COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of NSTAR Electric Company d/b/a Eversource Energy for Approval to Construct a New 115 kV Transmission Line in the City of Boston, Massachusetts, Pursuant to G.L. c. 164, § 69J	EFSB 19-03
Petition of NSTAR Electric Company d/b/a Eversource Energy for Approval to Construct and Use a New 115 kV Transmission Line in the City of Boston, Massachusetts, Pursuant to G.L. c. 164, § 72	D.P.U. 19-15

FINAL DECISION

On the Decision:

Dean Hazle
Enid Kumin
John Young

Donna C. Sharkey
Presiding Officer
July 2, 2021

APPEARANCES:

Catherine J. Keuthen, Esq.
Cheryl A. Blaine, Esq.
Keegan Werlin LLP
99 High Street, Suite 2900
Boston, MA 02210

FOR: NSTAR Electric Company d/b/a
Eversource Energy
Petitioner

Patricia McCormack
160 Savin Hill Avenue
Dorchester, MA 02125
FOR: PRO SE
Intervenor

William P. Brennan
44 Springdale Street
Dorchester, MA 02125
FOR: PRO SE
Intervenor

TABLE OF CONTENTS

ABBREVIATIONS

2017 EJ Policy	EEA's 2017 Environmental Justice Policy
2020 CECP	2020 Clean Energy and Climate Plan
2050 Roadmap	Massachusetts 2050 Decarbonization Roadmap
AUL	activity and use limitation
BES	bulk electric system
BESS	battery energy storage system
BHA	Boston Housing Authority
BMP	best management practices
Board	Massachusetts Energy Facilities Siting Board
BPDA	Boston Planning and Development Agency
BPS	bulk power system
BWSC	Boston Water and Sewer Commission
Candidate Routes	Potential routes identified for further study under the Company's route selection process
CLL	consequential load loss
Company	NSTAR Electric Company d/b/a Eversource Energy
dBA	A-weighted decibels
DCR	Massachusetts Department of Conservation and Recreation
Department	Massachusetts Department of Public Utilities
Determination	Determination of Statewide Emissions Limit for 2050, pursuant to the Global Warming Solutions Act
DOMSB	Decisions and Orders of Massachusetts Energy Facilities Siting Board

ABBREVIATIONS

East Eagle	NSTAR Electric Company d/b/a Eversource Energy, EFSB 14-04/D.P.U. 14-153/14-154 (2017)
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
EFSB	Energy Facilities Siting Board
EIR	Environmental Impact Report
ENF	Environmental Notification Form
Eversource	NSTAR Electric Company d/b/a Eversource Energy
FHWA	Federal Highway Administration
GHG	greenhouse gas
Golden Rock	New England Power Company d/b/a National Grid, D.P.U. 19-16 (2020)
GWSA	Global Warming Solutions Act
ISO-NE	Independent System Operator-New England
kV	kilovolts
Lower SEMA	NSTAR Electric Company, EFSB 10-2/D.P.U. 10-131/10-132 (2012)
LSP	Licensed Site Professional
Martha's Vineyard	NSTAR Electric Company d/b/a Eversource Energy, D.P.U. 18-155 (2020)
MassDEP	Massachusetts Department of Environmental Protection
MBTA	Massachusetts Bay Transportation Authority
MCP	Massachusetts Contingency Plan
MACRIS	Massachusetts Cultural Resources Inventory System
MEPA	Massachusetts Environmental Policy Act

ABBREVIATIONS

mG	milligauss
MHC	Massachusetts Historical Commission
McCormack Housing Community	Mary Ellen McCormack Housing Community
McCormack Redevelopment	proposed redevelopment of the Boston Housing Authority's Mary Ellen McCormack property
MOU	memorandum of understanding
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways
MVA	megavolt-amperes
MW	megawatts
National Register	National Register of Historic Places
Needham-West Roxbury	NSTAR Electric Company d/b/a Eversource Energy, EFSB 16-02/D.P.U. 16-77 (2018)
New Line	proposed new 115 kV transmission line between the Andrew Square and Dewar Street Substations
NERC	North American Electric Reliability Corporation
NHESP	Natural Heritage & Endangered Species Program
Notice	Notice of Adjudication and Public Comment Hearing
Noticed Alternative Route	Eversource's alternative route for the New Line between the Andrew Square and Dewar Street Substations
NPCC	Northeast Power Coordinating Council
NTA	non-transmission alternative
Petitions	Eversource's Petition to Construct pursuant to G.L. c. 164 § 69J, and Petition to Construct and Use pursuant to G.L. c. 164, § 72
Petition to Construct	Eversource Petition to Construct pursuant to G.L. c. 164 § 69J

ABBREVIATIONS

Primary Route	Eversource's preferred route for the New Line between the Andrew Square and Dewar Street Substations
Project Area	The area served by the Andrew Square Substation and the Dewar Street Substation (i.e., portions of the South Boston, Roxbury, and Dorchester neighborhoods of Boston)
Project	proposed new 115 kV transmission line between the Andrew Square and Dewar Street Substations and associated substation facilities
PTF	pool transmission facilities
Public Comment Hearing Notice	Notice of Public Comment Hearing/Notice of Adjudication
PV	solar photovoltaic
PVC	polyvinyl chloride
Restructuring Act	Electric Utility Restructuring Act of 1997 (St. 1997, c. 164)
ROW	right-of-way
Salem Cables	New England Power Company d/b/a National Grid, 20 DOMSB 129; EFSB 13-2/D.P.U. 13-151/13-152 (2014)
Section 61 Findings	findings pursuant to G.L. c. 30, § 61
Section 72 Petition	Eversource Petition to Construct and Use pursuant to G.L. c. 164, § 72
SF_6	sulfur hexafluoride
Siting Board	Massachusetts Energy Facilities Siting Board
South Boston Reliability Project	NSTAR Electric Company, D.P.U. 13-86 (2014)
Substations	Andrew Square Substation and Dewar Street Substation
Study Area	geographic study area to encompass all feasible routes for a new underground transmission cable between the Company's existing Andrew Square and Dewar Street Substations

ABBREVIATIONS

Sudbury-Hudson	NSTAR Electric Company d/b/a Eversource Energy, EFSB 17-02/D.P.U. 17-82/17-83 (2019)
SYS PLAN-015	Eversource's "Consequential Load Loss Guideline, SYS PLAN-015" dated April 1, 2018
SWPPP	stormwater pollution prevention plan
TMP	Traffic Management Plan
ULSD	ultra-low sulfur diesel
URAM	Utility-Related Abatement Measure (310 CMR 40.0460)
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VARs	Volt-amperes, reactive
Vineyard Wind	Vineyard Wind LLC, EFSB 17-05/D.P.U. 18-18/18-19 (2019)
WHO	World Health Organization
Woburn-Wakefield	NSTAR Electric Company d/b/a Eversource Energy and New England Power Company d/b/a National Grid, EFSB 15-04/D.P.U. 15-140/15-141 (2018)
XLPE	cross-linked polyethylene (cable)

SUMMARY OF THE FINAL DECISION

The Final Decision approves with conditions the Project submitted by Eversource for a new approximately two-mile-long 115 kV underground transmission line ("New Line") between the Company's Andrew Square Substation in South Boston and the Dewar Street Substation in Dorchester ("Substations"), along with substation modifications required to connect the New Line (collectively the "Project"). The Final Decision finds that the Project would on balance contribute to a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. The Final Decision requires that Eversource implement certain measures to minimize potential Project construction and operation impacts on residents and the environment in neighborhoods along the Project route.

The Siting Board evaluated the need for the Project by examining Eversource's reliability planning criteria and the ability of the system to operate reliably in the event of certain contingencies. Each Substation is served by a pair of radial, pipe-type cables buried beneath public roadways which are relatively vulnerable to third party damage. The loss of either pair of cables could result in disruption of service for up to 58,000 customers. The Final Decision finds that, given the complexity of repairing underground cables and the potential for a prolonged outage, additional energy resources are needed to maintain reliable electric service in this area. The New Line would provide a third transmission supply to the Substations and resolve the need for additional energy resources in the event of certain contingencies.

The Siting Board considered alternatives to the Project, including energy efficiency, energy storage, solar photovoltaics, conventional generation, distribution improvements, and another transmission approach; the Final Decision finds that the Project is superior in meeting the identified need with minimum impact on the environment at the lowest cost. The Siting Board also reviewed a range of siting alternatives to ensure that a superior route was not overlooked. Using a screening, scoring, and ranking process that considered several potential candidate routes, Eversource identified two routes for the New Line, the Morrissey Boulevard Route ("Primary Route") and the Sydney Street Route ("Noticed Alternative Route") for further analysis.

The Siting Board compared the two routes on the basis of environmental impacts, cost, and reliability and finds that the Primary Route is superior in providing a reliable energy supply with a minimum impact on the environment at the lowest possible cost. While both routes would be installed within public roadways, the Primary Route would have lower traffic and land use impacts relative to the Noticed Alternative Route. Construction of the Primary Route, but not the Noticed Alternative Route, could be coordinated with the planned redevelopment of the Mary Ellen McCormack Housing Community ("McCormack Housing Community") and the reconstruction of Morrissey Boulevard; the Final Decision finds that such coordination could reduce the net impacts of the Project. The Project along the Primary Route has an estimated cost of $68.3 million, approximately $1.3 million less than that of the Noticed Alternative Route. The Final Decision finds the Primary Route superior to the Noticed Alternative Route from a reliability perspective because the Primary Route would place the New Line in different location from existing in-street transmission cables.

Pursuant to G.L. c. 164, § 69J, the Massachusetts Energy Facilities Siting Board ("Siting Board" or "Board") hereby approves, subject to the conditions set forth below, the Petition of NSTAR Electric Company d/b/a Eversource Energy ("Company" or "Eversource") to construct ("Petition to Construct") a new approximately two-mile, underground 115 kilovolt ("kV") transmission line between two existing Eversource substations, the Andrew Square Substation located in South Boston and the Dewar Street Substation located in Dorchester, including related modifications at the Andrew Square and Dewar Street Substations. Pursuant to G.L. c. 164, § 72, the Siting Board hereby approves, subject to the conditions set forth below, the Petition of Eversource ("Section 72 Petition") for a determination that the proposed new 115 kV transmission line is necessary, serves the public convenience, and is consistent with the public interest (together, the "Petitions").

I. INTRODUCTION

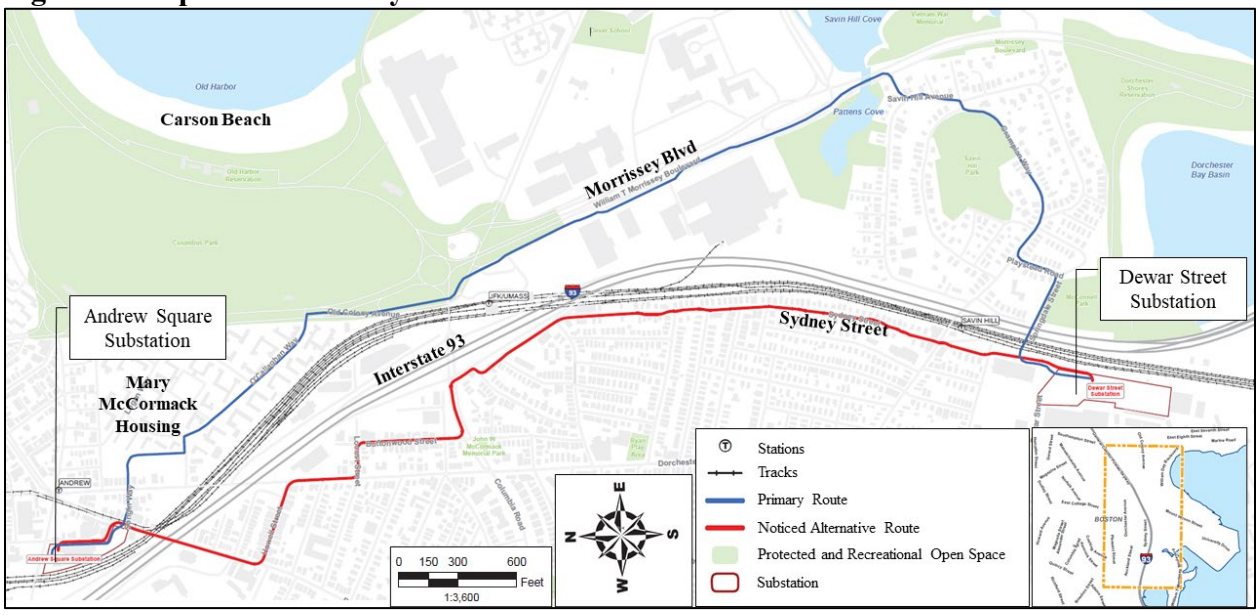
A. Description of the Proposed Project

Eversource proposes to construct a new approximately two-mile-long 115 kV solid dielectric underground transmission line between the Company's Andrew Square Substation in South Boston, Massachusetts, and the Dewar Street Substation in Dorchester, Massachusetts (the "New Line") (Exh. EV-2, at 1-1). To connect the New Line, Eversource would install switchgear and modify existing control houses at both the Andrew Square and the Dewar Street Substations (together, the "Project") (Exh. EV-2, at 3-4, 5-3, 5-6 to 5-7).

The Andrew Square and Dewar Street Substations (together, "Substations") serve portions of the South Boston, Roxbury, and Dorchester neighborhoods of Boston ("Project Area") (Exhs. EV-2, at 1-1; EFSB-N-1). The Substations are each served by two radial transmission lines originating from the Company's K Street Substation in South Boston (Exh. EV-2, at 2-2, fig. 2-2). The New Line would provide a new connection between the Substations, thus offering a third transmission line to reach either substation from the K Street Substation, which is the main source of power for the Project Area (Exh. EV-2, at 1-2 to 1-3). According to the Company, the Project is needed to serve load in the Project Area under certain contingency conditions involving the loss of two transmission elements (Exh. EV-2, at 2-7).

Eversource provided public notice of its preferred route ("Primary Route") and an alternative route ("Noticed Alternative Route"), which are both mapped on Figure 1, below (Exh. EV-2, at fig. 4-7). Both routes would run within public roadways in South Boston and Dorchester (Exh. EV-2, at 1-4). The Company's estimate for the cost of the Project is $68.3 million, -25%/+25% (Exhs. EV-2, at 1-5; EFSB-C-6).

Figure 1. Map of the Primary Route and Noticed Alternative Route



Adapted from Exh. EV-2, at fig. 4-3

B. Procedural History

On March 1, 2019, Eversource filed the Petition to Construct, docketed as EFSB 19-03, pursuant to G.L. c. 164, § 69J, and the Section 72 Petition, docketed as D.P.U. 19-15, pursuant to G.L. c. 164, § 72.[1] On April 25, 2019, the Department of Public Utilities ("Department") issued an order to consolidate the Petitions filed by the Company and refer the Petitions for review and decision by the Siting Board. The Siting Board docketed the consolidated proceeding as EFSB 19-03/D.P.U. 19-15. The Siting Board accordingly conducted a single adjudicatory proceeding and developed a single evidentiary record with respect to the Petitions.

[1] See Petition to Construct, Exhibit EV-1, and Appendices, identified as Exhibit EV-2; see also Exh. EV-3 (the Section 72 Petition).

On May 23, 2019, the Siting Board issued a Notice of Adjudication and Public Comment Hearing ("Notice") directing Eversource to provide the Notice in English, Spanish, Chinese, and Vietnamese to: (1) the owners of property (as those owners appear on the most recent applicable certified tax list) directly abutting, directly opposite on any public or private street or way, and within 300 feet of the edge of the right-of-way ("ROW") for areas including the Substations and the proposed ROW for the Primary Route and Noticed Alternative Routes. In addition, the Siting Board required the Company to provide the Notices to all U.S. Mail addresses within the same locations. The Siting Board directed the Company to publish the Notice in the Boston Globe in English, El Mundo in Spanish, the World Journal in Chinese, and Thang Long in Vietnamese at least twice prior to the scheduled public comment hearing to afford residents an opportunity to receive notice of the public comment hearing and the Company's filings.[2,3] Finally, the Siting Board directed the Company to provide copies of the Notices and copies of the Petitions at the South Boston Branch and the Uphams Corner Branch of the Boston Public Library and file copies of the Notices to the City of Boston City Clerk, the Boston Planning and Development Agency, and to the Boston City Council, and place the Notice on the Company's website. The Notice included a deadline for filings for petitions to participate as an intervenor or limited participant of July 11, 2019.

Consistent with the Notice, the Siting Board conducted a public comment hearing to

---

[2] The Siting Board required translation of the Notice, publication in English and non-English newspapers, and the availability of simultaneous interpreters for the public comment hearing given a linguistic analysis of the Project area, consistent with the Commonwealth's Language Access Policy. See Language Access Policy and Implementation Guidelines, Office of Access and Opportunity, A&F Administrative Bulletin #16, issued March 2015. https://www.mass.gov/administrative-bulletin/language-access-policy-and-guidelines-af-16

[3] Eversource acknowledged that the Project passes through neighborhoods which qualify as Environmental Justice populations, as defined by the Executive Office of Energy and Environmental Affairs' ("EEA") 2017 Environmental Justice Policy ("2017 EJ Policy") (Exh. EV-2, at 6-2 to 6-3; RR-EFSB-39; Company Brief at 90-91). However, the Company reported that the Project's environmental impacts fall below the MEPA impact thresholds referenced in the 2017 EJ Policy that would otherwise require either enhanced public participation or enhanced analysis of impacts and mitigation under the 2017 EJ Policy (RR-EFSB-39).

receive comment on the proposed Project on Wednesday, June 26, 2019, at Boston College High School in Dorchester. At the public comment hearing, the Siting Board heard comments from Annissa Essaibi-George, a Boston city councilor and Dorchester resident, and several other residents in the Project area. Residents who spoke at the public comment hearing raised concerns regarding traffic impacts, routing concerns due to narrow and congested streets, alternative route options, and potential length and timing of construction of the Project.

On September 3, 2019, the Presiding Officer issued a ruling granting intervenor status to Mary McCormack and Bill Brennan, both residents at locations abutting the route(s) of the Project (collectively, the "Intervenors"). The Company did not oppose the Petitions to Intervene. No other persons sought intervention or limited participant status.

The Siting Board issued two sets of discovery to the Company. The Siting Board conducted five days of evidentiary hearings in December 2019. The Company presented the testimony of eleven witnesses including: (1) Jamil Abdullah, lead engineer for transmission, Eversource; (2) Nicole Bowden, project outreach specialist, Eversource; (3) John Zicko, director of substation design engineering, Eversource; (4) Tracy Adamski, vice president, Tighe & Bond; (5) Nathan Dennis, project manager, EN Engineering; (6) Erin Engstrom, senior community relations specialist, Eversource; (7) Theresa Feuersanger, supervisor of rights and survey, Eversource; (8) Michael Zylich, senior environmental engineer, Eversource; (9) Robert Andrew, director of system solutions, Eversource; (10) John McLaughlin, senior planning engineer, Eversource; and (11) Christopher Soderman, acting director of transmission line engineering. The record in this matter consists of over 375 exhibits. The Intervenors did not submit written direct testimony, cross-examine witnesses, or submit briefs. The Company's Brief filed on February 14, 2020, is the sole brief submitted as part of the record in this proceeding.

On March 10, 2020, Governor Baker issued a state of emergency related to COVID-19 for the entire Commonwealth. On April 15, 2020, the Presiding Officer provided the service list with guidance from the Director of the Siting Board and the Department of Public Utilities regarding the use of electronic and paper filings in this docket during the state of emergency. In addition, the Siting Board and the Department of Public Utilities continued to hold necessary evidentiary hearings and Board meetings on a remote basis.

Siting Board staff prepared a Tentative Decision and distributed it to the Siting Board

members and all parties for review and comment on June 17, 2021. The parties were given until June 25, 2021 to file written comments; the Siting Board received timely written comments from Eversource and Mr. Brennan. The public was given until June 29, 2021 to file written comments.

The Siting Board scheduled a remote Board meeting using Zoom videoconferencing for June 30, 2021, to receive comments, deliberate, and vote on the Tentative Decision.[4] The Siting Board issued a Notice of Siting Board Meeting, provided an opportunity to submit written comments regarding the Project, and distributed the Tentative Decision in English, Spanish, Vietnamese, and Chinese. The Board directed the Company to provide Notice by the following means: (1) translate the Notice into Spanish, Vietnamese, and Chinese; (2) publish the Notice in English, Spanish, Vietnamese, and Chinese language local newspapers; (3) provide a copy of the Notice in all four languages to all persons on the service list; (4) provide a copy of the Notice in all four languages to all owners of property and all U.S. Mail addresses within 300 feet of the Andrew Square Substation and Dewar Street Substation, and the proposed right-of-way for the Primary Route and Noticed Alternative Route, and (5) post a copy of the Notice on the Company's website.

The Board conducted a remote public meeting to consider the Tentative Decision on June 30, 2021. After deliberation, the Board directed staff to prepare a Final Decision approving the Petitions, subject to conditions, as set forth below.

---

[4] Pursuant to Massachusetts Open Meeting Law, G.L. c. 30A, §§18-25, 980 CMR 2.04(1), Governor Baker's March 10, 2020 Declaration of Emergency, and the related March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law, the Siting Board's Notice announced that it would conduct the Siting Board meeting remotely using Zoom videoconferencing, and would provide simultaneous interpretation in Spanish, Vietnamese, and Chinese. On June 16, 2021, Governor Baker signed into law An Act Extending Certain COVID-19 Measures Adopted During the State of Emergency. St. 2021, c. 20. This Act includes an extension, until April 1, 2022, of the remote meeting provisions of the Governor's March 12, 2020, Executive Order Suspending Certain Provisions of the Open Meeting Law. The June 30, 2021 Siting Board meeting was conducted remotely consistent with St. 2021, c. 20.

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

G.L. c. 164, § 69J 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 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. 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 kilovolts 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 kilovolts or more and which is one mile or more in length on a new transmission corridor." A Section 69G transmission facility also includes "an ancillary structure which is an integral part of the operation of any transmission line which is a facility." The proposed 115 kV New Line would be approximately two miles long installed in a new transmission corridor; therefore, the Project is a "facility" that is subject to Siting Board review pursuant to Section 69J.

The Siting Board requires that an applicant demonstrate that its proposal meets the following requirements: (1) that additional energy resources are needed (see Section III, below); (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, below); (3) that 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 below); (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, below); 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, below).

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. NSTAR Electric Company d/b/a Eversource Energy, EFSB 17-02/D.P.U. 17-82/17-83, at 15-16 (2019) ("Sudbury-Hudson"); NSTAR Electric Company d/b/a Eversource Energy, EFSB 16-02/D.P.U. 16-77, at 8-9 (2018) ("Needham-West Roxbury"); NSTAR Electric Company d/b/a Eversource Energy and New England Power Company d/b/a National Grid, EFSB 15-04/D.P.U. 15-140/15-141, at 9-10 (2018) ("Woburn-Wakefield").

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. Sudbury-Hudson at 15; Needham-West Roxbury at 8-9; Woburn-Wakefield at 8-9.

When a petitioner's assessment of system reliability and facility requirements is, in whole or in part, driven by load projections, the Siting Board reviews the underlying load forecast. The Siting Board requires that forecasts be based on substantially accurate historical information and reasonable statistical projection methods that include an adequate consideration of conservation and load management. See G.L. c. 164, § 69J. To ensure that this standard has been met, the Siting Board requires that forecasts be reviewable, appropriate, and reliable. A forecast is reviewable if it contains enough information to allow a full understanding of the forecast method. A forecast is appropriate if the method used to produce the forecast is technically suitable to the size and nature of the company to which it applies. A forecast is

considered reliable if its data, assumptions, and judgments provide a measure of confidence in what is most likely to occur. Needham-West Roxbury at 8-9; Woburn-Wakefield at 10; Mystic-East Eagle-Chelsea Reliability Project, EFSB 14-04/D.P.U. 14-153/14-154, at 9 (2017) ("East Eagle").

B. Description of Existing System

The Company explained that the Substations are each supplied by two 115 kV radial transmission lines that originate at its K Street Substation, located in South Boston (Exh. EV-2, at 1-2). The Andrew Square Substation is served by Lines 106-526 and 106-527; the Dewar Street Substation is served by Lines 483-524 and 483-525 (Exh. EV-2, at 2-2). Eversource stated that the existing lines are high-pressure, fluid-filled, pipe-type cables,[5] buried under public roadways (Tr. 1, at 22-23, 27). Eversource stated that the Substations are the sole transmission source serving the Project Area load (Exh. EFSB-N-1).[6]

The Andrew Square Substation supplies over 34,000 customers (Exh. EV-2, at 2-2). It has four 115/14 kV transformers with a total capacity of 178 megavolt-amperes ("MVA") and a firm capacity of 133.5 MVA (Exh. EV-2, at 2-2).[7] The Dewar Square Substation supplies over 58,000 customers and has two 115/14 kV transformers with a total capacity of 280 MVA and a firm capacity of 150 MVA (Exh. EV-2, at 2-3).[8] Figure 2, below, depicts the approximate areas

---

5 The Company explained that a pipe-type cable consists of a steel pipe containing the conductors and pressurized oil for insulation (Tr. 1, at 23).

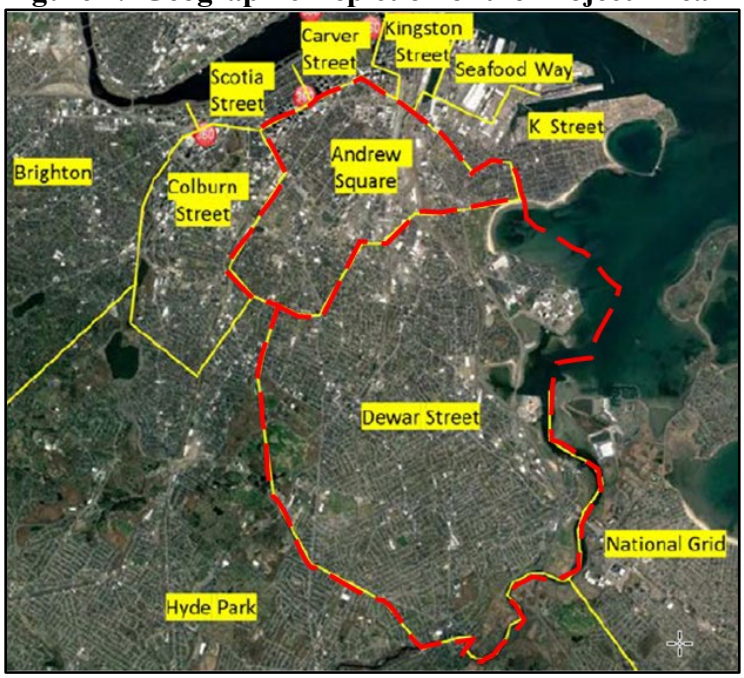
6 The Company identified the following substations that supply other parts of South Boston, Roxbury, and Dorchester, but do not directly supply the Project Area load: K Street Substation, Seafood Way Substation, Baker Street Substation, and Colburn Street Substation (Exh. EFSB-N-1).

7 MVA is a measure that includes MWs and volt-amperes, reactive ("VARs"). When VARs are in an appropriate range, an MVA measurement is just slightly higher than an MW measurement. NSTAR Electric Company, EFSB 10-2/D.P.U. 10-131/10-132, at 7, n. 6 (2012) ("Lower SEMA").

8 The "firm capacity" of the substation is calculated based on loss of one transformer (Exh. EV-2, at 2-2). The Company noted that the Andrew Square Substation

served by the Substations, as well as neighboring substations in Boston and National Grid's service territory in Quincy.

Figure 2. Geographic Depiction of the Project Area



Source: Adapted from Exh. EV-2, at fig. 2-1

The Company stated that, in addition to serving a densely populated urban area, the Substations serve a number of critical customers including a dozen medical facilities and hospitals; government agencies and departments including the Suffolk County House of Corrections and the Boston Police Department headquarters; schools, including UMass Boston and Roxbury Community College; large commercial customers such as South Bay Mall; high-rise buildings with elevators; and institutions such as the JFK Library and the Franklin Park Zoo (Exhs. EV-2, at 1-2; EFSB-N-19).

In 2014 the Department issued an order approving the NSTAR Electric Company's petition for the South Boston Reliability Project, which resulted in the present configuration of the cables serving the Substations. NSTAR Electric Company, D.P.U. 13-86 (2014) ("South Boston Reliability Project"). Specifically, the South Boston Reliability Project consisted of the

---

transformers do not have overload capability (i.e., the long-time emergency capacity and the normal capacity are the same) (Exh. EV-2, at 2-2).

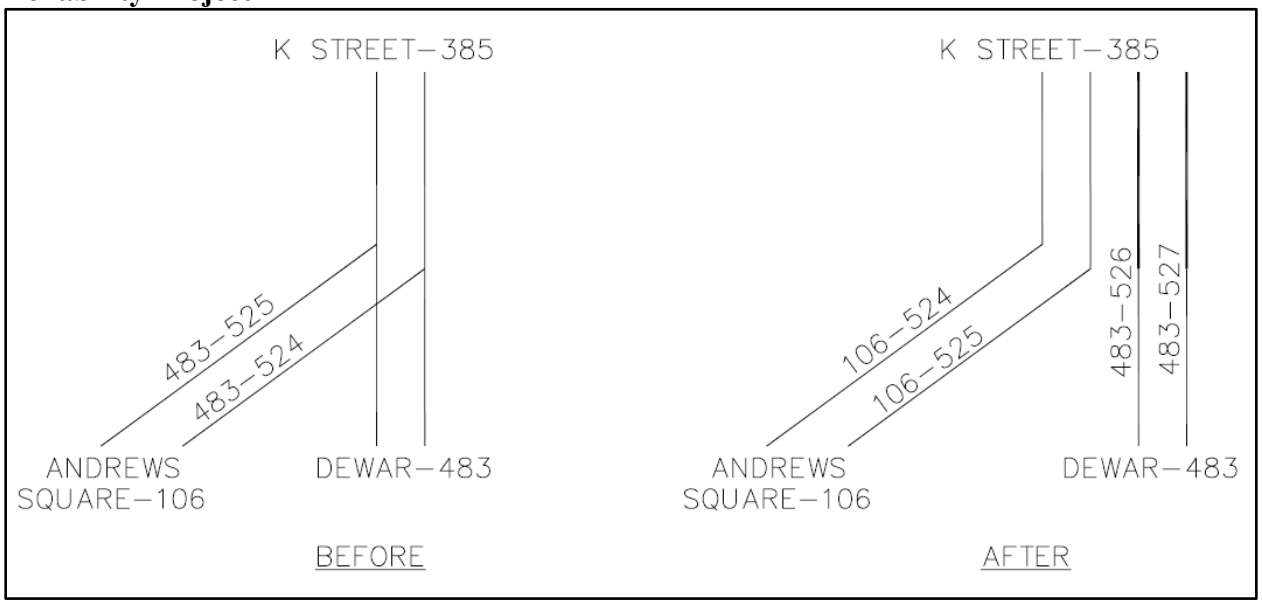
construction two new 115 kV underground transmission lines between the K Street Substation and wye joints (connections) in South Boston, which was completed in June 2016 (Exhs. EFSB-N-1; EFSB-N-14). Prior to the South Boston Reliability Project, only Lines 483-524 and 483-525, which originated at K Street Substation, supplied all the load to both the Andrew Square and Dewar Street Substations (Exh. EFSB-N-1).[9] The South Boston Reliability Project installed two one-mile cable sections from K Street to the wye joint, replaced the two wye joints with four straight joints, and resulted in two dedicated 115 kV lines supplying the Andrew Square Substation and two dedicated 115 kV lines supplying the Dewar Street Substation (Exh. EFSB-N-1). Figure 3, below, depicts the transmission configuration between K Street and the Substations before and after construction of the South Boston Reliability Project. The Company stated that the South Boston Reliability Project solved prior reliability problems within the Project Area including an N-1 thermal issue and the loss of both the Andrew Square and Dewar Street Substations in an N-1-1 event (Exh. EFSB-N-14; Tr. 4, at 463-464). Despite an initial cable outage related to construction of the South Boston Reliability Project, the Company confirmed that the South Boston Reliability Project is performing as designed to achieve the reliability benefits approved in D.P.U. 13-86 (Exh. EFSB-N-14; Tr. 4, at 531-533).[10]

---

9 Before the South Boston Reliability Project, Lines 483-524 and 483-525 were split into two segments at wye joints; one segment of each incoming line proceeded to Andrew Square and the other segment to Dewar Street (Exhs. EV-2, at 2-4; EFSB-N-1).

10 The Company indicated that the initial cable outage lasted for approximately six weeks (Tr. 4, at 531-532).

Figure 3. Depiction of the transmission configuration before and after the South Boston Reliability Project



Adapted from: South Boston Reliability Project, at 6, 13

C. Description of the Company's Demonstration of Need

1. Planning Criteria

Eversource stated that Lines 106-526, 106-527, 483-524 and 483-525 are radial transmission lines and therefore are classified as part of the local transmission system rather than the regional transmission system (Exh. EV-2, at 2-2, 2-3).[11] In contrast to local transmission facilities, regional transmission lines are classified as pool transmission facilities ("PTF") by Independent System Operator-New England ("ISO-NE") and are part of the Bulk Electric System ("BES") governed by the North American Electric Reliability Corporation ("NERC") (Exhs. EV-2, at 2-3; EFSB-N-4). Eversource stated that because the four transmission lines supplying the Substations, as well as the Substations themselves are non-PTF facilities and are not part of the BES, these facilities are not subject to ISO-NE or NERC system planning criteria

[11] Eversource indicated that a radial line is one that serves the end of its transmission system and is not otherwise connected to the wider power grid for New England (Exh. EV-2, at 2-3).

(Exh. EFSB-N-4).[12] However, the Company noted that the Andrew Square, Dewar Street, and K Street Substations are all classified as part of the Bulk Power System ("BPS"), and therefore, these substations and the transmission lines serving the Project Area still must comply with Northeast Power Coordinating Council ("NPCC") system planning criteria (Exh. EFSB-N-4).

Eversource stated that it designs and constructs its non-PTF facilities according to internal planning standards which are consistent with ISO-NE, NERC and NPCC criteria (Tr. 4, at 469). Eversource's transmission planning standards are set forth in a document it prepared called "SYS PLAN-01 Transmission System Reliability Standards" (Exh. EFSB-N-16; RR-EFSB-29(1)). Expanding and elaborating on the planning standards enumerated in SYS PLAN-01, Eversource also developed consequential load loss ("CLL") guidelines for its non-PTF elements; these guidelines are set forth in "Consequential Load Loss Guideline, SYS PLAN-015" dated April 1, 2018 ("SYS PLAN-015") (Exh. EV-2, at 2-4, app. 2-1).[13] These criteria are described in greater detail, below.

2. SYS PLAN-015

Eversource stated that it assesses the ability of its local transmission system to serve forecasted load under normal and contingency conditions in accordance with the consequential load loss guidelines stated in SYS PLAN-015 (Exh. EV-2, at 2-4). In relevant part, SYS PLAN-015 specifies that "CLL resulting from the loss of two underground cables serving a

---

12 As part of its transmission planning process, ISO-NE prepared a "Boston 2028 Needs Assessment Report" in June 2019, which contained two categories of need in the Greater Boston area (Exh. EFSB-N-1). The first category is "time sensitive needs" which the Company indicated are immediate problems that must be addressed; the second category is "non time sensitive needs," which will be addressed under FERC Order 1000 competitive solution process (Exh. EFSB-N-1). The Company indicated that, as announced at the September 26, 2019, ISO-NE Planning Advisory Committee meeting, none of the preferred solutions for these two categories of need involved work in the Project Area (Exh. EFSB-N-1).

13 CLL refer to the load that is lost as a result of transmission facilities being removed from service due to the operation of a protection system designed to isolate the fault (Exh. EV-2, at 2-4; Tr. 4, at 349).

substation or a group of substations should be no greater than 50 [megawatts ("MW")]" (Exh. EV-2, app. 2-1, at 1).

Eversource stated that it developed SYS PLAN-015 to consider and evaluate the outage impacts to local customers from transmission contingencies – impacts that are not addressed in other regional planning standards (Exh. EFSB-N-16; Company Brief at 28). Specifically, the SYS PLAN-015 guideline is applicable to Eversource-owned local transmission facilities that are not evaluated for load interruption in the ISO-NE regional planning process (Exh. EFSB-N-17; Tr. 4, at 470). The Company indicated that the major differences between SYS PLAN-015 and the ISO-NE guideline[14] for CLL are that: (1) SYS PLAN-015 only applies to Eversource-owned non-PTF elements, while the ISO-NE guideline applies only to all PTF elements; (2) SYS PLAN-015 takes into account an estimate of the time duration of an outage, while the ISO-NE guideline does not; and (3) SYS PLAN-015 establishes criteria for the loss of underground transmission lines that are different from its criteria for overhead lines, while ISO-NE system planning criteria do not differentiate between the two (Exhs. EFSB-N-17; EFSB-N-23). Eversource also noted that its CLL guidelines are focused on the reliability of service, whereas the ISO-NE CLL guidelines establish a consistent basis for evaluating transmission facility cost allocation recovery in regional rates versus local rates (and thus are only indirectly an indicator of a reliability need) (Exh. EFSB-N-17(1), at 3, 7; Tr. 4, at 470; Company Brief at 28).

The Company stated that SYS PLAN-015 are the first CLL guidelines developed by Eversource; prior to these guidelines Eversource did not use any specific CLL criteria for non-PTF facilities (Exh. EFSB-N-6). The Company indicated that it developed these standards

---

[14] The ISO-NE Load Interruption Guideline, issued in 2010, establishes thresholds for whether transmission solutions are appropriate to obviate CLL and whether the cost of the transmission solution would be approved for regional cost recovery in transmission rates (Exh. EFSB-N-17(1), at 7). The ISO-Load Interruption Guideline states that CLL from N-1-1 contingencies is allowed when the load loss would be less than 100 MW, is potentially allowable for 100-300 MW of load loss, and is not allowed for loss of loads exceeding 300 MW (Exh. EFSB-N-17(1), at 13). The Company explained that the ISO-NE Guideline only applies to regional facilities or PTF and is intended to identify acceptable thresholds from a broader grid impact perspective (Exh. EFSB-N-17; Company Brief at 28).

starting in the 2015-2016 time period; SYS PLAN-015 was issued on April 1, 2018 (Tr. 4, at 356). The Company stated that SYS PLAN-015 does not have to be approved by any regulatory agencies, including the Department (Tr. 4, at 358-359).

Eversource explained that it developed the SYS PLAN-015 50 MW CLL guideline based on a review of the areas of its service territory where loss of two underground cables supplying radial load could occur (Exhs. EFSB-N-7; EFSB-N-34). Eversource first ranked the CLL resulting from the loss of two underground lines serving a radial substation in order of highest to lowest load loss (Exh. EFSB-N-7). Eversource asserted that areas that are subject to loss of over 50 MW of load due to the contingency interruption of two underground cables tend to also be areas of the system with higher load and population density (Exh. EFSB-N-7).[15] Based on this assessment, the Company selected 50 MWs as its guideline, stating in SYS PLAN-015: "CLL resulting from the loss of two underground cables serving a substation or a group of substations should be no greater than 50 MW" (Exhs. EFSB-N-7; EFSB-N-34(1) at 4).[16] Eversource contends that a CLL of 50 MW is a reasonable and appropriate threshold for addressing the scope and consequences of loss of load in an urban area served by underground facilities (Company Brief at 28, citing Exh. EFSB-N-34(R1)).

SYS PLAN-015 states that transmission system assessments of CLL should be conducted in two steps (Exh. EV-2, app. 2-1 at 2). The first step is to determine the loss of load resulting from specific contingencies (Exh. EV-2, app. 2-1, at 2). The second step is to determine how much load transfer capability exists within the distribution system for a given contingency or contingency pair (Exh. EV-2, app. 2-1, at 2). When the resulting CLL is greater than 50 MW, SYS PLAN-015 states that measures should be evaluated to mitigate or eliminate the duration

---

15 The Company noted that results of the assessment were contained in the document referred to as the "CLL Report," issued in 2017 (Exh. EFSB-N-34(R1)(1); Tr. 4, at 372). Eversource indicated that the objective of the CLL Report was to identify CLL exposure for all Eversource substations and propose Company-wide guidelines for CLL which strike a balance between reliability and cost (Exh. EFSB-N-34(R1)(1), at 4).

16 SYS PLAN-015 also contains five other CLL guidelines that do not apply to the proposed Project (Exh. EV-2, app. 2-1, at 4). This Decision addresses only the Company's CLL guideline for underground cable facilities.

and/or impact of the CLL condition (Exh. EV-2, app. 2-1, at 3, 5). Specifically, SYS PLAN-015 states "[p]lanning solutions should eliminate the CLL condition or[,] as a minimum, significantly reduce the impact and/or duration of the CLL condition" (Exh. EV-2, app. 2-1, at 5).

SYS PLAN-015 provides that, initially, the Company should evaluate whether upgrades can be designed that would eliminate the potential CLL condition without the need for new transmission facilities (Exhs. EV-2, app. 2-1, at 1; EFSB-N-26; EFSB-N-29). When load transfer capability within the distribution network is insufficient, Eversource then assesses the outage impacts, and evaluates the cost, and feasibility of other potential measures to resolve the CLL condition (Exh. EV-2, at 2-4). In accordance with SYS PLAN-015, the Company seeks to develop solutions that ensure the entire identified loss of load is either avoided by a solution, a contingency plan, or a combination thereof (Exh. EFSB-N-26). In this case where the relevant contingencies concern underground cables would involve lengthy and complex repairs, Eversource testified that its objective was to propose a solution that would fully resolve the identified outage, rather than reducing the outage to be equal to or less than the CLL criteria of 50 MW (Tr. 4, at 490).

The Company indicated that none of the other New England utilities have guidelines that address the loss of multiple underground transmission cables, and it surmised this is because most of the underground lines in New England are owned by Eversource (RR-EFSB-27; Tr. 4, at 439-440).[17] Eversource provided comparable planning criteria from transmission owners serving central business districts or critical areas of other major metropolitan areas in the United States (Exh. EFSB-N-33; Tr. 4, at 453-454). For an N-1-1 contingency involving the loss of two underground cables within these business districts, Eversource reported the following maximum allowable CLL: Chicago business district, 0 MW; Pittsburgh, 0 MW; Newark and Jersey City, 20 MW; downtown Washington D.C. area network, 0 MW (Exh. EFSB-N-33).

---

[17] The Company asserted that other New England utilities do not have expansive underground transmission cable systems that serve densely populated urban areas similar to Eversource's Boston area (RR-EFSB-27). The Company noted that United Illuminating does have underground cables but does not have any specific consequential load loss criteria (Tr. 4, at 456).

Eversource indicated that, because the lines supplying the Andrew Square and Dewar Street Substation are not contained in hardened duct banks, they are relatively vulnerable to third-party damage – especially from routine construction digging (Tr. 1, at 27-28). Eversource stated that, compared to repairing an overhead line, more time is typically required to locate the source of an underground cable failure and conduct repairs, resulting in prolonged duration outages (e.g., potentially many days, weeks or months depending upon the nature of the failure and location of the necessary repair) (Exhs. EV-2, at 2-4, app. 2-1, at 3; EFSB-N-16; EFSB-N-20(1); Tr. 4, at 460). The Company maintains that the prolonged outage of two cables in a densely populated urban residential area could result in significant consequences including long customer outages requiring emergency deployments, public safety concerns, and economic impacts to urban business districts and tourism (Company Brief at 30, citing Exhs. EFSB-N-23; EFSB-N-35; Tr. 4, at 461).

3. Eversource Load Forecast Methodology

In developing peak load forecasts for the Substations, the Company first began with a ten-year system-level peak demand forecast for the years 2018 to 2028 (Exhs. EV-2, at 2-5 to 2-6; EFSB-N-3). The Company explained that its system-level forecast was based on an econometric model that evaluated historical peak demand as a function of (1) peak day weather conditions and (2) the economy (Exh. EFSB-N-3). Eversource stated that peak day weather conditions assume a "90/10" forecast, which is an extreme weather scenario that only has a ten percent change of being exceeded in each year of the forecast (Exh. EFSB-N-3; Tr. 4, at 485). Eversource noted that Moody's Analytics provided the economic history and forecast, and further noted that the system level forecast does not rely solely on historic growth rates (Exhs. EFSB-N-3; EFSB-N-9).

Eversource then developed ten-year substation-level forecasts using an econometric model that evaluates each substation's historical and project demand as a function of the Eversource system-level peak demand history and forecast (Exh. EFSB-N-3). The substation forecasts were then adjusted for energy efficiency, solar, and large customer projects (Exh. EFSB-N-3). The 2018-2028 forecasts, for the Andrew Square Substation and the Dewar

Street Substation, project annual average peak growth rates of 0.5% and -0.2%, respectively (Exh. EFSB-N-12(1)).

The Company projected a summer peak load for the Andrew Square Substation of 121.6 MVA in 2018, increasing to 128.3 MVA by 2028 (Exh. EV-2, at 2-5). The Company projected a summer peak load for the Dewar Street Substation of 124.7 MVA in 2018, decreasing to 121.6 MVA by 2028 (Exh. EV-2, at 2-6).[18] Comparing an earlier Project Area load forecast, calculated for 2013-2023, and the current 2018-2028 load forecast (as shown in Table 1, below), Eversource noted that the expected load growth rate for each substation has decreased (Exh. EFSB-N-18).

Table 1. Comparison of Substation Load Forecasts

Forecast year	Andrew Square Substation		Dewar Street Substation	
	2013 Forecast (MW)	2018 Forecast (MW)	2013 Forecast (MW)	2018 Forecast (MW)
2013	122.1	--	137.2	--
2018	131.7	121.6	151.2	124.7
2023	136	129.9	157.4	123.6
2028	--	128.3	--	121.8

Source: Exhs. EV-2, at 2-5 to 2-6; EFSB-N-18

4. Unserved Load Following the Loss of Two Underground Cables Serving the Andrew Square or Dewar Street Substation

The Company stated that, based on detailed system models and its 2018-2028 substation load forecasts, the transmission lines serving the Substations would have sufficient capacity to serve load under N-1 contingencies (Exh. EV-2, at 2-4 to 2-5; Tr. 4, at 349). However, the Company indicated that its local transmission system is vulnerable to losing all of the load served by either the Andrew Square or Dewar Street Substations following an N-1-1 contingency involving the loss of the pair of cables from K Street to either Substation (Exh. EV-2, at 2-5, 2-6). At high load levels, losing either pair of cables (i.e., Lines 106-526 and 106-527 serving

[18] Eversource indicated that the actual, non-weather adjusted, 2018 summer peaks for the Andrew Square and Dewar Street Substations were 114.4 MVA and 121 MVA, respectively (Exh. EV-2, at 2-5, 2-6).

Andrew Square, or Lines 483-524 and 483-525 serving Dewar Street) would result in CLL greater than 50 MW, which the Company deemed unacceptable and inconsistent with its 50 MW CLL guideline, given the potential for a prolonged duration outage due to the complexities associated with repairing underground cables (Exhs. EV-2, at 2-6, table 2-1 and 2-2, app. 2-1, at 1). The Company stated that load growth is not a factor driving the need for the Project; it is the exceedance of the 50 MW threshold for CLL contained in SYS PLAN-015 (Exh. EFSB-N-12: Tr. 4, at 387-391). The Company stated that, while load growth is not a factor driving the need for the Project, load growth would increase the magnitude of load loss at each substation (Exh. EFSB-N-12).

a. Emergency Distribution Transfer Switching

After determining the potential CLL following underground cable failures, and in accordance with SYS PLAN-015, Eversource examined the load transfer capability within its distribution network (Exh. EV-2, at 2-5, app. 2-1, at 3). The purpose of this examination was to determine if Eversource could reduce or eliminate the CLL that would occur under the N-1-1 contingencies (Exh. EV-2, at 2-5, app. 2-1, at 3). The Company stated that emergency distribution transfer switching to the neighboring substations for both the Andrew Square and Dewar Street Substations would not be sufficient to restore power to all affected customers (Exh. EV-2, at 2-5). For the Andrew Square Substation as of 2018, the Company identified 21.1 MVA of available emergency distribution transfer switching to four other substations (RR-EFSB-37).[19] For the Dewar Street Substation as of 2018, the Company identified

[19] In its initial Application, the Company stated that 27 MVA of emergency distribution transfer switching could be achieved by transferring 16.7 MVA to the K Street Substation, 2.3 MVA to the Dewar Street Substation, 2.3 MVA to the Colburn Street Substation, and 5.7 MVA to the Hyde Park Substation (Exh. EV-2, at 2-5 to 2-6). During the course of the proceeding, the Company updated the existing transfers that could be implemented for the Andrew Square Substation (Tr. 5, at 573, 589). The Andrew Square Substation could make the following emergency distribution switching transfers: 5.9 MVA to the K Street Substation, 7.2 MVA to the Dewar Street Substation, 2.3 MVA to the Colburn Street Substation, and 5.7 MVA to the Hyde Park Substation (for a total of 21.1 MVA) (Exh. EFSB-PA-3(R1); RR-EFSB-37).

15.1 MVA of available emergency distribution transfer switching to three other substations (Exh. EV-2 at 2-6).[20] Based on the current forecast and the available emergency distribution transfer switching in 2018, the Company stated that under an N-1-1 contingency the resulting loss of load served by the Dewar Street and Andrew Square Substations would be 109.6 MVA and 100.5 MVA, respectively (Exhs. EV-2, at 2-7; EFSB-PA-3(R1); Tr. 5, at 573; RR-EFSB-37).

Eversource stated that the net load at substations adjacent to the Project Area (i.e., K Street, Colburn Street, and Hyde Park Substations) is expected to decrease over the next ten years at annual average rates of one percent or less (Exh. EFSB-PA-6(R1)(1)). The Company noted that the net decrease in load at neighboring substations still does not result in an equal increase of distribution transfer capacity because the load transfers are limited by factors such as the number of existing distribution circuits between substations, distribution system topology, and the capacity of individual distribution circuits (RR-EFSB-36; Tr. 5, at 570, 596).

b. Emergency Restoration Measures

In accordance with SYS PLAN-015, after assessing the amount of currently available emergency distribution transfer capacity, Eversource examined whether portable generators could serve the customer load that would be lost in the event of an N-1-1 contingency (Exh. EV-2, app. 2-1, at 5; Tr. 4, at 364-371).[21]

A significant experience cited by the Company in the development of its SYS PLAN-015 was a 2012 fire at the Eversource Scotia Street Substation that caused the simultaneous outage of two underground transmission lines that supplied both the Scotia Street and the Carver Street Substations located in Boston (Exh. EFSB-N-34(R1); Tr. 4, at 359). Eversource reported that the

---

20 The Dewar Street Substation could make the following emergency distribution switching transfers: 7.2 MVA to the Andrew Square Substation, 3.8 MVA to the Colburn Street Substation, and 4.1 MVA to the Hyde Park Substation (Exh. EV-2, at 2-6).

21 As described above, SYS PLAN-015 states that "measures should be evaluated to mitigate or eliminate the duration and/or impact of a CLL condition" (Exh. EV-2, app. 2-1, at 3).

fire caused the loss of power to more than 20,000 customers for varying periods of up to five days (Exh. EFSB-N-34(R1)). Service to the Carver Street Substation was restored in less than a day, while service to the Scotia Street Substation was restored in about a week (Tr. 4, at 526-527). For the Scotia Street Substation, the Company deployed portable diesel generators and temporary electrical connections between the Carver Street Substation secondary network feeders and the Scotia Street Substation secondary networks (Tr. 4, at 527).

To temporarily restore power to customers served from the Scotia Street Substation, Eversource deployed more than 20 diesel generators, each capable of generating 2 MW, which required digging open trenches in the streets, laying 14 kV distribution cables, covering the trench with steel plates, and stationing personnel around the clock at each generator to ensure public safety (Exh. EFSB-N-34(R1)). The Company noted that it was not able to deploy portable transformers due to space constraints at the Scotia Street Substation (Tr. 4, at 361). The Company recounted the extremely disruptive impacts to the public and the environment such as noise, traffic, and air emissions from the diesel generators (Company Brief at 29, citing Tr. 5, at 566-568). Eversource stated that the Scotia Street incident informed the development of the Company's CLL guideline to completely, and not partially, restore load when two underground lines are lost (Company Brief at 29, citing Tr. 5, at 566-568).[22]

The Company indicated that, generally, it would use portable generators in the event of the loss of all transmission supply into a substation (RR-EFSB-30). The Company stated that, in such an event, it would be able to immediately rent up to 15 portable backup diesel generators that range in size from 0.02 MW to 2.0 MW (RR-EFSB-30). The Company stated that its fleet of backup generators is not sufficient to support all the Andrew Square Substation or Dewar Street Substation loads in the event of a loss of both existing supplies to either substation; therefore, Eversource would need to obtain more backup generator units from other utilities or other rental companies (RR-EFSB-30). In total, the Company indicated that it would need to connect approximately 25 semi-tractor-trailer sized generators to the distribution network (Tr. 4, at 364). The Company indicated that, if transmission supply were lost to either substation,

---

[22] The portable generators noise levels are 70 to 90 A-weighted decibels ("dBA") at a distance of 7 meters (or 23 feet) (Tr. 5, at 618).

Eversource would position portable generators both within the fence line of the affected substation and on public roadways throughout the area served by the affected substation (Tr. 4, at 363-365).[23,24] Eversource asserted that deploying emergency generators in the amount required would be impractical, and furthermore that using portable diesel generators in densely populated area would be disruptive and entail excessive noise and air impacts (Tr. 5, at 599-600; Company Brief at 35).

D. Analysis and Findings on Need

Given the radial arrangement of the Andrew Square and Dewar Street Substations, and 115 kV lines serving those substations from K Street, these substations and lines are part of the local transmission system, rather than the regional transmission system. As such, lines 106-526, 106-527, 483-524, and 483-525, and the Andrew Square and the Dewar Street Substations are classified as non-PTF elements. As non-PTF elements, the lines and substations are not assessed for reliability under ISO-NE criteria or ISO-NE system planning. The record shows that Eversource developed its own planning criteria to be conceptually consistent with ISO-NE, NERC, and NPCC reliability criteria and to ensure that its non-PTF elements are reliable. As part of its internal process, the Company evaluates its local transmission system to determine whether it has sufficient capacity to serve forecasted peak loads under both normal conditions and with contingencies.

Eversource reviews its non-PTF elements according to guidelines for consequential load loss set forth in its planning standard SYS PLAN-015. Under SYS PLAN-015, the CLL resulting from the loss of two underground lines serving a substation or a group of substations should be no greater than 50 MW. Where the CLL is greater than 50 MW, Eversource assesses measures to mitigate or eliminate the duration and/or impact of such events. In accordance with

---

23 In the event of a transformer failure at a substation, Eversource stated that it owns two mobile transformers which could be used at the Andrew Square and Dewar Street Substations (RR-EFSB-30; Tr. 4, at 362, 370).

24 Eversource indicated that it may be difficult to locate portable generators within the Andrew Square Substation without obstructing manhole access to distribution lines (Tr. 4, at 365).

SYS PLAN-015, Eversource first evaluates the ability of emergency distribution transfer switching and emergency restoration measures to reduce or eliminate the consequential load loss. When load transfer capability is insufficient, Eversource assesses the outage impacts and evaluates the cost and feasibility of other potential measures to resolve the CLL condition.[25]

The record shows that the Project Area encompasses portions of several densely populated Boston neighborhoods for which the Andrew Square and Dewar Street Substations are the sole transmission source. The Project Area includes a number of critical customers including hospitals, government facilities, and high-rise buildings with elevators. The record also indicates that, because the radial lines serving the Substations are pipe-type cables buried beneath public roadways without a protective duct bank, each cable pair is potentially vulnerable to third party damage that would result in an extended outage. In addition, it would be extremely difficult to locate sufficient emergency generation throughout the Project Area, should it be needed. The Siting Board finds that, given the particular mix of critical customers in the Project Area, the complex challenges associated with repairing underground lines in a dense urban environment, and difficulties associated with deploying emergency generators, the Company's use of these system planning criteria is reasonable, and the Company's methods used to assess system reliability are reviewable and appropriate. Eversource has determined that its existing transmission system does not currently meet these reliability criteria.

Eversource's assessment of need relied on peak load forecasts developed by the Company for the Andrew Square and Dewar Street Substations. The substation-level load forecasts used an econometric model that incorporated the Eversource system-level peak demand forecast and evaluated peak demand as a function of 90/10 weather conditions and the economy. Substation forecasts were adjusted for energy efficiency, solar, and large customer projects. In view of the above, the Siting Board finds that the Company has provided sufficient information to permit an understanding of its forecasting method, and that its forecast is reviewable, appropriate, and reliable for use in this proceeding to evaluate the Company's assertion of need.

---

[25] Eversource should continue to evaluate emergency measures and develop contingency plans that could be used in combination with distribution switching to maintain reliable electric service in the event of contingencies involving underground transmission lines in dense urban environments.

Moreover, the significant loss of load and customers in the event of an N-1-1 contingency affecting either the Andrew Square or Dewar Street Substations exists under present conditions and is not dependent on expectations of future load growth, although such growth would worsen the existing problem.

The Siting Board notes that the South Boston Reliability Project, approved by the Department in 2014, satisfied the reliability criteria for which it was designed and resulted in the present configuration of transmission lines serving the Project Area. Specifically, the South Boston Reliability Project resolved the simultaneous loss of the Andrew Square and Dewar Street Substations in an N-1-1 contingency by establishing dedicated transmission lines to each substation, as well as resolving an N-1 thermal issue. Although the South Boston Reliability Project eliminated the potential for losing both Substations following an N-1-1 contingency, such a contingency involving either pair of cables would still result in the loss of the area served by one of the two substations. The instant Project would eliminate the potential for losing either substation in the event of the same contingencies. The prolonged outage at the Company's Scotia Street Substation in 2012 resulted in widespread disruption in downtown Boston and illustrates the need for a robust grid, particularly in areas with a large number of critical customers.

The record shows that, under current and forecasted peak load conditions, the limited amount of the available emergency distribution transfer switching between the Substations and other substations in the Boston area would provide little relief from load loss due to an N-1-1 contingency involving both cables serving either the Andrew Square or Dewar Street Substations. Under peak conditions, a disruption of the pair of transmission cables feeding either Andrew Square or Dewar Street Substations could result in as much as 101 MW or 110 MW of load loss, representing 34,000 or 58,000 customers, depending on which substation is affected by the identified contingencies. This is a significant potential loss of load, and with underground cables supplying the Substations, the potential for a prolonged outage, with serious adverse consequences to public health, safety, and welfare in a densely populated urban area, is both inconsistent with the Siting Board's statutory obligations and unacceptable. See G.L. c. 164, §69J; St. 1997, c. 164, Sections 1(a) and (h). For these reasons, the Siting Board finds that

additional energy resources are needed to maintain a reliable supply of electricity to the Project Area.

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. Sudbury-Hudson at 27; Needham-West Roxbury at 13-14; Woburn-Wakefield at 18-19.

B. Identification of Alternative Approaches for Analysis

In assessing alternative solutions to meet the identified need, Eversource explored a range of non-transmission alternatives ("NTA") including generation, energy efficiency, demand response, energy storage, two transmission alternatives, an alternative that would increase emergency distribution transfer switching, and a new distribution substation.[26] Following its evaluation of alternative approaches, Eversource concluded that the Project remains the best alternative for meeting the identified need, with minimal impact to the environment, at the lowest possible cost (Exh. EV-2, at 3-1). Each of the alternative approaches evaluated by the Company is discussed below.

---

[26] Eversource also explored a no-build approach. However, this approach did not address the identified need (Exh. EV-2, at 3-1 to 3-2).

1. Non-Transmission Alternatives

The Company stated that it assessed several NTA technologies to address the identified need including battery energy storage systems ("BESS"), solar photovoltaic ("PV") facilities, demand-side programs, conventional generation, and distributed generation, and determined that they were all unsuitable to eliminate the N-1-1 contingency of concern (Exh. EV-2, at 3-14).

Eversource reported that a BESS, which would charge by drawing power from the grid for use at a later time, would be technically infeasible for the purpose of resolving the above described CLL condition due to the possibility of a prolonged outage associated with repairing underground cables (Exh. EV-2, at 3-14). The Company stated that a BESS would only be able to serve load for a short time after a contingency before needing to be recharged (Exh. EV-2, at 3-14). Given that each substation is served by radial transmission lines, a BESS would be unable to charge from the grid in the post-contingency situation (Exh. EV-2, at 3-14). The Company noted that a BESS, or any NTA solution, would need to support the remaining load after emergency distribution transfer switching is implemented (Exh. EV-2, at 3-14). Eversource reported that commercially available BESS are typically sized to operate at full capacity for four hours or less without recharging (Exh. EV-2, at 3-14). Therefore, most BESS would only be able to cover a relatively short portion of one day, which would be insufficient for a long-term outage possible with an underground cable failure (Exh. EV-2, at 3-14).[27]

The Company noted that solar PV facilities are an intermittent, non-dispatchable generating resource, and therefore would not be an effective solution for addressing a long-duration outage (Exh. EV-2, at 3-14). The Company also noted that there is insufficient land in the Project Area available for PV solar facilities at the scale needed to address the outage of concern, even when paired with battery storage (Exh. EV-2, at 3-14). While the Company acknowledged that some energy efficiency programs and distributed generation can reduce peak loads, the amount of load reduced by these programs is insufficient compared to the potential

[27] As noted above in Section III.C.2, Eversource indicated that an outage could potentially last many days, weeks or months depending upon the nature of the failure and location of the necessary repair (Exh. EFSB-N-16).

load loss at either the Andrew Square and Dewar Street Substations (Exh. EV-2, at 3-14 to 3-15).[28]

Eversource stated that certain types of conventional generation could support load either for the Andrew Square or Dewar Street Substation for an extended outage (Exh. EV-2, at 3-15).[29] The Company identified the option of constructing two fast-start combustion turbines – one each at the Andrew Square and Dewar Street Substations (Exh. EV-2, at 3-15). The Company stated that approximately five to ten acres of land would be required for a generator of the required size; Eversource did not identify any available land that would be suitable for a generator in the vicinity of either substation (Exh. EV-2, at 3-15). In addition, interconnecting the generators would require significant substation expansions and upgrades, and a nearby fuel supply (Exh. EV-2, at 3-15 to 3-16). Based on ISO-NE data, the Company estimated the cost of two 112 MW units, excluding land acquisition costs, at $412 million (Exh. EV-2, at 3-15). Eversource also considered whether NTA technologies that are insufficient as a standalone solution could be used in combination with a combustion turbine; the Company reported that none of these NTA technologies are feasible in the Project Area at a size that would materially reduce the size of the generator required and associated cost (Exh. EV-2, at 3-15).

2. Transmission and Distribution Alternatives

a. Transmission Alternative 1 – Proposed Project

As discussed above, the Project consists of a new approximately two-mile-long 115 kV underground solid dielectric transmission line between the Andrew Square and Dewar Street Substations, installed within a duct bank (Exh. EV-2, at 3-2). According to the Company, necessary work within the Andrew Square Substation would include the installation of switchgear, breakers, terminals and associated equipment, and relay and control panels in the control house (Exh. EV-2, at 3-4 and 5-4). Work within the Dewar Street Substation would

---

[28] Eversource also stated that distributed generation resources are not allowed to operate when the distribution system is not in its normal configuration (RR-EFSB-37).

[29] The Company stated that there are currently no generating projects proposed in the Project Area in the ISO-NE interconnection queue (Exh. EV-2, at 3-15).

include the installation of a hybrid Air Insulated System/Gas Insulated System module on an elevated platform, consisting of breakers, terminals and associated equipment, relay and control panels in the control house, and a 100-foot shielding mast (Exh. EV-2, at 3-4, 5-6 to 5-7). Eversource estimated the total cost of the Project to be approximately $68.3 million; the transmission lines are estimated at $52.0 million, while the substation work is $9.7 million at the Andrew Square Substation and $6.6 million at the Dewar Street Substation (Exh. EFSB-C-3). Eversource estimated that constructing the Project would take place intermittently over approximately 20 months (Exh. EV-2, at 1-5).

b. Transmission Alternative 2

Transmission Alternative 2 consists of two new 115 kV underground solid dielectric transmission lines, one from the K Street Substation to the Andrew Square Substation, and one from the K Street Substation to the Dewar Street Substation, creating a third supply to both the Andrew Square and Dewar Street Substations (Exh. EV-2, at 3-5 to 3-6). The K Street to Andrew Square line would be approximately 1.4 miles and the K Street to Dewar Street line would be approximately 3.1 miles (for a total of 4.5 miles of underground cable construction) (Exh. EV-2, at 3-5 to 3-6).[30] The interconnection work at both the Andrew Square and Dewar Street Substations would be the same as for the Proposed Project (Exh. EV-2, at 3-6). The Company's estimate for the cost of Transmission Alternative 2 is approximately $140.5 million at -25%/+50% (Exh. EV-2, at 3-7).

[30] For Transmission Alternative 2, the duct bank for the two lines would each include: (1) four eight-inch conduits, and (2) two four-inch and two two-inch communication conduits (Exh. EV-2, at 3-5 and 3-6). The K Street to Andrew Square line would include five manholes and five communication handholes; the K Street to Dewar Street line would include eleven manholes and eleven communication hand-holes (Exh. EV-2, at 3-5 and 3-6).

c. Distribution Alternatives

i. Increased Emergency Distribution Transfer Alternative

The Company analyzed the ability of increased distribution emergency transfer beyond the levels currently available at neighboring substations (see Section III.C.3, above) (Exhs. EV-2, at 3-10; EFSB-PA-3(R1); EFSB-P-4(R-1); RR-EFSB-36; RR-EFSB-37). Specifically, the Company examined the feasibility of increasing distribution transfers between the Andrew Square and Dewar Street Substations and from those Substations to K Street, Colburn Street and Hyde Park substations (Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1)). Eversource reviewed whether these neighboring substations could accept additional load transfers without violating the substations' normal ratings after all existing load transfers are implemented, and whether the substations have existing spare 14 kV board positions or physical space for new 14 kV board positions[31] (Exh. EV-2, at 3-10 to 3-11; Tr. 5, at 570-571).[32] The Company explained that the Colburn Street Substation could not accept any distribution transfers as that would exceed its normal capacity (Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1); RR-EFSB-37). The Company indicated that the Hyde Park Substation would need additional 14 kV breakers to accommodate distribution transfers and that there is no available land to construct new distribution switchgear (Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1); RR-EFSB-36).

For transfers from the Andrew Square Substation, the Company concentrated on adding new distribution lines between the Andrew Square and Dewar Street Substations and the Andrew Square and K Street Substations (Exh. EFSB-PA-3(R1)). The Company determined that two new distribution lines could be installed between Andrew Square and K Street Substations and two new distribution lines between the Andrew Square and Dewar Street Substations

---

31 The Company used the terms 14 kV "board position" and "breaker position" interchangeably (Exhs. EV-2, at 3-10; EFSB-PA-3(R1); EFSB-PA-4(R1)).

32 Eversource explained that further increasing load transfer capability requires that neighboring substations do not meet or exceed their normal capacity rating after the currently available distribution transfers are implemented (Tr. 5, at 560-561). The Company stated that a substation's normal capacity reflects that each substation transformer cannot exceed 75 percent of the transformer's nameplate rating (Exh. EV-2, at 3-11, 3-12).

(Exhs. EV-2, at table 3-3; EFSB-PA-3(R1)).[33] While existing 14 kV board positions could be used at the K Street Substation, the Company would need to install two new 14 kV board positions at the Dewar Street Substation (Exh. EFSB-PA-3(R1)). The Company stated that these distribution upgrades would provide an additional load transfer capability of 28 MVA for the Andrew Square Substation (Exh. EFSB-PA-3(R1); RR-EFSB-37). Eversource estimated the cost of these distribution upgrades to be $5.1 million (Exh. EFSB-PA-3(R1)).

For transfers from the Dewar Street Substation, the Company could add one distribution line between the Andrew Square and Dewar Substations and install one new 14 kV breaker at the Andrew Square Substation, at a cost of $1.5 million (Exh. EFSB-PA-4(R1)). Adding a new distribution line and board position would provide 6 MVA of additional load transfer capability for the Dewar Street Substation (Exh. EFSB-PA-4(R1)). The new distribution lines between the K Street and Andrew Square Substations and between the Andrew Square and Dewar Street Substations would be approximately 8,000 feet long and 9,000 feet long, respectively (Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1)). Eversource indicated that these lines would be installed using a combination of existing and new underground duct banks (RR-EFSB-35).

Given the existing emergency transfer levels of 21 MVA for the Andrew Square Substation and 15.1 MVA for the Dewar Street Substation and even after making the distribution line improvements described above, the Company concluded that an N-1-1 condition would still result in 72.5 MVA of unserved load for the Andrew Square Substation and 103.6 MVA of unserved load for the Dewar Street Substation (Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1)). The Company noted that these amounts of unserved load are well above its 50 MW CLL guideline and have the potential for a prolonged outage before power is restored (Company Brief at 43, citing Exhs. EFSB-PA-3(R1); EFSB-PA-4(R1)). Eversource indicated that, even in combination with another NTA solution such as a BESS, increasing the emergency distribution transfer

---

[33] Eversource indicated that, while K Street Substation has space for additional 14 kV board positions, the number of new distribution circuits is limited to two because the streets approaching the substation have limited space for new underground facilities (RR-EFSB-37).

switching would not be sufficient to eliminate the potential loss of load following a contingency involving either pair of transmission cables (Tr. 5, at 593-595).[34]

Given the amount of load that would still be at risk even with the above-described distribution improvements, the Company also evaluated adding equipment such as transformers and distribution switchgear to existing substations to allow for an increased number of distribution circuits (RR-EFSB-37). The Company focused on adding equipment to the Andrew Square and Dewar Street Substations since the Colburn Street Substation is capacity constrained and the Hyde Park Substation has land constraints (RR-EFSB-37). Eversource stated that, although the K Street Substation has space for additional equipment, the streets approaching that substation have limited space for new underground facilities (RR-EFSB-37). Eversource indicated that installing new 115 kV equipment and a new 140 MVA network-style transformer to support an even greater number of distribution circuits could address a N-1-1 contingency condition at the Andrew Square or Dewar Street Substations (RR-EFSB-37). However, the Company concluded that, although the Dewar Street Substation had enough space to construct new 115 kV equipment and a transformer, extensive new distribution lines would need to be constructed within two new duct banks (RR-EFSB-37).[35] The Company estimated that the distribution duct banks alone would cost over $100 million (RR-EFSB-37). Eversource maintains that this alternative would be more costly and environmentally impactful than the Proposed Project (Company Brief at 44, citing RR-EFSB-37).

ii. New Distribution Substation Alternative

This alternative would consist of a new 115/14 kV substation and at least three to four miles of new transmission lines (Exh. EV-2, at 3-13). Eversource stated that a new substation

---

34 As noted above in Section III.C.2, in this case where the relevant contingencies concern underground cables that would involve lengthy and complex repairs, Eversource stated that its objective was to propose a solution that would fully resolve the identified outage, rather than reducing the outage to be equal to or less than the CLL criteria of 50 MW (Tr. 4, at 490).

35 Eversource noted that the dimensions of the proposed transmission duct bank are similar to the dimensions of the distribution duct banks that would be required (RR-EFSB-37).

built adjacent to the Andrew Square and Dewar Street supply regions could provide sufficient station and distribution capacity to relieve the Andrew Square and Dewar Street Substations (Exh. EV-2, at 3-13). The Company estimated that the cost of this alternative would be significantly more than $150 million, of which the substation itself would be over $100 million (Exh. EV-2, at 3-13).

d. Company Comparison of Alternatives

The Company maintained that both the Project and Transmission Alternative 2 would meet the identified need by providing a third transmission source to the Andrew Square and Dewar Street Substations (Company Brief at 39, citing Exh. EV-2, at 3-7). Eversource compared the Project and Transmission Alternative 2 on the basis of environmental impacts, cost, and reliability (Exh. EV-2, at 3-7). Transmission Alternative 2 requires 4.5 miles of new underground 115 kV transmission lines and upgrades at three substations versus 2.0 miles of new transmission work and upgrades to two substations for the proposed Project (Exh. EV-2, at 3-8). The Company's desktop comparison of the environmental impacts showed that of the twelve environmental criteria, Transmission Alternative 2 had greater impacts for ten of the criteria (Exh. EV-2, at 3-8, 3-9).

With respect to reliability, the Company stated that Transmission Alternative 2 would require the K Street to Dewar Street 115 kV line to share a 115 kV switching position at the K Street Substation (Exh. EV-2, at 3-7). Eversource stated that this configuration would degrade the reliability of Transmission Alternative 2 because an outage of the shared transformer at K Street Substation would reduce the reliability of the 115 kV supply to the Dewar Street Substation (Exh. EV-2, at 3-7 to 3-8). Further, Transmission Alternative 2 costs approximately $140 million versus approximately $68.3 million for the Proposed Project (Exh. EV-2, at 3-7). Therefore, Eversource concluded that the Project would have fewer environmental impacts, lower cost, and a higher degree of reliability as compared to Transmission Alternative 2 (Exh. EV-2, at 3-9).

The Company stated that the Increased Emergency Distribution Transfer Alternative, consisting of new distribution lines between the Andrew Square and Dewar Street Substations and new breakers at the Substations did not meet the identified need (Exhs. EV-2, at 3-12 to

3-13; EFSB-PA-3(R1); EFSB-PA-4(R1); RR-EFSB-36). Further, the Company concluded that increasing the distribution switching capability of neighboring substations to a level that would address a N-1-1 condition at the Andrew Square or Dewar Street Substations would require the addition of new transformers and switchgear, and an extensive duct bank and manhole system for new distribution lines, resulting in greater environmental impacts and cost than the Project (RR-EFSB-37). Lastly, Eversource stated that construction of a new 115 kV substation and the associated transmission would be significantly more expensive than the Proposed Project (Exh. EV-2, at 3-13).

Finally, as noted above, the Company concluded that BESS, PV, and other generation solutions of sufficient size, alone or in combination, were technically infeasible (Company Brief at 44-45). The Company explained that these approaches would be infeasible due to the insufficient land availability and/or existing limitations related to interconnecting generating resources of sufficient size at either Substation (Exh. EV-2, at 3-15). Eversource also reported that developing a conventional generation alternative would have technical challenges with interconnecting and would be more costly than the Project (Exh. EV-2, at 3-15).

C. Analysis and Findings on Alternative Approaches

The evidence demonstrates that the most feasible NTA, constructing fast start combustion turbines at the Andrew Square and Dewar Street Substations, would cost significantly more than the Project and that, given the scale of land requirements, would likely encounter significant development obstacles.[36] Other NTAs, including BESS and PV facilities, were unsuitable to eliminate the N-1-1 contingency of concern. BESS technology is rapidly improving and is already a viable NTA in certain circumstances. In this particular instance, where the Project Area is served by radial transmission lines, a BESS solution would not be able to recharge

[36] Although energy efficiency and demand-side programs would not feasibly address the need for this Project, Eversource should also continue to explore ways to use NTAs (individually or in combination) to avoid or delay the need for new transmission infrastructure. In addition, the Siting Board expects that Eversource will strongly encourage its customers, both existing and new, to take full advantage of energy efficiency programs, which may also help avoid or delay the need for new transmission infrastructure.

following contingencies involving either pair of cables. Even in combination with the increased emergency distribution transfer switching alternative, described above, a BESS solution would need to supply at least 72.5 MVA of load at the Andrew Square Substation and 103.6 MVA at the Dewar Street Substation for the duration of a potentially prolonged outage. Even a large amount of energy storage could only support this unserved load for part of one day.[37]

With respect to increasing the distribution transfer capability of neighboring substations, the record shows that the amount of new transfer capability is limited first by the normal rating of neighboring substations and second the availability of spare, or space for new, 14 kV board positions. After implementing the improvements described in Section IV.B.2.c.i, above, the distribution transfer capability for the Andrew Square and Dewar Street Substations would be increased to 49.1 MVA and 21.1 MVA, respectively, at a cost of $6.6 million. Although significantly less expensive than the Project, this approach would not offer full backup upon loss of transmission supply to the Andrew Square or Dewar Street Substations and therefore does not meet the identified need (i.e., 72.5 MVA and 103.6 MVA of unserved load at the Andrew Square and Dewar Street Substations, respectively). Implementing a level of distribution improvements that could address a N-1-1 contingency for the substations would cost over $100 million and result in greater environmental impacts than the Project.

A new 115/14 kV substation built in the Project Area could provide enough station and distribution capacity to meet the identified need; however, this approach would require three to four miles of new transmission lines and would cost upwards of $150 million.

With respect to the transmission alternatives, the record shows that the proposed Project and Transmission Alternative 2 would both provide a third supply of electricity to the Andrew Square and Dewar Street Substations. With respect to reliability, one of the new lines required for Transmission Alternative 2 would share an existing switching position at the K Street

---

37 In NSTAR Electric Company d/b/a Eversource Energy, D.P.U. 18-155 (2020) ("Martha's Vineyard"), the Department approved zoning exemptions for a 14.7 MW/84 MWh BESS. The BESS, as approved, was sited within a 0.16-acre building, with an estimated cost of $43 million. By comparison, the Siting Board notes that to supply the Dewar Street Substation at peak load for four hours would require a BESS with the approximate capacity of 103.6 MW/414 MWh, about five times larger than the BESS approved in Martha's Vineyard.

Substation, thereby making the 115 kV supply to the Dewar Street Substation suspectable to an outage of the shared transformer at K Street Substation. Transmission Alternative 2 would result in greater environmental impacts given the greater overall length of the new lines, and construction at three substations as compared to two substations for the Project. Finally, Transmission Alternative 2 would have a significantly higher cost than the Project. The Siting Board finds that the Project is preferable to Transmission Alternative 2 with respect to reliability, environmental impacts, and cost.

The Siting Board finds that, on balance, 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.

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. Sudbury-Hudson at 50; Vineyard Wind LLC EFSB 17-05/D.P.U. 18-18/18-19, at 19 (2019) ("Vineyard Wind"); Needham-West Roxbury at 21. But see Colonial Gas Company d/b/a National Grid, EFSB 16-01, at 28 (2016), Colonial Gas Company d/b/a National Grid, EFSB 18-01/D.P.U. 18-30, at 40-41 (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

Eversource described its selection of the Primary Route and Noticed Alternative Route as

an iterative process consistent with Siting Board precedent and previously established approaches for evaluating electric transmission routing options (Exh. EV-2, at 4-1 to 4-2). The Company stated that the objective of its analysis was to identify a technically feasible route that would provide required transmission system reliability improvements by interconnecting the Andrew Square and Dewar Street Substations while minimizing the potential impacts on the developed and natural environment (Exh. EV-2, at 4-2).

Eversource characterized its route selection process as involving the following steps: developing a geographic study area ("Study Area"); identifying routing opportunities and constraints; identifying and screening routes and route variations through engineering review and municipal consultation ("Candidate Routes"); scoring potential routes based on environmental and constructability criteria; and selecting two candidate routes based on considerations of cost, reliability, environmental impacts, and geographical diversity (Exh. EV-2, at 4-2 to 4-3, 4-14). These steps are described below.

Eversource demarcated its geographic Study Area to encompass all feasible routes for an underground transmission cable between the Andrew Square and Dewar Street Substations (Exh. EV-2, at 4-4 to 4-5). The Substations mark the northern and southern limits of the Study Area as well as the Project termini (Exh. EV-2, at 4-5). Massachusetts Bay serves as the eastern boundary of the Study Area; Boston and Pleasant Streets mark its western boundary (Exh. EV-2, at 4-5). The Study Area is entirely within Boston's South Boston and Dorchester neighborhoods, a densely developed, urban area that includes residential, commercial and some industrial uses (Exh. EV-2, at 4-5). The only wetland areas within the Study Area are (1) Patten's Cove, and (2) floodplain associated with Massachusetts Bay (Exh. EV-2, at 4-5). Protected open space (land protected by Article 97) within the Study Area includes the Old Harbor Reservation, Dorchester Shores Reservation, Sharon Park, and McConnell Park/Springdale Street (Exh. EV-2, at 4-5; Tr. 2, at 156).

Eversource reviewed its Study Area in conjunction with five routing objectives: (1) compliance with all applicable statutory requirements, regulations, and state and federal siting agency policies; (2) achievement of a reliable, operable, and cost-effective solution to Project need; (3) optimization of the reasonable, practical, and feasible use of existing linear corridors (e.g., public roadway corridors and existing rail, pipeline, and transmission line

ROWs); (4) minimization of the need to acquire property rights; and (5) maximization of the potential for direct routing options over circuitous routes (Exh. EV-2, at 4-2). The Company used its five objectives to identify and compare the universe of potential underground routes between the Andrew Square and Dewar Street Substations on the basis of feasibility, construction constraints, environmental impacts, and the potential to meet reliability requirements at lowest cost (Exh. EV-2, at 4-5, 4-24 to 4-25).

By application of its route evaluation guidelines, the Company developed complete and distinct Candidate Routes (within a Universe of Routes) for further investigation and scoring (Exh. EV-2, at 4-5). Eversource noted that, in mapping Candidate Routes, the Company considered the use of existing linear, north south corridors (e.g., I-93 and the Massachusetts Bay Transportation Authority ("MBTA") ROW), that appeared feasible for Project construction and could provide a reasonably direct route between the Company's two Substation endpoints (Exh. EV-2, at 4-5).

Eversource stated that it undertook several planning and outreach initiatives, including meetings with elected officials, representatives of key Massachusetts and Boston agencies, (e.g., those with transportation, recreation, planning, and housing-related oversight), and representatives of Boston-based community and business organizations (Exh. EV-2, at 4-3 to 4-4). The purpose of these initiatives was to discuss potential locations for the Project, obtain input on proposed routes, and determine whether a new duct bank and manhole system within the streets of the Study Area would conflict with city or state projects or facilities (Exh. EV-2, at 4-3 to 4-4, 4-9).

Based on the results of these initiatives, the Company advanced six Candidate Routes for screening (Exh. EV-2, at 4-5 to 4-9). The initial screening process reviewed publicly available data to consider existing abutting land uses and the presence of natural resources such as wetlands, waterways, and rare species habitat; traffic experts conducted field investigations to confirm general traffic patterns and volumes applicable to the route (Exh. EV-2, at 4-9). The Company also reviewed routes for constructability constraints, such as difficult bends or existing underground utility congestion, and considered information from government agencies as well as from community and business stakeholder groups (Exh. EV-2, at 4-9). The six routes are described in Table 2, below.

Table 2. Route Alternatives

Route Name (Length)	Streets	Water Body Crossings	Conservation Areas
Morrissey Boulevard (2.0 miles)	Ellery Street, Boston Street, Songin Way, O'Connor Way, Kemp Street, O'Callaghan Way, Old Colony Avenue, Morrissey Boulevard, Savin Hill Avenue, Grampian Way, Playstead Street, Springdale Street	Pattens Cove (also referred to as Savin Hill Cove)	Old Harbor Reservation; Dorchester Shores Reservation; Vietnam War Memorial
Sydney Street (1.6 miles)	Ellery Street, Boston Street Howell Street, Dorchester Avenue, Locust Street Buttonwood Street, Mount Vernon Street, Columbia Road, Sydney Street	None	Sharon Park
Dorchester Avenue (1.6 miles)	Ellery Street, Boston Street Songin Way, Dorchester Avenue, Dewar Street	None	Ryan Play Area
Pleasant Street (1.7 miles)	Ellery Street, Boston Street Columbia Road, Pond Street Pleasant Street, Reach Street, Dorchester Avenue, Dewar Street	None	Richardson Square
MBTA (1.5 miles)	MBTA ROW	None	Old Harbor Reservation
I-93 (1.5 miles)	MBTA ROW I-93	None	None

Source: Exh. EV-2, at 4-8.

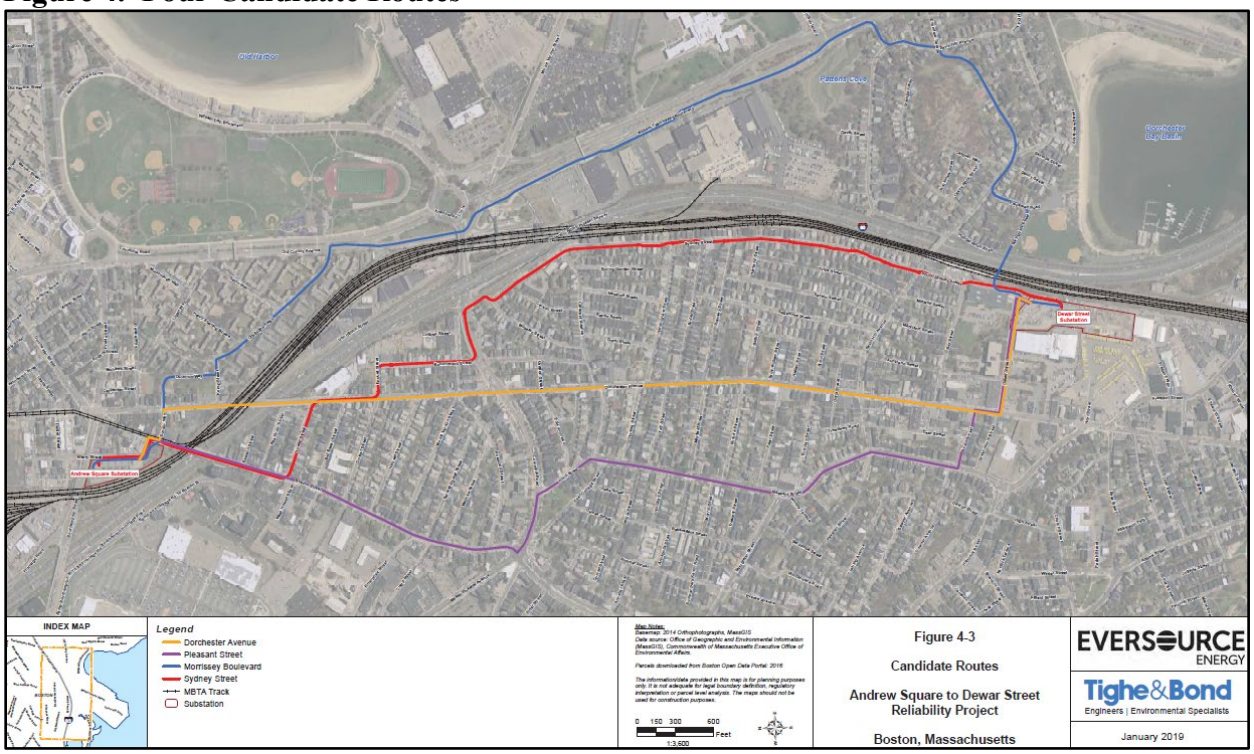
As a result of its screening process, the Company eliminated two routes, the so-called "MBTA" and "I-93" options, as inappropriate for further consideration (Exh. EV-2, at 4-9).[38]

[38] The Company eliminated the MBTA and I-93 route options because of construction feasibility constraints (Exh. EV-2, at 4-9). The MBTA ROW includes both commuter and local rail (Exh. EV-2, at 4-9). Space between rails is limited and the majority of the ROW is too narrow to support the Project's required width for the duct bank construction (Exh. EV-2, at 4-9). The I-93 Route is a major highway; MassDOT indicated that construction along the I-93 corridor would require restricted weekday and weekend work hours (Exh. EV-2, at 4-9). The Company stated that the need for the Project is

The remaining four routes were advanced for more detailed evaluation as Candidate Routes (Exh. EV-2, at 4-9).

The Company undertook a detailed analysis and ranking of its four remaining Candidate Routes: Morrissey Boulevard, Sydney Street, Dorchester Avenue, and Pleasant Street (Exh. EV-2, at 4-10). Each route would travel underground in existing public roadways and cross highways and MBTA corridors (Exh. EV-2, at 4-10). The four routes advanced for further consideration are shown in Figure 4, below.

Figure 4. Four Candidate Routes



Source: Exh. EV-2, at 4-29.

The Company's scoring process consisted of the following: (1) determining evaluation criteria to identify impacts of each route; (2) gathering raw criteria data for each route; (3) calculating a ratio score for each criterion for each candidate route; (4) assigning individual

immediate, but that work time restrictions and roadway restoration requirements would slow the Project by one or more years, as compared to other routes (Exh. EV-2, at 4-9).

weights to each criterion to reflect its potential for impact; and (5) determining a total raw ratio score and total weighted ratio score for each route (Exh. EV-2, at 4-11; RR-EFSB-1).

The Company graded each Candidate Route according to the following 14 criteria: residential land use; commercial/industrial land use; sensitive receptors; bus stops/MBTA stations; length along public transit/MBTA ROW; historical and archaeological resources; traffic impacts; public shade trees; wetland resource areas; potential to encounter subsurface contamination; existing road/ROW width (if less than 30 feet); existing utility density; existing transmission lines; and high impact crossings (Exh. EV-2, at 4-11 to 4-21).[39,40,41]

---

[39] The Company stated that it did not evaluate Article 97 lands in route selection criteria because no routes included parkland at the time the Company performed its route selection analysis (Company Brief at 50). Eversource stated that, in subsequent discussions with the City of Boston, the City requested and Eversource agreed to obtain rights to construct the Project on land in Springdale Street, which the City considers to be parkland (Company Brief at 74 n.38, citing Exh. EFSB-G-42; Tr. 2, at 152-153). See Section VI.D.1.v. below for further discussion. Eversource stated that the consideration of Article 97 issues in the route selection process would not have impacted the selection of the Morrissey Boulevard route as the Primary Route and the Sydney Street route as the Noticed Alternative Route (Company Brief at 50 n.26, citing Tr. 2, at 171-172.)

[40] The Company explained that its existing utility density criterion is distinct from its existing transmission lines criterion (Exhs. EFSB-RS-9; EFSB-LU-2). The existing utility density criterion combines analysis of existing utility density and transmission lines criteria for assessing useable corridor, utility crossing, and heat generating sources (Exhs. EFSB-RS-9; EFSB-LU-2). The Company calculated useable corridor by averaging the available space in the roadway between existing utilities (Exhs. EFSB-RS-9; EFSB-LU-2). Utility crossing refers to the number of times a route would cross an existing utility (Exhs. EFSB-RS-9; EFSB-LU-2). Heat generating sources refers to the number of times the route would cross a heat (electric or steam) generating utility (Exh. EFSB-RS-9).

[41] The Company used two criteria, number of bus stops/T stations and length along public transit, to assess the Project impacts to public transportation along evaluated routes (Exh. EFSB-RS-7). The former criterion reflects the likely impact of Project construction on pedestrian access to and from bus stops/T stations and the potential effect on bus passenger travel times due to temporary stop relocations or consolidation (Exh. EFSB-RS-7). The length along public transit criterion estimates the distance that a candidate route would coincide with bus routes, providing a measure of impact to bus travel time due to construction-related traffic (Exh EFSB-RS-7).

The Company calculated ratio scores to reflect potential impacts (Exh. EV-2, at 4-11). Eversource assigned a value of "1" to the criterion on the route with the highest potential for the corresponding impact; other routes received a ratio score between "0" and "1" indicating their relative potential impact for the particular criterion (Exh. EV-2, at 4-11).[42] The Company added scores for each criterion together to get a total raw ratio score for each candidate route (Exh. EV-2, at 4-11).

The Company then assigned weights (1 to 5) for each scoring criterion (with higher weights having greater impact), to reflect the Company's assessment of: (1) the potential temporary and permanent impacts that could result from construction; (2) public feedback; and (3) environmental and constructability factors (Exh. EV-2, at 4-10). Table 3 presents the weights that the Company assigned to the 14 criteria (Exh. EV-2, at 4-10, 4-21).

Table 3. Routing Analysis Criteria Weights Summary

	Criterion	Assigned Weight
Natural Environment	Public Shade Trees	3
	Wetland Resource Areas	2
	Potential to Encounter Subsurface Contamination	4
Technical/ Constructability	Existing Road/ROW Width (less than 30 feet)	2[43]
	Existing Utility Density	5
	Existing Transmission Lines	5
	High Impact Crossings	5
Built Environment	Residential Land Use	4[44]
	Commercial and/or Industrial Land Use	4

[42] For example, if a hypothetical Route X with ten proximate residential structures has the highest potential residential unit impact, then the residential unit impact score of Route X is 10 structures/10 structures or "1" (Exh. EV-2, at 4-11). A hypothetical Route Y with five proximate residential structures has a residential structure impact score of 5 structures/10 structures or "0.5" (Exh. EV-2, at 4-11).

[43] The Company assigned a weight of 2 to existing road width because parking restrictions or detours can be used to increase road width available for construction (Exh. EFSB-RS-10). Other technical issues (e.g., proximity to existing transmission lines) are less readily managed and they are accordingly assigned a greater weight indicating potential for greater impacts (Exh. EFSB-RS-10).

[44] The residential land use criterion reflects the number of residential units rather than residential structures (Exh. EFSB-RS-5).

Table 3. Routing Analysis Criteria Weights Summary

	Criterion	Assigned Weight
	Sensitive Receptors	3
	Bus Stops/T Stations	3
	Length along Public Transit/MBTA ROW	3
	Historical and Archaeological Resources	1
	Traffic Impacts	5

Source: Exh. EV-2, at 4-21.

Table 4 summarizes the weighted environmental impact scores, cost, and relative rank of the Candidate Routes (Exh. EV-2, at 4-24). As Table 4 shows, the Morrissey Boulevard Route has the lowest cost and lowest total weighted score (i.e., lowest potential for environmental impact), and therefore the highest (i.e., best) rank for cost and environmental impact of the evaluated Candidate Routes (Exh. EV-2, at 4-24). The Sydney Street Route has the next lowest cost and potential for environmental impact, and the second highest rank for cost and environmental impact of the evaluated Candidate Routes (Exh. EV-2, at 4-24).

Table 4. Ranking Summary of Candidate Routes

Route	Natural Env.	Construction Difficulty	Built Env.	Total Env. Rank	Cost (million USD) / Rank
Morrissey Blvd (Project)	6.8	7.4	13.6	27.8/1	$68.3 / 1
Sydney Street	5.7	12.2	10.5	28.4/2	$69.6 / 2
Pleasant Street	5.8	8.3	16.9	31.0/3	$74.5 / 4
Dorchester Avenue	4.7	10.6	21.4	36.6/4	$70.8 / 3

Sources: Exh. EV-2, at 4-24; RR-EFSB-1; RR-EFSB-1(1).

The Company noted cost estimates for each route were developed with the following accuracies: a planning grade estimate (-25%/+25%) for Morrissey Boulevard; a conceptual grade estimate (-25%/+50%) for Sydney Street; and order of magnitude estimates (-50%/+200%)

for Dorchester Avenue and Pleasant Street (Exh. EV-2, at 4-24).[45] The Company reported that the following factors could affect the actual cost of the Project: subsurface soil and rock conditions affecting excavation to place the duct bank, presence of contaminated soils, the proximity and density of existing underground utilities, route length, land uses and traffic conditions along the route that may affect construction timing, number of bends, need to acquire property rights, and availability and cost of materials and equipment (Exhs. EV-2, at 4-2, 4-14, 4-23 to 24; EFSB-C-5).

The Company also examined its Candidate Routes for reliability (Exh. EV-2, at 4-24). Eversource determined that there would be no substantial difference in the level of reliability risk between the Candidate Routes because of their underground location but expressed concern about existing transmission lines in the Sydney Street corridor (Exhs. EV-2, at 4-24; EFSB-RS-14). The Company represented that it designs its transmission system to reduce the risk of one single event being the cause of multiple element failures, and that it, therefore, whenever practical, seeks to minimize the length of parallel underground transmission lines (Exh. EV-2, at 4-24). The Company stated that the large number of existing lines in the Sydney Street corridor made it less desirable from a reliability perspective than other evaluated Candidate Routes (Exh. EV-2, at 4-24).

The Company identified the Morrissey Boulevard Route as both lowest in cost and potential impact to the environment and the Sydney Street Route as second lowest on each criterion (Exh. EV-2, at 4-23 to 4-24). The Sydney Street Route corridor is less desirable from a reliability perspective than the Morrissey Boulevard and other Candidate Routes, but not substantially so (Exh. EV-2, at 4-24). Eversource further determined that the Sydney Street Route offers a reasonable degree of geographic diversity compared to the Morrissey Boulevard Route (Exh. EV-2, at 4-25). In addition to its environmental, cost, and reliability review of Candidate Routes, Eversource stated that its route selection process was influenced by the opportunity to coordinate construction of the New Line along the Primary Route with other

---

[45] Eversource noted that cost estimates did not include costs associated with contingencies due to adverse weather or system-related delays; labor costs were based upon "typical" contractor work; and the estimate does not account for non-typical manufacturer back-log (Exh. EV-2, at 4-24).

construction efforts in the vicinity of the Project (Exh. EV-2, at 4-25). Eversource stated that such coordination could minimize the overall impacts to surrounding communities (Exh. EV-2, at 4-25).

Based on its route selection process, the Company selected the Morrissey Boulevard Route as the Primary Route for the Project and the Sydney Street Route as the Noticed Alternative Route (Exh. EV-2, at 4-25).

C. Geographic Diversity

The Company stated that it developed and assessed a wide variety of routes within the Study Area (Exh. EV-2, at 4-1 to 4-2, 4-4 to 4-5). Figure 4, above, shows the diversity of routes. The Company maintains that the two routes it has selected between the Andrew Square and Dewar Street Substations, one route that primarily follows Morrissey Boulevard and one route located along Sydney Street, represent geographically diverse alternatives (Exh. EV-2, at 4-25).

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, while ensuring reliability of supply. In past decisions, the Siting Board has found various criteria, including, but not limited to, natural resources, land use, community impact, cost, and reliability criteria, to be appropriate for identifying and evaluating route options for transmission lines and related facilities. Sudbury-Hudson at 71; Needham-West Roxbury at 21; Woburn-Wakefield at 65. The Siting Board has also found the specific design of scoring and weighting methods for chosen criteria to be an important part of an appropriate site selection process. Sudbury-Hudson at 71; Needham-West Roxbury at 21; Woburn-Wakefield at 65.

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 it has 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 with some measure of geographic diversity. The route selection methods used by the Company in this proceeding are generally consistent with those used for

other projects and accepted by the Siting Board.[46] Therefore, 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 energy supply.

VI. ANALYSIS OF THE PRIMARY AND ALTERNATIVE ROUTES

In this section, the Siting Board analyzes the Morrissey Boulevard Route (the Primary Route) and the Sydney Street Route (the Noticed Alternative Route) based on environmental impacts, cost, and reliability. Based on the evidence and findings presented below, the Siting Board concludes that the Primary Route is superior to the Noticed Alternative Route with respect to providing a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

A. Standard of Review

In implementing its statutory mandate under G.L. c. 164, §§ 69H, 69J, the Siting Board requires a petitioner to show that its proposed facility is sited at a location that minimizes costs and environmental impacts while ensuring a reliable energy supply. To determine whether such a showing is made, the Siting Board requires a petitioner to demonstrate that the proposed route for the facility is superior to the alternative route on the basis of balancing environmental impact, cost, and reliability of supply. Sudbury-Hudson at 78; Vineyard Wind at 35; Needham-West Roxbury at 32.

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

---

[46] This Siting Board's acceptance of this general route selection methodology was upheld on appeal by the Massachusetts Appeals Court. Town of Winchester v. EFSB, No. 19-P-300, slip op. at 6-8 (July 9, 2020). See also Town of Sudbury v. EFSB, No. SJC-12997, slip op. at 28-33 (June 25, 2021).

environmental impacts as well as among environmental impacts, cost, and reliability. Finally, the Siting Board compares the routes to determine which is superior with respect to providing a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. Sudbury-Hudson at 78; Vineyard Wind at 35; Needham-West Roxbury at 32.

B. Description of the Primary and Noticed Alternative Routes

Eversource identified the Morrissey Boulevard Route, approximately two miles long, as the Company's Primary Route (Exh. EV-2, at 5-1). The Sydney Street Route, approximately 1.6 miles long, is the Company's Noticed Alternative Route (Exh. EV-2, at 5-2).[47] Figure 1, above, provides a map of the Primary and Noticed Alternative Routes.

The Company's Primary Route would exit the Andrew Square Substation east on Ellery Street, turn south on Boston Street, east on Songin Way, continue on O'Connor Way, then turn east onto Kemp Street and south on O'Callaghan Way until the intersection of Old Colony Avenue (Exh. EV-2, at 5-1). The route would then continue south on Old Colony Avenue onto William T. Morrissey Boulevard after Kosciuszko Circle, at which point it would turn south onto Savin Hill Avenue, and down Grampian Way (Exh. EV-2, at 5-1).[48] The route then turns south on Playstead Road, west on Springdale Street, passes under the MBTA tracks and I-93, and continues into the Dewar Street Substation (Exh. EV-2, at 5-1).

The Noticed Alternative Route would exit the Andrew Square Substation east on Ellery Street, turn south on Boston Street, east on Howell Street, south on Dorchester Avenue, east on Locust Street, south on Buttonwood Street, and east on Mount Vernon Street, at which point the

---

47 The Morrissey Boulevard Route is 10,454 feet (1.98 miles) long (Exh. EV-2, at 5-1). The Sydney Street Route is 8,448 feet (1.60 miles) long (Exh. EV-2, at 5-2).

48 The Primary Route would bypass Kosciuszko Circle by following Old Colony Avenue to Mount Vernon Street to Morrissey Boulevard, passing beneath Columbia Avenue where Columbia Avenue enters Kosciuszko Circle from the west (Exhs. EV-2, at fig. 4-7; EFSB-LU-1(1), at 17). In a letter dated November 26, 2019, the Boston Planning and Development Agency ("BPDA") indicated a preference for avoiding construction impacts directly at Kosciuszko Circle (Exh. G-40(S1)(1)).

route would cross Columbia Road and travel south on Sydney Street to the Dewar Street Substation (Exh. EV-2, at 5-2).

The Company stated that a common feature of the Project, regardless of route, would be upgrades to the Company's Andrew Square and Dewar Street Substations (Exh. EV-2, at 5-3, 5-6). The Andrew Square Substation is located on Ellery Street at Southampton Street in South Boston, on a 2.02-acre, Company-owned parcel of land (Exh. EV-2, at 5-3). To accommodate either the Primary or the Noticed Alternative Route, the Company would install a hybrid air/gas insulated switchgear module and associated interconnecting equipment and bus work (Exh. EV-2, at 5-3). The Company would also install control and protection equipment in the control house (Exh. EV-2, at 5-3). Additionally, Eversource would install a 75-foot tall shielding mast within the substation fence line (Exhs. EFSB-V-1; EFSB-V-2). No fence line expansion or removal of existing equipment is required to accommodate the proposed improvements at the Andrew Square Substation (Exh. EV-2, at 5-3).

The Company's Dewar Street Substation is located on Dewar Street at Auckland Street in Dorchester, Boston, on 4.36 acres of Company-owned property (Exh. EV-2, at 5-6). To accommodate either the Primary or Noticed Alternative Routes, the Company would install a hybrid air/gas insulated module on an elevated platform and associated interconnecting equipment and bus work (Exh. EV-2, at 5-6 to 5-7). The Company would also install control and protection equipment in the control house and a 100-foot shielding mast (Exh. EV-2, at 5-6 to 5-7). No fence line expansion or removal of existing equipment is required to accommodate these proposed improvements at the Dewar Street Substation (Exh. EV-2, at 5-7).

C. General Description of Project Construction

Eversource described the construction methods that would be used for the Primary and Noticed Alternative Routes and upgrades to the Substations (Exhs. EV-2, at 5-3, 5-6 to 5-8; EFSB-G-6; EFSB-G-15). Eversource stated that, in general, construction impacts would be temporary and occur over a period of approximately 20 months (Exh. EV-2, at 5-15).

Both routes would require underground cable construction within roadways for their full distance, approximately 2.0 miles and 1.6 miles, respectively (Exh. EV-2, at 5-8). The Company would use 3,500 thousand circular mils ("kcmil") XLPE insulated cables for the New Line,

installed in four, eight-and-5/8-inch-diameter HDPE conduits (Exh. EV-2, at 5-8 to 5-9). Two four-inch-diameter PVC conduits and two two-inch diameter PVC conduits would carry communication lines and ground continuity conductors, respectively (Exh. EV-2, at 5-8 to 5-9). The space around the conduits would be filled with thermal concrete to form a duct bank (Exh. EV-2, at 5-9). In total, the duct bank would contain four HDPE conduits and four PVC conduits (Exh. EV-2, at 5-8 to 5-9, 5-13). The Company anticipates the dimensions of the typical duct bank trench will be four feet wide and five feet deep, with cables typically three feet below the road surface (Exh. EV-2, at 3-6, 5-8 to 5-9).

In-street installation of underground cable involves four principal phases of construction: manhole installation; trenching and duct bank installation; cable pulling, splicing, and testing; and final pavement restoration (Exh. EV-2, at 5-9). The Company would use a generally linear work zone along the construction corridor (Exh. EV-2, at 5-9). Typical open trench excavation would require an approximately eleven-foot-wide work space; areas that require deep excavations (e.g., intersections with high density of existing utilities) may require a work area as wide as 18 feet; installation of manholes typically requires a 20-foot-wide work area (Exh. EV-2, at 5-9). The Company would use temporary traffic control devices and police details to control traffic around work areas (Exh. EV-2, at 5-9, 5-22).

Eversource stated that constructing the New Line along either the Primary or Noticed Alternative Route would require crossing I-93 and the MBTA railroad tracks (Exh. EV-2, at 5-1 to 5-2, 5-14 to 5-16; EFSB-LU-8). For the Primary Route, the New Line would both cross I-93 and the MBTA railroad tracks via a single trenchless crossing installed using pipe jacking methods (Exhs. EV-2, at 5-16; EFSB-LU-8).[49] Eversource proposed that the trenchless crossing would start from Springdale Street, which is east of I-93 and perpendicular to Playstead Road, and exiting in the vicinity of the Dewar Street Substation, west of I-93 (Exh. EV-2, at 5-1). For

[49] The pipe jacking method is used to install a casing horizontally under a conflicting object where trenching cannot be accommodated or easily accommodated (Exh. EV-2, at 5-15). Eversource stated that the MBTA prefers the pipe jacking method for crossings beneath its railroad tracks (Exh. EV-2, at 5-15). The Company noted that, during a pipe jack, the entire excavation is supported by a casing installed behind the drill head, which minimizes soil settling and would address the MBTA's concerns (Exh. EV-2, at 5-15).

the Noticed Alternative Route, Eversource would use the existing Boston Street Bridge to cross over I-93 and the MBTA railroad tracks (Exh. EV-2, at 5-2).[50] Eversource indicated that installing the New Line might require additional trenchless crossings to avoid unanticipated obstructions, such as culverts or utilities (Exh. EV-2, at 5-14 to 5-15).

A description of the sequence of activities, Project work schedule, and other construction-related topics, including environmental compliance, monitoring, and mitigation, is provided below.

1. Manhole Chamber Installation

Manholes (also known as splice vaults) facilitate cable installation and splicing and allow access for maintenance and repairs over the life of the cable (Exh. EV-2, at 5-10). Manholes would be approximately ten feet wide by twelve feet high by 32 feet long and spaced approximately 1,500 to 1,800 feet apart (Exh. EV-2, at 5-10, 5-12). Manhole installation typically requires seven to ten days per location but may take longer where underground utility relocation is necessary (Exh. EV-2, at 5-12, 5-16).[51] Pulling and splicing cable require four and five days, respectively (Exh. EV-2, at 5-12, 5-16). Once installed, the Company inspects manholes approximately every three years (Exh. EV-2, at 5-12).[52] The Primary Route would require eight manholes; the Noticed Alternative Route would require six manholes (Exhs. EFSB-G-9(2); EFSB-LU-1(2)).

---

50 Eversource indicated that the installing the New Line along the Boston Street bridge would involve significant engineering challenges (e.g., for installing the duct bank within the abutments at both approaches to the bridge and designing any necessary bridge reinforcements) (Tr. 2, at 186).

51 Eversource plans to work with the City of Boston and utility companies on a case-by-case basis regarding relocations (Exh. EV-2, at 5-12).

52 Operators inspect the condition of cable joints, cable support brackets, link box connections, concrete wall integrity, and the junction of conduits as they enter and leave the manhole (Exh. EV-2, at 5-12). The manhole cover is inspected to ensure that it is stable and flush with the road surface (Exh. EV-2, at 5-12).

2. Trenching and Duct Bank Installation

Eversource stated that open-cut trenching would be the primary method for underground duct bank construction (Exh. EV-2, at 5-12). First, the Company would mark the planned trench width and Dig Safe would locate existing utilities in the street; then a construction crew would saw-cut the street (Exh. EV-2, at 5-12). Contractors would use pneumatic hammers and a backhoe to break up and load the cut pavement segments into a dump truck (Exh. EV-2, at 5-12). The Company would use a backhoe to excavate the trench, except where excavation is done by hand to avoid disturbing existing utility lines and/or service connections (Exh. EV-2, at 5-12). Pavement and soil from the trench opening process would be managed separately, with pavement recycled at an asphalt batching plant (Exh. EV-2, at 5-12).

Eversource anticipates that 100 to 200 feet of trench will be open at a time, and that construction will generally progress linearly, with tasks typically occurring in progressive sequence (Exh. EV-2, at 5-9). For typical receptors along either route, duct bank installation would have a duration of one to two weeks (Exh. EFSB-NO-3). The construction sequence and duration for each trench segment are summarized in Table 5.

Table 5. Approximate Duration of Trench Segment Activities

Activity	Approximate duration
Survey and layout	One day
Pavement cutting	One day
Trench excavation and shorting	Two to five days
Conduit installation	One to three days
Duct bank concrete placement/curing/shoring removal	Three to five days
Backfill/temporary pavement placement	Two to three days

Source: Exhs. EV-2, at 5-9; EFSB-CM-4.

Eversource will maintain a minimum separation of 18 inches between the outside of the duct bank and other utilities to minimize the need for protective devices (Exhs. EV-2, at 5-12; EFSB-CM-18). When installing duct bank under other existing utilities, the Company will, as necessary, employ wood sheeting or temporary mechanical supports such as strapping (Exh. EV-2, at 5-12). The Company will coordinate design and installation of any such supports with the existing utility owner (Exh. EV-2, at 5-12).

The Company is designing the Project to minimize utility conflicts and plans to use test pits to confirm design assumptions (Exh. EV-2, at 5-12). The Company indicated it would likely

excavate roadway intersections and other areas of expected subsurface utility congestion in advance to identify potential obstructions (Exh. EV-2, at 5-13). Cable installation may require temporary or permanent relocation of existing utilities (Exh. EV-2, at 5-13). The Company also noted that it may slightly shift construction locations to avoid unforeseen utility and other conflicts in the field (Exh. EV-2, at 5-12). The Company stated that, should construction necessitate a service disruption, Eversource and its contractors would notify and coordinate with any affected customers in advance (Exh. EV-2, at 5-12).

The Company would use "live loading" methods during trench excavation to remove excavated soil (Exh. EV-2, at 5-12 to 5-13). Excavated soil would be loaded directly into a dump truck for temporary off-site stockpiling or for hauling to an off-site facility for recycling, re-use, or disposal (Exh. EV-2, at 5-12 to 5-13). Eversource stated that the "live loading" construction technique eliminates the need for on-site soil stockpiling and reduces potential for sedimentation and nuisance dust (Exh. EV-2, at 5-13). During non-work hours, the excavated trench will be sheeted and/or shored as required by soil conditions, Occupational Safety and Health Administration safety rules, and local and state regulations (Exh. EV-2, at 5-13).

Cable conduits would be assembled and lowered into open trench and then the area around the conduits would be filled with thermal concrete forming a duct bank (Exh. EV-2, at 5-13). The remainder of the trench would be back-filled with fluidized thermal backfill or native soil, as required by regulation, and a temporary pavement patch applied (Exh. EV-2, at 5-13).

3. Cable Pulling, Splicing, and Testing; Final Road Restoration

The Company will test and clean conduits prior to cable installation (Exh. EV-2, at 5-14). Three cables will run between adjacent manholes with the pulling operation extending from a cable reel at the pull-in manhole to a cable puller at the pull-out manhole (Exh. EV-2, at 5-14). A hydraulic cable pulling winch and tensioner will be used to pull each cable from the pull-in to the pull-out manhole (Exh. EV-2, at 5-14). Adjacent cable sections will then be spliced together inside the manholes; the Company reported that each cable splice location typically requires 40 to 60 hours over four or five extended workdays (Exh. EV-2, at 5-14). Splicing would extend into evening hours and, in some cases, throughout the night (e.g., three shifts over 24 hours)

(Exh. EV-2, at 5-14). The splicing operation requires a splicing van and a generator, with all equipment and material needed to make a complete splice contained in the splicing van (Exh. EV-2, at 5-14).[53] Upon completion, Eversource will field test the cable system from the Company's substations; following a successful field test, the Company will energize the New Line (Exh. EV-2, at 5-14).

After Project completion, the Company will restore roads in accordance with state (D.T.E. 98-22) and municipal repaving standards (Exh. EV-2, at 5-13 to 5-14).[54,55] The Company reported that, in keeping with this expectation, it met with representatives of several jurisdictional City of Boston departments, including the Boston Planning and Development Agency ("BPDA"), to allow the City of Boston an opportunity to ask questions about and generally discuss the Project (Exh. EFSB-CM-6; EFSB-CM-12; EFSB-G-21; EFSB-G-21(1); EFSB-G-21(2); Tr. 1, at 35-43). Eversource further reported that, on September 17, 2019, the Company met with representatives from the Boston Public Works Department, the Public Improvement Commission ("PIC"), and other City departments to review the Project and begin discussions about requirements for final repaving (Exh. EFSB-CM-6). Eversource stated that the City's repaving requirements will be formalized during the PIC's permitting process for grants of location (Company Brief at 15 n.4, citing Exhs. EFSB-CM-19; EFSB-CM-24).

---

53 The splicing van contains an air conditioning unit that can be used to control the moisture content in the manhole (Exh. EV-2, at 5-14). The portable generator will provide the electrical power for the splicing van and air conditioning unit, which will be muffled to reduce noise (Exh. EV-2, at 5-14). The van, typically, will be located over one manhole access, the air conditioner will be located near the second manhole access, and the generator will be located to avoid restricting traffic movement around the work zone (Exh. EV-2, at 5-14).

54 D.T.E. 98-22 sets out the Department's "Standards to be Employed by Public Utility Operators When Restoring any of the Streets, Lanes and Highways in Municipalities."

55 The Company anticipates it may not be permitted to work within public roads during the winter months due to the winter moratorium for in-street construction (Exh. EV-2, at 5-16). Some construction activities, such as splicing at manholes, may be allowed during the moratorium (Exh. EV-2, at 5-16).

D. Environmental Impacts

1. Land Use, Historic Resources, and Cultural Resources

a. Company Description

i. Substation Land Use

The Company stated there will be no changes to land use at the Andrew Square and Dewar Street Substations for the Project; furthermore, substation work would be the same whether the New Line is constructed along the Primary or Noticed Alternative Route (Exh. EV-2, at 5-3, 5-6 to 5-7). The Company indicated that there is sufficient space within each substation to accommodate construction staging and laydown required for the substation upgrades (Exh. EV-2, at 5-3, 5-7). Section II.B, above, provides a description of equipment upgrades at the two substations.

ii. Land Use Along the Primary and Noticed Alternative Routes

Eversource maintains that the potential for the Project affect land use along Primary Route or the Noticed Alternative Route is relatively limited because the New Line would be installed primarily within public roadways (Company Brief at 72, citing Exh. EV-2, at 5-19). For the Primary Route, the predominant adjacent land use is residential, with some commercial and industrial land use (Exh. EV-2, at 5-20 to 5-21). Eversource stated that there are approximately 21.09 acres of residential land use within 100 feet of the Primary Route, and approximately 635 residential units directly abutting the Primary Route (Exh. EV-2, at 5-20, table 5-2). Eversource noted that land uses along Morrissey Boulevard, a roadway segment which accounts for approximately one-third of the Primary Route, include industrial, public/institutional (University of Massachusetts, Boston), recreational, and commercial (Exh. EV-2, at 5-20). The Primary Route would pass two schools, one place of worship, and four parks and recreation facilities (Exh. EV-2, at 5-1, 5-20 to 5-21). Eversource stated that the Primary Route crosses Pattens Cove/Savin Hill Cove on Morrissey Boulevard within an existing utility bay and is in the vicinity of several major conservation areas, including the Old Harbor Reservation Parkways (Exh. EV-2, at 5-1).

Road widths along the Primary Route range from 15 feet (for a short segment on Playstead Road) to 60 feet (Columbia Road), and there are five MBTA bus stops and an MBTA Red Line station (Exh. EV-2, at 5-1). Eversource reported that Morrissey Boulevard is a limited access roadway with no street parking and two lanes of traffic for each direction; each pair of lanes is 40 feet wide (Exh. EV-2, at 5-22 to 5-23, fig. 4-7). The Primary Route requires two high impact crossings, one where the New Line would cross Mount Vernon and Old Colony near Kosciuszko Circle (via open trench construction), and one at I-93 and the MBTA railroad tracks (via trenchless construction (pipe jacking) from Springdale Street to the Dewar Street Substation) (Exh. EV-2, at 5-1).[56] Eversource characterized the existing utility density along the Primary Route as medium (Exh. EV-2, at 5-1).[57]

The Noticed Alternative Route passes through predominantly residential adjacent land with one school and some commercial and industrial land uses along a relatively direct combination of main and side streets (Exh. EV-2, at 5-2). Eversource stated that there are approximately 25.32 acres of residential land use within 100 feet of the Primary Route, and approximately 543 residential units directly abutting the Noticed Alternative Route (Exh. EV-2, at 5-20, table 5-2). The Company reported one major conservation area, Sharon's Park, but no major waterbodies or wetland resource areas, in the vicinity of the Noticed Alternative Route (Exh. EV-2, at 5-2).

Road widths along the Noticed Alternative Route range from 20 feet (Ellery Street) to 60 feet (Columbia Road) (Exh. EV-2, at 5-2). Sydney Street, which accounts for approximately

---

56 The Company defines high impact crossings as "more significant" transportation corridor crossings where factors such as the amount of traffic, the traffic pattern, or a crossing over or under a bridge, railroad, or highway warrant consideration of alternatives (e.g., pipe jacking) to open trench construction methods (Exh. EV-2, at 4-15).

57 As previously noted, the Company indicated that its assessment of existing utility density reflects the combined analysis of three factors: useable corridor, utility crossing, and heat generating sources (Exhs. EFSB-RS-9; EFSB-LU-2). The Company calculated useable corridor by averaging the available space in the roadway between existing utilities (Exhs. EFSB-RS-9; EFSB-LU-2). Utility crossing refers to the number of times the proposed route would cross an existing utility (Exhs. EFSB-RS-9; EFSB-LU-2). Heat generating sources refers to the number of times the route would cross a heat (electric or steam) generating utility (Exh. EFSB-RS-9).

three-eighths of the Noticed Alternative Route, is a two lane, one-way street, with parking allowed on both sides (Exh. EV-2, at 5-24 to 5-25, fig. 4-7). The Company reported that the average width of Sydney Street is 40 feet; a large portion of the Noticed Alternative Route on Sydney Street passes through residential land use (Exh. EV-2, at 5-24 to 5-25, fig. 5-6). There are six MBTA bus stops along the Noticed Alternative Route (Exh. EV-2, at 5-2). The Noticed Alternative Route would traverse the MBTA commuter rail tracks and I-93 on Boston Street via the Boston Street bridge crossing (Exh. EV-2, at 5-2). Eversource categorized the existing utility density along the Noticed Alternative Route as medium-high (Exhs. EV-2, at 4-22, 5-2; EFSB-RS-9; EFSB-LU-2).

Eversource stated that the number of existing underground utilities within roadways affects the available space below grade to physically install the proposed transmission conduits and manhole system (Exh. EV-2, at 4-14). Also, if a duct bank needs to be routed around existing obstacles, a greater number of bends can result in a higher number of manholes and the need for the duct bank to crisscross the street to allow for the duct bank bending radius (Exh. EFSB-C-6). The Company stated that the need to accommodate a greater number of existing utilities during construction increases construction duration, traffic disruption, and costs (Exhs. EV-2, at 4-14).

In a comment letter submitted to the Massachusetts Environmental Policy Act ("MEPA") Office in response to the Project's Environmental Notification Form ("ENF"), the Boston Water and Sewer Commission ("BWSC") expressed concern for where the New Line would cross, or run parallel to and above, BWSC-owned utilities, especially where the New Line could complicate BWSC emergency repairs or routine replacements (RR-EFSB-38(2) at 6). The BWSC noted that if, during construction, the contractor encounters a conflict with existing BWSC facilities, Eversource must modify the design to avoid conflicts with its facilities (RR-EFSB-38(2) at 6). The BWSC therefore requests that Eversource submit a site plan to the BWSC's Engineering Customer Service Department for review and comment; with respect to site plan review, BWSC stated it would require that Eversource install the New Line below the BWSC's deepest facility, as well as inspect the existing sewer and drain lines by CCTV after

construction is complete, to confirm that the lines were not damaged from construction activity (RR-EFSB-38(2) at 6).[58]

iii. Opportunities for Construction Coordination

Eversource reported that construction of the New Line along the Primary Route could be coordinated with two other, major construction projects planned for the area: the redevelopment of the McCormack Housing Community and the reconstruction of Morrissey Boulevard (Exh. EV-2, at 1-1). Eversource reported that residents of the McCormack Housing Community would be temporarily relocated for at least part of the planned redevelopment, and that coordinating the construction of the Project with the timing of this activity presents the opportunity to minimize construction-related impacts to residents (Exh. EV-2, at 5-1). Eversource represented that, although the Winn Development Company, the firm managing the McCormack Redevelopment, and the Boston Housing Authority ("BHA") have not solidified their construction plans, the Company would continue to meet with the BHA and Winn to coordinate construction schedules, to the extent possible, and address any concerns regarding the Project (Exhs. EFSB-CM-8; EFSB-G-8; EFSB-G-9; EFSB-G-26).

Regarding Morrissey Boulevard, Eversource reported that Massachusetts Department of Conservation and Recreation ("DCR") plans to upgrade the portion of Morrissey Boulevard between Neponset Circle and Mt. Vernon Street near the JFK/UMass MBTA Station to raise parts of the roadway to address flooding issues, improve drainage, improve safety, and improve access to abutting recreational properties (Exh. EFSB-CM-9). The Company stated that it has been in communication with DCR with the objective of coordinating both projects, and that the current design for the Project incorporates the preliminary design plans for the reconstruction of Morrissey Boulevard (Exh. EFSB-G-12).

Eversource reported its understanding that DCR's reconstruction of Morrissey Boulevard would take place over five years, and that, once completed, there would be a ten-year moratorium on new construction within Morrissey Boulevard (Exh. EFSB-G-12(2) at 3).

---

[58] The BWSC also identified difficulties about past interactions with the Company on similar projects (RR-EFSB-38(2) at 6).

Eversource also indicated that it had discussed with DCR an expectation that construction of both projects would overlap (Exh. EFSB-G-12(1) at 2; EFSB-G-12(2) at 2-3; EFSB-G-12(3) at 1). Eversource stated that, although it had not developed a combined schedule with DCR's plans for Morrissey Boulevard reconstruction, the Company will continue to coordinate its planning efforts with DCR as both projects are advanced (Company Brief at 19-20; Exh. EFSB-G-12; Tr. 2, at 198-202).

In an ENF comment letter submitted to the MEPA Office, DCR commented that it appreciated the pre-filing coordination conducted by the Company and that DCR intends to issue a Grant of Location to Eversource for portions of the Project within DCR's jurisdiction (RR-EFSB-38; RR-EFSB-38(2) at 4). Eversource stated that it intends to file an application for a Construction and Access Permit for work with the DCR roadway corridor in a subsequent permitting phase of the Project (RR-EFSB-38).

In a second comment letter dated November 26, 2019, the BPDA indicated that it had been in communication with Eversource regarding opportunities for coordinating the Project with other BPDA priorities, including the planned reconstruction of Morrissey Boulevard (Exh. EFSB-G-40(S1)(1)). The BPDA also remarked that it "looks forward to continued engagement with Eversource and the City to understand how to minimize to the best extent possible any adverse disruption to the relevant neighborhoods during construction of the Project" (Exh. EFSB-G-40(S1)(1)).

iv. Historic and Cultural Resources

Eversource stated that the Project is subject to review by the Massachusetts Historical Commission ("MHC") (Exh. EV-2, at 5-36).[59] The Company undertook a cultural resource investigation to identify historic and archaeological resources adjacent to the underground segments of the Primary and Noticed Alternative Routes (Exh. EV-2, at 5-36). As indicated by the Massachusetts Cultural Resources Inventory System ("MACRIS"), the Primary Route and the Noticed Alternative Route each intersect the boundary of one or more Inventory Areas and

[59] Review by MHC is required by G.L. c. 9, §§ 26-27C as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00) (Exh. EV-2, at 5-36).

Inventory Points (Exh. EV-2, at 5-36 to 5-37). Eversource stated that the designated locations are classified as historic, or as eligible, for the State Register of Historic Places and/or the National Register of Historic Places ("National Register"), and therefore are included in the Inventory of Historic and Archaeological Assets of the Commonwealth (Exh. EV-2, at 5-36 to 5-37). Table 6 below compares the historical and archaeological resources of the Primary and Noticed Alternative Routes (Exh. EV-2, at 5-37).

Table 6. Comparison of Adjacent Historical and Cultural Resources

Historical & Archaeological Resources	Primary Route	Noticed Alternative Route
Inventory points adjacent to the route	56	23
Inventory areas intersected by the route	5[60]	7
Archaeological sites ≤ 0.25 miles of the route	1	2
Archaeological sites intersected by route	0	0

Source: Exh. EV-2, at 5-37

Eversource indicated that, due to the post-construction change in road-surfacing adjacent to the above-mentioned historic and cultural resources, the Project would require a determination of the effect of this change from the MHC (Exh. EV-2, at 5-37). Eversource stated that it sent a Project Notification form to MHC and the Massachusetts Board of Underwater Archaeological Resources and received correspondence back from both organizations stating that the Project along the Primary Route would have no adverse effect on historic or cultural resources (Exh. EFSB-G-42(S1)(1), at 77, 126-127). Eversource stated that neither the Andrew Square nor Dewar Street Substations is located within any National or Local Historic District or any Inventoried Area (Exh. EV-2, at 5-6, 5-8).

The Company argues that, although the Primary Route passes or intersects numerous historic properties and archaeological sites, no direct or indirect impacts to these resources are anticipated (Exh. EV-2, at 5-37; Company Brief at 88). The Company further argues that, because the Project involves the underground installation of transmission line within the existing

[60] Two intersected inventory areas are in the National Register: the Old Harbor Reservation Parkways and the Savin Hill Historic District (Exh. EV-2, at 5-37).

paved limits of roadways, neither route is anticipated to result in impacts to historic areas or points (Exh. EV-2, at 5-37; Company Brief at 88). The Company contends that for these reasons, and because the Andrew Square and Dewar Street Substations are outside any National or Local Historic District or Inventoried Area, impacts to historic and archaeological resources have been minimized (Company Brief at 88).

v. Parklands

The Company stated that approximately 322 feet of the Primary Route would be installed in Springdale Street, a grassed-over private way in Savin Hill, located between Playstead Road and I-93 (RR-EFSB-33; Tr. 2, at 151).[61] Springdale Street is adjacent to McConnell Park, two privately-owned parcels, and one City-owned parcel (Exhs. EFSB-LU-14; EFSB-LU-14(1); Tr. 2, at 150-151). The City owns McConnell Park and the adjacent portion of Springdale Street to the centerline (Exhs. EFSB-LU-14; EFSB-LU-14(1); EFSB-LU-15; Tr. 2, at 150-151).[62] Eversource represented that the City considers the City-owned portions of Springdale Street to be an extension of McConnell Park; as such, the City requested that Eversource seek Article 97

---

61 Eversource noted that, as a private way, abutting property owners have ownership rights to the center of Springdale Street (Exh. EFSB-LU-14). Eversource stated that there are existing municipal utilities in Springdale Street (Tr. 2, at 152-153).

62 The Company reports that the City plans to make improvements to McConnell Park, including the installation of a storm drain along Springdale Street (Tr. 2, at 152-153). The City's planned improvements to McConnell Park required the submittal of ENF to the MEPA Office; a Certificate was issued with no EIR required on January 29, 2021 (see https://eeaonline.eea.state.ma.us/EEA/emepa/mepacerts/2021/sc/enf/16305%20ENF%20McConnell%20Park%20Improvements%20Boston%20CLEAN.pdf). The City's planned improvements to McConnell Park are separate and apart from the Project work on Springdale Street.

authorization for the use of the property (Exh. EFSB-G-42(S1); Tr. 2, at 150, 152-153).[63,64] Eversource maintains that the Project would not result in permanent impacts to Article 97 lands because the Project will be installed entirely underground and Springdale Street will be restored to pre-construction conditions once installation is complete (Company Brief at 74; Exh. EFSB-G-42(S1)(1) at 79).

Eversource stated that, given the City's position and for avoidance of doubt, the Company agreed to obtain the rights under Article 97 to install the New Line in Springdale Street (Exh. EFSB-G-42(S1)). The Company stated, therefore, that the Project on the Primary Route triggered the need for an ENF under the Massachusetts Environmental Policy Act, G.L. c. 30, §§ 61-62I, for "conversion of land held for natural resource purposes" per 310 CMR 11.03(1)(b)(3) (Exh. EFSB-G-42(S1); Company Brief at 74 n.39, citing Tr. 2, at 156). The Company submitted as an attachment to its ENF a letter of support from the City of Boston Parks and Recreation Department, indicating that the Parks and Recreation Department is generally supportive of the Project and that the two organizations have been working together on the Article 97 legislative process (Exh. EFSB-G-42(S1)(1) at 125).

Thereafter, the Company finalized discussions with respect to compensation to the City of Boston by the Company for an easement to construct the New Line in Springdale Street and for mitigation funding to offset costs associated with the City's proposed McConnell Park improvements (Exh. EFSB-G-42(S1)). The Company explained that the compensation would

---

63 Eversource stated that, prior to filing its Petition, the Company conducted real estate title research to assess whether the City of Boston acquired its fee interest in Springdale Street for park purposes or whether Springdale Street is otherwise subject to Article 97 (Company Brief at 74 n.38, citing Exh. EFSB-G-42; Tr. 2, at 152-153). Based on its title research, Eversource maintains that the City did not acquire the fee in Springdale Street as parkland and has not taken steps to convert that portion of Springdale Street into parkland; therefore, the Company believes that Springdale Street is not technically subject to Article 97 (Company Brief at 74 n.38, citing Exh. EFSB-G-42; Tr. 2, at 152-153, 174-175).

64 Article 97 provides that state- and municipal-owned lands and easements originally taken or acquired as natural resource land cannot be used or disposed of for other purposes, except by a law enacted by a two-thirds vote of each branch of the Legislature (Company Brief at 73 n.37).

satisfy the "no net loss" provision of the MEPA Article 97 Land Disposition Policy (Exh. EFSB-G-42(S1)). After finalizing certain engineering design details required for its MEPA filing, Eversource submitted the Project's ENF to the MEPA Office on March 31, 2021 (Exh. EFSB-G-42(S1)).[65] The MEPA Office receive comment letters on the ENF from the Massachusetts Department of Environmental Protection ("MassDEP") Northeast Regional Office Wetlands Program, DCR, and the BWSC; each comment is address in relevant sub-sections of Section VI.D (RR-EFSB-38). On May 8, 2021, the Secretary of the Executive Office of Energy and Environmental Affairs ("EEA") issued a Certificate on the ENF stating that the Project does not require the preparation of an Environmental Impact Report ("EIR") and that the project's permitting process may proceed (RR-EFSB-38(2) at 2).

The Company also indicated that construction of the Project along the Primary Route might affect parklands at several locations other than in the vicinity of Springdale Street (Tr. 1, at 61-62). The Company stated it would install a segment of the Primary Route within the median of Morrissey Boulevard, which is under the control of DCR (Tr. 1, at 61-62). According to Eversource, DCR confirmed that such construction would not require Article 97 approval as long as the Project remained in the median (or the paved roadway) of Morrissey Boulevard (Exh. EFSB-G-32; Tr. 1, at 61-62; RR-EFSB-2).

vi. Public Shade Trees, Vegetation Management, and Rare Species

The Company examined potential impacts to vegetation along the Primary and Noticed Alternative Routes, with a specific focus on impacts to public shade trees, defined under G.L. c. 87, as all trees within a public way or within the boundaries thereof (Exh. EV-2,

---

[65] As part of the Project's MEPA review, and in recognition that the Project would pass through neighborhoods which qualify as environmental justice populations defined by the 2017 EJ Policy, MEPA staff provided Eversource with a list of contacts for local community groups and requested that Eversource notify these groups of the ENF filing and public comment period deadline (RR-EFSB-39). In accordance with MEPA's request, Eversource notified approximately 19 community-based contacts on April 7, 2021 (RR-EFSB-39(3)).

at 5-28).[66] Eversource conducted a field survey and identified 44 public shade trees along the Primary Route and 63 along the Noticed Alternative Route, respectively (Exh. EV-2, at 5-28).[67] Project construction along either route would be within paved roadways and, therefore, would have no permanent impacts to public shade trees (Exh. EV-2, at 5-28). Eversource indicated that construction might require some trimming of branches and/or exposure or cutting of roots (Exh. EV-2, at 5-28). Regardless of which route is used for the Project, the Company stated it would coordinate with the Boston Tree Warden regarding public shade tree protection and replacement (Exh. EV-2, at 5-28 to 5-29).

The Company would need to remove or materially prune one public shade tree on the Primary Route (Exhs. EV-2, at 5-28; EFSB-V-4; EFSB-V-9; Tr. 2, at 249-250). The Company stated that it would work with the Boston Tree Warden and the adjacent landowner regarding mitigation (Exh. Ev-2, at 5-27 to 5-28). According to the Company, similar impacts to public shade trees would occur along the Noticed Alternative Route where there are more such trees; for all other criteria with respect to public shade trees, impacts from construction of the Project on the Primary Route and the Noticed Alternative Route would be comparable (Exhs. EFSB-V-4; EV-2, at 5-38). The Company also anticipated no impacts to public shade trees from proposed improvements to the Dewar Street and Andrew Square Substations (Exh. EV-2, at 5-5, 5-8). The Company contends that it properly minimized impacts to public shade trees (Company Brief at 79).

The Company stated that neither the Primary Route nor the Noticed Alternative Route pass through priority habitats for rare species identified by the Natural Heritage and Endangered Species Program ("NHESP"), and that, therefore, the Project would not result in any impacts to rare species or their habitats (Exh. EV-2, at 5-40, 5-43, 5-46, 5-47; Tr. 2, at 156).

---

66 For a discussion of vegetation and visual impacts, see Section VI.D.5.

67 Trees were counted without reference to diameter at breast height or distance from the proposed cable trench (Exh. EV-2, at 5-28).

b. Analysis and Findings on Land Use and Historic Resources

Work at the Substations for each route would be the same and confined within the fence line of the Substation properties. The Company and its contractors would also locate staging and laydown for the Substations within the fence line of the properties. Therefore, land use impacts of construction at the Andrew Square and Dewar Street Substations would be the same for the Primary and Noticed Alternative Routes.

The Primary Route is approximately 0.4 miles longer than the Noticed Alternative Route and, while it is non-residential for much of its length, the Primary Route passes in total more residential units and sensitive abutters. Both the Primary and Noticed Alternative Routes would require what the Company characterized as "high impact crossings." However, the Primary Route would be constructed along roads that are, overall, of lesser underground utility density which is likely to improve the pace of construction. Faster construction typically reduces the time spent at a particular location and the corresponding impacts to any specific residence or sensitive receptor. The record shows that the Company will, to the extent possible, coordinate the installation of its New Line with the McCormack Redevelopment and the reconstruction of Morrissey Boulevard. This anticipated coordination offers the construction of the Project along the Primary Route some potential land use advantages. If properly coordinated, Project construction along the Primary Route could coincide with work on the McCormack Redevelopment, which could reduce the net impacts of both projects to local residents.

There are more inventoried historic and cultural resources near the Primary Route than the Noticed Alternative Route; however, the record shows that Project construction would be within the limits of public roadways and therefore would not result in any direct impacts to these resources. The record further shows that the MHC and the Massachusetts Board of Underwater Archaeological Resources reviewed the Project along the Primary Route and stated that it would have no adverse effect on historic or cultural resources. The Siting Board agrees with the Company that impacts to historic and archaeological resources of the Project will be minimized along either evaluated route.

The record shows that because the New Line would be constructed underground in paved roadways, potential impacts to vegetation are limited along both the Primary and Noticed Alternative Routes. Only one tree along the Primary Route will require removal or significant

pruning. The Company will coordinate with the Boston Tree Warden and the adjacent landowner to determine necessary mitigation. The Siting Board anticipates that the Company would mitigate impacts to vegetation along the Primary Route or the Noticed Alternative Route in conjunction with the Boston Tree Warden and any affected landowners. The Siting Board concurs with the Company's expectation that impacts to vegetation and mitigation of any such impacts would be comparable along the Primary Route and the Noticed Alternative Route. The Siting Board also notes the absence of rare species and priority habitats defined by the NHESP in the area of the Project along either the Primary or Noticed Alternative Route.

The Primary Route avoids the need for Article 97 rights along Morrissey Boulevard, but requires them in the vicinity of McConnell Park and the adjacent portion of Springdale Street. The Noticed Alternative Route does not traverse the same parkland areas and does not otherwise involve acquisition of Article 97 rights, a potential savings of cost and time. The Company anticipates, however, and the Siting Board agrees, that the underground installation of the Project will result in no permanent impact to Article 97 lands along the Primary Route, including in the area of Springdale Street and McConnell Park. The record shows that Eversource has coordinated with the City to secure Article 97 rights to install the New Line within Springdale Street; Eversource intends to satisfy the "no net loss" provision of the MEPA Article 97 Land Disposition Policy by providing mitigation funding to offset costs associated with the City's proposed McConnell Park improvements.

Nevertheless, Project construction along Springdale Street may affect recreational activities at McConnell Park. The Siting Board therefore directs the Company to avoid construction through, and in the immediate vicinity of, McConnell Park during scheduled recreational activities whenever possible, and further directs the Company to inform relevant municipal officials at least one week in advance of construction activity in this recreation area. The Siting Board anticipates that the Company will continue to coordinate with Boston Parks and Recreation with respect to seeking Article 97 approval.

In comparing the land uses of the Project along the Primary and Noticed Alternative Routes, the Siting Board first notes the advantages of constructing in roads with fewer existing underground utilities along the Primary Route. The Siting Board observes that constructing with less underground utility congestion is advantageous for the Project in reducing its impacts and

costs. As noted in comments to MEPA, BWSC expressed concern for where the New Line would cross, or run parallel to and above, existing BWSC-owned utilities, especially where the position of the New Line could complicate BWSC emergency repairs or routine replacements. The BWSC requested that Eversource submit a site plan to it for review and comment. Eversource shall submit to the Siting Board 30 days prior to start of construction a description of the review process undertaken between the Company and the BWSC, and any specific engineering mitigation/approach selected for areas of the Project that would potentially complicate BWSC emergency repairs or routine replacements.

To the extent that Project construction can proceed in concert with other major construction project in the area, such as the Morrissey Boulevard reconstruction and the McCormack Redevelopment, this would benefit all parties concerned and reduce overall net impacts of Project construction along the Primary Route. With respect to coordinating construction of the Primary Route with DCR's anticipated reconstruction of Morrissey Boulevard, the Siting Board notes that the Company and DCR have engaged in preliminary discussions but timing for these two independent projects may not be able to proceed in concert. The Siting Board encourages Eversource to develop a construction schedule with DCR that could, to the extent practicable, offer potential additional benefits by constructing the Morrissey Boulevard segment of the Primary Route in coordination with DCR's Morrissey Boulevard reconstruction. If timing Project construction with DCR's Morrissey Boulevard reconstruction is not feasible, we acknowledge those additional benefits may not be realized. The Siting Board directs the Company, prior to the start of construction, to submit to the Siting Board (1) a status report of the schedule for construction of the Morrissey Boulevard reconstruction and the McCormack Redevelopment, and (2) a detailed description of the coordination that will take place between the Project and Morrissey Boulevard reconstruction and the McCormack Redevelopment.

Accordingly, the Siting Board finds that the Primary Route is preferable to the Noticed Alternative Route with respect to land use and historic resource impacts. With implementation of the above conditions relative to coordination, the Siting Board finds that land use impacts of the Project along the Primary Route would be minimized.

2. Water and Wetlands

a. Company Description

The Company examined the Primary and Noticed Alternative Routes to identify potential Project construction impacts to wetland and water resources, including river crossings, wetland crossings, riverfront area, and Chapter 91 jurisdictional tidelands (Exh. EV-2, at 5-26 to 5-27).[68] The Company reported no wetland or water resources at or near the Andrew Square and Dewar Street Substations (Company Brief at 78, citing Exh. EV-2, at 5-3 to 5-8). The Company also indicated that the Noticed Alternative Route would not result in any wetlands impacts, river crossings, or impacts to filled or flowed tidelands (Exh. EV-2, at 5-27).

Table 7, below, summarizes the wetland resource areas, buffer zones, and stream crossings associated with the Primary Route; area estimates assume an eight-foot-wide trench (Exh. EV-2, at 5-27).

Table 7. Water and Wetland Resources Associated with the Primary Route

Resource	Estimate
Distance within 100-foot Buffer Zone	488 feet
Waterbody crossing	Savin Hill Cove/Pattens Cove
Chapter 91 Jurisdiction	14,517 square feet
100-year floodplain/Land Subject to Coastal Storm Flowage	24,212 square feet

Source: Exh. EV-2, at 5-27

The Company stated that the Primary Route would include work within jurisdictional wetland and water resources, including resources within Chapter 91 Jurisdiction, but that impacts would be minor and temporary (Exh. EV-2, at 5-27). The potential wetland and water resource

68 The Company reviewed MassGIS databases and conducted field reconnaissance to determine the number of rivers or waterbodies the routes would cross, as well as the number of local- and state-regulated resource areas, as defined in the Massachusetts Wetlands Protection Act regulations (310 CMR 10.00 et seq.), including Bordering Vegetated Wetland and River Bank and their associated 100-foot buffers, Bordering Land Subject to Flooding and 200-foot Riverfront Area, that the proposed routes would cross (Exh. EV-2, at 5-26 to 5-27). The Company's evaluation of Chapter 91 jurisdictional areas involved reviewing MassGIS data layers, using a combination of contemporary high water, historic high water, and landlocked tidelands to form the landward and seaward boundaries of landlocked tidelands (Exh. EV-2, at 5-26 to 5-27).

impacts of the Project along the Primary Route would occur within the footprint of previously disturbed areas (i.e., within roadway ROWs and an existing culvert) and areas proposed for redevelopment; therefore, work for the Primary Route would not alter values of wetland resource areas (Exh. EV-2, at 5-27 to 5-28).[69,70] Given that construction of the New Line for the Project would be predominately within existing paved roadways, the Company anticipated no permanent impacts to wetlands or streams (Exh. EV-2, at 5-28; Tr. 1, at 71; Tr. 3, at 322; Company Brief at 77-78). The Company further stated that all construction work proposed in wetland and water resource areas and buffer zones would conform to applicable local, state, and federal wetlands regulatory programs (Exh. EV-2, at 5-27 to 5-28).

With respect to wetlands and water related permitting for the Primary Route, Eversource represented that construction would require an Order of Conditions from the Boston Conservation Commission, and a Section 10 Permit from the U.S. Army Corps of Engineers ("USACE") (Exh. EV-2, at 5-27).

Eversource explained that if the Primary Route is selected, it would construct a portion of the New Line within previously authorized filled tidelands and cross a tidal stream (Pattens Cove) and, therefore, would require Chapter 91 authorization from MassDEP for a "minor project modification" to an existing licensed structure and/or fill (Exh. EFSB-G-42(S1)(1) at 76-77). Specifically, Eversource stated that it requested a minor project modification for the existing box culvert that conveys the tidal flow of Patten's Cove beneath Morrissey Boulevard (Exh. EFSB-G-42(S1)(1) at 76-77). As noted above, Eversource proposed to install the New Line within an existing utility bay in which the electrical conduits would be supported by

---

69 The Company stated that it would install the New Line across Savin Hill Cove/Pattens Cove by using an existing utility bay located within the Morrissey Boulevard box culvert (Exh. Exh. EFSB-G-42(S1)(1) at 71; Tr. 1, at 71; Tr. 3, at 322). The Company represented that, because the New Line would be installed within existing roadways and would cross Savin Hill Cove/Patten's Cove within an existing utility bay, constructing the Project along the Primary Route would not negatively affect this resource area (Exh. EV-2, at 5-27 to 5-28).

70 The Company asserted that by coordinating Project work with the proposed DCR reconstruction of Morrissey Boulevard, the Project would minimize potential impacts to wetland and water resources (Exh. EV-2, at 5-27).

hangers from the ceiling of the culvert structure (Exh. EFSB-G-42(S1)(1) at 71). MassDEP requested that Eversource confirm whether installing the New Line within the utility bay would effectively reduce the capacity of the culvert (Exh. EFSB-G-42(S1)(1) at 129). Eversource reported that the lowest point of the electrical conduit would be higher than the bottom of an existing water main utility, thereby not increasing coastal flooding impacts (Exh. EFSB-G-42(S1)(1) at 77, 131-132). In an ENF comment letter to the MEPA Office, MassDEP indicated that Eversource's final design of the culvert crossing was still under review, but stated that "details for the final implementation of the Project can be resolved in the permitting process without the need for further MEPA review" (RR-EFSB-38(2) at 2).

To address the potential for erosion and sedimentation within wetland resource areas during construction, the Company stated that it would prepare a stormwater pollution and prevention plan ("SWPPP") for the Project that will specify erosion control measures (Exh. EV-2, at 5-16 to 5-17). Eversource stated that, during construction, it would implement applicable Best Management Practices ("BMP") for sediment and erosion control in accordance with the Company's BMP Manual (Exhs. EV-2, at 5-28; EV-2, App. 5-3, app. A).

b. Analysis and Findings on Wetlands and Water Resources

The record shows that the Primary Route passes through wetland buffer zones, tidelands, 100-year flood plains, and areas classified as Land Subject to Coastal Storm Flowage. The New Line, however, would be constructed underground and within the limits of existing roadways; no permanent impacts to these resources are expected. With respect to waterbody crossings, Eversource intends to use an existing utility bay within the Morrissey Boulevard box culvert to cross Savin Hill Cove/Pattens Cove. Consequently, no permanent impacts are expected as a result of waterbody crossings associated with the Primary Route.

The Noticed Alternative Route does not pass through any water or wetland resource areas, and therefore, construction along the Noticed Alternative Route would result in no wetlands impacts, waterbody crossings, or impacts to filled or flowed tidelands.

The record shows that the Andrew Square and Dewar Street Substations are not located within or near any water or wetland resource areas. Therefore, the substation work that is

required for either route would not result in any temporary or permanent impacts to wetland and water resources.

The Siting Board finds that construction of the Project along the Noticed Alternative Route would be slightly preferable with respect to wetland and water resource impacts; however, the wetland and water resource impacts for the Primary Route would be temporary in nature and largely mitigated by the planned waterbody crossing in a utility bay.

Based on the proposed water and wetlands mitigation measures the Siting Board finds that potential water and wetland resource impacts of the Project along the Primary Route would be minimized.

3. Noise Impacts

a. Company Description

As previously noted, both the Primary and Noticed Alternative Routes traverse public roadways through densely populated, urban areas of Boston; constructing the New Line along either route would result in temporary noise impacts to the surrounding areas (Exh. EV-2, at 5-1 to 5-2, 5-36; Company Brief at 84, citing Exh. EV-2, at 5-33). Eversource stated that the potential for noise impacts from Project construction along a particular route is a function of the specific receptors along the route, the equipment used, and proposed hours of operation (Exh. EV-2, at 5-33). Several phases of construction (e.g., manhole construction, roadway cutting, trench excavation, conduit installation, backfilling, and repaving) will likely be ongoing simultaneously along various sections of the route (Exh. EV-2, at 5-33). Eversource also noted that cable pulling and splicing may overlap with ongoing civil construction activities conducted later in the cable installation process (Exh. EV-2, at 5-33).

The Company explained that the anticipated noise exposure of a resident or sensitive receptor depends on location (Exh. EFSB-NO-3). For typical receptors along either route, duct bank installation would have a duration of one to two weeks (Exh. EFSB-NO-3). Construction at specific locations adjacent to manholes would last an additional two weeks; construction at locations adjacent to pipe jacking activities would also continue for approximately two weeks (Exh. EFSB-NO-3). Eversource stated that Project construction would, for the most part, take

place Monday through Friday from 7:00 a.m. to 6:00 p.m., in accordance with City of Boston noise ordinances (Exhs. EV-2, at 5-35; EFSB-NO-5).

At some locations, the Company stated that it may be required by the City or DCR to undertake construction during night or Saturday hours; the Company also noted that it may seek approval for night or Saturday work where it may be appropriate but not otherwise required (Exhs. EV-2, at 5-16, 5-33, 5-35 to 5-36; EFSB-NO-5; EFSB-T-7; Tr. 2, at 222-223).[71] The Company also indicated that DCR may require alternate construction hours in non-residential areas (Exh. EV-2, at 5-15). The Company stated its intention to coordinate with the City of Boston, DCR, and the MBTA to determine specific areas where construction hours may need to be limited (e.g., in front of schools) (Exh. EV-2, at 5-16).

Eversource stated that construction equipment used the Project would be similar to that used during typical public works projects (e.g., road resurfacing, storm sewer installation, water line installation) (Exh. EV-2, at 5-33; Company Brief at 85). The Company presented reference sound levels from typical equipment associated with construction activities at a reference distance of 50 feet, summarized in Table 8, below (Exh. EV-2, at Table 5-10; Exh. EFSB-NO-2).[72] Eversource reported that noise levels from pipe jacking are not expected to exceed levels experienced during normal work activities (Exh. EFSB-NO-4).

---

[71] Eversource noted that off-hours construction work would require approval from the City of Boston Inspectional Services Department (Exh. EV-2, at 5-35).

[72] The typical sound levels are based on actual field measurements recorded by Eversource noise consultants at similar projects in October and November 2015 (Exh. EV-2, at 5-34 to 5-35).

Table 8. Reference Sound Levels for In-Street Construction Activities

Activity	Equipment	Typical Sound Levels at 50 feet (dBA)
Trench excavation, pile installation, and pavement patching, manhole installation	Pavement saw, pneumatic hammer, hoe ram, excavator, dump truck, pipe crane, manhole crane, welding machine and generator, concrete batch truck, asphalt paver	57 to 83
Cable pulling, splicing, and testing	Generator, splicing van	60 to 67
Final pavement restoration	Asphalt paver	63 to 83

Source: Exh. EV-2, at table 5-10

As noted in Section VI.D.1.ii, the Primary Route and the Noticed Alternative Route both pass through a mix of residential, commercial, and industrial land uses (Exh. EV-2, at fig. 4-5). Receptors along both routes are primarily residential; the Primary and Noticed Alternative Routes abuts approximately 635 and 543 residential units, respectively (Exhs. EV-2, at 5-20, 5-21; EFSB-NO-3). Sensitive receptors along the Primary Route include park/recreation facilities, a school, and a place of worship (Exh. EV-2, at 5-35). The Company identified ten residential parcels within 50 feet of proposed manhole locations along the Primary Route, where construction and cable splicing would have a longer duration relative to duct bank construction (Exhs. EFSB-CM-3; EFSB-NO-9; EFSB-NO-10(R1)). The Company indicated that six of these parcels are located in Savin Hill, a quiet residential neighborhood (Exhs. EFSB-CM-3; EFSB-NO-10(R1)).[73]

The Company stated that Project construction would create similar levels of noise along either route (Exh. EV-2, at 5-36). By coordinating Project construction with the McCormack Redevelopment and reconstruction of Morrissey Boulevard, the Company anticipates less overall

[73] The Company stated it has not determined manhole locations for the Noticed Alternative Route (Exh. EFSB-NO-10(R1)). The Company used a preliminary layout to identify 19 residential structures that might be within 50 feet of manhole locations along the Noticed Alternative Route (Exhs. EFSB-NO-10(R1); EFSB-NO-15).

noise impact to neighborhoods along the Primary Route (Exh. EV-2, at 5-36; Company Brief at 87-88).

Eversource stated that construction noise along either route would comply fully with applicable City of Boston noise ordinances, and the Boston Air Pollution Control Commission regulations (Exhs. EV-2, at 5-35 to 5-36; EFSB-NO-1). The Company anticipates that noise impacts of New Line and associated Andrew Square and Dewar Street Substation construction will be temporary and will cease with the end of construction (Exhs. EFSB-NO-6; EFSB-NO-11). Eversource stated that operating the New Line itself would not generate any noise and that there would be no change in noise generated by the respective substations (Exhs. EV-2, at 5-33; EFSB-NO-11).

To minimize noise disturbances to nearby residences during Project construction, the Company would limit construction activities that generate significant noise to the hours allowed by the City (Exh. EFSB-NO-13). Eversource would employ the following measures to mitigate noise during construction: the use of well-maintained equipment with functioning mufflers; strict compliance with MassDEP's anti-idling equipment regulations; use of only necessary equipment for the task at hand; and, training of all construction contractors to comply with the Company's requirements with respect to the aforementioned practices and other relevant policies (Exhs. EFSB-NO-6; EFSB-NO-13).[74] The Company anticipated minimizing noise from cable splicing through use of low-noise generators and by reducing or eliminating use of motorized equipment during evening and overnight work (Exh. EFSB-NO-6).

b. Analysis and Findings on Noise Impacts

The record shows that construction noise impacts would be a function of the equipment used, specific receptors along the route, and proposed hours of construction. Noise generated by construction would be similar along either Project route, reflecting the use of similar construction

[74] The Company stated that it prefers noise reduction measures, such as the use of newer, lower-noise-generating equipment, in lieu of measures such as noise barriers (Exh. EFSB-NO-7). The Company contends that use of noise barriers typically reduces the pace of construction and interferes with the flow of traffic (Exh. EFSB-NO-7; Tr. 3, at 266-268).

methods and equipment (e.g., manhole installation, roadway cutting, trench excavation, conduit placement, and backfilling and repaving). The Primary Route would require a trenchless crossing beneath I-93 and the MBTA railroad tracks; however, the record indicates that noise from pipe jacking activities is not expected to be greater than other construction activities required for installing the New Line. Construction activities and noise impacts of the Project at the Andrew Square and Dewar Street Substations would be the same regardless of the route selected. Operating the New Line itself would not generate noise and substation-related noise would not change as a result of the Project.

Proximity of residents, businesses, and other sensitive receptors to construction, as well as the relative length of the active work zone, are important determinants of the relative impact of construction-related noise along the Primary and Noticed Alternative Routes. With respect to those affected by noise impacts, there is a greater number of residential units and sensitive receptors along the Primary Route than the Noticed Alternative Route.[75] By contrast, the duration of exposure to sound levels from construction is another noise impact determinant. As noted in Section VI.D.1, Eversource expects the lower density of underground utilities associated with the Primary Route to result in faster construction progress and, therefore, reduced noise impacts to abutters relative to those of the Noticed Alternative Route. Also, the Company's coordination of the Project with the McCormack Redevelopment and reconstruction of Morrissey Boulevard has the potential to reduce overall noise impacts to neighborhoods along the Primary Route. The Siting Board therefore finds the Primary Route and the Noticed Alternative Route comparable with respect to construction noise impacts.

The Company has committed to strict compliance, for itself and its contractors, with MassDEP's anti-idling regulations. In addition, Eversource will minimize noise from cable splicing with use of low-noise generators and elimination of motorized equipment during evening and overnight work. The record shows the Company will confine most Project work to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, in accordance with City noise

---

[75] As noted above in Section VI.D.1.ii, approximately one third of the Primary Route follows Morrissey Boulevard through primarily non-residential land uses; by comparison, approximately three eights of the Noticed Alternative Route follows Sydney Street through residential areas.

ordinances. The Company may, however, be asked to, or request on its own, approval for night or Saturday work from the City of Boston (as may be authorized by special permit from the Boston Inspectional Services Commission for off-hours construction) or DCR. The Siting Board directs the Company to limit construction in residential areas to the above-noted standard hours, except by request of the City or DCR or with their specific written approval in advance, as requested by Company. Work requiring longer continuous duration than normal construction hours allow, such as cable splicing, is exempted from this condition. The Siting Board also directs the Company to coordinate with the City, DCR, and the MBTA to determine areas, such as schools, where construction hour limitations may be appropriate to mitigate noise or other concerns.

Should the Company need to extend construction work beyond the above-noted hours and days, with the exception of emergency circumstances on a given day necessitating extended hours, the Company shall seek written permission from the relevant municipal authority before the commencement of such work, and to provide the Siting Board with a copy of such permission. If the Company and municipal officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Siting Board and shall provide the relevant municipality with a copy of any such request.

The Company shall inform the Siting Board and the relevant municipality in writing within 72 hours of any work that continues beyond the hours allowed by the Siting Board. The Company shall also send a copy to the Siting Board, within 72 hours of receipt of any municipal authorization for an extension of work hours. Furthermore, the Company shall keep records of the dates, times, locations, and durations of all instances in which work continues beyond the hours allowed by the Siting Board, or, if granted extended work hours in writing by a municipality, work that continues past such allowed hours, and must submit such record to the Siting Board within 90 days of Project completion.

The record shows that noise levels likely to be associated with nighttime (after 6:00 p.m.) cable splicing could be disruptive in residential areas where these activities are in close proximity to homes. The Siting Board therefore directs Eversource, in addition to using newer, lower-noise-generating equipment, to use portable noise barriers to mitigate the noise impact of nighttime cable splicing operations that occur within 75 feet of a residential structure.

With the implementation of the above noise conditions, the Siting Board finds that noise impacts of the Project along the Primary Route would be minimized.

4. Traffic

a. Company Description

As previously noted, the New Line along the Primary Route or the Noticed Alternative Route would be installed primarily within public roadways (Exh. EV-2, at 5-1 to 5-2). To compare potential traffic impacts of the Project constructed on the Primary Route and the Noticed Alternative Route, the Company reviewed existing traffic and parking conditions, roadway widths, travel lanes, and the presence of public bus service along each route, as well as the options for traffic and parking mitigation along each route and at each substation (Exh. EV-2, at 5-22).

Eversource stated that the Andrew Square Substation, near the intersection of Ellery and Southampton Streets, is in an area of moderate traffic volume (Exh. EV-2, at 5-5). The substation property, however, is large enough to accommodate construction vehicles and staging areas (Exh. EV-2, at 5-5). As a result, the Company anticipates that traffic impacts associated with substation improvements at the Andrew Square Substation would be minor and temporary (Exh. EV-2, at 5-5).

The Dewar Street Substation is located at the end of Dewar Street, a dead-end street off Dorchester Avenue (Exh. EV-2, at 5-7). The Company stated that Dewar Street does not typically experience a high volume of traffic (Exh. EV at 5-7). The Company also indicated that the size of the Dewar Street Substation property is sufficient to accommodate construction vehicles and staging areas; therefore, construction associated with improvements at the Dewar Street Substation would result in limited, temporary traffic impacts (Exh. EV-2, at 5-5, 5-7 to 5-8).

The Company stated that traffic impacts associated with the New Line along the Primary or Noticed Alternative Route would only occur during Project construction (Exh. EV-2, at 5-21 to 5-22). To minimize traffic congestion during construction, the Company would implement a Traffic Management Plan ("TMP"), designed in accordance with its construction BMPs (Exhs. EV-2, at 5-21 to 5-22; EFSB-T-10). The Company's TMP would have both active and

passive traffic control measures and would be designed to decrease construction-related inconvenience to drivers and those taking public transportation, and to reduce disruption to local businesses (Exhs. EV-2, at 5-21 to 5-24; EFSB-T-13; EFSB-T-14).[76] Eversource noted that the TMP would be developed in accordance with the Federal Highway Administration's ("FHWA") Manual on Uniform Traffic Control Devices for Streets and Highways ("MUTCD") (Exh. EFSB-CM-20).[77] The Company stated that it would maintain at least one accessible route to businesses and residences adjacent to the work zone (Exhs. EV-2, at 5-22; EFSB-T-13).

To assess comparative potential traffic impacts of the Primary Route and the Noticed Alternative Route, the Company identified all road segments by street name, the approximate average road width for each segment, existing traffic and parking conditions per segment, whether the listed segment was part of a public transportation route, and the daily traffic volume of the identified segment (Exh. EV-2, at 5-23, 5-24). The Company noted that, in Route Selection, the Noticed Alternative Route scored more favorably for traffic impacts than the Primary Route, principally due to the higher volume of traffic on Morrissey Boulevard (Exh. EV-2, at 5-24 to 5-25). However, Eversource also indicated that there are areas of concern about traffic congestion along both routes (Exh. EV-2, at 5-24 to 5-25). Along the Noticed Alternative Route, the Company pointed to Columbia Road and Moseley Street, near the intersection with the I-93 ramps, as an area of traffic congestion (Exh. EV-2, at 5-25). Eversource reported that, although the routes traverse a similar number of bus stops, only one road segment of the Primary Route overlaps with public transportation routes, whereas three road segments of the Noticed alternative Route overlap with public transportation routes (Exh. EV-2, 5-23 to 5-24). Along the Primary Route, the Company expected Old Colony Avenue, in addition

---

[76] The Company submitted preliminary staging plans, a precursor to more detailed TMPs, which are based on the current design of the Project and are subject to change with additional information (e.g., from ongoing geotechnical borings and the test pit program) and coordination with, and input from, the City and DCR (Exhs. EFSB-T-10; EFSB-T-16; RR-EFSB-16).

[77] The MUTCD defines standards for traffic control devices on all public streets, highways, bikeways, and private roads open to public travel (Exh. EFSB-CM-20).

to Morrissey Boulevard, to be possible traffic congestion areas due to high traffic volumes and proximity to Kosciuszko Circle (Exh. EV-2, at 5-25).

Eversource stated that traffic impacts could be further minimized by implementing nighttime work along segments of either route that meet the following characteristics: the segment experiences high traffic volumes and congestion during the day; the adjacent land uses are primarily commercial and/or industrial; and/or the City (or DCR or MassDOT, in the case of roads under state jurisdiction, e.g., Morrissey Boulevard and I-93 ramps near Columbia Road) has required the Company to construct at night (Exh. EV-2, at 5-22). The Company stated that night work, where appropriate, would minimize the Project's impact on traffic congestion during normally busy times and would avoid potential business interruptions (Exh. EV-2, at 5-22). Regarding the Primary Route, the Company indicated it would have greater flexibility with work hours when working along Morrissey Boulevard, given that the stretch of Morrissey Boulevard along the Primary Route does not have any residential uses (Exh. EV-2, at 5-25). Eversource stated that it would only implement night work after coordinating closely with local officials and securing any necessary authorizations (Exh. EV-2, at 5-22).

Regardless of the route selected for the Project, the Company indicated that each would require similar traffic management measures, including use of police details and implementation of detours and lane closures (Exh. EV-2, at 5-25). The Company emphasized that, because the segment of Morrissey Boulevard along the Primary Route is a limited access roadway with multiple travel lanes in each direction, the roadway would have greater capacity to absorb a lane reduction required for construction and greater flexibility for implementing traffic management measures during construction than would Sydney Street, a major segment of the Noticed Alternative Route (Exh. EV-2, at 5-25). In contrast, Sydney Street is a relatively narrow, one way roadway, with extensive on-street parking (Exh. EV-2, at 5-25).

The Company stated it would confer with the MBTA to identify and mitigate possible impacts due to Project construction with respect to MBTA operations at its JFK/UMASS stop along the Primary Route (RR-EFSB-15). The Company explained that Project construction at this location might require restrictions, including time-of-day restrictions to facilitate MBTA-related entry, exit, general access, and drop-off points for pedestrians, cars, buses, and other MBTA vehicles (RR-EFSB-15). The Company stated that it anticipated working in front

of the JFK/UMASS MBTA stop for 30-to-54 days and that it would coordinate with the MBTA to ensure minimal disruption (RR-EFSB-15).[78]

Additionally, Eversource stated that it plans to coordinate construction of the New Line along the Primary Route with the McCormack Redevelopment and DCR's planned reconstruction of Morrissey Boulevard to the maximum extent possible (Exh. EV-2, at 5-25). The Company indicated that coordinating the construction projects could reduce the overall traffic impacts from along O'Callaghan Way and Morrissey Boulevard, respectively (Exh. EV-2, at 5-25).

To minimize and mitigate traffic impacts associated with Project, the Company will work closely with DCR, MassDOT, the MBTA, and the City to develop its construction TMPs (Exh. EV-2, at 5-26; EFSB-T-4; Tr. 2, at 215; RR-EFSB-15).[79] Mitigation measures that the Company will address in its TMP include:

- Width and lane location of the work zone to minimize impacts to vehicular traffic;
- Work schedule and duration of lane closures, road closures, or detours (where applicable);
- The use of traffic-control devices such as barricades, reflective barriers, advance warning signs, traffic regulation signs, traffic-control drums, flashers, detour signs, and other protective devices as shown on plans and as approved by the City and DCR;
- Locations where temporary provisions may be made to maintain access to homes and businesses;

---

78 The Company stated that, where construction may interfere with MBTA operation, the MBTA requires the proponent to enter into a license agreement prior to the start of construction (RR-EFSB-15). The license agreement would describe any required site-specific mitigation for ingress/egress impacts to buses, pedestrians, cars, and drop-off points during construction (RR-EFSB-15). The Company indicated that mitigation could include modifying the traffic patterns, scheduling work to avoid heavy commuter traffic, reducing work zones, night work, or specific construction methods (RR-EFSB-15). The Company noted that the license agreement would be developed in coordination with the relevant MBTA departments (RR-EFSB-15).

79 In a November 26, 2019 letter, the BPDA stressed the importance of coordinating Project construction with active development projects in the area, including coordination with reconstruction of Morrissey Boulevard, with the Boston Parks and Recreation Department, and to minimize impacts at Kosciuszko Circle (Exh. EFSB-G-40(S1)(1)).

- Routing and protection of pedestrian and bicycle traffic;
- Maintenance of MBTA service and school bus service;
- Communication with adjacent businesses, so critical product deliveries are not interrupted by construction;
- Determination of the impact to roadway level of service due to short-term lane closure(s);
- Notification of municipal officials, local businesses, and the public of the timing and duration of closed curbside parking spaces and travel way restrictions; and
- Coordination between the Company and police and fire departments to ensure that emergency access through the route is provided at all times.

(Exhs. EV-2, at 5-26; EFSB-T-5; EFSB-T-9; EFSB-T-11; EFSB-T-14).

Lastly, in addition to developing a Project-specific TMP, to further mitigate traffic and other construction-related impacts, the Company will execute a comprehensive construction community outreach plan to keep property owners, businesses, and municipal officials, including fire, police, and emergency personnel, up to date on planned construction activities (Exh. EFSB-T-3; Tr. 2, at 227).

b. Analysis and Findings on Traffic

Regarding substation improvements, the Company has sufficient space for contractor parking and staging within the limits of each substation, and, therefore, traffic impacts would be minimal. The record shows that construction of the New Line along the Primary Route or Noticed Alternative Route would result in temporary although significant traffic impacts. For either route, Eversource would develop a TMP and would implement similar traffic mitigation measures.

Although Morrissey Boulevard has a relatively high volume of daily traffic, Eversource presented a number of specific factors that demonstrate a greater degree of flexibility for minimizing traffic impacts along the Primary Route. Morrissey Boulevard is an important segment of the Primary Route and has a greater volume of daily traffic than major segments of the Noticed Alternative Route such as Sydney Street. The record shows that Morrissey Boulevard is a relatively wide, limited access roadway, with multiple lanes of traffic for each direction. The robust layout of Morrissey Boulevard, as compared to Sydney Street along the

Noticed Alterative Route, offers greater flexibility for implementing traffic control measures dictated by the Company's TMP. A single lane closure on Morrissey Boulevard would have a lower overall effect on traffic congestion as compared to a lane closure on Sydney Street. Sydney Street only has one lane of traffic in each direction and has on-street parking on both sides of the roadway. Additionally, the segment of Morrissey Boulevard that the Primary Route would follow has primarily non-residential land uses, potentially allowing the Company to undertake night work and further minimize the traffic impacts associated with the Primary Route. Finally, the record shows that Eversource would endeavor to coordinate construction of the New Line along the Primary Route with the planned reconstruction of Morrissey Boulevard and the McCormack Redevelopment. Successful coordination of construction with these projects would offer a unique opportunity to minimize overall traffic impacts and would confer an additional benefit to construction along the Primary Route.

The Siting Board recognizes that construction of the Project along either the Primary or Noticed Alternative Route involves significant traffic challenges due to the nature of construction through urban roadways. Traffic impacts of the Project would be temporary along either route, but, assuming coordination with the City of Boston, the MBTA, MassDOT, and DCR in particular, use of the Primary Route and Morrissey Boulevard is likely to result in less traffic congestion than use of the Noticed Alternative Route. The Siting Board recognizes that the Company will coordinate with jurisdictional roadway authorities to mitigate traffic impacts, and that the Company's TMPs will reflect this coordination. The Company has committed to working closely with DCR, MassDOT, the MBTA, and the City to develop its construction TMPs to reduce Project traffic impacts to the extent possible.

Based on the record, with TMPs, mitigation, including mitigation specific to the MBTA JFK/UMASS station (e.g., implementing time-of-day restrictions for construction), and municipal and state agency coordination developed as proposed, the Siting Board finds the traffic impacts of the Primary Route would be preferable to those of the Noticed Alternative Route. The Siting Board directs the Company to arrange for off-peak delivery of Project equipment and materials and to develop TMPs for the Project, as the Company indicates it will do; specifically, the TMPs shall address safe movement of pedestrians and bicycles. The Siting Board also directs the Company to submit a copy of its final TMPs to the Siting Board when available, but

no less than two weeks prior to the commencement of construction, and to publish the TMPs on the Company's Project website to ensure availability of traffic-related planning information for the Project area. With the implementation of the above equipment delivery, TMP development, and communications outreach plan conditions imposed above, the Siting Board finds that traffic impacts of the Project along the Primary Route would be minimized.

5. Visual Impacts

a. Company Description

Eversource stated that, because the New Line would be constructed underground, visual impacts resulting from its construction would be minimal along either the Primary or Noticed Alternative Route (Exhs. EV-2, at 5-31; EFSB-V-4). Visual impacts of constructing the underground portion of the Project are expected to be temporary only, limited to the effects of tree canopy trimming during transmission line installation (Exhs. EV-2, at 5-31; EFSB-V-4; Tr. 2, at 252-253).[80]

The Andrew Square Substation is surrounded by commercial and residential uses on three sides with train tracks and I-93 on the fourth side (Exh. ESFB-V-2). Eversource stated that all equipment proposed at the Andrew Square Substation for the Project, with the exception of a single, 75-foot-high shielding mast, would be below the height of existing station equipment (Exh. ESFB-V-2). Eversource stated that one tree located within the substation's fence line would be removed; however, the Company noted that the visual impacts of removing this tree would be minimal because other trees in its proximity would remain (Exh. EFSB-V-8; Tr. 2, at 245-246). The Company anticipates that the substation's existing landscaping, fencing, and walls will adequately screen the proposed equipment with the exception of the shielding mast, for which the Company indicates, there is no practical screening method (Exh. EFSB-V-2). The Company did not propose any new visual screening measures at the Andrew Square Substation (Exh. EFSB-V-2).

---

[80] The Company indicates that along the Primary Route it will move or materially prune one public shade tree during construction of the transmission line (Tr. 2, at 249-250).

The Dewar Street Substation, located at the end of a dead-end street, is surrounded by contractor yards, bus storage, and other commercial uses on three sides, and by the train tracks and I-93 on the fourth side (Exh. EFSB-V-2). The Company stated that new substation equipment would be slightly higher than the highest point of the existing substation transformers (Exh. EFSB-V-2). Eversource indicated that there are currently three, 75-foot tall shielding masts installed at the Dewar Street Substation and that, as part of the Project, an additional 100-foot tall shielding mast would be installed (Exhs. EV-2, at 5-7; EFSB-V-1). However, because of (1) the location and existing uses surrounding the Dewar Street Substation, and (2) the height of the proposed new equipment, the Company did not propose new visual buffering for the Dewar Street Substation (Exh. EFSB-V-2).

With respect to mitigating potential visual impacts, the Company stated that it would coordinate with the City of Boston Tree Warden regarding protection and replacement of public shade trees where required (Exhs. EV-2, at 5-31; EFSB-V-4).[81] If the Project is constructed along the Primary Route, the Company will need to prune or remove entirely one public shade tree and will coordinate mitigation of same with the Boston Tree Warden and the adjacent landowner (Exh. EV-2, at 5-28; Tr. 2, at 249-250).

b. Analysis and Findings on Visual Impacts

The record shows that the New Line would be installed underground along the Primary or Noticed Alternative Route and, therefore, would result in minimal visual impacts. Impacts to public shade trees are minimal along both routes and will be mitigated on an individual basis in cooperation with the Boston Tree Warden and consultation with the adjacent landowner. Some new equipment at the Dewar Street Substation would be slightly higher than existing equipment. Views from the substation, however, are consistent with existing uses (e.g., parking areas, train tracks, highways) surrounding the substation property. At the Andrew Square Substation, new equipment would, for the most part, be less than the height of existing station equipment and

[81] With respect to trees affected by construction, the Company will not only work with the City of Boston to identify appropriate mitigation, but commits to replacement of trees or vegetation on a one-to-one basis with compatible tree or vegetation species (Exh. EFSB-V-4).

would be adequately screened by existing landscaping, fencing, and walls; the exception is the proposed 75-foot-tall shielding mast, for which there is no practical screening method. The incremental visual impacts of adding a shielding mast at the Andrew Square Substation would, however, be minimal, given that the substation is generally bordered by commercial and industrial land uses.

The Siting Board finds, therefore, that visual impacts of the Project along the Primary and Noticed Alternative Routes would be comparable. The Siting Board finds, in addition, that potential visual impacts of the Project along the Primary Route would be minimized.

6. Air Impacts

a. Company Description

The Company stated that circuit breakers and gas-insulated bus work installed at Andrew Square Substation and Dewar Street Substation for the Project would contain sulfur hexafluoride ("SF_6") (Exhs. EV-2, at 5-4, 5-7; EFSB-A-1). Eversource reported that the Company tracks its use of tracks SF_6 on a system-wide basis in accordance with U.S. Environmental Protection Agency ("USEPA") guidelines (Exhs. EV-2, at 5-4; EFSB-A-2). The Company indicated that new equipment installed for the Project will be specified at an annual emission rate of 0.1% or less, which complies with the MassDEP standard (310 C.M.R. 7.72) of 1.0% per year (Exh. EV-2, at 5-4).[82]

Eversource reported that, in 2003, it entered into a Memorandum of Understanding ("MOU") with the USEPA to reduce the Company's SF_6 emissions (Exh. EV-2, at 5-4). The Company stated that the MOU is still in place and that, in accordance with its terms, the Company continues to monitor and report its annual SF_6 usage and leakage (Exh. EV-2, at 5-4).

---

[82] SF_6 is shipped in U.S. Department of Transportation-approved cylinders and handled in accordance with work practices of the gas and equipment manufacturer (Exh. EFSB-A-2). Trained Eversource personnel or qualified contractors would fill or top off equipment with SF_6 in accordance with manufacture specifications (Exh. EFSB-A-2). The equipment is filled at installation and will not be opened until maintenance is required, at which time the SF_6 gas is captured into a gas cart (Exh. EFSB-A-2). When the equipment is retired, a vendor would recover and reclaim any remaining SF_6, minimizing atmospheric releases (Exh. EFSB-A-2).

Eversource stated that it also reports its annual leakage of SF_6 pursuant to the USEPA's Mandatory Greenhouse Gas Reporting Rule (Exh. EV-2, at 5-4).

The Company stated that it would follow various construction BMPs to minimize and control dust from construction (Exh. EFSB-A-3). Specifically, the Company stated it would implement the following BMPs: applying crushed stone or calcium chloride to areas of exposed soil within substation construction areas; using a combination of water and street sweeping within roadway construction areas; and, upon consultation with its contractor, using water spray or other mitigation methods on an ongoing basis if appropriate (Exh. EFSB-A-3). The Company will also use plastic covering on temporary soil stockpiles (Exh. EFSB-A-3).

Eversource stated that all Project work performed by the Company or its contractors will comply with state law (G.L. c. 90, § 16A) and MassDEP regulations (310 CMR 7.11(1)(b)) pertaining to air pollution and air quality standards (Exh. EV-2, at 5-18). In addition, to minimizing air emissions from equipment, the Company will direct its contractors to retrofit any diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project with USEPA-verified (or equivalent) emission control devices (e.g., oxidation catalysts or other comparable technologies) (Exh. EV-2, at 5-18). The Company stated that it uses ultra-low-sulfur diesel ("ULSD") fuel in its own diesel-powered construction equipment and will require ULSD fuel in contractors' diesel-powered construction equipment used for the Project (Exh. EV-2, at 5-18).

b. Analysis and Findings on Air Impacts

The record shows the Company has made a number of commitments to limit potential air impacts of the Project, including a commitment to comply with an MOU with USEPA for SF_6, to implement construction BMPs for dust suppression and control, and to comply with state law, regulations, and requirements concerning air pollution/air quality standards, diesel retrofits, and ULSD fuel.

The Siting Board finds that air impacts of the Project along the Primary Route and the Noticed Alternative Route would be comparable. The Siting Board finds, in addition, that potential air impacts of the Project along the Primary Route would be minimized.

7. Safety and Hazardous Waste

a. Company Description

The Company stated that it will comply with all applicable federal, state, and local safety standards in constructing the Project (Exh. EFSB-S-6). Furthermore, Eversource stated that the Project would be designed in accordance with sound engineering practices and design codes established by, among others, the Department, the Institute of Electrical and Electronic Engineers, the American Society of Civil Engineers, the American Concrete Institute and the American National Standards Institute (Exh. EV-2, at 6-1). Eversource stated that all in-street construction will, at a minimum, adhere to the FHWA's MUTCD to ensure that both vehicular and pedestrian traffic are safely routed around all street and curbside construction activities (Exh. EFSB-S-6). During active work hours this will include the use of police details, cones, barricades, signage, electronic sign boards, or any combination of the above, as required by the MUTCD (Exh. EFSB-S-6). To prevent the public from accidentally accessing the trench during non-working hours, the Company will backfill and pave the trench or cover it with engineered road plates staked with bituminous berm ramping around the plate perimeter (Exh. EFSB-S-6). Following construction of the facilities, all transmission structures and substation facilities will be clearly marked with warning signs to alert the public to potential hazards (Exh. EV-2, at 6-1).

To ensure a safe work area, the Company will coordinate all construction activities with the appropriate public safety authorities (Exh. EFSB-T-4). Eversource indicated that its TMP also functions as an important document for ensuring public and worker safety, noting that its TMP would incorporate both active and passive management measures to aid in this effort: the Company will provide police details at work zones where necessary, limit public access to construction work zones, and design temporary alternative vehicle and pedestrian access routes where appropriate to ensure safe passage around work zones (Exhs. EV-2, at 5-22 to 5-24; EFSB-T-4; Tr. 2, at 215; Tr. 3 at 334-335).

With respect to safeguarding existing utilities, the Company has developed an existing utilities survey based on as-built information provided by various utilities and verified by field reviews (Exh. EFSB-S-7). The Company stated that it is planning test pitting along the Primary Route to further verify utility locations (Exh. EFSB-S-7). At the start of any excavation, the

Company will first comply with the Dig Safe law and have all existing utilities marked to locate the as-built placement of the existing utilities (Exh. EFSB-S-7).[83]

The Company stated that subsurface excavation associated with the Project has the potential to encounter contaminated soils from past releases and/or urban fill in the Project vicinity along both the Primary Route and Noticed Alternative Route (Exh. EV-2, at 5-29). Reviewing MassDEP-listed contaminated sites (i.e., sites that are subject to an Activity and Use Limitation ("AUL") or a Utility Related Abatement Measure ("URAM")), the Company identified nine sites within 500-feet of the Primary Route and ten sites within 500-feet of the Noticed Alternative Route (Exh. EV-2, at 5-30). The Company noted that four sites are common to both routes (Exh. EV-2, at 5-30).

If contaminated soils are encountered along either route, the Company would manage them pursuant to the URAM provisions of the Massachusetts Contingency Plan ("MCP") (Exh. EV-2, at 5-31). The Company will prepare a soil and groundwater management plan and will contract with a Licensed Site Professional ("LSP") as necessary, consistent with the MCP at 310 CMR 40.0460 et seq. (Exh. EV-2, at 5-31). All excess soil will be managed in accordance with local, state, and federal regulations (Exh. EV-2, at 5-31).

To improve soil management during construction, the Company will implement a soil pre-characterization program along the selected Project route (Exh. EV-2, at 5-13 n.19). The pre-characterization program would help identify contaminated soils in-advance of construction and improve the Company's ability to plan accordingly (Exh. EV-2, at 5-13 n.19). As previously identified in Section VI.C, the Company would load excavated soils directly into dump trucks for transport directly to an appropriate receiving facility (Exh. EV-2, at 5-12 to 5-13). During any night work when it may not be possible to send soils directly to a receiving facility, Eversource stated that its contractor would stockpile soils at a Company-owned or contractor-operated facility (Exh. EV-2, at 5-13 n.19). The Company stated that each stockpile would be covered

---

[83] The Company will consult with the City of Boston during the design review phase regarding separation from other utilities to minimize the need to add mechanical supports (Exh. EFSB-S-7). Where required, wood sheeting or temporary mechanical supports (e.g., bracing or strapping) will be installed in coordination with the existing utility owner (Exh. EFSB-S-7).

with polyethylene sheeting and equipped with appropriate erosion control measures to prevent sediment runoff (Exh. EV-2, at 5-13 n.19).

Eversource stated that there is one contaminated site within 200 feet of the Andrew Square Substation, and that the Andrew Square Substation itself is subject to an AUL (Exh. EV-2, at 5-5). The Company would complete construction at Andrew Square Substation in accordance with the AUL and the MCP (Exh. EV-2, at 5-5). Construction activity will require submittal of a URAM plan and disposal of excess soil at an appropriate facility (Exh. EV-2, at 5-5). Eversource identified one contaminated site approximately 500 feet from the Dewar Street Substation; however, there are no waste site and/or reportable releases within the Dewar Street Substation (Exh. EV-2, at 5-8).

b. Analysis and Findings on Safety and Hazardous Waste

The Company will comply with all applicable federal, state, and local safety regulations, as well as with generally protective industry standards and guidelines. The Project will adhere to all traffic control and safety measures required by the FHWA's MUTCD. The Company will coordinate with public safety authorities and will develop TMPs that aid in this effort. Police details will be assigned where necessary and public access to construction work zones will be restricted. Where appropriate, the Company will establish safe temporary pedestrian and vehicle routes around work zones. Among other precautions to protect existing utilities, the Company will comply with Dig Safe and consult with the City of Boston and existing utility owners during the Project design review phase.

Based on the record, with the Company's planned compliance with safety regulations and industry guidelines, coordination with DigSafe, and the Company's commitment to protect existing utilities through consultation with the City of Boston and utility owners during the Project design review phase, the Siting Board finds that the Project constructed along either the Primary Route or the Noticed Alternative Route would be comparable with respect to safety. The Siting Board further finds that impacts along the Primary Route with respect to safety would be minimized.

Subsurface excavation associated with the Project has the potential to encounter contaminated soils from historical releases and/or urban fill in the Project area. There is one

MassDEP listed site within 200 feet of the Andrew Square Substation and another approximately 500 feet from the Dewar Street Substation. The record shows that the Andrew Square Substation is subject to an AUL and that construction would be completed in accordance with the AUL and the MCP, including the development of a URAM plan describing the proper management and disposal of contaminated soil and groundwater encountered during construction. The Company's review of AUL-restricted and URAM sites in the vicinity of the two Project routes yielded a similar count of nine total sites for the Primary Route and ten total sites along the Noticed Alternative Route, respectively. Four sites are common to both routes. Based on the record, the Siting Board finds that the Project along the Primary or the Noticed Alternative Route would be comparable with respect to hazardous waste impacts.

With respect to contaminated soils encountered, if any, the Company will follow the URAM provisions of the MCP as well as other local, state, and federal guidelines regardless of Project construction along the Primary or Noticed Alternative Route. The Company has similarly committed to preparing a soil and groundwater management plan for the Project along either route and contracting with a certified LSP, as necessary, consistent with the MCP.

Based on the record, and in accordance with the URAM provisions of the MCP and the Company's commitment to prepare a soil and groundwater management plan, the Siting Board finds that hazardous waste impacts along the Primary Route would be minimized.

8. Magnetic Fields

a. Background

A magnetic field is present whenever electrical current flows in a conductor (Exh. EV-2, at 5-31). Strengths of magnetic fields depend on the amount of current, the distance to conductors and, where there are multiple phases, the distance between conductors (Exhs. EV-2, App. 5-4, at 12; EFSB-MF-1; Tr. 4, at 403, 407-410, 414-415). The magnetic field from the underground transmission line will be highest directly over the duct bank and will decrease rapidly with increasing distance from the line (Exh. EV-2, App. 5-4, at 12).

Over the years, some epidemiology studies have reported statistical associations between power-frequency magnetic fields and diseases such as childhood leukemia (Exh. EFSB-MF-4(1) at 2). In 2007, the World Health Organization ("WHO") concluded that the evidence of a causal

relationship is limited and that magnetic field exposure limits based upon epidemiological evidence are not recommended, but some precautionary measures are warranted (RR-EFSB-23(1) at 12). When reviewing magnetic fields in past proceedings, the Siting Board, in recognition of public concern about magnetic fields and in keeping with WHO guidance, has encouraged use of low-cost measures that would minimize magnetic fields along transmission ROWs. Sudbury-Hudson at 154; Woburn-Wakefield at 121; New England Power Company d/b/a National Grid, EFSB 13-2/D.P.U. 13-151/13-152, at 88 (2014) ("Salem Cables").

b. Company Description

The Company modeled magnetic field levels that would be experienced directly above and at a distance of 25 feet from the New Line, and from a manhole, and a flat section (i.e., a horizontal array, rather than a vertical array) of the New Line (Exh. EV-2, at 5-32). The Company further indicated that the modeling was at sections representative of the post-Project circuit configurations under average annual and peak loading conditions (Exh. EV-2, at 5-32).[84] For the purpose of modeling magnetic fields, Eversource obtained base-case system power-flow models from ISO-NE that include: (1) the expected New England Year 2021 transmission topology with all lines in service; and (2) include transmission system changes that already have been approved by ISO-NE and are in its system models (Exh. EV-2, at 5-32).

The Company indicated that calculations of magnetic field levels were performed at average annual loads and expected peak loads on the transmission system (Exh. EV-2, at 5-32).[85] Magnetic field levels calculated at annual average loads in trench sections of the transmission system, at and in the vicinity of manholes, and at flat sections (i.e., horizontal array) are provided

---

84 Magnetic field levels were calculated using computer algorithms developed by the Bonneville Power Administration, an agency of the U.S. Department of Energy (Exh. EV-2, at 5-32 & App. 5-4). The Company stated that these methods have been shown to accurately predict magnetic field levels near transmission lines (Exh. EV-2, at 5-32). In accordance with standard protocol, the Company calculated magnetic field levels at one meter (3.28 feet) above ground (Exh. EV-2, at 5-32).

85 According to Eversource, the calculations are representative of the magnetic field levels expected from operation of the Project along either route (Exh. EV-2, App. 5-4, at 5).

in Table 9, below (Exh. EV-2, at 5-32). The calculated magnetic field levels at annual average loads and peak loads are provided for directly above the transmission cable (at maximum, in milligauss ("mG")), and 25 feet to either side (in mG) (Exh. EV-2, at 5-32).[86]

Table 9. Calculated Magnetic Field Levels for Average and Peak Loading Levels

Section	Loading Level	Magnetic Field (mG)	
		+/- 25 feet	Maximum over cable
Trench (inverted delta)	Average Load	1.1	13
	Peak Load	1.4	17
Manhole	Average Load	1.8	18
	Peak Load	2.3	22
Flat Section	Average Load	1.8	21
	Peak Load	2.2	27

Source: Exh. EV-2, at 5-32.

The Company explained that magnetic fields will vary along the New Line in two ways (Exh. EFSB-MF-1). First, the capacitive charging current will affect the reactive power flow, which will lower the current (and thereby the magnetic field) along the New Line (Exh. EFSB-MF-1). Additionally, the magnetic fields will change where the conductor configuration changes (Exh. EFSB-MF-1). Eversource stated that most of the proposed transmission line would be in the "inverted delta" configuration (Exh. EFSB-MF-1). A horizontal/flat configuration may be used if previously unidentified utility conflicts require this configuration (Exh. EFSB-MF-1). A vertical configuration will be used for approximately 50 feet to either side of and within the manholes (Exh. EFSB-MF-1).

The New Line will be located primarily under public roadways; however, some relatively short line segments and two manholes would be constructed beneath sidewalks where existing utilities preclude the use of the roadway (Exhs. EFSB-MF-1; EFSB-MF-10; EFSB-LU-1). Along the Primary Route, the Project would be routed within sidewalks at five locations (Exhs. EFSB-MF-10; EFSB-LU-1(1)). At the intersection of O'Callaghan Way and Kemp

[86] Eversource represented that "peak load" conditions assume temperatures in the Boston area exceed 90 degrees Fahrenheit accompanied by high humidity levels (Exh. EFSB-MF-2). On average, Boston experiences approximately twelve days per summer with temperatures above 90 degrees Fahrenheit (Exh. EFSB-MF-2).

Street, and Mount Vernon Avenue, the New Line would be located under a sidewalk to accommodate the construction of the proposed McCormack Redevelopment (Exhs. EFSB-MF-10; EFSB-LU-1(1)). Eversource also proposed constructing the New Line beneath a sidewalk at Mount Vernon Avenue to avoid utility congestion (Exhs. EFSB-MF-10; EFSB-LU-1(1)). The two locations of manholes located within a sidewalk would be on Grampian Way and Ellery Street (Exh. EFSB-MF-10).

Along the Noticed Alternative Route, the alignment would be routed within sidewalks at three locations (Exh. EFSB-MF-10). At one of these locations, the alignment would be partially within sidewalks (Exhs. EFSB-MF-10; EFSB-LU-1(1)). At a second location, on Sydney Street, the Noticed Alternative Route would use the sidewalk to avoid utility congestion in the roadway (Exhs. EFSB-MF-10; EFSB-LU-1(1)). The Company stated that, off Moseley Street, the sidewalk is the only location with space available for the New Line (Exh. EFSB-MF-10; EFSB-LU-1(1)).[87]

Among mitigation measures to reduce magnetic fields from the New Line, Eversource will provide the minimum phase spacing possible while maintaining transmission line thermal capability (Exh. EFSB-MF-5). To reduce magnetic fields further, the Company will configure its Project cables primarily in a delta configuration (EFSB-MF-5).[88]

c. Analysis and Findings on Magnetic Fields

The record shows magnetic field strengths along the Primary and Noticed Alternative Routes would be similar. Therefore, the Siting Board finds that the Primary Route and Noticed Alternative Route are comparable with respect to magnetic field impacts.

---

87 The Company also indicates that if the Noticed Alternative Route were used, location of utilities in this area would be verified during test pitting and relocation of the New Line out of the walkway would be assessed (Exh. EFSB-MF-10).

88 The Company considered additional magnetic field mitigation measures including installation of passive cancellation loops or installation of plates above the transmission duct bank (Exh. EFSB-MF-5). Eversource rejected these options as they would increase Project cost and decrease the rating of the transmission line (Exh. EFSB-MF-5).

Consistent with WHO recommendations, the Siting Board's practice for magnetic field mitigation is to identify low-cost measures that would minimize exposures to magnetic fields from transmission lines. In prior Siting Board decisions, the Siting Board has recognized public concern about magnetic fields and has encouraged the use of practical and low-cost design to minimize magnetic fields along transmission ROWs. See, e.g., Salem Cables at 88. The Siting Board requires magnetic field mitigation which, in its judgment, is consistent with minimizing cost. The Company's average annual and peak modeled magnetic field values, as indicated above, show that the underground design, primarily in public roadways, and close positioning of the phases provides substantial mitigation of magnetic fields. The Company has proposed to locate two manholes within sidewalks on Grampian Way and Ellery Street. After the Company completes test pits to assess the final engineering and placement of these manholes, the Siting Board directs the Company, to further minimize pedestrian exposure to magnetic fields by avoiding placement of manholes in sidewalks, to the extent practicable. Eversource should report to the Siting Board whether the Company is able to relocate the manholes into the street, and if not, the Company shall provide an explanation as to why the sidewalk must be used instead of the street.

Based on the design and operation of the Project, as described above, and with the conditions imposed, the Siting Board finds that magnetic field impacts of the Project along the Primary Route would be minimized.

9. Summary of Environmental Impacts

The Siting Board finds that the information provided by the Company regarding the Project's environmental impacts is substantially accurate and complete. In comparing the environmental impacts along the Primary and Noticed Alternative Routes, the Siting Board finds that the Primary Route would have lower land use impacts and lower traffic impacts than the Noticed Alternative Route. The Siting Board attributes these advantages to the reduced impacts to nearby residential and other sensitive receptors resulting from the greater ease and speed of

construction along the Primary Route due to its lower utility densities.[89] The Siting Board further finds that noise, visual, air, safety, hazardous waste, and magnetic field impacts would be comparable for the Primary and Noticed Alternative Routes given that the Company would install the New Line underground and within roadways, using the same technology and construction methods. Finally, the Siting Board finds that the Primary Route has the potential for minor water and wetland resource impacts, whereas the Noticed Alternative Route would not result in any such impacts; therefore, the Noticed Alternative Route is preferable to the Primary Route with respect to water and wetland resource impacts. The relative environmental impacts for each category assessed in Section VI.D are summarized in Table 10, below. On balance, the Siting Board finds that the Primary Route is preferable to the Noticed Alternative Route with respect to environmental impacts.

Table 10. Environmental Impacts Comparison Summary

Impact Category	Primary Route Preferred (+)	Noticed Alternative Route Preferred (+)	Routes Are Comparable (=)
Land Use & Historic Resources	+		
Water & Wetlands		+	
Noise			=
Visual			=
Air			=
Traffic	+		
Safety			=
Hazardous Waste			=
Magnetic Fields			=

E. Cost

1. Company Description

Eversource provided a planning grade cost estimate (i.e., -25%/+25%) of $68.3 million

[89] The Siting Board also notes that, if feasible, the opportunity to coordinate with other planned construction projects could further reduce overall impacts to neighboring land uses along the Primary Route.

for the Primary Route and a conceptual grade estimate (-25%/+50%) of $69.6 million for the Noticed Alternative Route (Exhs. EV-2, at 5-38; EFSB-C-1).[90,91] The Company noted that it compared the cost estimates for the two routes without any adjustments to account for the varying levels of accuracy (Exh. EFSB-C-1). The Company stated that the cost estimates were developed in accordance with standard industry practice, in terms of the development stage for each route and the respective level of accuracy (Exh. EFSB-C-1).[92] According to the Company, even though the Noticed Alternative Route is shorter than the Primary Route, the cost estimate is greater due to the engineering and construction-related challenges of its construction, including proximity to existing transmission facilities and density of underground utilities (Exh. EV-2, at 5-38).[93]

Table 11, below, provides a breakdown of estimated costs for the New Line along each route and substation upgrades. As previously stated, the New Line would require the same

---

90 According to the Company, because the Project involves non-PTF elements and serves a local rather than a regional reliability need, approximately 98 percent of Project cost would be allocated to NSTAR East retail customers (Exh. EFSB-C-7). NSTAR East consists of three service areas: Greater Boston; Cambridge; and the South Shore, Cape Cod, and Martha's Vineyard (Exh. EFSB-C-10).

91 For comparison, the South Boston Reliability Project, which consisted of approximately one mile of in-street construction for two new transmission lines, was estimated at $20.5 million as approved in D.P.U. 13-86; the final constructed cost was $29.8 million, an increase of 45.4 percent (RR-EFSB-5). The Company attributed the cost increase to greater than anticipated underground utility congestion (RR-EFSB-5).

92 The Company states that, initially, cost estimates with a -50%/+200% level of accuracy are developed for routes by using an average cost-per-mile based on recent projects (Exh. EFSB-C-1). Subsequent to choosing its Primary and Noticed Alternative Routes, Eversource performed certain field engineering that enabled the Company to refine its cost estimates to a -25%/+50% level of accuracy (Exh. EFSB-C-1). The Company then advanced design and engineering along the Primary Route, providing more information regarding existing conditions there and enabling the Company to develop a cost estimate at a -25%/+25% level of accuracy (Exh. EFSB-C-1).

93 Eversource stated that the Noticed Alternative Route was slightly more expensive than the Primary Route due in part to engineering challenges related to locating the New Line in a position where it would not adversely affect existing infrastructure during construction or operation (Exh. EFSB-C-6).

substation improvements, regardless of the route selected (Exh. EV-2, at 5-3 to 5-4). The table indicates the slightly lower cost of the Project constructed along the Primary Route, as follows:

Table 11. Estimated Cost Breakdown, Primary and Noticed Alternative Routes

Component	Primary Route	Noticed Alternative Route
Transmission Line	$52.0 million	$53.3 million
Andrew Square Substation	$9.7 million	$9.7 million
Dewar Street Substation	$6.6 million	$6.6 million
TOTAL (accuracy)	$68.3 million (-25%/+25%)	$69.6 million (-25%/+50%)

Source: Exh. EFSB-C-3[94]

2. Analysis and Findings on Cost

The Siting Board requires the petitioner to demonstrate that the proposed route for the transmission facility is superior to the alternative route(s) on the basis of balancing environmental impact, cost, and reliability of supply. G.L. c. 164, § 69J. Further, because G.L c. 164, § 69J provides that "no state agency shall issue a construction permit for any such facility unless the petition to construct such facility has been approved by the [Siting Board]," the Siting Board's balancing of environmental impact, cost, and reliability of supply takes place at a relatively early stage in the engineering design of a particular project. As a result, project cost estimates are typically developed only to an intermediate level of precision. Furthermore, applicants typically do not develop engineering design of alternatives to the same level of detail, so cost estimates for alternatives are necessarily less precise. Sudbury-Hudson at 175; East Eagle at 60-61.

---

94 The Company explained that material and labor are the main components of underground transmission line cost, and that labor is the principal distinguishing cost factor (Exh. EFSB-C-5). The Company pointed to utility density, population density, street width, and number of intersections as elements that can result in reduced productivity rates during construction (Exh. EFSB-C-5). The Company stated that these reduced productivity rates can be resolved by increasing the workforce or lengthening the project schedule, both of which add to project cost (Exh. EFSB-C-5).

The record identifies the Project along the Primary Route as the least cost alternative, with an estimated cost of approximately $68.3 million compared to an estimated cost of approximately $69.6 million for the Noticed Alternative Route. Based on the Company's cost estimates, the Siting Board finds that the Primary Route is slightly preferable to the Noticed Alternative Route with respect to cost.

F. Reliability

The Company's assessment is that the Primary Route and the Noticed Alternative Route are each reliable means for providing a 115 kV connection between the Andrew Square Substation and the Dewar Street Substation (Exh. EV-2, at 5-38). Eversource noted, however, that the Noticed Alternative Route, but not the Primary Route, presents a potential single point of failure for three underground transmission lines because significant portions of Sydney Street contain two existing 115 kV K Street-to-Dewar Street lines (Exhs. EV-2, at 5-38 to 5-39; EFSB-RS-14; Tr. 1, at 26-30). According to the Company, future road construction activities on Sydney Street, including, for example, saw-cutting the road or installing gas, sewer, or water facilities, could compromise the integrity of the electric transmission infrastructure, which could result in the outage of all three 115 kV underground transmission lines serving Dewar Street Substation, with a prolonged loss of supply to the Dewar Street Substation as a consequence (Exh. EV-2, at 5-39; Tr. 1, at 27-30). Therefore, it would be preferable to route the New Line in a different street than where the existing K Street-Dewar Street 115 kV lines are located (Exh. EV-2, at 5-39).

The Company states that, in general, routing a new line in a location with no existing electric transmission lines improves the reliability of transmission supply to connected substations (Exh. EV-2, at 5-39). The Company stated that the Primary Route is superior to the Noticed Alternative Route from a reliability perspective because it provides an opportunity to install the New Line in a location different from that of existing in-street transmission lines (Exh. EV-2, at 5-39).

Constructing the Noticed Alternative Route along Sydney Street could present a potential single point of failure for three underground transmission lines, the New Line plus the two existing K Street-to-Dewar Street 115 kV lines. Possible simultaneous outage of the three

115 kV underground transmission lines from future physical road construction would potentially result in a prolonged loss of supply to Dewar Street Substation. The Primary Route does not present this outage concern. The Siting Board therefore finds that the Primary Route is preferable to the Noticed Alternative Route with respect to reliability.

G. Conclusion on Analysis of the Primary and Alternative Routes

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. As discussed above, the Siting Board finds that the Primary Route is preferable to the Noticed Alternative Route with respect to environmental impacts, cost, and reliability. The Siting Board acknowledges that the dense urban area in which the Project would be located gives rise to both the relatively high cost of underground construction and also the important reliability benefits associated with the Project.

The Siting Board therefore finds that the Primary Route is superior to the Noticed Alternative Route with respect to providing a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

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 along the Primary Route would be minimized. The Siting Board finds that the Project along the Primary Route would achieve an appropriate balance among conflicting environmental concerns as well as among 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. Sudbury-Hudson at 182; Vineyard Wind at 127; Needham-West Roxbury at 74.

B. Company Description

Eversource states that the Project is consistent with the current health, environmental protection, and resource use and development policies adopted by the Commonwealth, as required for Project approval by the Siting Board pursuant to G.L. c. 164, § 69J (Exh. EV-2, at 6-1). The Company notes that the Project also satisfies the goals of various state legislative enactments and related policies, including the Electric Utility Restructuring Act of 1997 (St. 1997, c. 164) ("Restructuring Act"), the Green Communities Act (St. 2008, c. 169), the Global Warming Solutions Act ("GWSA") (St. 2008, c. 298), and the Energy Diversity Act (St. 2016, c. 188) (Exh. EV-2, at 6-2; Company Brief at 89).

Eversource asserts that it has incorporated specific measures to mitigate environmental impacts associated with the Project while minimizing overall costs (Exh. EV-2, at 6-1; Company Brief at 90). In its initial filing, the Company identified federal, state, and local environmental permits and approvals required to construct and operate the Project (Exh. EV-2, at 6-2 and Table 6-1). Eversource states that by meeting the identified permitting requirements, the Project will comply with applicable environmental policies (Exh. EV-2, at 6-2; Company Brief at 90).

The Company cites the Restructuring Act's recognition that reliable electric service is of "utmost importance to the safety, health, and welfare of the Commonwealth's citizens and economy . . . ." (Company Brief at 89, citing Restructuring Act, § 1(h)). Accordingly, the Company notes that the Legislature has determined that a reliable supply of electricity is necessary for, and consistent with, the health policies of the Commonwealth (Exh. EV-2, at 6-1). Eversource asserts that in addition to improving the reliability of electric service, the Project's design, construction and operation in accordance with applicable governmental and industry health and safety standards (such as the National Electric Safety Code and Occupational Safety and Health Administration regulations) ensure that the Project is fully consistent with public health and safety and will have no adverse health effects (Company Brief at 89).

The Company noted the progression of the Commonwealth's Environmental Justice Policy, as set forth initially in 2002, delineated further by Executive Order 552 in 2014, and

updated in 2017, and characterized the Company's community outreach plan "to facilitate the meaningful opportunity for stakeholders to participate" as demonstrating consistency with the Environmental Justice Policy (Exh. EV-2, at 6-2 to 6-3). Eversource acknowledged that the Project passes through neighborhoods which qualify as Environmental Justice populations, as defined by the 2017 EJ Policy (Exh. EV-2, at 6-2 to 6-3; RR-EFSB-39; Company Brief at 90-91).[95] However, the Company reported that the Project's environmental impacts fall below the MEPA impact thresholds referenced in the 2017 EJ Policy that would otherwise require either enhanced public participation or enhanced analysis of impacts and mitigation under the 2017 EJ Policy (id.).

Eversource summarized the provisions of the Green Communities Act, including amendments included in 2012 that were designed to encourage energy efficiency, promote renewable energy, and create green communities among other environmental and energy goals (Exh. EV-2, at 6-3). The Company asserted that the Project's improvements to the transmission system will strengthen and support the load requirements served by the Project and enable a more efficient and flexible operation of the local grid, consistent with the aims of the Green Communities Act (id.; Company Brief at 91). The Company noted that the Project's improvements to the reliability of the transmission system also would help meet the goals of the Energy Diversity Act, a statute which focuses on the promotion of renewable energy resources and the importance of a robust transmission grid to accommodate the rising number of renewable resources in the resource supply mix (Company Brief at 92).

Eversource characterized the Project as fully consistent with the provisions of the GWSA and its greenhouse gas ("GHG") emission reductions aims, including emission reduction targets established in the 2020 Clean Energy and Climate Plan ("2020 CECP") (Exh. EV-2, at 6-3). The Company asserted that the Project would have no adverse climate change impacts or negative effects on sea levels (id.; Company Brief at 92).

---

95 As illustrated by the map provided in RR-EFSB-30, the Noticed Alternative Route would be located entirely within EJ communities as compared to only a portion of the Primary Route. See RR-EFSB-39.

Finally, the Company noted the Resource Use and Development policies of the Commonwealth including the Sustainable Development Principles set forth in the Smart Growth/Smart Energy policy of EEA (Company Brief at 92-93). Eversource maintained that the Project's design is consistent with the principles of compact development, historic preservation, reuse of existing developed areas, and protection of environmentally sensitive land and cultural and natural resources and landscapes (Exh. EV-2, at 6-4; Company Brief at 92-93). The Company identified the Project's use of existing roadways to route the New Line as illustrative of the manner in which Eversource prevented Project impacts to undisturbed property (Company Brief at 93).

C. Analysis and Findings

1. 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." See St. 1997, c. 164. In Section VI.D, above, the Siting Board found that the Project would improve the reliability of electric service in the South Boston, Dorchester and Roxbury areas of Boston. As reliable electric service is essential to the health, safety, and welfare of residents of the Commonwealth, an improvement in reliability, as provided by the Project, will also result in health and safety benefits for the public. Such benefits are of particular importance in Environmental Justice communities, such as the Project area, where residents may already bear disproportionate adverse health impacts. See 2017 EJ Policy at 7.

The Company has committed that all design, construction and operation activities will comply with applicable governmental and industry health and safety standards including the National Electric Safety Code, the Occupational Safety and Health Administration requirements, and other regulations designed to limit adverse health impacts (Exhs. EV-2, at 6-1). In Section VI.D, the Siting Board finds that the Project's land use, historic resources, wetland and water resources, traffic, noise, air, visual, safety, hazardous waste, and magnetic fields impacts have been minimized. In addition to the Siting Board's conditions, the Company is required to obtain

all environmental approvals and permits required by federal, state, and local agencies and must be constructed and operated according to those permits and approvals. Accordingly, subject to the Company's specified mitigation and the Siting Board's conditions set forth in Section X, below, the Siting Board finds that the Company's plans for construction of the Project are consistent with current health policies of the Commonwealth.

2. Environmental Protection Policies[96]

The GWSA, enacted in August 2008, is a comprehensive statutory framework to address climate change in Massachusetts. St. 2008, c. 298. The GWSA mandates that the Commonwealth reduce its GHG emissions by 10 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). More recent policy developments, following the hearings and briefs in this proceeding, have both increased and accelerated the Commonwealth's GHG emissions reduction targets.[97]

On April 22, 2020, pursuant to the GWSA, the Secretary issued a "Determination of Statewide Emissions Limit for 2050" ("Determination")[98], which established a "net zero" level of statewide greenhouse gas 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 4).

---

96 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.

97 The Siting Board officially notices the following recent policies of the Commonwealth: "Determination of Statewide Emissions Limit for 2050" dated April 22, 2020; Massachusetts Clean Energy and Climate Plan for 2030 Interim" dated December 30, 2020; and "Massachusetts 2050 Decarbonization Roadmap" dated December 30, 2020. 980 CMR 1.06(7).

The Secretary issued an "Interim Massachusetts Clean Energy and Climate Plan for 2030" on December 30, 2020 (the "Interim 2030 CECP") for public comment. In the 2030 Interim CECP, the Secretary set the 2030 statewide GHG emissions limit at 45 percent below 1990 levels. Also on December 30, 2020, Secretary issued the "Massachusetts 2050 Decarbonization Roadmap" ("2050 Roadmap") Based on its analysis of a range of potential pathways, the 2050 Roadmap finds that the most cost-effective, low-risk pathways to net zero GHG emissions share core elements, including a balanced clean energy portfolio anchored by a significant offshore wind resource, more interstate transmission, widespread electrification of transportation, building heat and hot water, and cost-effective replacement of equipment, infrastructure, and systems that use fossil fuels (2050 Roadmap at 21-26).

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 Roadmap underscores the 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). While not specifically addressed in the 2050 Roadmap, the Project would create a more robust transmission system and therefore is consistent with the objectives and key findings of the 2050 Roadmap, including increased electrification and the addition of new renewable resources.

The GWSA also obligates administrative agencies to consider reasonably foreseeable climate change impacts and related effects when reviewing permit requests. G.L. c. 30, § 61. The Company has shown that construction of the Project would have no adverse climate change impacts (Exh. EV-2, at 6-3). Eversource also addressed the Project's resilience to climate

change, including changes in loads associated with extreme weather conditions, and the durability of Project construction in the face of extreme weather conditions (Exh. EFSB-G-24). The record supports Eversource's view that the Project's should function reliably as designed given anticipated climate change impacts.

The Company has communicated with and will continue to coordinate throughout the Project's development with other agencies and authorities, with the shared goal of improved infrastructure resiliency. The Company has held discussions with the City of Boston's Department of Public Works regarding planned road improvements in the Savin Hill neighborhood, the Boston Parks and Recreation Department regarding the planned McConnell Park Redevelopment, and DCR regarding planned improvements to Morrissey Boulevard (Exh. EFSB-CM-9). DCR plans to raise parts of Morrissey Boulevard to address flooding issues, improve drainage, improve safety for pedestrian and bicycle traffic and improve access to abutting recreational properties (id.). The Boston Parks and Recreation Department plans to address flooding issues experienced at McConnell Park as part of its redevelopment project (Exh. EFSB-G-21). The Siting Board finds that the Project would complement and help facilitate planned climate change resiliency efforts in the local area, such as DCR's reconfiguration of Morrissey Boulevard to relieve road flooding issues and in so doing, would be consistent with Commonwealth's climate-related resiliency policies.

The Siting Board notes that the Project did not trigger enhanced public participation or enhanced analysis of impacts and mitigation provisions under the 2017 EJ Policy.[99]

---

[99] On March 26, 2021, Governor Baker signed An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, St. 2021, c. 8 ("the Climate Act"). The Climate Act sets forth environmental justice principles to protect rights to a clean and healthy environment, regardless of race, color, income, class, handicap, gender identity, sexual orientation, national origin, ethnicity or ancestry, religious belief, or English language proficiency. To promote that goal, the Climate Act requires the meaningful involvement of environmental justice populations and requires additional measures to improve public participation, such as providing translation services and public notices in English and any other language spoken by a significant number of the affected environmental justice population. St. 2021, c. 8, § 60. The environmental review process conducted by the MEPA Office will be revised to reflect additional focus on environmental justice populations. The 2017 EJ Policy was updated on June 24, 2021: https://www.mass.gov/doc/environmental-justice-policy6242021-update/download.

Nevertheless, the Company's compliance with language access directives of the Siting Board resulted in widespread notification of the Project to the community, in multiple languages that are prevalent in the area. See Section I.B. As detailed earlier, the Siting Board directed the Company to provide notice in multiple languages to reach not only property owners but residents in rental housing in the Project area. The Company's community outreach was both responsive to, and consistent with, the broader public participation objectives of the Environmental Justice Policy.

Subject to the specified mitigation and conditions set forth in this Decision, the Siting Board finds that the Companies' plans for construction and operation of the Project are consistent with the current energy and environmental protection policies of the Commonwealth.

3. Resource Use and Development Policies

In 2007, pursuant to the Commonwealth's Smart Growth/Smart Energy policy, EEA established Sustainable Development Principles. Among the principles are: (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 reuse of existing sites, structures and infrastructure; (3) protecting environmentally sensitive lands, natural resources, critical habitats, wetlands and water resources and cultural and historic landscapes; and (4) increasing the quantity, quality, and accessibility of open spaces and recreational opportunities.

The Company's proposed Project design is located primarily within existing roads, and therefore does not impact undisturbed property, consistent with the Commonwealth's policies regarding resource use and development (Exh. EV-2, at 6-4). As mentioned above, Eversource intends to coordinate the Project with planned development activities in the vicinity including the Morrissey Boulevard redevelopment and the McConnell Park Redevelopment project. In addition, Eversource has been in contact with the Boston Housing Authority and the Winn Development Company regarding the redevelopment of the McCormack Housing Community, a large public housing development (Exhs. EV-1, at ES-1-ES-2; EFSB-G-11; EFSB-G-26). The Company stated that Eversource will attempt to coordinate in-street civil construction efforts such as installing multiple infrastructure elements in the same excavation, and coordinating

excavation and repaving efforts with these and other local projects so as to reduce impacts to abutters and commuters (Exhs. EFSB-LU-18; EFSB-LU-19). These efforts are consistent with the revitalization and redevelopment goals of EEA's Sustainable Development Principles.

In Section V, the Siting Board reviewed the process by which the Company selected the Primary Route for the Project. The Project has been designed and conditioned to avoid or minimize impacts to natural and cultural resources by being constructed primarily in existing roadways between the existing Andrew Square and Dewar Street Substations. In view of these findings, the Siting Board finds that the Project is consistent with the Commonwealth's resource use and development policies.

4. Conclusion

Subject to the specific mitigation and the conditions set forth in this Decision, 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 of the Commonwealth.

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

A. Standard of Review

General Laws c. 164, § 72, requires, in relevant part, that an electric company seeking approval to construct a transmission line must file with the Department a petition for: authority to construct and use … a line for the transmission of electricity for distribution in some definite area or for supplying electricity to itself or to another electric Company or to a municipal lighting plant for distribution and sale … and shall represent that such line will or does serve the public convenience and is consistent with the public interest .... The [D]epartment, after notice and a public hearing in one or more of the towns affected, may determine that said line is necessary for the purpose alleged, and will serve the public convenience and is consistent with the public interest.

The Department, in making a determination under G.L. c. 164, § 72, considers all aspects of the public interest. Boston Edison Company v. Town of Sudbury, 356 Mass. 406, 419 (1969). All factors affecting any aspect of the public interest and public convenience must be weighed

fairly by the Department in a determination under Section 72. Town of Sudbury v. Department of Pub. Utils., 343 Mass. 428, 430 (1962); NSTAR Electric Company d/b/a/ Eversource Energy, D.P.U. 19-46, at 4-5 (2020); New England Power Company d/b/a National Grid, D.P.U. 19-16, at 6 (2020) ("Golden Rock").

In evaluating petitions filed under G.L. c. 164, § 72, the Department examines (1) the need for, or public benefits of, the present or proposed use; (2) the present or proposed use and any alternatives identified; and (3) the environmental impacts or any other impacts of the present or proposed use. Golden Rock at 6; NSTAR Electric Company d/b/a Eversource Energy, D.P.U. 18-21, at 58 (2019); Boston Edison Company, D.T.E. 99-57, at 3-4 (1999). The Department then balances the interests of the general public against the local interests and determines whether the line is necessary for the purpose alleged and will serve the public convenience and is consistent with the public interest. Save the Bay, Inc. v. Department of Public Utilities, 266 Mass. 667, 680 (1975); Town of Truro v. Department of Public Utilities, 365 Mass. 407 (1974); Golden Rock at 6.

B. Analysis and Findings

As described above in Sections III through VI, the Siting Board examined: (1) the need for, or public benefits of, the proposed Project; (2) the environmental impacts of the proposed Project; and (3) any identified alternatives. With implementation of the specified mitigation measures proposed by the Companies and the conditions set forth by the Siting Board in Section X, below, the Siting Board finds pursuant to G.L. c. 164, § 72, that the proposed Project is necessary for the purpose alleged, would serve the public convenience, and is consistent with the public interest. Thus, the Siting Board approves the Section 72 Petition.

IX. SECTION 61 FINDINGS

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" ("Section 61 Findings"). G.L. c. 30, § 61. Pursuant to 301 CMR 11.01(3), Section 61 Findings are necessary when an

EIR is submitted to the Secretary of EEA and Section 61 Findings should be based on such EIR. Where an EIR is not required, Section 61 Findings are not necessary. 301 CMR 11.01(4).[100]

In this case, the record indicates that Eversource filed an ENF for the Project on March 31, 2021, and the Secretary issued a Certificate on the ENF on May 7, 2021 stating that the Project does not require an EIR (RR-EFSB-40(S1)). Accordingly, Section 61 findings are not necessary in this case.

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. Thus, 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 additional energy resources are needed to maintain a reliable supply of electricity to the Project Area.

In Section IV, above, the Siting Board finds that, on balance, 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.

In Section V, 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 it has 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 with some measure of geographic diversity. Therefore, the Siting Board finds that the Company has demonstrated that it examined a reasonable range of practical siting alternatives and that its

---

[100] The Siting Board generally is not required to make a G.L. c. 30, § 61 finding in a G.L. c. 164, § 69J proceeding, as Siting Board action is exempt by statute from MEPA. G.L. c. 164, § 69I. However, the Board must comply with MEPA with respect to review of the Company's Section 72 Petition, which is a Department statute, and action under Section 72 is not exempt from MEPA.

proposed facilities are sited in locations that minimize cost and environmental impacts while ensuring a reliable energy supply.

In Section VI, above, the Siting Board finds that the Primary Route is superior to the Noticed Alternative Route with respect to providing a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost.

In Section VI, above, the Siting Board finds that with the implementation of the specified conditions and mitigation presented, and compliance with all applicable local, state and federal requirements, the environmental impacts of the Project along the Primary Route would be minimized.

In Section VII, above, the Siting Board finds that, subject to the specific mitigation and conditions set forth in this Decision, the Company's plans for construction of the Project are consistent with the health, environmental protection, and resource use and development policies of the Commonwealth.

In addition, the Siting Board finds, pursuant to G.L. c. 164, § 72, that the Project is necessary for the purpose alleged, and will serve the public convenience and is consistent with the public interest, subject to the following Conditions A through L.

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

A. The Siting Board directs the Company to avoid construction through, and in the immediate vicinity of, McConnell Park during scheduled recreational activities whenever possible, and further directs the Company to inform relevant municipal officials at least one week in advance of construction activity in this recreation area.

B. Eversource shall submit to the Siting Board 30 days prior to start of construction a description of the review process undertaken between the Company and the BWSC, and any specific engineering mitigation/approach selected for areas of the Project that would potentially complicate BWSC emergency repairs or routine replacements.

C. The Siting Board directs the Company, prior to the start of construction, to submit to the Siting Board (1) a status report on the schedule for construction of the McCormack Redevelopment and the Morrissey Boulevard project, and (2) a detailed description of the coordination that will take place between the Project and the McCormack Redevelopment and Morrissey Boulevard project.

D. The Siting Board directs the Company to limit construction in residential areas to Monday through Friday from 7:00 a.m. to 6:00 p.m., except by request of the City or DCR or with their specific written approval in advance, as requested by Company. Work requiring longer continuous duration than normal construction hours allow, such as cable splicing, is exempted from this condition. The Siting Board also directs the Company to coordinate with the City, DCR, and the MBTA to determine areas, such as schools, where construction hour limitations may be appropriate to mitigate noise or other concerns.

Should the Company need to extend construction work beyond the above-noted hours and days, with the exception of emergency circumstances on a given day necessitating extended hours, the Company shall seek written permission from the relevant municipal authority before the commencement of such work, and to provide the Siting Board with a copy of such permission. If the Company and municipal officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Siting Board and shall provide the relevant municipality with a copy of any such request.

E. The Company shall inform the Siting Board and the relevant municipality in writing within 72 hours of any work that continues beyond the hours allowed by the Siting Board. The Company shall also send a copy to the Siting Board, within 72 hours of receipt of any municipal authorization for an extension of work hours. Furthermore, the Company shall keep records of the dates, times, locations, and durations of all instances in which work continues beyond the hours allowed by the Siting Board, or, if granted extended work hours in writing by a municipality, work that continues past such allowed hours, and must submit such record to the Siting Board within 90 days of Project completion.

F. The Siting Board directs Eversource, in addition to using newer, lower-noise-generating equipment, to use portable noise barriers to mitigate the noise impact of nighttime cable splicing operations that occur within 75 feet of a residential structure.

G. The Siting Board directs the Company to arrange for off-peak delivery of Project equipment and materials and to develop TMPs for the Project; specifically, the TMPs shall address safe movement of pedestrians and bicycles. The Siting Board also directs the Company to submit a copy of its final TMPs to the Siting Board when available, but no less than two weeks prior to the commencement of construction, and to publish the TMPs on the Company's Project website to ensure availability of traffic-related planning information for the Project area.

H. The Siting Board directs the Company, to further minimize pedestrian exposure to magnetic fields by avoiding placement of manholes in sidewalks, to the extent practicable. Eversource should report to the Siting Board whether the Company is

able to relocate the manholes into the street, and if not, the Company shall provide an explanation.

I. The Company shall, in consultation with the City of Boston, develop a comprehensive outreach plan for the Project. The outreach plan should describe the procedures to be used to notify the public about: (1) the scheduled start, duration, and hours of construction in particular areas; (2) the methods of construction that will be used in particular areas (including any use of nighttime construction); and (3) anticipated street closures and detours. The outreach plan should also include information on complaint and response procedures; Project contact information; the availability of web-based project information; and protocols for notifying the schools of upcoming construction.

J. The Siting Board directs the Company and its contractors and subcontractors to comply with all applicable federal, state, and local laws, regulations, and ordinances from which the Company has not received an exemption.

K. The Siting Board directs the Company to submit to the Board an updated and certified cost estimate for the Project prior to the commencement of construction. Additionally, 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 and actual costs and completion dates, and an explanation of the Company's internal capital authorization approval process.

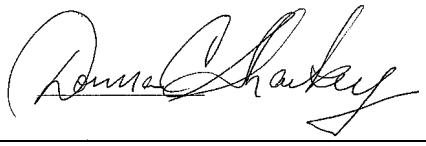
L. The Siting Board directs the Company, within 90 days of Project completion, to submit a report to the Siting Board documenting compliance with all conditions contained in this Decision, noting any outstanding conditions yet to be satisfied and the expected date and status of such resolution.

Because issues addressed in this Decision relative to this facility are subject to change over time, construction of the proposed Project 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, and its successors in interest, to notify the Siting Board of any changes other than minor variations to the Project 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.

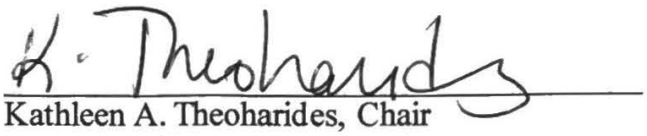
The Secretary of the Department shall transmit a copy of this Decision herein to the Executive Office of Energy and Environmental Affairs, and the Company shall serve a copy of this Decision on the City Clerk, the Office of the Mayor and the City Council of the City of Boston. The Company shall certify to the Secretary of the Department within ten business days of issuance that such service has been made.



Donna C. Sharkey, Esq.
Presiding Officer

Dated this 2nd day of July, 2021

Approved by a vote of the Energy Facilities Siting Board at its meeting on June 30, 2021, by the members present and voting. Voting for the Tentative Decision as amended: Kathleen A. Theoharides, Secretary of the Executive Office of Energy and Environmental Affairs and Siting Board Chair; Matthew H. Nelson, Chair of the Department of Public Utilities; Cecile M. Fraser, Commissioner of the Department of Public Utilities; Patrick C. Woodcock, Commissioner of the Department of Energy Resources; Gary Moran, Deputy Commissioner and designee for the Commissioner of MassDEP; Jonathan Cosco, General Counsel and designee for the Secretary of the Executive Office of Housing and Economic Development; Joseph Bonfiglio, Public Member; and Brian Casey, Public Member.



Kathleen A. Theoharides, Chair
Energy Facilities Siting Board

Dated this 2nd day of July 2021

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. Massachusetts General Laws, Chapter 25, Sec. 5; Chapter 164, Sec. 69P.