants of the Siting Board's strong preference, in general, for inclusion of a route scoring analysis in the route selection process.

In some instances, the Siting Board has found an applicant's decision not to notice an alternative route to be reasonable. See Colonial Gas Company d/b/a National Grid, EFSB 16-01, at 28-29 (2016) ("Colonial 2016"); Colonial Gas Company d/b/a National Grid, EFSB 18-01/D.P.U. 18-30, at 40-42 (2019) ("Colonial 2019"). The Siting Board agrees with the Company that a Noticed Alternative Route would have served no useful purpose in the case where no feasible alternative route exists and finds that it was not warranted under the circumstances applicable to the proposed Project.

Based on the route selection process described above, the Siting Board finds that the Company has: (1) developed and applied a reasonable set of criteria for identifying and evaluating alternative routes in a manner that ensures that they have not overlooked or eliminated any routes that are on balance clearly superior to the proposed Project; and (2) identified a range of transmission line routes as potential alternative routes. Regarding geographic diversity among route alternatives, since twelve Massachusetts cities are dependent on the A1/B2 Lines for electric service, any feasible alternative route must continue to serve the existing substations along the Existing Lines ROW; and due to these constraints, the Board finds that routes with significant geographic diversity would not meet the Project need, removing the geographic diversity requirement in this unique instance only. Therefore, the Siting Board finds that the Company has demonstrated that it examined a reasonable range of practical siting alternatives.

VI. ANALYSIS OF THE PROJECT ROUTE

A. Standard of Review

In implementing its statutory mandate under G.L. c. 164, §§ 69H and 69J, the Siting Board requires a petitioner to show that its proposed facility minimizes costs and environmental impacts while ensuring a reliable energy supply. Beverly-Salem at 41-42; Andrew-Dewar at 44-45; New England Power Company d/b/a National Grid, EFSB 10-1/D.P.U. 10-107/10-108, at 39 (2012) ("Hampden County"). To evaluate the proposed facility, the Siting Board first determines whether the petitioner has provided sufficient information regarding environmental impacts and potential mitigation measures to enable the Siting Board to make such a determination. The Siting Board then examines the environmental impacts of the proposed facilities and determines: (1) whether

environmental impacts would be minimized; and (2) whether an appropriate balance would be achieved among conflicting environmental impacts as well as among environmental impacts, cost, and reliability. Mid Cape Reliability at 50-51; Beverly-Salem at 41-42; Sudbury-Hudson at 78.

B. Description of Project Construction

The Company stated that the Project would employ conventional overhead electric transmission line construction techniques (Exh. NG-2, at 63). The Company emphasized that it would complete the Project in segments, reducing the duration of activities within a given segment to less than the overall duration of construction (Exh. EFSB-A-1). The Company also noted that it would assign a community outreach representative to inform abutting property owners and municipal officials about construction progress (Exh. NG-2, at 68).

The Company stated that it would first implement vegetation management to provide safe access to the proposed structure locations for vehicles and equipment passage, and personnel (Exh. NG-2, at 64). Vegetation management would include mowing or removing small trees and shrubs, as well as trimming trees to maintain required clearances between vegetation and transmission line structures and conductors (Exh. NG-2, at 64). Second, the Company would implement erosion and sediment controls in accordance with its Best Management Practices ("BMPs") and approved plans and permit requirements (Exh. NG-2, at 64).

Third, the Company would establish physical access through improvement of existing or historic accessways, temporary placement of construction mats, and construction of new access where necessary (Exh. NG-2, at 65). The Company would minimize construction impacts by moving construction equipment on existing ROWs and using existing access where feasible (Exh. NG-2, at 65). Fourth, the Company would construct work pads to provide a safe and level work area for foundation work and structure assembly, and live line construction (Exh. NG-2, at 66). The Company would establish temporary storage, staging, and laydown areas; these areas would typically be situated on previously developed properties, where environmental resources can be avoided (Exh. NG-2, at 66).

Fifth, the Company stated that it would replace the existing structures with new monopole structures, directly embedded into the ground or set upon reinforced concrete caisson foundations

(Exh. NG-2, at 66). The Company would consider alternative foundation types if warranted by site conditions (Exh. NG-2, at 66). Sixth, the Company would install insulators on the new structures, and subsequently, the OPGW and power conductors (Exh. NG-2, at 67).

After the New Lines and Tap Lines are placed into service, the Company's last phase of construction would remove the existing steel lattice towers with a hydraulic shear and remove wood pole structures in their entirety, unless complete removal would create adverse impacts in environmentally sensitive areas (Exh. NG-2, at 67). Finally, the Company would remove construction debris and undertake final grading and stabilization of disturbed soil, remove temporary sediment control devices, restore existing stone walls and fences, install permanent gates and access roadblocks, and restore environmental resource areas (Exh. NG-2, at 68). Construction of all phases of the Project would take approximately 43 months (Exh. NG-2, at 87).

C. Environmental Impacts

1. Land Based Resources

a. Company Description

The Project route is situated entirely within existing ROWs held in NEP easements or land owned in fee (Exh. NG-2, at 61, 70). NEP would construct the Project within these ROWs, utilize historically utilized access routes and build two new off-ROW access ways (Exh. NG-2, at 70). The Company reported that it would not need to obtain additional properties for the Project but would need to acquire easements for the two new off-ROW access ways (Exh. NG-2, at 70). Further, the Company contends that Project construction would not permanently alter land uses abutting the Project route (Exh. NG-2, at 70, 72; Company Brief at 57). The Company stressed that it would build the New Lines and Tap Lines consistent with existing and surrounding utility infrastructure and current land uses (Exh. NG-2, at 72).

The Company documented (using MassGIS and field data) twelve types of land uses within the Project ROWs and within 300 feet of the ROWs (Exh. NG-2, at 62-63). The Company also noted two sensitive receptors situated within 55 feet of the ROW, i.e., fire and police stations situated in the same building in Royalston (Exh. NG-2, at 72). Table 2, below, lists these land use types and corresponding acreage.

Table 2: Land Uses Within the Project ROWs and Within 300 Feet of the ROWs.

Land Use Type	Project Route (Acres)	
	Within ROWs	Within 300 Feet of the ROWs
Agricultural/Horticultural	2	19
Commercial	3	29.5
Exempt Property[18]	395	1,552
Forest Property	32	195
Industrial	80	184
Mixed Use	66	198
Recreational Property	1	8
Residential	139	719
Vacant	85	416
Transportation	19	117
Unknown[19]	2	13
Water	3	27
Total	829	3,479

Source: Exh. NG-2, at 70-71.

The Company identified 37 protected open space lands within or adjacent to Project ROWs, covering a total of 1,739 acres (Exh. NG-2, at 75). The Company explained that the lands are in federal, state, private, municipal, and non-profit ownership, and are used for recreation, conservation, habitat protection, water supply protection, and cultural and historical purposes (Exh. NG-2, at 75). Most of the Project construction activities would take place within the existing ROWs to minimize impacts to adjacent open spaces (Exh. NG-2, at 75). The Company would undertake improvements to existing access and construct new access roads within Company easements on state forest lands (Exh. NG-2, at 75). Specifically, the Project route would include an access route in Warwick State Forest, which is owed by the Department of Conservation and

[18] The Company stated that most of the exempt property surrounding the Project route is densely forested (Exh. NG-2, at 85).

[19] Per MassGIS, the *Unknown* use classification belongs to parcels that do not link to an assessor record. See: https://www.mass.gov/info-details/massgis-data-2016-land-coverland-use-full-documentation.

Recreation ("DCR"), where the Project is proposed to be co-located with the New England National Scenic Trail for approximately 2,300 feet (RR-EFSB-2(1) at 14). DCR owns and manages four state forests covering 79.5 acres within Project ROWs and 378 acres within 300 feet of the ROWs (Exh. NG-2, at 75). Article 97 disposition process is not required for Project construction in the Company's pre-existing easement (Exh. NG-2, at 75; Company Brief at 60). The Company has received a construction access permit from DCR for its proposed off-ROW access improvements (RR-EFSB-4(S-1) at 2; Exh. NG-2, at 75; Company Brief at 60).

As noted in Table 2, above, the Project ROWs primarily traverse forested, Exempt Properties. To provide a safe area for construction, future maintenance, and operation, and to ensure the reliability of the New Lines and Taps, NEP will remove trees in select locations along the edges of the existing Project ROWs as follows:

- The Existing Lines ROW is currently cleared of tall woody vegetation to approximately 85 feet wide on average throughout the corridor. NEP is proposing to remove trees in select locations to maintain approximately 100 feet of its 100-to-450-foot-wide ROW.

- The Athol Taps ROW is currently cleared of tall woody vegetation to approximately 115 feet wide on average throughout the corridor. NEP is proposing to remove trees in select locations to maintain approximately 125 feet of its 125-foot-wide ROW.

- The Crystal Lake Taps ROW is currently cleared of tall woody vegetation to approximately 85 feet wide on average throughout the corridor. NEP is proposing to remove trees in select locations to maintain approximately 100 feet of its 100-foot-wide ROW.

Source: Exh. NG-2, at 77.

The Company stated that tree clearing associated with the Project would result in 131.2 acres of permanent impacts, 14 acres of which would be in wetland resource areas (RR-EFSB-2(1) at 4). Further, 100 acres would be within Project ROWs, and 31.2 acres would be off-ROW (Exh. NG-2, at 78).[20] NEP explained that the tree removals would accommodate new, improved, and reestablished access ways in areas where on-ROW access would cause greater

[20] The Company indicated that its estimate of the on-ROW acreage is based on the approximate existing tree canopy cover (Exh. NG-2, at 78).

wetland and traffic impacts (Exh. NG-2, at 78). The Company added that widening or grading of historic access, or building new access, would require more extensive tree removal (Exh. NG-2, at 78). In coordination with DCR and Mass Audubon, the Company has committed to compensatory mitigation, as well as tree planting in EJ population areas and forest-based soil and vegetation restoration measures (RR-EFSB-2(1) at 16).

Generally, the Company emphasized that its ongoing vegetation management of the Existing Lines ROW substantially reduced the need for additional tree removal for Project construction (Exh. NG-2, at 79). Further, the Company stated that it would develop a final mitigation package regarding vegetation management that would address required federal, state, and local permit conditions and agency concerns, and that, if required, it would use native plant species to supplement re-establishment of vegetation (Exh. NG-2, at 79).

The Company stated that the Project route contains habitat for nine state-listed species per the Massachusetts Wildlife's Natural Heritage and Endangered Species Program ("NHESP") and the Project area potentially includes four federally listed species per the United States Fish and Wildlife Service Information for Planning and Consultation[21] (Exh. NG-2, at 82). The Company stated that access improvements and construction of new access and work pads would temporarily and permanently alter wildlife habitats within the Project ROWs (Exh. NG-2, at 82). The Company represented that 86 acres, or 8.2 percent of the ROW, are situated in rare species habitat, and that the Company would remove six acres of trees in priority habitat (Exh. NG-2, at 82). In total, the Company indicated that the Project would permanently impact 12.9 acres of upland in priority habitat due to access and work pad improvements (Exh. NG-2, at 82).

The Company stated that, where feasible, it would use habitat information to minimize impacts to rare species, and limit work pads and extent of access to the minimum size required for work safety (Exh. NG-2, at 82). The Company stated that in collaboration with NHESP, it was developing mitigation measures for all species associated with the Project route (Exh. NG-2, at 82;

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[21] The nine state-listed species include two reptiles, one amphibian, two invertebrates, three birds, and one plant (Exh. NG-2, at 82). The four federally listed species include a threatened mammal, candidate insect, endangered plant, and threatened plant (Exh. NG-2, at 82).

Company Brief at 68-69). The Company has preemptively proposed BMPs in accordance with past approvals by NHESP of similar projects which include a contractor training and awareness program, species specific time-of-year limitations for construction and maintenance, as well as an NHESP-approved monitor onsite whenever work is conducted in priority habitat mapped areas (Exh. NG-4, at 78-81). The Company has been actively working with NHESP to avoid and minimize impacts to state-listed species (RR-EFSB-2(1) at 30). NHESP anticipates the Project would result in a "Take" of both Wood Turtle and a portion of the Sand Violet populations due to direct placement of timber (RR-EFSB-2(1) at 9, 30). NHESP issued a Conservation and Management Permit in December 2025 which authorized the "Take" of both species on condition that the Company meets associated performance standards (RR-EFSB-4(S-1)(2) at 1)..

The Company determined that the Project area includes 60 archaeological sites within one kilometer of the Existing Lines and Tap Lines centerlines; 14 are Native American and 46 are historic archaeological sites (Exh. NG-2, at 76). Royalston, Winchendon, and Fitchburg were found to have denser concentrations of archaeological sites (Exh. NG-2, at 76). The Company also noted eight National Register of Historic Places properties within one kilometer of the centerlines, two of which intersect the Project route (Exh. NG-2, at 76). Additionally, the Existing Lines cross through the Royalston Historic District (Exh. NG-2, at 77). The Company stated that there are no Areas of Critical Environmental Concern ("ACECs") within Project ROWs or within 300 feet of ROWs (Exh. NG-2, at 73).

Per the request of the Royalston Historic District Commission, the Company relocated two proposed structures (261 and 262) to lessen their potential visual impacts in the district (Exh. EFSB-V-3). The Company also stated that the Massachusetts Historical Commission did not request visual analysis for the Project (Exh. EFSB-LU-14). The Company stated that it has been coordinating with the United States Army Corps of Engineers ("USACE") and Massachusetts Historical Commission to incorporate avoidance and minimization measures, as needed, with respect to potentially eligible or listed cultural resources with the National Register of Historic Places (Exhs. EFSB-LU-16; Company Brief at 61). If required, the Company acknowledged that it would fund mitigation, acquire associated land, and in coordination with its contractor, oversee mitigation implementation (Exh. NG-5, at 63). The Company added that it would outline any

required resource protection or avoidance measures in an Avoidance and Protection Plan, and that it would specify procedures for handling unanticipated discoveries during construction in a Post Review Discoveries Plan (Exh. NG-2, at 77).

b. Analysis and Findings on Land Based Resources

The record shows that the Project route would be situated entirely within existing ROWs. The significant length of the Project, and its location in proximity to densely forested areas, would require approximately 100 acres of tree removal within the ROWs, and 31 acres in off-ROW access routes with prior easements. The record demonstrates that the Company's ongoing ROW vegetation management practices reduced the amount of new clearing needed for construction and safe operation of the Project. On the Existing Line ROW, the Project would expand existing cleared areas from an average existing width of 85-feet to a proposed 100-foot width, with similar increases in the cleared width of the Athol and Crystal Lake Tap Line ROWs. The greenhouse implications of the anticipated tree removal, and the Project overall, are discussed in Section VI.C.6(a), below. To offset tree removal impacts, the Company will implement state forest and EJ population area carbon mitigation measures.

The record shows that the Project would not require the Company to obtain ownership of additional properties, instead it would require two easements for new ROW access. The record also shows that the Project route would not permanently alter abutting land uses.

While construction would occur almost entirely in existing ROWs and historically utilized access routes, some activity would occur on state forest lands owned by DCR, specifically within Warwick State Forest for off-ROW access route construction. The Company has obtained a construction access permit from DCR for related work and would not need Article 97 legislation. Construction would also occur within the habitat of nine state-listed species and possibly four federally listed species. To minimize impacts to state-listed species, the Company would observe time-of-year construction restrictions, conduct contractor training, as well as have an NHESP-approved monitor onsite in priority habitat mapped areas during construction. The Company would limit work areas to the minimum size required for safe access and construction. The Company would also collaborate with NHESP during construction on mitigation for "Take" of the

Wood Turtle and a portion of the Sand Violet populations in the Project area and meet associated performance standards of its NHESP Conservation and Management Permit.

The record shows that the Project ROWs and the area within 300 feet of the ROWs would not include ACECs. However, there are numerous archaeological sites in the Project area, and the ROW passes through the Royalston Historic District. The record shows that the Company has already addressed the Royalston Historic District Commission request to relocate transmission line structures to mitigate visual impacts. The Company has been coordinating with USACE and Massachusetts Historical Commission to mitigate impacts if required and plans to avoid historic resources and develop procedures for handling discovery of unanticipated cultural or historic resources.

With these measures, in addition to the Company's proposed tree removal mitigation, the Siting Board finds that impacts to land-based resources have been appropriately addressed.

2. Water Resources and Wetlands

a. Company Description

The Company identified 262 acres of wetland and water features (i.e., wetlands, streams, and certified vernal pools) within Project ROWs and 74 acres of the same alongside Project ROWs (Exh. NG-2, at 80). NEP explained that Project construction would result in 38 acres of temporary wetland impacts, nine acres secondary impacts to trees, and 0.05 acres of permanent impacts from fill (Exh. NG-2, at 81). Table 3, below, summarizes these water features and the extent of anticipated impacts. In terms of minimization, the Company stated that it modified the Project design within wetland resource areas to reduce tree removal by 6.8 acres, temporary construction matting by 12.7 acres, as well as remove 14 caisson structures from BVW (RR-EFSB-2(1) at 18).

The Company stated that it would minimize wetlands disturbance by implementing proper forestry techniques, and that prior to tree removal, trimming, and mowing, it would clearly mark wetlands boundaries to prevent unauthorized vehicle access (Exh. NG-2, at 79). The Company added that it would preserve native vegetation in and adjacent to wetlands when practicable (RR-EFSB-2(1) at 18).

Table 3: Wetlands, Watercourses, and Vernal Pools Associated with the Project.

Resources	Units	Existing Wetlands along Project Route		Anticipated Impacts (sq ft)		
		ROW	Off-ROW	Temporary	Secondary	Permanent
Wetlands[22]	**Acres**	169	16	38 acres	9 acres	2,302
Streams (Perennial)	**Number**	49	15	13,068	8,712	0
Streams (Intermittent)	**Number**	43	37	3,071	4,356	79
Certified Vernal Pools	**Number**	1	6	1,003	0	0

Source: Exh. NG-2, at 80.

In addition to the direct wetland impacts, the Company also presented anticipated Project impacts to wetland resource areas and buffers, as summarized in Table 4, below. These areas include Inland Bank, Land Under Waterbodies and Waterways ("LUWW"), Bordering Land Subject to Flooding ("BLSF") and Riverfront Area ("RA") (RR-EFSB-2(1) at 10).

Table 4: Summary of Anticipated Impacts to Wetland Resource Areas and Buffers.

Impact Type	Activity	Impact Area (Square Feet)					
		BVW	**100-foot Buffer Zone of BVW**	**Bank**	**LUWW**	**BLSF**	**200-foot RA**
Temporary Alteration	**Construction Matting**	1,645,153	609,509	3,378	17,217	223,662	451,840
Permanent Alteration	**Tree Removal-Conversion of Vegetative Cover Type**	403,366	2,021,185	28,714	0	106,286	605,048
	Access Improvement/ Grading	0	3,954,772	0	0	65,973	1,010,480

[22] These wetlands include all field-delineated Bordering Vegetated Wetland ("BVW") within and adjacent to Project ROWs.

Impact Type	Activity	Impact Area (Square Feet)					
		BVW	100-foot Buffer Zone of BVW	Bank	LUWW	BLSF	200-foot RA
Permanent Impact	**Structure Replacements**	2,246	10,160	0	79	726	3,561

Source: RR-EFSB 2(1) at 10.

To develop a mitigation package for wetland impacts, the Company has approached the USACE, the Massachusetts Department of Environmental Protection ("MassDEP"), and the NHESP (Exh. NG-2, at 81).

Further, the Company has received Orders of Conditions from the conservation commissions in all jurisdictional municipalities, and post-construction, it would prepare an application to each commission for Certificates of Compliance (Exh. NG-2, at 81). The Company stated that it would replicate BVW to mitigate for permanent fill[23] and would design compensatory storage to mitigate for 76.6 cubic yards of fill in BLSF (RR-EFSB-2(1) at 18). The Company also reported that the Project would require a 401 Water Quality Variance pursuant to 314 CMR 9.08 because it would use temporary fill to facilitate access to two structures located within wetlands situated within 400 feet of the Ordinary High-Water Mark of a Class A Public Water Supply (RR-EFSB-2(1) at 12).

The Company reported that it would implement in-situ restoration for areas temporarily impacted by construction matting as the temporary matting required for ROW access and protection of wetland resource areas would not comply with the Massachusetts Wetlands Protection Act performance standards[24] (per 310 CMR 10.00) (RR-EFSB-2(1) at 11, 18). The

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23 The Company noted that replication would be 1:1 except in Outstanding Resource Waters, where it would be 2:1 (RR-EFSB-2(1) at 18).

24 The Secretary's DEIR and FEIR Certificates explain that such noncompliance is permissible due to the Project's Limited Project status pursuant to 310 CMR 10.53(3)(d), which also requires that the Company conduct mitigation subject to the approval of jurisdictional conservation commissions (Exhs. NG-4, at 19; NG-6, at 15; RR-EFSB-2(1), at 10).

Company would clean matting used in wetlands containing invasive species prior to moving it to other work areas or wetlands (RR-EFSB-2(1) at 18).

Finally, the Company analyzed anticipated Project impacts to public water supplies, as summarized in Table 5 below. Overall, the Company argues that impacts to these public water supplies would be negligible and generated only by construction activities (e.g., access road improvements, caisson foundation and direct embedded pole installation for structures, and construction matting to protect wetlands and streams) (Exhs. NG-2, at 83; NG-4, at 72-73; Company Brief at 69). The existing A1/B2 Line includes two sections with structures located in wetlands within the 400-foot buffer of the high-water mark of the Notown and Fall Brook Reservoirs, both of which are Class A Public Water Supplies and ORWs (Exh. NG-6, at 16). Further, the Project would require removal of two existing upland structures, necessitating placement of temporary fill in wetlands within the 400-foot buffer of the Fall Brook Reservoir (Exh. NG-6, at 16). The Company would require a variance pursuant to 314 CMR 9.08 for work within these buffer areas, including placement of temporary fill (Exh. NG-6, at 16).

Table 5: Summary of Anticipated Project Impacts to Public Water Supplies.

Acres	Public Water Supply Designation/Location
148	Zone II Wellhead Protection Areas ("WPAs") – 1 in Athol; 1 in Leominster
26	Miller River Basin Aquifer
412	Across Eight Outstanding Resource Waters: Crystal Lake, Goodfellow Pond, Simonds Pond, Notown Reservoir, Distributing Reservoir, Morse Reservoir, Fall Brook Reservoir, Perley Brook Reservoir
988.5	Nashua and Miller Water Supply Watersheds
1	Across Four Reservoirs: Crystal Lake, Fall Brook Reservoir, Notown Reservoir, Perley Brook Reservoir

Source: Exh. NG-2, at 84.

The Company indicated that a Chapter 91 license would be required for Project work situated in the Perley Brook tributary, under the MassDEP Waterways Program (RR-EFSB-2(1) at 13, 18). To manage vegetation in public water supply areas, the Company stated that it would follow the procedures highlighted in its vegetation management plan, which are the same as those currently used at existing ROWs (Exh. NG-2, at 85). The Company stated that it would routinely

deploy environmental compliance monitors to ensure that civil construction, as well as erosion and sediment control measures, are consistent with government permits (Exh. NG-2, at 68-69). The Company reported that it would require construction contractors to coordinate with environmental compliance monitors, ensure compliance with permit requirements, and provide training and direction for construction crew members on permit compliance and construction mitigation commitments (Exh. NG-2, at 69).

b. Analysis and Findings on Water and Wetlands Impacts

The record shows that the Project would impact water resources and wetlands, including temporary, secondary and permanent impacts. The Company has endeavored to minimize impacts to wetlands in its Project design and has also committed to minimize impacts during construction. The Company has committed to remain actively engaged in ongoing discussions with the USACE, MassDEP, and NHESP, and has received Orders of Conditions from all local conservation commissions for required wetland submittals and mitigation measures. The record also established several mitigation techniques that NEP would implement (e.g., replication, in-situ restoration, and preservation of native vegetation).

The record also shows potential impacts to water resources, however, these impacts would be temporary and related to construction. For work related to the Perley Brook tributary or any work that would require a Chapter 91 license, NEP would coordinate with the MassDEP Waterways Program to obtain the license. The Siting Board directs the Company to promptly coordinate with the MassDEP Waterways Program to determine the need for a Chapter 91 license(s) and to promptly apply for any required license(s), if needed. The Company would also employ practices to minimize potential construction duration impacts to waterways and water supply areas. Accordingly, the Siting Board finds that water resource and wetlands impacts would be minimized.

3. Noise

a. Company Description

The Company stated that noise impacts would be limited to the construction period (Exh. NG-2, at 87). The Company indicated that it would limit construction activities and related

deliveries to 7 a.m. to 7 p.m. on weekdays, and to 8 a.m. to 5 p.m. on Saturdays; NEP added that it would not undertake construction on Sundays and state or federal holidays (Exh. NG-2, at 68). The Company stressed, however, that it would be unable to stop certain tasks (e.g., concrete pours, transmission line stringing) once commenced, and that it may need to extend work beyond normal hours in those circumstances (Exh. NG-2, at 68). The Company stated that it would closely coordinate with affected municipalities to develop mutually agreeable work hours (Exh. NG-2, at 68).

Depending on specific activity and distance from the Project route, construction could generate between 65 A-weighted decibels ("dBA") and 98 dBA at the 329 residences that are located within 300 feet of the Project ROW; the Company stated that the maximum noise impact at 300 feet would be 83 dBA (Exh. NG-2, at 90). According to the Company, the nearest residence to the Project ROW, in Westminster, is 28 feet away, and a total of 86 residences are within 100 feet of the ROW, an additional 120 residences are within 200 feet, and an additional 123 residences are within 300 feet (Exh. NG-2, at 90). The Company explained, however, that typical sound levels at abutting residences would be temporary and intermittent (Exh. NG-2, at 90). Table 6, below, lists estimated dBA ranges associated with the Project's anticipated construction activities.

Table 6: Estimated dBA Ranges for Construction Activities for Successive Distance Intervals from the Source.

Description of Activity	50 Feet	100 Feet	200 Feet	300 Feet
Vegetation Removal and ROW Mowing	84 to 98	78 to 92	72 to 86	69 to 83
Installation of Foundations and Structures	80 to 90	74 to 84	68 to 78	65 to 75
Conductor and Shield Wire Installation	80 to 93	74 to 87	68 to 81	65 to 78
Removal and Disposal of Existing Transmission Line Components	80 to 90	74 to 84	68 to 78	65 to 75
Restoration of the ROW	80 to 90	74 to 80	68 to 78	65 to 75

Source: Exh. NG-2, at 89-90.

The Company anticipated that blasting would not be required for the Project (Exh. NG-2, at 67). The Company also anticipates that the Project would not require helicopter work, although NEP reserved the right to reconsider depending on methods proposed by the construction vendors (Exh. NG-2, at 67).[25] The Company added that it would alert abutters ahead of any helicopter work (Tr. 1, at 149).

The Company stated that it would mitigate construction-based noise impacts by using equipment mufflers and maintaining construction equipment to provide the quietest possible performance (Exh. NG-4, at 122). Further, the Company stated that it would turn off construction equipment when not in use and limit vehicle idling to no more than five minutes when feasible (Exhs. NG-2, at 91; NG-4, at 158). The Company also reported that it would mitigate the impact of loud equipment at sensitive locations by employing shielding or buffering distance, and by locating continuously operating noise sources (e.g., air generators and compressors) away from populated areas when feasible (Exhs. NG-2, at 91).

The Company would flag anticipated high-decibel activities on the Project website and in the Company's regular Project mail notifications to abutting residents (Exh. EFSB-NO-4). The Company would address any construction-based noise complaints by considering schedule adjustments and through additional mitigation measures implemented on a case-by-case basis and according to associated site conditions (Exhs. EFSB-NO-6; EFSB-NO-10).

b. Analysis and Findings on Noise

The record shows that construction equipment for the Project could generate between 65 and 98 dBA within 300 feet of the ROW, with the noisiest activities being vegetation removal and ROW mowing. Nevertheless, the record shows that the Company would curtail impacts through

[25] If helicopter work were required, the Company stated that noise generated at ground-level would range between 85 and 95 dBA at the ROW edge, adjacent to the work (RR-EFSB-8). The Company stated that for any single wire pulling section, helicopter work would take between 14 and 20 days (RR-EFSB-8). The Company noted that helicopter-assisted installation of pulling ropes at a given location would typically take less than five minutes per wire attachment point (RR-EFSB-8). The Company added that the helicopters would fly linearly along the transmission line, avoiding direct flight over residential abutters (Tr. 1, at 148).

typical equipment-based mitigation measures and shielding and buffering. The Company commits to adhering to the work hours of 7 a.m. to 7 p.m. on weekdays, and 8 a.m. to 5 p.m. on Saturdays. Additionally, the record shows that neither blasting nor helicopter use is anticipated for Project construction. The Siting Board directs the Company to consult with each affected municipality to determine if additional work hour limitations may be desirable and mutually acceptable.

To mitigate potential noise impacts, the Siting Board directs the Company to limit the Project's construction work hours to 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturdays. Normal construction work hours shall not include Sundays or state or federal holidays. Should the Company need to extend construction work hours beyond the above-noted hours and days, with the exception of emergency circumstances necessitating extended hours, the Company shall seek written permission from the relevant municipal authority (or authorities) before commencement of such work and provide the Siting Board with a copy of said permission. If the Company and municipal officials cannot agree on whether such extended construction hours should occur, the Company may request prior authorization from the Siting Board and shall provide the associated municipality (or municipalities) with a copy of any such request. Work requiring a longer continuous duration than normal construction work hours shall be exempt from those hours. The Company shall promptly inform the Siting Board and the relevant municipal authority (or authorities) of any emergency work occurring outside of normal construction work hours. The Siting Board encourages the Company to mitigate construction noise in the vicinity of residents and sensitive receptors during construction, to the extent practicable.

The Siting Board directs that if the Company determines, per consultation with its construction vendor(s), that helicopter use is required, the Company shall notify any residence situated within 300 feet of the ROW boundary and adjacent to the proposed helicopter location(s) at least seven days prior to commencement.

The Siting Board finds that noise impacts would be minimized with implementation of the above conditions.

4. Traffic

a. Company Description

The Company stated that the Project route intersected two active railroad crossings and a total of 67 roads (Exh. NG-2, at 92). Per Massachusetts Department of Transportation ("MassDOT") categorization, 43 of the roads are local street or road, six are urban or rural principal arterial, and 18 are urban minor arterial or collector (Exh. NG-2, at 91). Among these, average daily traffic volumes ranged from about 5,000 to 45,000 vehicles, with Route 2 having the highest traffic volumes (Exh. EFSB-T-3). The Company reported that the largest traffic impacts would result from use of public roads to transport equipment and personnel into ROWs, and stringing transmission conductors over railroad and road intersections (Exh. NG-2, at 91-92). For each work area, the Company noted that smaller vehicles carrying construction workers would access the ROW daily; large construction equipment would enter the ROW once; and multiple delivery trips could be conducted for construction materials (e.g., construction matting or stone) (Exh. NG-2, at 91).

The Company indicated that increased traffic from Project construction would not significantly affect existing traffic patterns or adversely impact safe navigation of roads by existing traffic (Exh. NG-5, Part 1, at 32; Company Brief at 75). For stringing activities, the Company stated that it would employ lane closures and temporary traffic stops, and would schedule these activities for off-peak traffic periods, as necessary (Exhs. NG-2, at 92; EFSB-T-1). The Company reported that it would consult with applicable railroad owners and operators to establish protocols for stringing operations at associated railroad crossings and would coordinate with applicable municipalities to mitigate traffic on local roads (Exhs. EFSB-T-1; EFSB-T-5). The Company added that it would limit construction vehicle traffic to within or the vicinity of ROWs and would work to curtail traffic impacts to residential, commercial, and other abutters (Exhs. NG-2, at 92; EFSB-T-1). The Company stated that it would provide advance notice to affected landowners of any off-ROW access use and would coordinate on a case-by-case basis with any such landowners who express concern (Exh. NG-2, at 68).

The Company stated that the Project would include 25 Traffic Management Plans ("TMPs") for work within state highway layouts: fourteen access plans and eleven crossing plans

(Exhs. NG-2, at 68; EFSB-T-8). At locations where construction equipment would be staged in a local public way, the Company would follow a pre-approved work zone traffic control plan (Exh. NG-2, at 68). The Company stated that its traffic control plans would restrict public access to potentially hazardous work areas and would require use of temporary guard structures at road and electric line crossings (Exh. NG-2, at 69). The Company noted that it would obtain the necessary MassDOT permits for access to state roads and would closely collaborate with MassDOT on TMP development (Exhs. NG-2, at 68, 92; EFSB-T-1; EFSB-T-8).

The Company indicated that the Project's post-construction traffic impacts would be limited to occasional ROW and transmission line maintenance activities, and no less than one vehicle trip per day (Exhs. NG-2, at 91; NG-4, Part 36, at 36).

b. Analysis and Findings on Traffic

The record shows that the Project would intersect railroads and roadways, including state highway Route 2, which sees the most daily traffic of the roads impacted by the Project. The record shows that during construction, the activities that would cause traffic impacts include stringing transmission conductors over railroad and road intersections, as well as use of public roads to transport equipment and personnel into the ROW. NEP committed that the Project's construction would not adversely affect traffic patterns or safety. The record shows that for stringing activities, the Company would require road closures and temporary traffic stops, but also that it would schedule such activities during off-peak hours.

The Siting Board directs that the Company comply with its commitment to: (a) obtain necessary MassDOT permits for access to state roads and coordinate with MassDOT to develop TMPs for work within state highway ROWs; (b) consult with railroad operators to establish protocols for stringing operations at railroad locations; (c) coordinate traffic management with local authorities for work on local streets and roads; (d) provide advance notice of use of off-ROW access to affected landowners; and (e) work on a case-by-case basis with landowners who express concerns. The record shows that the Project's post-construction traffic impact would be negligible; occasional ROW and transmission line maintenance activities and less than one vehicle trip per day. The Siting Board finds that traffic impacts would be minimized.

5. Visual

a. Company Description

The Company would construct the Project in an existing ROW that currently contains overhead transmission lines (Exh. NG-2, at 85). The Company stated that the proposed new structures would range between 93 and 121 feet high, with height increases (relative to the existing structures) ranging between 42 and 63 feet (Exh. NG-2, at 87). The height increases would produce the greatest visual impacts where structures rise above adjacent vegetation (Exh. NG-2, at 87). The Company added that the proposed brown weathering steel monopoles could be more visible against the sky than the current grey or galvanized poles (from the same vantage point) (Exh. NG-2, at 87). The Company identified 21 observation points that could be noticeably affected by views of these changes (Exh. NG-2, at 85).

Most of the Project would be screened by dense forests and would only be visible from road crossings, open water, open fields, and some commercial and residential uses situated directly adjacent to ROWs (Exh. NG-2, at 85). The Company argues that the Project would minimize visual impacts due to use of existing ROWs, limit tree removal to discrete areas where the ROWs have not been fully maintained, and to areas where additional tree removal is required to achieve compliance with vegetation management standards (Exh. NG-2, at 85, 87; Company Brief at 72). The Company stated that it would work with abutting landowners impacted by material changes in view to implement reasonable screening measures, consisting of soft (e.g., vegetation) and hard (e.g., fencing) options (Exh. NG-2, at 87).

b. Analysis and Findings on Visual Impacts

The record indicates that the Project will modify the visual character along the ROW, as the new structures will be significantly taller. The record further identifies 21 vantage points where visual changes could be noticeable. The overall viewscape, however, will remain largely influenced by the existing transmission corridor context, and views will continue to be screened in many locations by adjacent dense forest. The Siting Board directs the Company to implement mitigation, including coordinating with abutters on reasonable screening measures and

development of mutually agreeable solutions with landowners. Accordingly, the Siting Board finds that visual impacts have been appropriately addressed.

6. Air

a. Company Description

The Company stated that the Project construction and operation would not exceed any MEPA air quality thresholds or require air permits (Exh. EFSB-A-3). The Company acknowledged that construction activities could cause a temporary increase in airborne dust, but that it would minimize dust by spreading wood mulch or straw and spraying dried soil with water (Exh. EFSB-A-3). Further, the Company emphasized that it would stabilize and revegetate soil to prevent dust generation after construction (Exh. EFSB-A-3). The Company would minimize greenhouse gas ("GHG") and other emissions from construction equipment through the following methods: (a) retrofitting equipment with emissions control devices, as necessary; (b) using ultra-low-sulfur diesel fuel; (c) complying with state law and regulations for vehicle idling; and (d) following other best management practices (Exh. EFSB-A-3).

Per MEPA's GHG Emissions Policy, the Company analyzed loss of carbon sequestration associated with construction-based land and soil disturbance (Exh. NG-6, at 19). The Company stated that the Project would cause a one-time loss of 11,199 metric tons ("mt") of carbon storage due to tree removal (Exh. NG-5, at 52). Over the next 30 years, the cleared area is expected to recover 1,338 mt of carbon, resulting in an estimated net loss of 9,861 mt of carbon sequestration (Exh. NG-5, at 52). Additionally, the removal of trees and maintenance of much of the area as shrubland results in an additional loss of sequestration potential over 30 years of 2,302 mt carbon (Exh. NG-5, at 52). Therefore, the cumulative loss of carbon storage/emissions caused by the Project is 12,164 mt carbon (which is equivalent to 37,883 mt CO2e after consideration of "leakage") (Exh. NG-5, at 52). The Company emphasized, however, that the Project would also reduce GHG emissions, as increased grid resiliency would reduce outages and flickers that result in use of back-up generation, loss of residential and commercial food, losses and damage to commercial equipment, and remanufacturing of commercial products (Exh. NG-6, at 20). The Company also explained that the Project would also facilitate a overall net reduction in GHG

emissions by enabling increased interconnection of non-emitting electric generation and storage facilities that are currently pending in the interconnection queue (Exh. NG-6, at 20-21).[26] The FEIR Certificate noted the Project's asserted net cumulative GHG reduction of approximately 117,424 mt CO2e over a 30-year time horizon (RR-EFSB-2(1) at 15).

The Company collaborated with DCR and Mass Audubon on a mitigation package for tree removal and associated carbon sequestration loss, including compensatory mitigation up to $250,000 (Exh. NG-5, at 53). Specifically, the Company committed to: (1) remedying soil organic carbon loss associated with failing road infrastructure in Lawton State Forest; (2) providing understory planting and nuisance species control in Warwick, Otter River, or Lawton State Forests; (3) working with DCR's Greening the Gateway Cities Program in Athol and Fitchburg to increase tree cover in overburdened EJ populations; and (4) fiscally contributing to Mass Audubon's 30x30 Catalyst Fund for preservation of forested land under current threat of development (RR-EFSB-2(1) at 3, 19). The Company maintains that through 2050, per DCR estimates, mitigation for soil carbon loss in Lawton State Forest would result in a cumulative net reduction of 27.34 – 61.60 mt CO_2e, and understory planting in Warwick State Forest would result in a net reduction of 380.34 mt CO_2e (RR-EFSB-2(1) at 19). Additionally, in its Final Environmental Impact Report, the Company committed to donate 1.7 percent of the trees felled to the DCR Community Wood Bank or other Massachusetts wood bank programs that provide free firewood for those in need of energy (RR-EFSB-2(1) at 15). On land owned by the Company, wood collected during tree removal will be committed to reuse in long-lived wood products or will be donated to affordable housing projects or wood banks within the state (RR-EFSB-2(1) at 15).

b. Analysis and Findings on Air

The record demonstrates that there are no required air permits, no exceedance of MEPA air quality thresholds, and that the Company would use appropriate measures to limit temporary construction air impacts. The record shows that the Project would cause a one-time loss of

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[26] The Company pointed out that 20.5 MW of solar generation and battery energy storage system projects are on hold because the existing A1/B2 Lines would experience thermal overloads if the new projects were tied into the lines (Exh. NG-6, at 20-21).

11,199 mt of carbon due to tree removal, yielding a net 12,164 mt cumulative reduction in carbon sequestration during Project construction and over the following three decades. The record also demonstrates that the Company developed, in coordination with DCR and Mass Audubon, a targeted mitigation package that would offset a portion of the direct carbon impacts. However, the far more significant carbon mitigation benefit, that results in an overall cumulative net CO2e reduction profile for the Project, stems from the Project's improvement to electric grid reliability and resiliency, and its ability to help interconnect additional non-emitting electric generation and storage resources that are currently pending in the interconnection queue.

The Siting Board directs the Company to fulfill its carbon-related mitigation commitments with DCR and MassAudubon, as described in the record, and to submit a filing with the Siting Board within 90 days of Project completion documenting its compliance. The Siting Board directs the Company to seek to minimize tree-clearing through selective pruning and selective cutting to maximize the ongoing carbon sequestration by the forest. With these commitments and prescribed mitigation measures, the Siting Board finds that air impacts are minimized.

7. Safety and Hazardous Waste

a. Company Description

The Company anticipates that the Project would not require handling hazardous materials, except for the lead paint coatings on existing lattice tower structures (Exh. EFSB-SH-7). When removing existing structures, the Company emphasized that its contractor would avoid disturbing paint by using mechanical means to disassemble transmission towers (e.g., unbolting) and other mechanically fastened structures; if unbolting is not possible, biodegradable paint strippers and HEPA-equipped powered mechanical tools would be utilized to avoid the creation of dust. (Exh. EFSB-SH-12). When structures cannot be mechanically disassembled, the Company indicated that the contractor would remove lead-coated cut points prior to utilizing dismantling methods that could generate lead dust, fumes, or vapors (Exh. EFSB-SH-12). The coatings would be taken off using a chemical paint stripper or with mechanical tools with dust collection systems (EFSB-SH-7). Further, the Company would process steel components with intact lead coatings (except cut points) through its asset recovery operation, and workers would use tarps and plastic sheeting,

and collect paint chips and debris (EFSB-SH-7). The Company stated that it would adhere to all applicable regulations for materials disposal (RR-EFSB-6). The Company emphasized that it would handle, transport, and dispose of non-recyclable hazardous materials according to material type, quantity and concentration, and applicable government requirements (Exhs. EFSB-SH-6). The Company reported that its contractors would containerize lead debris/residues in U.S. Department of Transportation-approved, open-topped 55-gallon drums, and would recycle steel components with intact lead coatings through Company-approved vendors; the Company, via an approved environmental contractor, would be responsible for disposal of lead waste (solid and liquid) generated during the Project (Exhs. EFSB-SH-12; EFSB-SH-13). After Project construction, the Company noted that it would salvage steel from removed steel lattice structures, as well as conductors and insulators, and would dispose of used wood poles at a licensed landfill or incinerator (Exh. NG-2, at 67). Further, the Company noted that it would properly dispose of all cross-arms, braces, and other hardware, and would transport any non-recyclable equipment and debris to an appropriate offsite disposal facility (Exh. NG-2, at 67).

The Company stated that the Project would include work within the disposal site boundary for release tracking number 2-0012349, which corresponds to the existing fence line at Pratts Junction Substation (Exh. EFSB-SH-8). The Company emphasized that its work within the release tracking number site would not involve earth disturbance (Exh. EFSB-SH-8). According to the Company, the site received a Response Action Outcome in August 2002 (Exh. NG-4, at 44).

To enhance construction safety, the Company would review work areas prior to construction for hazardous materials and other non-recyclable solid or construction/demolition wastes (Exh. EFSB-SH-6). If required, the Company would arrange testing by a licensed site professional to determine quantities and concentrations of identified hazardous materials (Exh. EFSB-SH-6). The Company would highlight identified hazardous materials in its Project-specific Health and Safety Plan, construction and safety kickoff, and daily Job Hazard Analysis (Exh. EFSB-SH-6).

The Company would develop a construction spill prevention and response plan, which would minimize both spill risk and effects (Exh. NG-4, at 131). The Company would implement, monitor, and manage erosion and sediment controls, as well as spill prevention and response

measures, and require contractors to adhere to BMPs for storage and handling of oil and potentially hazardous materials (Exh. NG-2, at 85). The Company would properly maintain and operate construction equipment to reduce risk of accidental spills and releases of petroleum products (Exh. NG-2, at 84). When refueling equipment, the Company would use spill containment and prevention devices (e.g., drip pans, absorbent pads) and only refuel equipment in upland areas unless equipment were located elsewhere and immovable (Exh. NG-2, at 84). The Project would comply with National Pollutant Discharge Elimination System ("NPDES") Construction General Permit and Stormwater Pollution Prevention Plan requirements (Exh. NG-2, at 84).

Prior to construction, the Company would provide the following types of Environmental Field Issue training to all contractor personnel: (1) hazardous materials handling and spill prevention; (2) identification of hazardous waste encountered during construction; (3) disposition of encountered hazardous materials or waste; (4) responding to petroleum and hazardous materials releases; and (5) operating in or near sites with an activity use limitation (Exh. EFSB-SH-9). The Company stated that it also may require Occupational Safety and Health Administration ("OSHA") Hazardous Waste Operations and Emergency Response 40-hour certification and other requirements (Exh. EFSB SH-6).

After construction, NEP would prevent unauthorized ROW access by using physical barriers (e.g., gates, boulders, and bollards) typically situated where access alignments intersect public ways either within the transmission line ROW or at the termination of off-ROW access alignments (Exh. EFSB-SH-5). The Company would clearly mark all transmission structures with warning signs to alert the public to potential hazards from climbing or entering structures (Exh. NG-2, at 70).

b. Analysis and Findings on Safety & Hazardous Waste

The record indicates that the Company would follow a pre-established approach in both identifying hazardous materials and managing and disposing of them. While the record shows that the Company anticipates only a limited scope of hazardous materials handling – for the lead paint coatings on the existing lattice tower structures, the Company commits to several corresponding

safeguards (e.g., mechanical disassembly). The record also highlights the Company's commitment to recycling and proper waste disposal, and use of physical barriers and hazard signage after construction. The Siting Board directs the Company to engage a licensed site professional to identify and ensure that all construction activities comply with any activities and use limitations associated with the release tracking number. The Siting Board directs the Company to identify hazardous materials proactively, implement corresponding safeguards, employ proper waste disposal methods, and use of physical barriers where necessary. Therefore, the Siting Board finds that hazardous materials and waste impacts would be minimized.

8. Magnetic Fields

a. Company Description

The Company stated that it modeled magnetic fields ("MFs") for existing conditions and the two post-Project transmission voltage scenarios (i.e., 69 kV and 115 kV) (Exh. NG-2, at 1, 92). The Company noted that it modeled both annual average and system peak load levels for all cross-sections applicable to the Massachusetts portion of the Project (Exhs. NG-2, at 92; EFSB-MF-1; EFSB-MF-2). The Company added that its modeling is based on annual average loading conditions per ISO-NE's 2022 load forecasts for the year 2032, which include projected DERs and other anticipated electric demand changes in the ten-year forecast (RR-EFSB-1).

The Company stated that it minimized MF levels by selecting conductor arrangements and phasing configurations that promote MF cancellation (Exh. NG-2, at 96). The Company stated that the Project's primarily rural setting and proximity to only a limited number of residential structures would further minimize MF exposure (Exh. NG-2, at 96). Additionally, the Company noted that it's modeling conservatively placed all conductors at the lowest clearance permissible by governing code, thereby assuming maximum corresponding MFs (Exhs. NG-2, at 92; EFSB-MF-1, at 2; EFSB-MF-2, at 2).

The Company indicated that for both transmission voltage scenarios the Project would increase MF levels under the system peak loading scenario along the Crystal Lake Tap ROW and most of the New Line ROW and reduce MF levels along the Athol Tap ROW (Exh. NG-2, at 94). These MFs levels are summarized in Table 7, below. The Company stated that Project MF levels would decrease to below four mG at 50 feet from all ROW edges (Exh. NG-2, at 95-96). The

Company pointed out that post-Project MF levels would be low for a transmission line ROW and well below International Commission on Non-Ionizing Radiation Protection ("ICNIRP") health-based guidelines of 2,000 mG for allowable public exposure to 60-Hertz MFs (Exh. NG-2, at 96; Company Brief at 82).

Table 7: MF Levels at the Northern and Southern ROW Edges of the A1/B2 Lines for System Peak Loading Scenarios.

	Magnetic Field Levels (mG)		
	Pre-Project	**Post-Project (69 kV)**	**Post-Project (115-kV)**
A1/B2 Lines			
Northern Edge-of-ROW	<1 - 4.1	<1 - 13.5	<1 - 8.1
Southern Edge-of-ROW	<1 - 13.9	1 - 13.3	<1 - 13.4
Athol Tap			
Northern Edge-of-ROW	5.5	1.2 - 2.1	<1
Southern Edge-of-ROW	5.5	1.2 - 2.1	<1
Crystal Lake Tap			
Northern Edge-of-ROW	1.7	5.1	3.4
Southern Edge-of-ROW	2.9	8.2	5.1

Source: Exh. NG-2, at 95-96.

b. Analysis and Findings on Electric and Magnetic Fields

As noted in Section IV.C, the Siting Board reviews the environmental impacts of the Project constructed as 115 kV capable. The Project would operate at 69 kV unless NEP petitions and is approved to operate at the higher voltage in the future. Therefore, in this instance, while the Company presented MF values for both voltage operation scenarios, the Siting Board only reviews the 69 kV modeled MF values.

The record shows that after construction, the MF at peak loading at the ROW edge for the 69 kV transmission voltage would range from less than 1 mG to approximately 13.5 mG at the edges of Project ROWs. The record also shows that the Company would arrange conductors and

phasing configurations that promote MF cancellation, and the Project would be located in a primarily rural Project setting. Additionally, the range of expected average magnetic fields is generally similar to pre-Project conditions. These predicted levels of MF impacts are low and well within the range of MF levels the Siting Board has previously reviewed and approved in other proceedings, and more than 100 times below the ICNIRP MF guidelines. See NSTAR Electric Company d/b/a Eversource Energy, EFSB 16- 02/D.P.U. 16-77, at 65-66 (2018) ("Needham West Roxbury"); NSTAR Electric Company d/b/a Eversource Energy, EFSB 14-2/D.P.U. 14-73/14-74, at 77 (2017). Accordingly, the Siting Board finds that MF impacts of the Project would be minimized.

9. Summary of Environmental Impacts

The Siting Board finds that the information the Company provided regarding the Project's environmental impacts is substantially accurate and complete. The record demonstrates that the Project will result in 131 acres of tree clearing and associated carbon sequestration loss, as well as other impacts across a long corridor traversing state forests, wetlands, and cultural and other resources. However, these impacts will primarily be temporary and construction-related, confined to the Project corridor, and addressed through the Company's extensive mitigation commitments. Therefore, the Siting Board finds that with implementation of the mitigation and conditions specified, and given compliance with all local, state, and federal requirements, the Project's temporary and permanent impacts would be minimized.

D. Cost

End-of-life or asset condition projects, such as the Project, are not subject to the same transmission planning process requirements as other Federal Energy Regulatory Commission jurisdictional transmission projects.[27] Asset condition projects are a significant and growing

[27] Resolution of the National Association of Regulatory Utility Commissioners ("NARUC"), EC-3, "Resolution on Electric Consumers' Need for Effective Oversight of Costs for Replacing Aging or Obsolete Transmission Infrastructure," adopted at the 2025 Winter Policy Summit on February 26, 2025 ("NARUC Asset Condition Resolution"), https://pubs.naruc.org/pub/A37E3860-ECFF-DBA3-13A7-BA3B120910C2.

component of consumers' electricity bills. Regional investment in asset condition projects in the ISO-NE region increased eightfold from 2016-2023.[28] Thus, the Siting Board is aware of the need to review the Project and determine whether it would provide a reliable energy supply for the Commonwealth, with a minimum impact on the environment, at the lowest possible cost.

The Company stated that the entire Project would cost approximately $474.1 million, while the portion of the Project constructed in Massachusetts would cost approximately $414.7 million (in 2024 dollars) (Exh. EFSB-C-3(S2)).[29] The Company noted that the total Project cost allocation is approved by ISO-NE for regional recovery, though final costs and allocation will be based on the actual expenditures (Exhs. EFSB-C-3; EFSB-C-3(S3)(1)). The Company reported that certain required Project features increased costs relative to a routine single-circuit transmission line rebuild (A1 transmission line): taller towers (with large caisson and deep direct embed foundations) to allow for safe construction over existing power lines; additional labor, materials, and time associated with inclusion of a second circuit (B2 transmission line) in the scope of work; construction in areas requiring extensive and multiple layers of matting; construction of access roads in remote locations; and removal and disposal of all existing towers in the ROW from primarily remote locations (Exh. EFSB-C-3, at 1-2). As noted above in Section IV.C, the Siting Board did not find that any of the less expensive Project alternatives would adequately meet the energy needs in the Project area.

Regarding the two Project design alternatives (i.e., 69 kV and 115 kV), the Company stated that both alternatives would share the same number and location of structures, as well as construction techniques; therefore, differences in material costs associated with taller structures would drive most cost variability between the two (Exh. NG-2, at 39). Altogether, the Company noted that the material cost savings for the 69 kV alternative would be $5.02 million compared with the 115 kV alternative, or less than 1.5 percent of the Project cost (Exh. NG-2, at 39). The

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28 NARUC Asset Condition Resolution at 7. See https://pubs.naruc.org/pub/A37E3860-ECFF-DBA3-13A7-BA3B120910C2.

29 The Company stated that the expected accuracy of its Project cost estimates was +/-25 percent; the total cost was updated from the initial estimate of $347.3 million (Exh. EFSB-C-3(S2)).

Company stated that the small differential in cost would be a fraction of the cost of rebuilding the New Line as a 115 kV system in the future, if that were needed (Exh. NG-2, at 39). The Company stated that outside of projects assumed to be undertaken when needed in the future, switching from 69 kV to 115 kV operation would be limited to planning and crew time to operate the switch (Exh. EFSB-C-1). The Siting Board finds the rather minor additional costs of building the Project as a 115 kV capable line are a reasonable expenditure given the expectation of growing loads due to increasing development of clean DERs and electrification trends. The Siting Board directs the Company to submit to the Siting Board an updated and certified cost estimate for the Project prior to the commencement of construction. The Siting Board directs the Company to file semi-annual compliance reports with the Siting Board starting within 180 days of the commencement of construction, that include projected and actual construction costs and explanations for any discrepancies between projected costs, actual costs, and completion dates. Accordingly, the Siting Board finds that the Project would provide a reliable energy supply for the Commonwealth at the lowest possible cost.

E. Reliability

Both the 69 kV and 115 kV design alternatives would address the design issues associated with the Existing Lines' poor performance, thus increasing system reliability. The Company emphasized that the 115 kV alternative would provide greater reliability benefits (Exh. NG-2, at 38). In the short term, the Company reported that the increased insulation and phase spacing of the 115 kV alternative would further improve lightning performance, and the additional structure height would reduce the probability of off-ROW vegetation striking an energized conductor (Exh. NG-2, at 38). In the long term, the Company reported that the 115 kV alternative would eliminate the need for further transmission line upgrades if future planning studies determined that increased DER penetration and increased load growth required operation of the lines at 115 kV (Exh. NG-2, at 38). Finally, the Company stated that 115 kV operation would provide additional transfer capability and enable interconnection with nearby transmission facilities and networks currently operating at 115 kV (Exh. NG-2, at 38).

The Company reported that 115 kV operation would provide superior voltage regulation due to lower impedance on a per megavolt-ampere ("MVA") basis, helping avoid the need for additional transmission switching stations, capacitor banks, reactors, and dynamic voltage control devices to support new load or DER (Exh. NG-2, at 38). Therefore, the Siting Board finds that the Project would best meet the Siting Board's reliability objectives.

F. Conclusion on Analysis of Project Route

The Siting Board is charged with ensuring jurisdictional facilities approved for construction in the Commonwealth achieve an appropriate balance between environmental impacts, reliability, and cost. G.L. c. 164, §§ 69H, 69J. See GCEP at 206; Mid Cape Reliability at 87; Beverly-Salem at 108. Based on review of the record, the Siting Board finds that the Company provided sufficient information to allow the Siting Board to determine whether the Project has achieved a proper balance among cost, reliability, and environmental impacts.

The Siting Board finds that with the implementation of the specified conditions and mitigation presented above, and compliance with all applicable local, state, and federal requirements, the environmental impacts of the Project would be minimized. Therefore, the Siting Board finds that the Project, as proposed, would achieve an appropriate balance among environmental concerns as well as environmental impacts, reliability, and cost.

VII. CONSISTENCY WITH POLICIES OF THE COMMONWEALTH

A. Standard of Review

G.L. c. 164, § 69J requires the Siting Board to determine whether plans for construction of the applicant's new facilities are consistent with current health, environmental protection, and resource use and development policies as adopted by the Commonwealth. SouthCoast Wind at 166; GCEP at 206; Park City Wind at 158; Beverly-Salem at 109.

B. Position of the Company

The Company asserts that the Project not only satisfies the requirements of the § 69J standard, but is also fully consistent with other important state energy laws and policies, such as the Electric Utility Restructuring Act of 1997 (St. 1997, c. 164) (the "Restructuring Act"); the

Green Communities Act (St. 2008, c. 169); the Global Warming Solutions Act (St. 2008, c. 298) (the "GWSA"); the Energy Diversity Act (St. 2016, c. 188), the Clean Energy Act (St. 2018, c. 227); An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy (St. 2021, c. 8) (the "Roadmap Act"); and An Act Driving Clean Energy and Offshore Wind (St. 2022, c. 179) (the "2022 Clean Energy Act"). The Company also maintains that the Project complies with all laws and policies of the Commonwealth regarding EJ (Company Brief at 88-96; Exh. NG-2, at 102).

1. Health Policies

The Company asserts that construction and operation of the Project would be consistent with the Commonwealth's health policies (Company Brief at 89-90; Exh. NG-2, at 102).

Table 8: Company's Asserted Project Consistency with Key Health Policies.

Commonwealth Policy	Policy Description	Project Consistency Per Company
Restructuring Act	Noted that "electricity service is essential to the health and well-being of all residents of the Commonwealth" and that "reliable electric service is of utmost importance to the safety, health, and welfare of the Commonwealth's citizens and economy" (Exh. NG-2, at 102; Company Brief at 26, 89).	Projects that increase reliability in electric service to the community also play a role in contributing to the health of the Commonwealth's citizens. The Project will enhance the reliability of the electric transmission system in central Massachusetts by replacing the existing transmission lines, which are subject to frequent outages, with new higher-capacity lines, thus ensuring the availability of sufficient and reliable electric service to the citizens and businesses of the Commonwealth and the region promotes public health and safety (Exh. NG-2, at 102; Company Brief at 89-90).
Various Federal, State, Local Laws and Regulations; Industry Standards	Various laws and regulations established for protection of public health and safety (Exh. NG-2, at 102; Company Brief at 89).	Company will design, build, operate and maintain the facilities for the Project so that the health and safety of the public are protected by adherence to all applicable federal, state, and local regulations, and industry standards and guidelines established for protection of the public (Exh. NG-2, at 102; Company Brief at 90).
MEPA EIR (EJ Protocol)	Identification of any environmental or public health impact from the proposed project that would likely result in a disproportionate adverse effect on EJ populations (Exh. NG-2, at 108; Company Brief at 99).	Company conducted a "baseline assessment of any existing or unfair environmental burdens and related public health consequences." FEIR confirmed that there will be no disproportionate adverse effects, with regard to environmental and public health impacts on either EJ or non-EJ populations (Exh. NG-5, at 41; Company Brief at 99).

2. Environmental Protection

The Company asserts that the Project is consistent with the environmental protection policies as set forth in Chapter 164 and other state and local environmental policies (Company Brief at 89, citing Exh. NG-2, at 102-103).

Table 9: Company's Asserted Project Consistency with Key Environmental Protection Policies.

Commonwealth Policy	Policy Description	Project Consistency Per Company
Various Federal, State, Local Laws and Regulations	Various laws and regulations established for environmental protection (Company Brief at 90; Exh. NG-2, at 102-104).	By meeting the requirements for each required federal, state, and local permits, the Project will comply with applicable state and local environmental policies (Company Brief at 91; Exh. NG-2 at 102-103).
MEPA	• Requires consideration of reasonably foreseeable climate change impacts in GHG Emissions Policy and Protocol • EJ provisions in Roadmap Act (Company Brief at 96; Exh. NG-2, at 107).	Company received a Certificate of the Secretary of Energy and Environmental Affairs on the FEIR for the Project, finding that the Company's FEIR adequately and properly complies with MEPA and its implementing regulations (Company Brief at 91; RR-EFSB-2(1)). The Secretary's certificate on the FEIR confirmed no significant disproportionate adverse effects with regard to environmental burden to EJ populations (Company Brief at 99; Exh. NG-5, at 41).
GHG Reduction and Resiliency	• State Hazard Mitigation & Climate Adaptation Plan • Resilient MA Action Team Climate Resilience Design Standards for climate risk assessment • Net Zero by 2050 (Roadmap Act) (Company Brief at 92; Exh. NG-2, at 105).	Project will result in a more climate-ready and resilient transmission system. Project facilitates increased injections of renewable and other clean resources to achieve decarbonization (Company Brief at 92 – 96; Exh. NG-2, at 106).

3. Resource Use and Development Policies

The Project, which will contribute to the long-term maintenance and reliability of the electric transmission system in the Project area and the region, will be constructed and operated in compliance with Massachusetts's policies regarding resource use and development (Company Brief at 102-103; Exh. NG-2, at 108-109).

Table 10: Company's Asserted Project Consistency with Key Resource Use and Development Policies.

Commonwealth Policy	Policy Description	Project Consistency Per Company
EEA Smart Growth/Smart Energy Policy	Sustainable Development Principles including: • Support revitalization of city centers and neighborhoods • Encourage remediation and reuse of existing sites and infrastructure • Protect environmentally sensitive lands, natural resources, critical habitats, wetlands and water resources, and cultural and historic landscapes (Company Brief at 102-103' Exh. NG-2, at 109).	Project supports these principles because, among other reasons, the New Lines will support the reliability of service to central Massachusetts, thereby supporting its revitalization, and will not adversely affect environmentally sensitive lands because it will be predominantly located within previously disturbed parcels of land on existing ROWs (Company Brief at 102-103; Exh. NG-2, at 109).

C. Analysis and Findings

1. Consistency with Health Policies

The Restructuring Act noted the fundamental importance of reliable electric service to public health in declaring that "electricity service is essential to the health and well-being of all residents of the Commonwealth" and that "reliable electric service is of utmost importance to the safety, health, and welfare of the Commonwealth's citizens and economy." St. 1997, c. 164. Following this reasoning, a project that increases reliability in electric service should also be deemed to contribute to the health of the Commonwealth's residents. Mid Cape Reliability at 89; see also, Beverly-Salem at 109. In Section III.E above, the Siting Board found the Project would "ensure a reliable electric supply" for the Commonwealth. Therefore, the Siting Board concludes that the Project's reliability benefits would result in health benefits to Commonwealth residents. Accordingly, subject to the specified mitigation and conditions set forth in this Decision, the Siting Board finds that the Company's plans for construction of the Project are consistent with current health policies of the Commonwealth.

2. Consistency with Environmental Laws, Regulations, and Policies

a. The Global Warming Solutions Act and Other Emissions Reductions Policies

GWSA, enacted in August 2008, constitutes a comprehensive statutory framework to address climate change in Massachusetts. St. 2008, c. 298.[30] The GWSA requires the Commonwealth to reduce its GHG emissions by ten to 25 percent below 1990 levels by 2020, and by at least 80 percent below 1990 levels by 2050. G.L. c. 21N, §3(b). The requirements have been strengthened and expanded upon in the past few years. Furthermore, GWSA obligates administrative agencies to consider reasonably foreseeable climate change impacts and related effects when reviewing permit requests. G.L. c. 30, § 61.

On April 22, 2020, pursuant to the GWSA, the Secretary issued a "Determination of Statewide Emissions Limit for 2050" which established a "net zero" level of statewide GHG emissions. The Determination defined net zero as "[a] level of statewide greenhouse gas emissions that is equal in quantity to the amount of carbon dioxide or its equivalent that is removed from the atmosphere and stored annually by, or attributable to, the Commonwealth; provided, however, that in no event shall the level of emissions be greater than a level that is 85 percent below the 1990 level" (Determination at 1).

On December 30, 2020, Secretary issued the "Massachusetts 2050 Decarbonization Roadmap" ("2050 Roadmap"). The 2050 Roadmap provides the Commonwealth with near- and long-term strategies to achieve the goal of reaching net zero emissions by 2050. The importance of additional electric transmission infrastructure in achieving net zero GHG emissions in a cost-effective manner is one of the key findings of the 2050 Roadmap: "Additional transmission increases access to, and the ability to share, additional low-cost clean energy resources across the Northeast, lowering costs overall" (2050 Roadmap at 15). The 2050 Roadmap underscores the

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[30] G.L. c. 164, § 69J requires consistency with environmental protection policies of the Commonwealth but does not explicitly recognize energy policies. However, the Siting Board accomplishes its statutory mandate to ensure reliable energy supply with minimum impact on the environment at the lowest possible cost within the context of current energy policies of the Commonwealth. G.L. c. 164, § 69H; see also Mid Cape Reliability at 90, n.69; Andrew-Dewar at 100 n.96.

importance of maintaining and enhancing transmission capability in Massachusetts to provide cost-effective, reliable service, and facilitate development and use of both local and regional clean and renewable resources (2050 Roadmap at 59, 65). In addition, the 2050 Roadmap identifies a need for increasing electrification to achieve deep GHG emission reductions and envisions the widespread deployment of electric vehicles in place of gasoline and diesel engines, and of heat pump-based electrified heating and hot water systems in place of gas and oil furnaces, boilers, and water-heating equipment (2050 Roadmap at 35, 44).

The Roadmap Act updated the GHG emissions limits in the 2008 GWSA, codified Massachusetts' commitment to achieve Net Zero emissions in 2050 and authorizes the Secretary of EEA to establish a GHG limit based on an emissions reduction of at least 50 percent below 1990 levels for 2030, and at least 75 percent for 2040. G.L. c. 21N, § 4(h). Acting pursuant to the Roadmap Act, the Secretary issued the Clean Energy and Climate Plan for 2025 and 2030 ("2025-2030 CECP") on June 30, 2022. This document updated key strategies the Commonwealth will use to reach the statutorily required 50 percent reduction in GHG emissions below 1990 levels. By letter issued contemporaneously with the 2025-2030 CECP, the Secretary set the 2025 statewide GHG emissions limit at 33 percent below 1990 levels and 50 percent below 1990 levels by 2023 (2025-2030 CECP at 2). As noted in the 2025-2030 CECP, electricity demand in the Commonwealth is projected to increase significantly by 2050 due to the widespread electrification of building and transportation services. "Thus, the emissions intensity of electricity generation must continue to decrease even while total generation increases" (2025-2030 CECP at 62).

One theme that recurs in these statutes and policies is the importance of reliable electricity transmission. The 2050 Roadmap and the 2025-2030 CECP explicitly recognize reliable electric service. With respect to the other statutes and policies, the need for reliable transmission is implied. The Siting Board agrees with the Company that construction of the Project would strengthen and improve the reliability of the Company's transmission system, as we have found in Section III, supra. Furthermore, the Siting Board finds that a more robust system would be better able to accommodate future clean energy projects at a large scale that will be necessary to achieve the emission reduction goals established by GWSA, related statutes, and policies. The Siting Board also finds the Project would have beneficial impact on climate change by facilitating

emission reduction goals. Therefore, the Siting Board finds that the Project would be consistent with the environmental laws, regulations, and policies of the Commonwealth.

b. Consistency with Environmental Justice Policies

The MEPA Public Involvement Protocol for Environmental Justice Populations ("EJ Protocols") provide that "the Secretary will determine on a case-by-case basis the need for enhancing public involvement opportunities to meet the spirit of the Climate Roadmap Act." In the Certificate on the FEIR, discussed below, the Secretary states in detail the ways in which the Company has complied with the requirements of the EJ Protocols: namely, outreach, analysis, and the measuring of environmental benefits and burdens (Exh. NG-5; RR-EFSB-2(1)).

The EJ Policy requires enhanced public participation and enhanced analysis where the Project exceeds a mandatory environmental impact report ("EIR") threshold for air, solid and hazardous waste (other than remediation projects), or wastewater and sewage sludge treatment and disposal; and: (1) the Project would be located within one mile of an EJ population; or (2) the Project exceeds the mandatory EIR threshold for air and would be located within five miles of an EJ population (Exh. NG-2, at 107; Company Brief at 96). In the certificate issued on the FEIR, the Secretary found that the Project site is located within five EJ populations in four municipalities characterized by Income, Minority, and Minority and Income; and within an additional one mile of the Project there would be 13 EJ populations in five municipalities also characterized by Income, Minority, and Minority and Income (RR-EFSB-2(1) at 4). However, the Project does not exceed the MEPA thresholds for air, solid or hazardous waste (Exh. NG-2, at 106; Company Brief at 93).

The EJ Policy and the Roadmap Act both emphasize the importance of outreach to EJ populations. In cases that require enhanced public participation, the EJ Policy from 2021 calls for the "use of alternative media outlets such as community or ethnic newspapers…and [the] translation of materials or interpretation services prior to and during public meetings[.]" Similarly, the Roadmap Act requires the provision of "translation services" at public meetings. St. 2021 c. 8, § 60; G.L. c. 30, §60.[31] The Project did not require translation based on the EJ populations;

[31] This section of the Roadmap Act, St. 2021 c. 8 § 60, inserted a new section, section 62J, into General Laws, chapter 30.

however, the Company provided Project information and materials in both English and Spanish. In addition, pursuant to the Siting Board's Language Access Policy, the Siting Board also provided language access in Spanish.

The Roadmap Act includes in its definition of EJ principles, "the equitable distribution of energy and environmental benefits and environmental burdens." St. 2021 c. 8 § 56; G.L. c. 30, § 62. The Roadmap Act amended Section 62 of Chapter 30 to define environmental benefits as "the access to clean natural resources, including air, water resources, open space, constructed playgrounds and other outdoor recreational facilities and venues, clean renewable energy sources, environmental enforcement, training and funding disbursed or administered by the executive office of energy and environmental affairs." St. 2021, c. 8, § 56; G.L. c. 30, § 62.

The FEIR confirmed there would be no significant disproportionate adverse effects, environmental burdens and public health impacts, to EJ populations resulting from the Project. The record shows that the Project is proposed within existing ROWs resulting in minimized adverse environmental impacts to both EJ and non-EJ populations. The record also shows that Project would improve transmission system infrastructure and comply with comprehensive regional plans for maintaining electric transmission reliability in New England, for both EJ and non-EJ Populations. The Project would increase the reliability of electricity service to the nearby EJ populations; and reliability constitutes a significant health benefit. Mid Cape Reliability at 89; see also, Beverly-Salem at 109. In addition, the record also contains examples of the ways in which the Project would not result in adverse impacts to EJ populations. The Company would implement measures to avoid, minimize, and mitigate potential environmental impacts throughout the entire Project alignment, including where it crosses through or is within one mile of mapped EJ populations. As found above, permanent impacts to abutters and communities have been minimized and construction related impacts would be mitigated.

Therefore, the Siting Board finds that the Project is consistent with environmental policies, including environmental justice policies, of the Commonwealth.

3. Consistency with Resource Use and Development Policies

The Smart Growth & Energy Policy established the Commonwealth's Sustainable Development Principles. These principles include: (1) supporting the revitalization of city centers and neighborhoods by promoting development that is compact, conserves land, protects historic resources and integrates uses; (2) encouraging remediation and reuse of existing sites, structures and infrastructure rather than new construction in undeveloped areas; and (3) protecting environmentally sensitive lands, natural resources, critical habitats, wetlands and water resources, and cultural and historic landscapes. The Project would use previously disturbed land on existing ROWs, which would be consistent with the policy of reusing existing sites. The Siting Board finds that construction of the Project would be consistent with the resource use and development policies of the Commonwealth.

D. Conclusion

Subject to the specified mitigation and conditions set forth in this Decision, the Siting Board finds that the Company's plans for construction of the Project along the Existing Line ROW would be consistent with the current health, environmental protection, and resource use and development policies as adopted by the Commonwealth.

VIII. ANALYSIS UNDER G.L. C. 164, § 72

The 2024 Climate Act became effective February 18, 2025, and made a number of changes to the Siting Board's jurisdiction. St. 2024, c. 239. One of the changes was to transfer jurisdiction over transmission line siting under G.L. c. 164, § 72 ("Section 72") from the Department to the Siting Board, effective March 1, 2026. St. 2024, c. 239, §§ 75, 139. In addition, the 2024 Climate Act limited the applicability of Section 72 to eminent domain proceedings under G.L. c. 79. St. 2024, c. 239, § 75. Therefore, on March 1, 2026, transmission providers are no longer required to obtain approval to construct "a line for the transmission of electricity for distribution" pursuant to Section 72 other than for eminent domain approval. Id.

The Company's Petitions in this proceeding included a Section 72 Petition, filed May 1, 2023, before the enactment or effective date of the 2024 Climate Act, and the Act's changes to Section 72. The new regulations implementing the Consolidated Permit program apply to projects

filed on July 1, 2026, and after, and therefore do not apply to this Project. See 980 CMR 13.00. This Project consists of transmission lines over which the Siting Board has continued jurisdiction under G.L. c. 164, § 69J. The Siting Board retains the obligation under Sections 69H and 69J to ensure that this Project is needed, that it minimizes costs, and that it avoids, minimizes and mitigates environmental impacts, substantively fulfilling the scope of a Section 72 review. Given the change in the scope of Section 72 and the Siting Board's continued jurisdiction over the Project under G.L. c. 164, § 69J, the Siting Board concludes that it is not necessary to make findings under Section 72 for this Project. We note that this finding does not apply to any projects filed before the effective date of the 2024 Climate Act and were not also filed under G.L. c. 164, § 69J.

IX. SECTION 61 FINDINGS

The Company submitted an Expanded Environmental Notification Form ("EENF") on September 12, 2022 (Exh. NG-2, at 6). On October 31, 2022, the Secretary of EEA issued a Certificate on the EENF requiring the submittal of a Draft Environmental Impact Report ("DEIR") (Exh. NG-2, at 6). On October 31, 2023, the Company submitted a DEIR to the Secretary, and on January 16, 2024, the Secretary issued a Certificate on the DEIR (Exhs. NG-4; NG-6). On July 31, 2024, the Company submitted the FEIR to the Secretary (Exh. NG-5). On September 13, 2024, the Company received a Certificate of the Secretary FEIR for the Project, finding that the Company's FEIR adequately and properly complies with MEPA and its implementing regulations (RR-EFSB-2(1)).

MEPA provides that "[a]ny determination made by an agency of the Commonwealth shall include a finding describing the environmental impact, if any, of the Project and a finding that all feasible measures have been taken to avoid or minimize said impact" and shall consider reasonably foreseeable climate change impacts, including additional GHG emissions, and effects, such as predicted sea level rise ("Section 61 Findings"). G.L. c. 30, § 61. Pursuant to 301 CMR 11.01(4)(c), Section 61 Findings are necessary when an Environmental Impact Report is submitted to the Secretary; and Section 61 Findings should be based on such Environmental Impact Report. Where an Environmental Impact Report has not been required and the Secretary has not required additional review, Section 61 Findings are not necessary. 301 CMR 11.01(4).

The Siting Board generally is not required to make G.L. c. 30, § 61, findings in a G.L. c. 164, § 69J, proceeding, as actions by the Siting Board are exempt by statute from MEPA. G.L. c. 164, §69I. However, the Siting Board has in the past complied with MEPA with respect to reviewing Section 72 Petitions, where the Section 72 Petition was filed under statutory provisions implemented by the Department, because the Department is not exempt from MEPA. The Siting Board notes that Section 72 is now under the jurisdiction of the Siting Board, and not the Department. Because the Siting Board's review in this proceeding is pursuant to G.L. c. 164, § 69J, not pursuant to Section 72, the Siting Board is not required to make Section 61 Findings in this proceeding.

X. DECISION

The Siting Board's enabling statute directs the Siting Board to implement the energy policies contained in G.L. c. 164, §§ 69H to 69Q, to provide a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G.L. c. 164, § 69H. An applicant must obtain Siting Board approval under G.L. c. 164, § 69J, prior to construction of a proposed energy facility.

In Section III, above, the Siting Board finds that the replacement of the Existing Lines with new 115 kV capable steel monopole structures and conductors is needed to maintain a reliable supply of electricity.

In Section IV, above, the Siting Board finds that the 115 kV capable line solution is appropriate, and the record shows no alternative means is capable of solving the need or would be superior to the proposed Project.

In Section V, above, the Siting Board finds that the Company has demonstrated that it examined a reasonable range of practical siting alternatives and that its proposed facilities are sited in locations that minimize cost and environmental impacts while ensuring a reliable electric supply.

In Section VI, above, the Siting Board finds that the Project, as designed, will provide a reliable energy supply for the Commonwealth, with a minimum impact on the environment, at the lowest possible cost.

In Section VII, above, the Siting Board finds that the Company's plans for construction of the Project are consistent with the current health, environmental protection, and resource use and development policies as adopted by the Commonwealth.

Accordingly, the Siting Board APPROVES pursuant to G.L. c. 164, § 69J, the Company's Petition to construct the Project, as described herein, subject to the following Conditions A through O.

A. The Siting Board directs the Company to comply with all applicable federal, state, and local laws, regulations, and ordinances from which the Company has not received an exemption. The Company shall be responsible for ensuring such compliance by its contractors, subcontractors, or other agents.

B. The Siting Board directs the Company, within 90 days of Project completion, to submit a report to the Siting Board documenting compliance with all conditions contained in this Decision, noting any outstanding conditions yet to be satisfied and the expected date and status of compliance.

C. The Siting Board directs the Company to ensure that its Construction Community Outreach Plan establishes clear protocols for the receipt, documentation, investigation, and resolution of complaints. The Plan shall specify mechanisms for timely communication with affected community members and require the Company to respond promptly and effectively to reports of inappropriate conduct, safety concerns, or other violations occurring at construction worksites, within and adjacent to Project ROWs, and on neighboring properties. The Company shall also ensure that corrective actions are taken as necessary to address and prevent recurrence of such incidents.

D. The Siting Board directs the Company to seek to minimize tree-clearing through selective pruning and selective cutting to maximize the ongoing carbon sequestration by the forest.

E. The Siting Board directs the Company to consult with each affected municipality to determine if additional work hour limitations may be desirable and mutually acceptable.

F. The Siting Board directs that the Company comply with its commitment to: (a) obtain necessary MassDOT permits for access to state roads and coordinate with MassDOT to develop TMPs for work within state highway ROWs; (b) consult with railroad operators to establish protocols for stringing operations at railroad locations; (c) coordinate traffic management with local authorities for work on local streets and roads; (d) provide advance notice of use of off-ROW access to affected landowners; and (e) work on a case-by-case basis with landowners who express concerns.

G. The Siting Board directs the Company to implement mitigation, including coordinating with abutters on reasonable screening measures and development of mutually agreeable solutions with landowners.

H. The Siting Board directs the Company to identify hazardous materials proactively, implement corresponding safeguards, employ proper waste disposal methods, and use of physical barriers where necessary.

I. The Siting Board directs the Company to limit the Project's construction work hours to 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturdays. Normal construction work hours shall not include Sundays or state or federal holidays. Should the Company need to extend construction work hours beyond the above-noted hours and days, with the exception of emergency circumstances necessitating extended hours, the Company shall seek written permission from the relevant municipal authority (or authorities) before commencement of such work and provide the Siting Board with a copy of said permission. If the Company and municipal officials cannot agree on whether such extended construction hours should occur, the Company may request prior authorization from the Siting Board and shall provide the associated municipality (or municipalities) with a copy of any such request. Work requiring a longer continuous duration than normal construction work hours shall be exempt from those hours. The Company shall promptly inform the Siting Board and relevant municipal authority (or authorities) of any emergency work occurring outside of normal construction work hours.

J. The Siting Board directs that if the Company determines, per consultation with its construction vendor(s), that helicopter use is required, the Company shall notify any residence situated within 300 feet of the ROW boundary and adjacent to the proposed helicopter location(s) at least seven days prior to commencement.

K. The Siting Board directs the Company to engage a licensed site professional to identify and ensure that all construction activities comply with any restrictions in activities and use limitations associated with the release tracking number.

L. The Siting Board directs the Company to fulfill its carbon-related mitigation commitments with DCR and MassAudubon, as described in the record, and to submit a filing with the Siting Board within 90 days of Project completion documenting its compliance.

M. The Siting Board directs the Company to submit to the Siting Board an updated and certified cost estimate for the Project prior to the commencement of construction.

N. The Siting Board directs the Company to file semi-annual compliance reports with the Siting Board starting within 180 days of the commencement of construction,

that include projected and actual construction costs, and explanations for any discrepancies between projected costs, actual costs, and completion dates.

O. The Siting Board directs the Company to promptly coordinate with the MassDEP Waterways Program to determine the need for a Chapter 91 license(s) and to promptly apply for any required license(s), if needed.

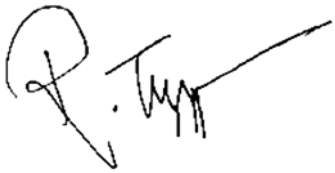
Because issues addressed in this Decision relative to this facility are subject to change over time, construction of the proposed facility must be commenced within three years of the date of the decision.

In addition, the Siting Board notes that the findings in this decision are based upon the record in this case. A project proponent has an absolute obligation to construct and operate its facility in conformance with all aspects of its proposal as presented to the Siting Board. Therefore, the Siting Board requires the Company, or its successors in interest, to notify the Siting Board of any changes other than minor variations to the proposal so that the Siting Board may decide whether to inquire further into a particular issue. The Company or its successors in interest are obligated to provide the Siting Board with sufficient information on changes to the proposed project to enable the Siting Board to make these determinations.

Connor C. Tarr
Presiding Officer

Dated this 4th day of June 2026

APPROVED by an unanimous vote of the Energy Facilities Siting Board at its meeting on June 2, 2026, by the members present and voting. Voting for the Final Decision as amended: Rebecca L. Tepper, Secretary of Energy and Environmental Affairs and Chair, Energy Facilities Siting Board; Jeremy McDiarmid, Chair, Department of Public Utilities; Elizabeth Mahony, Commissioner, Department of Energy Resources; Bonnie Heiple, Commissioner, Department of Environmental Protection; Patrick Field, Undersecretary and designee for Eric Paley, Secretary, Executive Office of Economic Development; Thomas O'Shea , Commissioner, Department of Fish and Game; and Meg Blanchet, Toxicology Program Director, and designee for Dr. Robert Goldstein, Commissioner, Department of Public Health.



Rebecca L. Tepper, Secretary of Energy and Environmental Affairs and Chair of the Siting Board

Dated this 4th day of June 2026

Appeal as to matters of law from any final decision, order or ruling of the Siting Board may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the order of the Siting Board be modified or set aside in whole or in part. Such petition for appeal shall be filed with the Siting Board within twenty days after the date of service of the decision, order or ruling of the Siting Board, or within such further time as the Siting Board may allow upon request filed prior to the expiration of the twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the clerk of said court. G.L. Chapter 25, Sec. 5; G.L. Chapter 164, Sec. 69P.