

COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD

Petition of Hingham Municipal Lighting Plant Pursuant to G.L. c. 164, § 69J for Approval t to Construct a New Underground 115 kV Electric Transmission Line in Weymouth and Hingham, a New Substation in Hingham, and a New Tap Station in Weymouth, Massachusetts	)))))))	EFSB 24-01
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Joint Petition of Hingham Municipal Lighting Plant and NSTAR Electric Company d/b/a Eversource Energy Pursuant to G.L. c. 40A, § 3 for Individual and Comprehensive Exemptions from the Zoning By-law of the Town of Hingham and the Zoning Ordinance of the Town of Weymouth, Massachusetts	)))))))	D.P.U. 24-135
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INITIAL BRIEF OF
HINGHAM MUNICIPAL LIGHTING PLANT

Submitted by its attorneys,

Robert D. Shapiro
Diedre T. Lawrence
Duncan & Allen NE, LLC
25 Braintree Hill Office Park, Suite 200
Braintree, MA 02184
617-817-9365 (Shapiro)
617-435-2546 (Lawrence)
rds@duncanallen.com
dtl@duncanallen.com

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I. INTRODUCTION

On November 13, 2024, pursuant to G.L. c. 164, § 69J, Hingham Municipal Lighting Plant (“HMLP”) a municipally-owned electric light department, filed a Petition with the Energy Facilities Siting Board (the “Siting Board” or “EFSB”) (“Petition to Construct”) for approval to construct, operate and maintain (1) a proposed approximately 3.2-mile underground 115 kilovolt (kV) transmission line in the Towns of Weymouth and Hingham (“New Line”); and (2) a proposed enclosed substation located at the transfer station site at 0 Old Hobart Street in the Town of Hingham (“New Substation”). With this Petition, HMLP also seeks approval of a proposed open-air tap station in Weymouth (“New Tap Station”), which would be constructed, owned, and operated by NSTAR Electric Company d/b/a Eversource Energy (“Eversource”) within an existing transmission corridor off Broad Street. The proposed New Line, New Substation and New Tap Station are referred to collectively as the “Project.”¹ Exh. HE-3, at 1. The Siting Board docketed the Petition to Construct as EFSB 24-01.

Also on November 13, 2024, pursuant to G.L. c. 40A, § 3, HMLP and Eversource filed with the Department of Utilities (“DPU”) a joint petition seeking individual and comprehensive exemptions from the operation of (1) the zoning bylaws of Hingham in connection with HMLP’s construction and operation of the New Substation, and (2) zoning ordinances of the Town of Weymouth in connection with Eversource’s construction and operation of the New Tap Station (“Joint Zoning Exemption Petition”). Exh. HE-2. The DPU docketed the Joint Zoning Exemption Petition as D.P.U. 24-135.

The Project is needed to address a significant and current reliability risk. At present, the entire Town of Hingham is served by two overhead Eversource 115 kV lines – circuit number 478-503 and circuit number 478-508. In many locations, the two overhead 115 kV lines are located on the same double-circuit towers (“DCTs”). If HMLP loses both circuits because of a DCT failure (a N-1 contingency), or if one circuit is out for service-- as a result of maintenance or a single line contingency-- and there is an event on the remaining circuit (a N-1-1 contingency), the entire Town of Hingham is susceptible to an extended outage. Exh. HE-1, at 1-5. Unlike other utilities, HMLP only has one substation and, in the event of an outage associated

¹ The Project is also referred to as the Hingham Electric Infrastructure Reliability Project (“HEIRP”).

with a N-1 or N-1-1 contingency, there are no other backstop transmission or distribution options available to serve any portion of HMLP's customer load. Exh. HE-1, at 1-6.

The proposed Project is designed to provide HMLP with an additional transmission source and thereby eliminate the risk of an extended outage associated with a N-1 or N-1-1 contingency affecting the current transmission circuits serving Hingham.

As set forth herein, consistent with G.L. c. 164, § 69H, the Project is necessary to provide a reliable energy supply for the Commonwealth with a minimal impact on the environment at the lowest possible cost. Moreover, as discussed in greater detail below, consistent with G.L. c. 40A, § 3, and Siting Board precedent, (1) individual and comprehensive exemptions to the zoning bylaws of Hingham should be granted to HMLP with respect to construction and operation of the New Substation; and (2) individual and comprehensive exemptions to the zoning ordinances of Weymouth should be granted to Eversource with respect to construction and operation of the New Tap Station.²

II. PROCEDURAL HISTORY

A. Consolidation of Dockets

On November 21, 2024, in response to HMLP's Motion to Consolidate Proceedings, pursuant to G.L. c. 25, § 4, G.L. c. 164, § 69H(2), and 980 CMR 1.09(3), the DPU's Chair referred the Joint Zoning Exemption Petition to the EFSB where it was consolidated for hearing with the Petition to Construct.

B. Notice, Public Comment Hearings and Intervention

On March 3, 2025, the Siting Board issued a Notice of Adjudication and Public Comment Hearing for the consolidated proceedings ("Notice"). The Notice announced two public comment hearings – on March 25, 2025, at the Chapman Middle School in Weymouth, and on March 31, 2025, at Hingham Town Hall. The Notice also established April 14, 2025, as the deadline for submitting petitions to intervene or for limited-participant status in the proceeding.

² In Section VI, *infra*, HMLP demonstrates that individual and comprehensive exemptions to the zoning bylaws of Hingham should be granted to HMLP. In its separate initial brief, Eversource demonstrates that individual and comprehensive exemptions to the zoning ordinances of Weymouth should be granted to Eversource.

As directed by the Siting Board, HMLP published the Notice (1) in the Boston Herald on March 11, 2025, and March 18, 2025; and (2) in the Patriot Ledger on March 12, 2025, and March 18, 2025. HMLP Return of Service Letter (March 25, 2025).

HMLP sent the Notice by first class mail to all property owners and addresses that (1) abut the proposed Project, are opposite the property lines of New Tap Station site or the New Substation site across any public or private street or way, and abutters to abutters within one quarter mile of the New Tap Station site or the New Substation site; (2) lie within three hundred feet of the edge of those portions of streets where the New Line is proposed; or (3) lie within a quarter-mile of the property line of either the New Tap Station site or the New Substation site. HMLP Return of Service Letter (March 25, 2025).

Moreover, as directed by the EFSB, HMLP also sent the Notice to:

- The Planning Board, Town Administrator, Select Board, Zoning Board of Appeals, Department of Public Works, and Conservation Commission for the Town of Hingham.
- The Planning Board, Mayor, Town Council, Zoning Board of Appeals, Department of Public Works and Conservation Commission for the Town of Weymouth.
- The Planning Boards of Quincy, Braintree, Holbrook, Abington, Rockland, Norwell, Scituate, Cohasset and Hull.
- Churches, senior centers, nursing facilities and apartment complexes within one mile of the New Line, New Tap Station and New Substation.

HMLP Return of Service Letter (March 25, 2025).

HMLP also provided copies of the Notice, the Petition to Construct, and the Joint Zoning Exemption Petition to the Town Clerks in Hingham and Weymouth. HMLP requested that each of the Town Clerks post a copy of the Notice on its town's website, post the Notice in their office through April 28, 2025, and place copies of the Petition to Construct and the Joint Zoning Exemption Petition in a prominent place in their offices until such time as the Siting Board issues a Final Decision in these matters. Finally, HMLP provided copies of the Petition to Construct and the Joint Zoning Exemption Petition to the Hingham Public Library, the Fogg Public Library (South Weymouth), and the Tufts Public Library (Weymouth), and requested that the libraries place copies of these filings in a prominent place in their libraries until such time as the Siting Board issues a Final Decision. HMLP Return of Service Letter (March 25, 2025).

Pursuant to the duly issued Notice in this proceeding, on March 25, 2025, the Siting Board held a public comment hearing at the Chapman Middle School in Weymouth, and on March 31, 2025, a public comment hearing was held at Hingham Town Hall. Both hearings were hybrid meetings where members of the public could attend in person or participate via Zoom.

The Siting Board received timely Petitions to Intervene from (1) the Town of Weymouth; (2) Robert Preble, Jr., and Naomi Preble; and (3) Karen Rund. Petitions for Limited Participant Status were submitted by (1) Don and Judy DiCristofaro; (2) Susan & Larry Wetzel; and (3) Judy Kelly. On July 2, 2025, the Siting Board granted all petitions to intervene and petitions for limited participant status.

C. Evidentiary Hearings and Record

The Siting Board held evidentiary hearings on September 29, 2025, and September 30, 2025. HMLP presented seven witnesses: (1) Thomas Morahan, HMLP's General Manager; (2) Thomas E. Converse, P.E., President and Principal Engineer, LIG Consultants, P.C.; (3) Tracy Adamski, AICP, Vice President, Tighe & Bond, Inc.; (4) Charles Salamone, P.E., Principal, Cape Power Systems Consulting, LLC; (5) P.J. O'Sullivan, Senior Advisor, Rasky Partners, Inc.; (6) Dr. Christopher M. Long, Principal, Gradient, LLC ("Gradient"); and (7) Mark Cordeiro, Principal, Power Line Models, Inc. In addition, Eversource presented four witnesses: (1) John Gerety, Project Manager for Eversource; (2) Moesha Outar, Project Engagement for Transmission for Eversource; (3) Matthew Watkins, President of Watkins Strategies LLC; and (4) Christopher P. Newhall, Supervisor in Eversource's Licensing and Permitting Department.

In total, approximately 107 exhibits were entered into the evidentiary record, including the Petition to Construct and the Joint Zoning Exemption Petition, and initial, revised and supplemental responses to Information Requests.

III. PROJECT SUMMARY

In the sections that follow, HMLP provides details regarding the elements of the Project (Section III.A); Construction Methodology, Schedules and Procedures (Section III.B); Community Outreach (Section III.C); and Project Costs (Section III.D)

A. DESCRIPTION OF THE PROJECT

The Project comprises the following elements: (1) the New Line, an approximately 3.2-mile underground 115 kV transmission line in the Towns of Weymouth and Hingham; (2) the New Substation, a proposed enclosed substation located at the transfer station site on Old Hobart Street in Hingham; and (3) the New Tap Station, an open-air facility within an existing Eversource transmission corridor on Broad Street in Weymouth.

1. New Line

The New Line would be constructed, owned and operated by HMLP.

The Preferred Route for the New Line (also referred to as the Broad Street Route) is approximately 17,040 linear feet (about 3.2 miles), of which approximately 11,040 linear feet (2.1 miles) are in Weymouth and approximately 6,100 linear feet (1.1 miles) are in Hingham. The Preferred Route would travel underground from the proposed New Substation at the Hingham transfer station and run west on Hobart Street, turning south on French Street, then turning west on High Street and continuing west into Weymouth on High Street which becomes Broad Street at Commercial Street. Broad Street is then followed for approximately 9,300 feet until ending at the proposed New Tap Station site at the Eversource transmission corridor. The predominant adjacent land use for the Broad Street Route is residential, with some commercial and industrial uses, one school, three places of worship, and parks and recreation facilities. Exhs. HE-3, at 3, HE-1, at 1-3 (Figure 1-1), 1-4 (Figure 1-2), and 5-1.

The Noticed Alternative Route (also referred to as the Lake Street Route) would exit the proposed New Substation in Hingham and run west on Hobart Street, then turn south on French Street and turn west on High Street. The Noticed Alternative Route then continues west into Weymouth, continues on High Street which becomes Broad Street. This route then turns south down Water Street, turning north on Pleasant Street, and travels west on Lake Street, and northwest on Essex Street, which transitions to Spring Street. The Noticed Alternative Route then turns west onto Broad Street and continues west on Broad Street to the New Tap Station site within the Eversource transmission corridor. The Noticed Alternative Route is approximately 19,600 linear feet (3.7 miles) of which approximately 13,500 linear feet (2.6 miles) are in Weymouth and approximately 6,100 linear feet (1.1 miles) are in Hingham. The Noticed Alternative Route is a combination of main and side streets and is relatively direct. The

predominant adjacent land use is residential, with some commercial and industrial uses, one school and one place of worship. Exhs. HE-3, at 3; HE-1, at 1-3 (Figure 1-1), 1-4 (Figure 1-2), and 5-5.

HMLP also presented a Variation of its Noticed Alternative Route (“Noticed Alternative Route Variation”) which follows the same route out of the proposed New Substation in Hingham to Broad Street in Weymouth. Then, instead of turning south down Water Street, the variation follows Broad Street west, turns south on Shawmut Street, and then turns southwest onto Lake Street where it continues to follow the Noticed Alternative Route to the New Tap Station site. Exhs. HE-3, at 3; HE-1 at 1-3 (Figure 1-1), and 1-4 (Figure 1-2).

2. New Substation

The proposed New Substation will be the termination point for the proposed New Line. The New Substation would be constructed, owned and operated by HMLP and would be located at the Hingham Transfer Station site, a 9.7-acre property owned by the Town of Hingham and located off Old Hobart Street in Hingham. The New Substation is proposed to be constructed on an approximately ½-acre area (approximately 24,000 square feet) of undeveloped land within the transfer station parcel in the northeastern corner of the parcel, adjacent to the exit road. The transfer station site has adequate capacity for the proposed New Substation, and construction and operation of the New Substation will not have a significant impact on the transfer station operations. Exh. HE-1, at 5-15. As required by G.L. c. 40, §§ 3, 15A, on April 30, 2022, Hingham Town Meeting voted to authorize the Town, acting through the Select Board, to transfer custody and control of the parcel of land at the Town’s transfer station to HMLP. Exhs. HE-1, at 1-9; RR-EFSB-6.

The New Substation site in Hingham is abutted by the transfer station access road to the north, by Brewer Reservation municipal conservation land to the east, by the former Hingham landfill to the south, and by the Hingham Transfer Station to the west. HMLP’s existing Hobart I Substation is located at the northwestern corner of the transfer station site. Property uses near the proposed New Substation are the transfer station/former landfill and generally conservation land. Exh. HE-1, at 5-15, 5-16 (Figure 5-9), 5-17 (Figure 5-10). The New Substation will be located approximately 150 feet from HMLP’s Hobart I Substation and will allow HMLP to coordinate and manage its transmission system in a reliable and efficient manner. Exh. HE-3, at

4. The nearest residence to the New Substation is located at 194 Old Hobart Street, approximately 380 feet to the west. As discussed in Section V.D.3.d, *infra*, the New Substation would not be visible from the closest residence. Exh. EFSB-V-2(S1), at 1-2.

The New Substation will include the following activities and new equipment: a gas insulated switchgear (“GIS”) substation (enclosed, approximately 54 feet x 64 feet x 25 feet in height); circuit breakers; bus work; pad-mounted transformers; protection and communications equipment; site clearing and grading within a defined limit of disturbance; a stormwater management system; fencing; and a retaining wall. Exh. HE-1, at 5-15 and 5-20. In addition, the New Substation site is large enough to accommodate the addition of switchgear and a transformer in the future, if and when HMLP’s customer load warrants these additions.³

3. New Tap Station

As part of its comprehensive analysis of Project alternatives and after discussion with Eversource, it was determined that HMLP’s proposed New Line would sectionalize Eversource’s existing 478-502 line in Weymouth and that a new tap station would be constructed within the Eversource ROW in Weymouth. Exh. HE-1, at 1-6 to 1-7. Specifically, the New Tap Station, which would be constructed, owned and operated by Eversource, would be located on an 11.6-acre property owned by Eversource within its existing transmission ROW property off Broad Street in Weymouth. Exh. HE-1, at 5-9.

The New Tap Station site is abutted by the Eversource ROW to the west, by Broad Street and electric transmission, residential, industrial, and religious uses to the south, by the Connell Rink and Pool and single-family residential uses to the east, and by single-family residential uses to the north. Exh. HE-1, Figure 5-7, Figure 5-8.⁴ The nearest residence to the proposed Tap Station fenceline is located at 39 Roosevelt Road in Weymouth, approximately 395 feet away.

³ While not needed for capacity purposes in the near term, the proposed Project offers the distinct benefit of addressing peak winter load over the longer term in the high electrification case. HMLP’s existing Hobart I Substation presently has the ability to serve 80 MVA on a firm basis with any single transformer out of service. Although HMLP projects limited load growth over the next 10 years, HMLP has estimated the technical potential for system peak winter load with full electrification, and the projected winter peak under the full electrification scenario exceeds the current system capability of 80 MVA. Given the climate change goals of both the Town of Hingham and the Commonwealth, HMLP determined that it was reasonable and prudent to select a substation site and lay out its proposed New Substation to accommodate a new transformer and switchgear when load growth warrants these additions. Exh. HE-1, at 1-5, n.2. See also Exh. EFSB-N-7.

⁴ An updated version of the New Tap Station site plan (Figure 5-8) was provided by Eversource at the evidentiary hearing held on September 29, 2025.

As discussed in Section V.D.4.d, *infra*, sound levels associated with construction of the New Tap Station at this residence, which would be limited to standard construction hours and be temporary in nature, would be comparable to the sound level from an air conditioning unit. Exh. RR-EFSB-9.

The New Tap Station will include the following activities and new equipment: an air-insulated switchyard (“AIS”); an electrical control house; three electric transition structures (two for the incoming 115 kV transmission line and one for the New Line); 210 feet of new transmission interconnections between the existing transmission lines and the New Tap Station; one distribution tangent pole; four lightning masts (85 feet tall); security fencing; spreading of crushed stone within the security fence line; construction of associated parking; new vegetated screening; installation of soil erosion and sediment control Best Management Practices (“BMPs”); site clearing and grading within a defined limit of disturbance; upgrade of the existing gravel access road to support construction equipment; and installation of stormwater management BMPs consisting of a sediment forebay and stormwater basin. Exh. HE-1, at 5-9.

B. CONSTRUCTION METHODOLOGY, SCHEDULE AND PROCEDURES

1. New Line

The proposed underground transmission cable will consist of 750 kcmil copper conductor, XLPE-insulated cable in a concrete encased manhole and duct bank system. The typical duct bank will consist of three 6-inch-diameter Polyvinyl Chloride (“PVC”) conduits for the 115 kV cables, one 4-inch-diameter PVC conduit for a protection and communications cable, and two 2-inch-diameter PVC conduits -- one to carry a ground continuity conductor and one for a possible temperature monitoring cable. Exh. HE-1, at 5-23.

The duct bank will be encased in a thermal concrete envelope. For most duct bank configurations, the top of the duct bank will be approximately 30 inches below grade. The Horizontal Directional Drilling (“HDD”) configuration has a minimum burial depth of 48 inches below grade. Typical trench excavation for the duct bank will be up to 4 feet wide and 5 feet deep or more depending on site conditions. Exh. HE-1, at 5-23.

As discussed below, construction of the underground line comprises four separate phases: (1) manhole/splice chamber installation, (2) trenching, duct bank installation, and temporary pavement patching; (3) cable pulling, splicing and testing; and (4) final pavement restoration.

a. Manhole/Splice Chamber Installation

Manholes will be installed along the underground cable route to facilitate cable installation and splicing and to allow access for maintenance requirements and future repairs. Manhole size is determined by the space required to support pulling, splicing and supporting the cable within the manhole. For the New Line, each manhole will be approximately 10 feet wide by 10 feet high and 26 feet long (exterior dimensions); manholes for this Project will typically be spaced approximately 1,500 to 1,800 feet apart. For manhole installation, the duration of construction typically takes seven to ten construction days per location but may take longer if underground utility relocation is necessary. HMLP will work with the Towns of Hingham and Weymouth and utility companies regarding these utility relocations on a case-by-case basis as manhole locations are finalized. Exh. HE-1, at 5-25.

b. Trenching and Duct Bank Installation

The primary method for underground duct bank construction is open-cut trenching. Where construction takes place within roads, the width of the trench will be marked on the street, Dig Safe will be contacted, and the location of the existing utilities will be marked. The pavement will be saw cut. Exh. HE-1, at 5-25 to 5-26.

Following saw cutting, the existing pavement will be removed by pneumatic hammers or excavators and loaded into a dump truck with a backhoe/excavator. Pavement will be handled separately from soil and will be recycled at an asphalt batching plant. Subsequently, a backhoe/excavator will excavate the trench to the required depth. *Id.*

HMLP has surveyed the existing utilities along both the Preferred and Noticed Alternate Routes and presently is working on the design for the New Line. HMLP will align duct banks to avoid existing utilities to the extent practicable and will work with utilities to maintain agreed-upon separation from other utility lines. HMLP does not anticipate any planned disruption to utilities along the proposed routes. The routes are being designed to avoid utility conflicts, to the extent possible. *Id.*; Exh. EFSB-CM-1.

HMLP's witness, Ms. Adamski, indicated that transmission line design begins with "looking for a corridor that doesn't impact existing utilities" and further noted that it is "only on a rare occasion where there might be a conflict where something would be moved." Tr. 1, at 132.

Intersections tend to have the greatest concentration of underground utilities. Generally, the street intersection is excavated or test pitted in advance of the other work areas so obstructions can be precisely identified, and the PVC conduit locations can be determined before the main trenching work crew reaches the intersection. Exh. HE-1, at 5-26; Tr. 1, at 132.

Where necessary, wood sheeting or temporary mechanical supports, such as bracing, strapping or other means, will be employed during construction, particularly when the proposed duct bank needs to be installed under existing utilities. Such supports will be designed and installed in coordination with the existing utility owner. Exh. EFSB-CM-1.

Once excavated, the trench will be sheeted and/or shored as required by soil conditions, Occupational Safety and Health Administration ("OSHA") safety rules, and local and state regulations. Shoring is designed to permit passage of traffic adjacent to the trench and will allow for the trench to be covered with a steel plate to allow traffic over the trench during non-working hours. While there may be some delays and disruption associated with construction of the New line, HMLP is committed to ensuring that residents and businesses have continuous access to homes and businesses. Exhs. HE-1, at 5-26; EFSB-CM-4.

A "clean trench" or "live loading" method will be used for removal of excavated soils, where soil will be loaded directly into a dump truck for temporary off-site stockpiling or hauling to an off-site facility for recycling, re-use or disposal. The soil will not be stockpiled along the edge of the roadway, thus reducing the size of the required work area and reducing the potential for sedimentation and nuisance dust. Rock encountered during excavation will be removed by mechanical means and brought to an off-site facility for recycling, re-use or disposal. Exh. HE-1, at 5-26.

Once the open trench is prepared, the conduits will be assembled and lowered into the trench. The area around the conduits will be filled with thermal concrete (3,000 pounds per square inch). After the concrete is placed in the trench, it will be back-filled with fluidized thermal backfill or native soil, depending on local requirements, and a temporary pavement patch will be installed. *Id.*

In addition, trenchless installations/crossings will be used by HMLP as necessary to minimize impacts to resource areas and utilities. A trenchless installation is proposed by HMLP to cross Herring Run Brook and other infrastructure at Jackson Square in Weymouth. Exh. HE-1, at 5-28 to 5-29.

Trenchless crossing techniques such as pipe jacking or HDD may be required at crossing locations where there is some obstruction to open trenching such as wetland resource areas or high utility congestion. However, during test pitting or during construction, HMLP may encounter existing unmapped utilities at depths that require the proposed transmission line to be placed underneath them; in such cases, a trenchless crossing will be considered. Additionally, if HMLP encounters other significant unanticipated utility obstructions, and/or unidentified culverts, it may consider pursuing a trenchless crossing to avoid such obstructions. *Id.* HMLP's witness, Ms. Adamski, testified that decisions regarding trenchless crossings would be made at the detailed design stage, but at this point it is expected that they would be used for limited crossings and for limited spans. Ms. Adamski also noted that the objective in employing trenchless installations is to "minimize the impacts to the environmental resource areas." Tr. 1, at 135-136.

c. Cable Installation and Testing

Three 115 kV high voltage cables will be installed between two adjacent manholes. To install each cable section, a cable reel or reels will be set up at the "pull-in" manhole and a cable puller will be set up at the "pull-out" manhole. Depending on the engineering, the pull may include multiple manholes for the pulls. Following the initial pulling of the mandrel and pulling line through each duct, a hydraulic cable pulling winch and tensioner will be used to individually pull cable from the pull-in to the pull-out manhole. This process will be repeated until all cables have been installed. Once adjacent cable sections are installed, they will be spliced together inside the manholes. Exh. HE-1, at 5-27 to 5-28.

Splicing high-voltage XLPE transmission cable is a time-consuming, complex operation. It typically requires 40 to 60 hours to complete the splicing of all three cables at each manhole. Each of the three phases will be spliced separately. The splicing activities will take place over four or five extended workdays at each manhole location. Cable splicing is a 12-hour/day activity completed by specialized contractors, and extended workdays for cable splicing would

entail multiple work shifts that would extend into evening hours. The splicing operation requires a splicing van and a generator. At times, an air conditioning unit will be used to control the moisture content in the manhole. *Id.* HMLP's witness, Mr. Morahan, testified that splicing generators are typically enclosed inside a confined area that has some noise mitigation. Tr. 2, at 183.

In addition to the high voltage cable installation and splicing, there are (1) grounding and auxiliary control cables that will be installed within the duct system, and (2) two sets of fiber optic cables that will be installed for communication and system protection of the cables. Exh. HE-1, at 5-27 to 5-28.

HMLP estimates the time to pull the fiber cables would take approximately 34 days. The splicing activities for the fiber will take place over two workdays at each splicing manhole -- for a splicing timeline of approximately 64 workdays total. Similar to high voltage cables, the fiber optic cable splicing is a 12-hour/day activity completed by specialized contractors. Extended workdays for cable splicing would entail multiple work shifts that would extend into evening hours. *Id.*

d. Final Pavement Restoration

Upon Project completion, the roads will be restored in accordance with the Department's "Standards to be Employed by Public Utility Operators When Restoring Any of the Streets, Lanes and Highways in Municipalities" (D.T.E. 98-22) and municipal standards. Exh. HE-1, at 5-28.

After trenches are backfilled, the trenched area will be restored with a temporary asphalt pavement patch. Within 3 to 12 months of completion of the New Line, HMLP contractors will mill and overlay the full width of the impacted streets (curb to curb). The timeline will be season and weather dependent. The mill and overlay work is anticipated to take approximately 2 to 3 months. The restoration schedule will be coordinated with the two municipalities. Exh. EFSB-CM-2.

e. Construction Schedule

Assuming receipt of all necessary permits and approvals, construction of the Project is anticipated to commence in Spring 2027 and continue over an 18- to 24-month period, with a target completion by the end of mid-2029. Construction hours will be developed in accordance

with local noise ordinances and in consultation with the Towns of Hingham and Weymouth. Exh. HE-1, at 5-29.

In areas where manhole installations, cable splicing, and/or culvert crossings are not required, HMLP expects to spend approximately eight to ten days performing construction activities in front of any single abutter's property. The duration of time spent in front of a specific abutter's property for manhole installation, cable pulling and high voltage cable splicing will be 16 to 20 days, broken out for each task as follows:

- Approximately 7 to 10 days for manhole installation
- Approximately 4 days of pulling activity (two days in each pull direction); and
- Approximately 5 days for splicing.

Exh. HE-1, at 5-29 to 5-30.

The actual duration of these activities can vary based on a number of factors, including existing utility conditions and below-grade conditions. HMLP anticipates that it may not be permitted to work within public roads in Hingham during the winter months due to the winter moratorium for in-street construction. Some activities associated with construction, for example, splicing at manholes, may be allowed under the moratorium. Exhs. HE-1, at 5-30; EFSB-CM-5.

2. New Substation

Work at the New Substation site will take place over an approximately 12-18 month period. Construction activities will include site preparation and the installation of a retaining wall, stormwater management system, the GIS building, new electrical equipment, support structures and foundations. The site has been chosen to minimize impacts to the nearby residences. The nearest residence is located to the west of the transfer station, approximately 380 feet from the proposed New Substation site. Exhs. HE-1, at 5-20; EFSB-V-2(S1).

3. New Tap Station

Work to construct the New Tap Station will take place over an approximately 18-month period. Construction activities will include site preparation, including rock removal and grading, and the installation of new poles, electrical equipment, support structures and foundations. Exhs. HE-1, at 5-13; HE-2, at 29.

The Eversource ROW will continue to be used for electric transmission purposes. Upon completion of construction, the portion of the site not otherwise used for the New Tap Station and associated appurtenances will be restored by stabilizing disturbed soils and landscaped in a manner appropriate to the surroundings/neighborhood. Exh. HE-1, at 5-12.

C. STAKEHOLDER OUTREACH

From the outset of Project development, HMLP has worked closely with municipal officials, local residents, businesses, and other interested stakeholders in both Hingham and Weymouth to provide clear, transparent, and updated information regarding the Project. In addition to its outreach efforts regarding the proposed New Substation in Hingham and the proposed New Line in Hingham and Weymouth, HMLP has worked closely with Eversource on outreach specifically focused on the proposed New Tap Station off Broad Street in Weymouth. Moreover, HMLP has a plan in place to continue outreach efforts and provide meaningful notice to a wide range of public officials, residents and businesses prior to and during construction. HMLP will administer its outreach plan going forward both on its own (with respect to the New Substation and New Line) and in conjunction with Eversource (with respect to the New Tap Station). Exhs. HE-1, at 1-8; EFSB-G-2; EFSB-G-5.

Beginning in December 2020, HMLP has held or participated in 38 outreach meetings or events regarding the HEIRP, including Open Houses with both Weymouth and Hingham residents and businesses, and meetings with Weymouth and Hingham officials and legislators representing the affected towns. HMLP also developed a Project-specific website for HEIRP, which has been updated to reflect new information as it becomes available. Exhs. HE-1, at 1-12; EFSB-G-5. These meetings and events, as well as the HEIRP website, are discussed in detail below.

1. Meetings with Officials Prior to 2022 Hingham Town Meeting

In order to secure custody and control of a portion of the Town of Hingham transfer station property, HMLP submitted a warrant article for consideration by Town Meeting to authorize the Select Board to transfer custody and control of the proposed New Substation site to HMLP. *See* G.L. c. 40, §§ 3, 15A. Beginning in December 2020 and continuing through the Spring of 2022, HMLP held multiple meetings with Town of Hingham agency heads, the

Hingham Conservation Commission, the Hingham Select Board and Hingham Advisory Committee to discuss the Project and receive feedback on various substation sites as part of the process for obtaining Town Meeting approval. Exh. HE-1, at 1-9.

On April 30, 2022, Town Meeting voted to authorize the Town, acting through the Select Board, to transfer custody and control of the parcel of land at the Town's transfer station to HMLP. Exh. RR-EFSB-6.

2. Open Houses

HMLP conducted a series of Open Houses in both Hingham and Weymouth to provide residents and businesses with information regarding the Project and to obtain feedback from all stakeholders regarding the Project. On October 18, 2021, and November 18, 2021, prior to seeking Town Meeting approval for the Select Board to transfer custody and control of the New Substation site, HMLP held community meetings by Zoom regarding the proposed New Substation for Hingham residents living near the site of the proposed New Substation site.⁵ Exh. HE-1, at 1-9 to 1-10.

On August 25, 2022 and September 13, 2022, HMLP held in-person Open Houses at the Tufts Public Library in Weymouth. On September 28, 2022, HMLP held an in-person Open House at the Hingham Public Library, and, on October 12, 2022, HMLP held a Zoom Open House for both Hingham and Weymouth residents and stakeholders. The purpose of these Open Houses was to provide residents, businesses and other stakeholders with information regarding the Project and to obtain feedback regarding two potential routes under consideration by HMLP – the Broad Street Route and the Lake Street Route – as well as with respect to the proposed New Substation in Hingham and new Tap Station in Weymouth.⁶ Exh. HE-1, at 1-10.

⁵ Notice for these two meetings included mailing letters to the stakeholders, specifically to property owners within 300 feet of the proposed New Substation location. HMLP also sent a press release regarding these meetings to the Boston Globe and the Patriot Ledger as well as to hyperlocal news websites including the Hingham Anchor and Wicked Local. Exh. HE-1, at 1-10.

⁶ Notice for these meetings was provided as follows: HMLP mailed notice to abutters within 300 feet of the preliminary Preferred and Notice Alternative Routes and within ¼-mile of both the New Substation and New Tap Station sites; sent emails to all HMLP customers (for the Hingham Open House and Zoom Open House); issued press releases to the Boston Globe and the Patriot Ledger as well as to hyperlocal news websites including the Hingham Anchor and Wicked Local; and posted on the HEIRP website and HMLP's social media channels. Exh. HE-1, at 1-10.

On January 25, 2024, January 26, 2024, and March 19, 2024, Eversource – with HMLP in attendance - held outreach events in Weymouth in the vicinity of the proposed New Tap Station site. Two meetings (January 25th and January 26th) were held at Union Towers in Weymouth, and an evening Community Open House was held at the Crossroads Worship Center in Weymouth on March 19, 2024.⁷

3. Meetings with Hingham Officials/Informal Review Process at Zoning Board of Appeals and Planning Board

In addition to the meetings held with Hingham officials from December 2020 through Spring 2022 to address HMLP's proposed substation site in anticipation of Town Meeting (*see* Section III.C.1., *supra*), HMLP held two meetings on February 15, 2023, and September 12, 2023 – one meeting with the Town's Planning Director and a follow-up meeting with the Town's Planning Director, the Town Manager and a member of the Select Board - to discuss HMLP's plans to seek a zoning exemption from the DPU/EFSB with respect to its proposed New Substation at the Town's transfer station site. As a result of these meetings, HMLP agreed to submit its plans for the New Substation to the Hingham Planning Board and Hingham Zoning Board of Appeals for informal review with the goal of providing the Siting Board with any recommendations and conditions issued by those Planning and Zoning Boards with respect to the New Substation.⁸ Exh. HE-1, at 1-11.

On April 12, 2024, HMLP submitted design information on its proposed New Substation to the Hingham Planning Board and Zoning Board of Appeals (together “the Boards”) as part of this informal review process. The Boards scheduled a joint public meeting on the proposal for June 4, 2024.⁹ The June 4, 2024, meeting was attended by approximately 38 people, including

⁷ Two weeks prior to the March 19th event, Eversource's Project Services team coordinated a pop-up event at Jimmy's Diner on Broad Street, Weymouth, to create awareness for the scheduled Community Open House. An invitation was also mailed to over 3,500 Weymouth residents along the proposed route and sent to local elected officials. A Cantonese interpreter was in attendance at the January 25, 2024 meeting, and both Spanish and Portuguese interpreters were present for the Community Open House on March 19, 2024. Project information handouts were available in English, Portuguese, Traditional Chinese and Spanish. Exh. HE-1, at 1-10.

⁸ On May 19, 2023, HMLP provided the Hingham Town Administrator and Planning Board Director with a memorandum regarding the zoning exemption process under G.L. c. 40A, § 3 as administered by the EFSB and DPU and HMLP's willingness to work with Hingham officials to ensure their feedback would be reflected in any decision by the Siting Board. Exhs. RR-EFSB-11; RR-EFSB-11(1), at 2-5.

⁹ The Boards published notice of the meeting in the Hingham Journal on May 16, 2024, and May 23, 2024, and provided notice to abutters within 300 feet of the transfer station property. In addition, HMLP advised customers of the June 4, 2024 meeting (via letter and bill insert) and posted information regarding the meeting on its HEIRP

Board members and members of the public, who were invited to make comments and ask questions. The Boards reviewed the information submitted, indicated no opposition to the proposed New Substation, and voted to recommend conditions for the Select Board to consider in connection with their transfer of the custody and control of the New Substation parcel to HMLP. (The Boards' recommended conditions were provided to the Siting Board by HMLP as Exhs. HE-1, Appendix 1-1; HE-2, Exhibit G.) HMLP intends to comply with the Boards' recommended conditions and supports these conditions being incorporated in the Siting Board's Final Decision in these proceedings. Exh. HE-1, at 1-11.

4. Meetings with Weymouth Officials

Between April 6, 2021, and March 12, 2024, HMLP held 10 meetings with Weymouth officials, including the Mayor and his staff, the Weymouth Planning Director, the Weymouth Conservation Commission, the Weymouth Department of Public Works, and various members of the Town Council. HMLP's May 3, 2022 meeting with the Weymouth Conservation Commission also included representatives from the Fore River Watershed Association and the Town's Herring Warden. At these meetings, HMLP discussed and obtained feedback regarding its identified routes, timing of construction and potential impact on other Weymouth projects, construction methods, and, in the case of the May 3, 2022 meeting, impacts on the Town's herring run. Exh. HE-1, at 1-11 to 1-12.

In discussions with Town officials and correspondence with the Weymouth Planning Director, HMLP discussed the need to petition the DPU/EFSB for a zoning exemption for the proposed Tap Station. Weymouth officials expressed no opposition to the plans of HMLP and Eversource to seek zoning relief pursuant to G.L. c. 40A, § 3. Exhs. HE-1, at 1-12; RR-EFSB-11(2).

HMLP is presently in discussions with the Town of Weymouth regarding a number of Project-related issues, including opportunities for coordinating HMLP's construction of the proposed New Line with the Town's infrastructure and development projects that are planned near the proposed New Line. Exh. EFSB-G-4. HMLP's witness, Mr. Morahan, testified that discussions with Weymouth regarding coordination of HMLP's and the Town's projects are

website. HMLP also issued a press release regarding the Project and the joint public meeting scheduled for June 4th, which was published in the Hingham Anchor on May 20, 2024.

ongoing. Mr. Morahan also noted that “until this project is approved, we don't know the exact route of the project”, and absent a final decision regarding the route for the New Line, it remains unclear which of Weymouth’s development projects would be impacted by HMLP’s construction of its New Line. Tr. 1, at 28-29.

5. Project Websites/GM Updates

Both HMLP and Eversource maintain websites for the proposed Project. HMLP maintains an HEIRP website with updated information and materials regarding the Project. Among other things, the HEIRP website includes information on the need for the Project; maps and details regarding the Preferred and Noticed Alternative transmission line routes for the New line, the proposed New Substation site in Hingham and the proposed Eversource New Tap Station site in Weymouth; details regarding the outreach and regulatory and permitting processes for the Project, including a link to Siting Board’s webpage for the Project; a Q & A page regarding the Project; and contact information for questions or concerns. Exhs. HE-1, at 1-12; EFSB-G-2; Tr. 1, at 48-49.

HMLP also has issued five GM Updates regarding the Project – in March 2023, March 2024, May 2024, November 2024, and March 2025. Exhs. HE-1, at 1-12; EFSB-G-5. These updates, which are designed to provide the latest information regarding the Project and identify upcoming events, are mailed or emailed to all HMLP customers, and uploaded to the HEIRP website. Going forward, HMLP plans to employ the HEIRP website as a means of providing information regarding all state and local permitting, including notices of public hearings, and as a repository for all regulatory filings and information. When the final plans for the Project are approved, the HEIRP website will include all construction-related information, including hotline numbers for questions and registering concerns, and will operate as a central access point for all Hingham and Weymouth residents and businesses to obtain the latest information on the Project. Exh. HE-1, at 1-12.

Eversource maintains a website for the Project, which, among other things, includes a fact sheet regarding the proposed New Tap Station, as well as a link to the HEIRP website. Tr. 1, at 41.

6. Construction Outreach

Outreach with Hingham and Weymouth regarding the Project, including communications with Hingham and Weymouth officials, is ongoing and will continue through permitting and construction. HMLP intends to develop an outreach plan that encompasses all elements of construction, including coordination with both towns with respect to traffic impacts from construction; ensuring access to residential streets and the Connell Rink and Pool; and notifying residents and businesses with respect to construction of the New Line. HMLP's comprehensive outreach plan will comprise timely updates to the HEIRP website, including the addition of a "Traffic and Construction Notice" section on the home page of the website; issuing press releases and regular media updates; and scheduling at least two public meetings – one in Hingham and one in Weymouth – once a route for the New Line has been approved by the EFSB and construction schedules and a traffic management plan are in place. Moreover, prior to commencement of construction, HMLP plans to provide detailed information by mail to all abutters and others in close proximity to the New Line, New Substation and New Tap Station regarding construction plans and timelines, traffic management measures and contact information. Exh. EFSB-G-2.

Notably, HMLP plans to work with Eversource to coordinate outreach plans and other activities associated with construction of the New Tap Station. HMLP recognizes that Eversource has experience with, and can devote significant resources to, Project-related outreach and HMLP can benefit greatly from Eversource's experience and best practices for outreach. Id.

Witnesses for both HMLP and Eversource indicated that respectively they would be able to submit a construction outreach plan to the Siting Board sixty (60) days before commencement of construction. Tr. 1, at 33.

D. PROJECT COST

HMLP developed its project schedule based on estimates of regulatory review timelines, municipal bidding and procurement requirements, and industry-based expectations regarding equipment delivery and construction periods for similar facilities. Assuming timely receipt of all necessary permits and authorizations, construction of the New Line, New Substation, and New

Tap Station is anticipated to commence in Spring 2027. Construction is anticipated to occur over a two-year period, with energization of the New Line expected in the Spring 2029.

The current planning grade cost estimate (25%/+50%) for the Project – comprising the New Line, New Substation, and New Tap Station – is summarized below:

<u>Project Components</u>	<u>Cost Components</u>
Tap station (based on Eversource costs)	\$38.1 M
Transmission line	\$47.7 M
<u>New Substation GIS station and interties</u>	<u>\$18.9 M</u>
Total Estimated 2024 Project Cost	\$104.7 M

Exh. HE-1, at 1-8.

The Company’s witness, Mr. Converse, indicated that the cost estimate has not been updated since the Petition to Construct was submitted in 2024. Mr. Converse testified that the cost estimate will be updated before the end of 2025 as part of HMLP’s request for bonding approval by Hingham Town Meeting in Spring 2026. Tr. 1, at 150.

IV. JURISDICTION AND SCOPE OF REVIEW

A. G.L. c. 164, § 69J

Pursuant to G.L. c. 164, § 69J, an applicant seeking to construct a “facility” first must obtain approval from the Siting Board.

Under G.L. c. 164, § 69G, the definition of “facility” includes: “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;” and “an ancillary structure which is an integral part of the operation of any transmission line which is a facility”.

The proposed Project is a “facility” requiring Siting Board approval as it comprises (1) a 3.2-mile underground transmission line with a design rating of 115 kV that will be located almost entirely in public ways in Weymouth and Hingham; (2) the ancillary New Substation in Hingham that will be constructed, owned and operated by HMLP; and (3) the ancillary New Tap Station in Weymouth that will be constructed, owned and operated by Eversource. The proposed New

Substation in Hingham and proposed New Tap Station in Weymouth are “facilities” subject to Siting Board review as each is an “integral part of the operation” of the proposed New Line.

In accordance with G.L. c. 164, § 69J, before approving a petition to construct facilities, the Siting Board requires an applicant to meet five requirements. First, the Siting Board requires the applicant to show that additional energy resources are needed. Second, the Siting Board requires the applicant to establish that, on balance, its proposed project is superior to alternative approaches in terms of cost, environmental impact, reliability, and ability to address the identified need. Third, the Siting Board requires the applicant to show that it has considered a reasonable range of practical facility siting alternatives and that the proposed site (or route) for the facility is superior to a noticed alternative site (or route) in terms of cost, environmental impact and reliability of supply. Fourth, the Siting Board requires that environmental impacts of the Project are minimized and that the Project achieves an appropriate balance among conflicting environmental concerns as well as among environmental impacts, cost, and reliability. Finally, the applicant must show that its plans for construction of its new facilities are consistent with the current health, environmental protection and resource use and development policies as developed by the Commonwealth. As demonstrated throughout this proceeding and the sections of this initial brief that follow, the Project satisfies the Siting Board’s standards and relevant precedent for jurisdictional facilities. *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 22-03/D.P.U. 22-21, at 14-15 (2024) (“*Eversource Cambridge-Somerville*”); *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 19-06/D.P.U. 19-142/D.P.U. 19-143, at 9 (2022) (“*Eversource Mid-Cape*”).

B. G.L. c. 40A, § 3

G.L. c. 40A § 3, provides, in relevant part, that:

Lands or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the [Department] shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public.

Thus, a petitioner seeking exemption from a local zoning bylaw under G.L. c. 40A, § 3 must meet three criteria. First, the petitioner must qualify as a public service corporation. *Save the Bay, Inc. v. Dep’t of Pub. Utils.*, 366 Mass. 667 (1975); *Park City Wind LLC*, EFSB 20-

01/D.P.U. 20-56/20-57, at 169 (2023) (“*Park City Wind*”). Second, the petitioner must establish that it requires a zoning exemption. *Park City Wind* at 169; *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 17-02/D.P.U. 17-82/17-83, at 193 (2019) (“*Eversource Sudbury-Hudson*”); *Vineyard Wind LLC*, EFSB 17-05/D.P.U. 18-18/18-19, at 132 (2019) (“*Vineyard Wind*”); *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 14-02/D.P.U. 14-73/14-74, at 90 (“*Eversource Walpole-Holbrook*”). Third, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. *Eversource Sudbury-Hudson* at 193; *Vineyard Wind* at 132; *Eversource Walpole-Holbrook* at 90.

Moreover, the Siting Board grants comprehensive exemptions from zoning bylaws or ordinances on “a case-by-case basis where the applicant demonstrates that issuance of a comprehensive exemption could avoid substantial public harm by serving to prevent a delay in the construction and operation of the proposed use.” *Park City Wind* at 208; *New England Power Company d/b/a National Grid*, EFSB 19-04/D.P.U. 19-77/19-78, at 126-127 (2021) (“*NEP Beverly-Salem*”); *Eversource Sudbury-Hudson* at 215; *Vineyard Wind* at 109-110. In order to make a determination regarding substantial public harm, the Department and the Siting Board have articulated relevant factors, including, but not limited to, whether: (1) the proposed project contributes to a reliable energy supply for the Commonwealth; (2) the project is time-sensitive; (3) the project involves multiple municipalities that could have conflicting zoning provisions that might hinder the uniform development of a large project spanning these communities; (4) the proponent of the project has actively engaged the communities and responsible officials to discuss the applicability of local zoning provisions to the project and any local concerns; and (5) the affected communities do not oppose the issuance of the comprehensive exemption. *Park City Wind* at 208; *Eversource Mid-Cape* at 109-110; *Eversource Sudbury-Hudson* at 215; *Vineyard Wind* at 153.

V. THE PROJECT SATISFIES THE STANDARDS FOR SECTION 69J APPROVAL

A. HMLP Has Established that the Project is Needed

1. Standard of Review

Consistent with G.L. c. 164, § 69J, the Siting Board should approve a petition to construct if it 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. In carrying out its statutory mandate with respect to proposals to construct energy facilities in the Commonwealth, the Siting Board evaluates whether there is a need for additional energy resources to meet: (1) reliability objectives; (2) economic efficiency objectives; or (3) environmental objectives. *Eversource Mid-Cape* at 10; *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 19-03/D.P.U. 19-15, at 7 (2021) (“*Eversource Andrew-Dewar*”); *NEP Beverly-Salem* at 10; *Eversource Sudbury-Hudson* at 15.

In this instance, the additional energy resources associated with HMLP’s Project are needed to meet reliability objectives. 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, and compliance with the applicable planning criteria can demonstrate a “reliable” system. *Eversource Mid-Cape* at 10; *NEP Beverly-Salem* at 10; *Eversource Andrew-Dewar* at 7; *Eversource Sudbury-Hudson* at 15.

Moreover, 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. *Eversource Mid-Cape* at 10; *NEP Beverly-Salem* at 10; 8 *Eversource Andrew-Dewar* at 7; *Eversource Sudbury-Hudson* at 15; see also *Town of Sudbury v. Energy Facilities Siting Board*, 487 Mass. 737, 748-749 (2021) (“*Town of Sudbury*”).

2. HMLP’s Current System Does Not Meet Accepted Reliability Standards and the Town of Hingham Is At Risk of an Extended Outage

HMLP, a municipally owned electric utility, is the sole provider of electricity to approximately 10,500 HMLP metered customers, which includes approximately 24,000 residents, as well as a number of medical facilities, schools, municipal offices and public safety buildings within the Town of Hingham. HMLP is served by the Hobart I Substation, a single bulk power substation, located at 190 Old Hobart Street in Hingham, adjacent to the Town landfill. HMLP's current substation and distribution system is designed to allow for loss of a single 115/13.8 kV transformer while still retaining the capability to serve the highest load demand of the Town. Exh. HE-1, at 2-1.

Hobart I Substation currently is fed via two overhead 115 kV transmission lines -- circuit number 478-503 and circuit number 478-508¹⁰ -- covering a distance of approximately 3.3 miles, which are supported by both wood and metal structures, including 22 DCTs, where the two transmission lines share the same single pole. The initial 2.3-mile section of the two 115 kV lines presently serving Hobart I Substation begins at the Eversource tap point on the Eversource ROW (circuits 478-503 and 478- 508), runs along the Greenbush rail line, and terminates at the East Weymouth Substation on North Wharf Street in Weymouth. This 2.3-mile section and the East Weymouth Substation are owned and maintained by National Grid ("NGRID"). *Id.* at 2-2.

HMLP owns and maintains the transmission lines along the second section of the two 115 kV lines from East Weymouth Substation to Hobart I Substation, a distance of 1.1 miles. The HMLP-owned portion of the two lines run adjacent to the active Greenbush rail line and then travels along local Hingham roadways to reach Hobart I Substation. *Id.*

There are 49 transmission structures between NGRID's East Weymouth Substation and HMLP's Hobart I Substation, including 22 DCTs.¹¹ This particular configuration is susceptible to contingency events that can result in simultaneous loss of service from both transmission lines. If even a single DCT pole supporting the two lines falls or is otherwise disabled, service to the Hobart I Substation would be interrupted and all customers in Hingham would be subjected to an extended outage. Indeed, a fallen DCT could result in an outage lasting a week or more

¹⁰ Lines 478-503 and 478-508 are part of the New England Transmission System and originate from a tap located in Weymouth on the Eversource 115 kV transmission lines that run between Edgar Station and Holbrook Substation. Exh. HE-1, at 2-2.

¹¹ Fifteen (15) of the DCTs are owned by HMLP and seven (7) are owned by NGRID. Exh. HE-1, at 2-3.

depending on the degree of damage to the adjacent towers and availability of replacement equipment. An interruption of service to all Hingham customers lasting from 8 hours to 48 hours could also occur if one transmission line is out of service either for maintenance or as a result of a single circuit outage event -- and there is an outage event on the remaining transmission line. Because there are no alternative supply options available to HMLP to restore customers from another substation, loss of service to the Hobart I Substation results in loss of service to the entire town. Exh. HE-1, at 2-2 to 2-3.

With respect to reliability standards, while HMLP does not operate Bulk Electric System facilities as defined by the North American Electric Reliability Corporation (NERC) or Pool Transmission Facilities as defined by ISO-New England (ISO-NE), as a Load Serving Entity and Transmission Operator as defined by NERC, HMLP does follow Good Utility Practice (GUP).¹² On this basis, HMLP appropriately considers national and regional reliability standards as establishing a sound basis for assessing its system with respect to reliability and adequacy. To be clear, HMLP is not required under any state or federal regulation to follow these standards, but HMLP has determined that it is appropriate to assess its system reliability performance based on these standards as part of its efforts to provide its customers with the same level of reliability as other customers across the state. Exh. HE-1, at 2-5.

More specifically, HMLP strives to adhere to the reliability standards and criteria that are established under the oversight of NERC, which is charged with ensuring the reliability of transmission systems across most of North America. NERC oversees a number of regional councils, one of which is the NPCC, covering New York, New England and Eastern Canada. NPCC has a number of “control areas” which includes the New England transmission system that is under the control of ISO-NE. The standards established by NERC, NPCC and ISO-NE have been developed to ensure that the electric power system serving New England, which includes HMLP, is designed and constructed to provide adequate and reliable electric power to customers. *Id.*

Specifically, HMLP seeks to comply with the following reliability and planning standards when planning its transmission system:

¹² Good Utility Practice refers to the generally accepted industry standards, methods, and procedures that ensure utility companies operate safely, reliably, and efficiently. It encompasses the practices, techniques, and standards commonly used by utilities to deliver services and meet regulatory requirements. Exh. EFSB-N-3.

- NERC TPL-001-4 Transmission System Planning Performance Requirements;
- NPCC Regional Reliability Reference Directory #1, “Design and Operation of the Bulk Power System;”
- ISO-NE Planning Procedure 3, “Reliability Standards for the New England Area “Pool Transmission Facilities;” and
- ISO-NE Planning Procedure 5-3, “Guidelines for Conducting and Evaluating Proposed Plan Application Analyses.”

Exh. HE-1, at 2-5.

The above four standards all include evaluation of reliability performance under certain contingency events. Specifically, these standards include assessment of the impacts associated with single contingency events that result in loss of both circuits installed on DCTs (N-1 contingency events) as well as loss of one circuit followed by loss of a second circuit (N-1-1 contingency events). *Id.* Notably, all of these entities and their associated reliability standards call for routine consideration of DCT faults and their impact on service to customers. Exh. EFSB-N-3.

Given its size, resources and location, it is reasonable and appropriate for HMLP to follow the accepted transmission reliability standards from NERC, NPCC and ISO-NE.¹³ Moreover, HMLP has determined that both N-1 and N-1-1 contingency events could result in an extended outage for all customers in Hingham, and, as such, HMLP’s current system does not meet transmission reliability standards. Here, it is important to note that the configuration of the transmission facilities connected to HMLP are not considered Pool Transmission Facilities as they are radial in nature and are not an integral part of the interconnected transmission network serving New England. Exh. HE-1, at 2-6. Accordingly, there are no other transmission network facilities to rely upon in the event of an outage resulting from either an N-1 or N-1-1 contingency event. Absent a solution to address the identified need, the entire Town of Hingham would lose power in the case of either an N-1 or N-1-1 contingency event.

3. **HMLP Appropriately Used A Deterministic Rather than a Probabilistic Approach in Assessing Need**

¹³ In response to questioning from Siting Board Staff, HMLP witnesses noted that while there is no written document setting out HMLP’s specific reliability standards, HMLP does follow the four reliability standards identified herein and does so “across all HMLP projects.” Tr. 1, at 43.

Over the course of this proceeding, the Siting Board raised questions regarding (1) HMLP's reliability history and whether that history reflects risk of outages; and (2) the probability of a contingency event resulting from an extreme weather event.

With respect to reliability history, HMLP indicated that its system, as currently configured, has experienced a number of outage events:

- A 23-hour outage on November 30, 1991, involved a failed switch, where part of the switch fell on the adjacent line -- tripping both transmission circuits supplying Hobart I Substation.
- An 8-hour outage event which placed the HMLP system at risk occurred during a severe weather event in January 2018 and resulted in damage to portions of one of the two transmission lines serving HMLP and caused repairs to be needed during severe cold weather conditions.
- An insulator failure in April 2022 on circuit 478-503 which took 24 hours to repair.

Exhs. HE-1, at 2-6, EFSB-N-6, RR-EFSB-1.

Notably, HMLP's reliability and/or outage history is not an accurate reflection of existing risk. Exh. EFSB-N-2. Moreover, reliability or outage history is not part of the analysis of whether a system meets relevant transmission standards. As HMLP's witness, Mr. Salamone, testified, the number of historical outages or durations of those outages has no bearing on whether a system is compliant with NERC, NPCC and ISO-NE standards for N-1 and N-1-1 contingencies. As Mr. Salamone asserted "failure to be able to serve load under those contingency conditions is a violation of reliability guidelines... irrespective of historical performance." Tr. 1, at 127.

With respect to extreme weather events, it is important to emphasize that HMLP's determination that there is a need for additional resources to meet reliability objectives is not based on an assessment of probabilities. Along with most other utilities operating in the U.S., HMLP does not consider the likelihood of contingency events, including weather events, in order to assess system reliability. Rather, like other utilities, HMLP used a deterministic approach, not a probabilistic approach, to evaluate the reliability of its system – and has determined that currently either N-1 or N-1-1 contingency events could result in an extended outage for all customers in Hingham in contravention of accepted reliability standards. Exh. EFSB-N-2.

Having said that, HMLP has noted that the environment in which its transmission system operates has become more tenuous due to increases in both the severity and frequency of extreme weather events. And, again like other utilities, HMLP is proposing to enhance the

reliability of its systems to reduce the risk of outages in light of the increase in severity and frequency of extreme weather events.¹⁴ Exh. EFSB-N-2. Indeed, HMLP has provided the Siting Board with information and data relative to extreme weather events, including the 2023 Massachusetts State Hazard Mitigation and Climate Adaptation Plan, also known as the 2023 ResilientMass Plan, which identifies damage to electric transmission and utility distribution infrastructure as a priority impact. Exh. EFSB-G-7; *see also* Exhs. EFSB-N-5, RR-EFSB-5.

HMLP's determination that additional energy resources are needed to address N-1 and N-1-1 contingency events is fully consistent with the Supreme Judicial Court's ("SJC") decision in *Town of Sudbury, supra*. There, the SJC found:

We discern no error in the board's use of the conservative N-1-1 criterion in assessing the existence of a need. Conservative forecast predictions are warranted, particularly given the importance placed on a reliable electric system. State law makes it clear that the residents of the Commonwealth simply cannot be exposed to foreseeable and avoidable power outages. See St. 1997, c. 164, § 1 (h) (Electric Utility Restructuring Act) ("reliable electric service is of utmost importance to the safety, health, and welfare of the commonwealth's citizens and economy"). See also St. 1997, c. 164, § 1 (a) ("electricity service is essential to the health and well-being of all residents of the commonwealth, to public safety, and to orderly and sustainable economic development"). If government and industry fail to properly plan and act to timely address our energy needs, enormous suffering can result.

Town of Sudbury, 487 Mass. at 748.

While HMLP has provided the Siting Board with historical information indicating that outage events have occurred on its existing system, as well as data supporting the fact that the severity and frequency of extreme events are likely to increase, HMLP's deterministic assessment that its current system is subject to an extended outage under N-1 and N-1-1 contingencies under accepted reliability standards – without anything more -- is consistent with the SJC's decision in *Town of Sudbury, supra*. Indeed, as the SJC compellingly held in that case,

¹⁴ Similarly, HMLP acknowledged that a train derailment could damage existing transmission structures serving HMLP. Again, because HMLP used a deterministic approach to assess reliability, it did not consider the probability of a train derailment. However, HMLP's witness, Mr. Converse, noted that when HMLP's current system was constructed in 1986, the adjacent Greenbush train line had been dormant since 1959. Mr. Converse indicated that the Greenbush line restarted in 2007, and with that restart, the probability of a derailment on that line is no longer zero. Tr. 1, at 74-75.

residents of the Commonwealth -- which include residents of Hingham -- “simply cannot be exposed to foreseeable and avoidable power outages.” *Id.*

4. Conclusion on Need

Consistent with the Siting Board’s standards, it is reasonable and appropriate for HMLP to follow the transmission reliability standards from NERC, NPCC and ISO-NE. Moreover, HMLP has established that its system does not meet these reliability criteria under certain contingencies given existing loads. *Eversource Mid-Cape* at 10; *NEP Beverly-Salem* at 10; *Eversource Andrew-Dewar* at 7; *Eversource Sudbury-Hudson* at 15. Accordingly, consistent with Siting Board precedent and based on uncontested record evidence, the Siting Board should find that additional energy resources are needed to ensure a reliable supply of electricity to the Town of Hingham.

B. HMLP Evaluated a Reasonable Range of Project Alternatives in Determining That the Project Is Superior in Meeting the Identified Need.

1. Standard of Review

G.L. c. 164, § 69J requires a project proponent to present alternatives to the proposed facility, which may include: (a) other methods of transmitting or storing energy; (b) other sources of electrical power or natural gas; or (c) a reduction of requirements through load management. *Eversource Mid-Cape* at 26; *NEP Beverly-Salem* at 28- 29; *Eversource Andrew-Dewar* at 24; *Eversource Sudbury-Hudson* at 27. 20.

In implementing its statutory mandate, the Siting Board requires a petitioner to show that, on balance, its proposed project is superior to alternative approaches in terms of reliability, cost, environmental impact, and ability to meet a previously 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. *Eversource Mid-Cape* at 26-27; *NEP Beverly-Salem* at 28-29; *Eversource Andrew-Dewar* at 24; *Eversource Sudbury-Hudson* at 27.

2. Evaluation of Project Alternatives

Consistent with Siting Board precedent, HMLP identified and analyzed a number of potential project alternatives from the perspective of their ability to reliably meet the identified

need with a minimum impact on the environment and at the lowest possible cost. Specifically, HMLP considered the following alternatives¹⁵: (1) a “No-Build” alternative (*see* Section V.B.3, *infra*); (2) transmission alternatives (*see* Section V.B.4, *infra*); and (3) non-transmission alternatives (“NTAs”), including new renewable generation, energy efficiency (“EE”) and energy storage technologies, either alone or in combination with renewable resources (*see* Section V.B.5, *infra*). Exh. HE-1, at 3-1.

For the reasons set forth below, HMLP’s proposed Project is, on balance, the superior alternative available to fully address its current reliability need with a minimum impact on the environment and at the lowest possible cost.

3. No-Build Alternative

Under the No-Action or “No Build” Alternative, HMLP would not construct any new facilities to address reliability concerns that are discussed in Section V.A. The current transmission system serving HMLP would remain unchanged. Specifically, with respect to HMLP’s existing system, a failure of both supply circuits on a single DCT can leave all customers in Hingham without power. Again, this is an unacceptable condition as any outage length for an event of this type could easily be 8 to 48 hours before at least one of the DCT circuits is restored, and, in the case of a fallen DCT structure, it could take a week or more to restore power to the HMLP system. Similarly, an outage event or maintenance requirement that takes one of the two circuits supplying HMLP out of service for an extended duration (anywhere from 8 to 48 hours) could result in loss of service to the entire town if the second remaining transmission line were to experience an outage event (*i.e.*, an N-1-1 contingency). Unlike larger and/or investor-owned utilities, which typically have multiple substations within an area and can backstop their customer circuits via distribution tie circuits from other substations, HMLP is limited to just Hobart I Substation. There are no other backstop transmission or distribution options available to HMLP, and a single DCT N-1 event or N-1-1 event would interrupt power to

¹⁵ HMLP did not consider distribution alternatives as a means to address the identified need. As noted herein, there is only one substation in Hingham – the Hobart I Substation. Unlike larger and/or investor-owned utilities which often operate multiple substations in an area and can use distribution ties from adjacent substations upon loss of transmission lines or a substation, HMLP has no other substations to leverage in the event of an N-1 or N-1-1 contingency. Exh. HE-1, at 3-3, n.14. However, where the Siting Board has asked questions regarding potential distribution ties, HMLP addresses these alternatives in Section V.B.6, *infra*.

the Town for an extended period of time due to the lack of switching alternatives. Exh. HE-1, at 3-1 to 3-2.

Accordingly, the No-Build Alternative fails to provide the additional energy resources needed to address HMLP's identified, existing transmission reliability needs of the Town of Hingham.

4. Transmission Alternatives

HMLP identified locations within the area transmission system to create an additional tap point for a third line to Hingham. HMLP determined that other than the existing lines serving Hingham, there are no other transmission lines within the Town of Hingham boundaries that could serve as an additional tap point. Recognizing that an additional tap point would need to be located in an adjacent town or in an area close to Hingham, HMLP identified (1) lines owned by Eversource that are north of Hingham that run between Edgar Station in Weymouth to a substation in Holbrook (line numbers 478-502, 478-503, 478-508 and 478-509); and (2) lines owned by NGRID to the south of Hingham that are located in Whitman, Abington, Rockland, Hanover, Norwell, and Scituate (C3 and S9 lines) with a spur to North Abington (C3-99 line). Exh. HE-1, at 3-3.

HMLP also looked at transmission alternatives designed to eliminate the DCT failure scenario associated with the lines currently feeding Hingham.

In all, HMLP identified the following seven (7) transmission alternatives:

- (1) Underground transmission line from Eversource's Edgar Station to a new substation at Hingham Shipyard (Option 1).
- (2) Underground transmission line from Point of Interconnection on Eversource circuit 478-502 in Weymouth to a new substation at a location near the existing Hobart I Substation in Hingham (the proposed Project) (Option 2).
- (3) Underground transmission line from NGRID's North Abington Substation to a new substation at South Hingham Industrial Park (Option 3 and Option 3 Variation).
- (4) Overhead and underground transmission line from NGRID's Norwell Substation to Union Street to Hobart Street (Option 4).

- (5) Underground transmission line from Point of Interconnection on Eversource circuit 478-502 in Weymouth near MBTA ROW, then along MBTA Rail Line to Hobart Street (Option 5).
- (6) Elimination of the DCTs (two approaches):
- Replacement of the DCTs currently serving HMLP with separate, single monopoles for each portion of the circuit where there are presently DCTs (Option 6A).
 - Placement of one of the existing transmission lines serving HMLP underground to eliminate the DCT contingency (Option 6B).

Exh. HE-1, at 3-3 to 3-4.

After fully considering and analyzing the seven transmission alternatives, HMLP eliminated five options from further consideration:

Option 1, which involves the installation of a new 115 kV breaker and associated equipment at Eversource's Edgar Station in order to interconnect to the station's 115 kV bus, the construction of a new substation at the Hingham Shipyard in the Town of Hingham, and an approximately 2.5-mile underground line between Edgar Station and the new substation at the Hingham Shipyard, was eliminated from further consideration because of (1) the extensive feeder work which would be necessary to integrate a new substation at the Hingham Shipyard with HMLP's distribution system; (2) the lack of available land at the Hingham Shipyard; (3) the considerable difficulties associated with construction along heavily-travelled Route 3A; and (4) potential impacts to protected open space or designated Outstanding Resource Waters (ORW)/Areas of Critical Environmental Concern (ACEC). Exh. HE-1, at 3-6 to 3-7.

Option 4, which would (a) tap into NGRID's 115 kV C3 Line near Norwell Substation and extend that 115kV line northwest for approximately 7.5 miles, and (b) also require the construction of a new substation near Hobart I Substation, was eliminated from further consideration because of (1) the significant costs associated with extensive circuit reconductoring of considerable portions of NGRID's lines, reconductoring that would be required to reliably integrate the HMLP load that could be placed upon the lines to serve Hingham during an outage event; (2) the cost of construction of a new 7.5-mile transmission line through environmentally challenging areas; and (3) the potential environmental impacts

associated with construction in areas with rare and endangered species, wetland resources, ORWs, and protected open space. Exh. HE-1, at 3-17 to 3-20.

Option 5 would include a new 3.25-mile underground line starting at the same Eversource ROW corridor near Broad Street as the proposed Project (Option 2), but in a different location in the ROW closer to the intersection between the ROW corridor and the MBTA ROW. This option then would follow the MBTA rail line and a similar route as the existing HMLP transmission lines to a new Hobart Street substation, and, like Option 2, would require the construction of a new substation in Hingham near the Hobart I Substation. Among other concerns, this option was eliminated from further consideration because of (1) constructability concerns associated with installation of a new underground transmission line along active MBTA tracks, including space constraints for manhole and splice vaults; (2) timing and cost concerns given that construction along the MBTA ROW would be limited to the hours between midnight and 5:00 AM; (3) considerable wetlands impacts associated with this tap station location; and (4) cost concerns, including increased costs associated with construction of the underground line at five bridge crossings along the MBTA ROW. Exh. HE-1, at 3-20 to 3-22.

Option 6A would involve removing one line from all DCTs currently carrying the two 115 kV lines serving Hingham and transferring that line to new separate poles. In all, there are 22 DCTs where the two transmission lines share the same single pole – fifteen (15) DCTs are owned by HMLP and seven (7) DCTs are owned by NGRID. Exh. HE-1, at 2-3 and 3-22 to 3-24.

This option was eliminated from further consideration because it fails to address the identified need. Removing one of the lines from the DCTs and placing that line on separate poles would address the N-1 contingency situation, but not the N-1-1 contingency where one line has failed or is undergoing maintenance, and the second line experiences an outage. As such, Option 6A does not meet the identified need. In addition, Option 6A was deemed not to be viable because (1) HMLP likely would be required to acquire additional land on the NGRID portion of the line in Weymouth in order to install separate monopoles because the current utility ROW likely is not sufficiently wide; and (2) installation of separate monopoles in Hingham would result in an increase in visual impacts that likely would not be acceptable to municipal officials and residents. Exh. HE-1, at 3-22 to 3-24.

Option 6B would involve installing an underground line adjacent to the existing 115 kV overhead lines to eliminate the DCT failure scenario. Like Option 6A, this option would require construction along both the NGRID- owned and HMLP-owned portions of the current lines.

This option was eliminated from further consideration because, like Option 6A, it fails to address the identified need. Removing one of the lines from the DCTs and placing that line underground would address the N-1 contingency situation, but not the N-1-1 contingency where one line has failed or is undergoing maintenance, and the second line experiences an outage. Moreover, this option was deemed to be infeasible because of the costs associated with mitigating environmental impacts and the impacts of multiple bridge crossings; and the cost, construction and timing concerns associated with construction. Exh. HE-1, at 3-24 to 3-26.

With the elimination of the five options above, HMLP focused its analysis on Option 2 and Option 3, each of which is discussed more fully below.

a. Underground Transmission Line from Point of Interconnection on Eversource Circuit 478- 502 in Weymouth to Location Near Existing Hobart I Substation in Hingham (the Proposed Project) (Option 2) (Proposed Project)

This transmission alternative (Option 2), which ultimately was selected by HMLP as its proposed Project, involves bifurcation of Eversource's 478-502 in Weymouth, a New Tap Station (115 kV) to be owned and operated by Eversource, a New Substation in Hingham in close proximity to the existing Hobart I Substation, and an approximately 3.2-mile underground 115 kV New Line between the New Tap Station and the New Substation. Exh. HE-1, at 3-8.

The New Substation in Hingham would include breakers and/or motor-operated switches, and a control house to allow for the ability to sectionalize the 115 kV feeders. Under this option, one of the existing 115 kV lines would remain connected to the existing Hobart I Substation and the other existing 115 kV line would be connected to the New Substation.¹⁶ The

¹⁶ HMLP requested an analysis from Eversource regarding the reliability and cost impacts of HMLP tapping existing transmission circuits 478-502 and 478-509 lines between Edgar Station in Weymouth and Holbrook Station. The results from the Eversource study indicated that a new 115 kV interconnection to the 478-502 and 478-509 transmission supply circuits caused no adverse impacts and would require no reconductoring or uprating costs upstream of the Point of Interconnection. Following issuance of the Eversource study, HMLP requested that Eversource utilize a connection to the 478-502 line only and sectionalize that line creating two line segments. HMLP and Eversource agreed to pursue that option. This proposed design for modification of the New England

new line from the Weymouth tap station also would be connected to the New Substation and would feed the existing Hobart I Substation. Exhs. HE-1, at 3-8; EFSB-N-1; EFSB-N-1(1).

With respect to reliability, Option 2 meets HMLP's reliability need and also allows for the future expansion of the New Substation in Hingham to include an additional transformer and switchgear to provide the ability to add distribution capacity in the event of load growth associated with increased electrification and also provide back up for the existing Hobart I Substation.¹⁷ Moreover, because the proposed New Substation would be located in close proximity to the existing Hobart I Substation, compared to the other transmission alternatives, the cost and complexity of integrating this option with HMLP's distribution system would be considerably less. Exh. HE-1, at 3-11.

The estimated cost for Option 2 as of 2024 was \$104.7 Million. *Id.* From an environmental perspective, the location of the New Tap Station is within an existing Eversource transmission corridor, set back from Broad Street and residential uses, and sited to minimize potential impacts to wetland resource areas and their associated buffer zones. The proposed New Substation would be located within the Hingham Transfer Station property and would be set back from residential properties. The transmission line would cross Herring Run Brook in Weymouth, within the Broad Street roadway ROW, as well as three smaller culvert crossings of unnamed hydrologic connections/streams. Notably, the impacts associated with these crossings can be appropriately mitigated at a reasonable cost. And, while the New Line would cross the designed ORW/ACEC for the Weymouth Back River, crossings would occur within previously disturbed road ROW. Moreover, this option avoids impacts to protected open space. Exh. HE-1, at 3-11.

b. Underground Transmission Line from NGRID's North Abington Substation to South Hingham Industrial Park (Option 3)

This transmission alternative (Option 3) would tap into NGRID's 115 kV C3-99 overhead line at the North Abington substation in Abington. The transmission line associated

transmission system (*i.e.*, sectionalizing the 478-502 circuit) was reviewed and approved by ISO-NE on August 21, 2023, as part of their "Proposed Plan Application" process. Exh. HE-1, at 3-8.

¹⁷ While not needed for capacity purposes, given the climate change goals of both the Town of Hingham and the Commonwealth, HMLP determined that it was reasonable and prudent to select a substation site and lay out its proposed New Substation to accommodate a new transformer and switchgear when load growth warrants these additions. Exh. HE-1, at 1-5, n.2; *see also* Exh. EFSB-N-7.

with this option would be a 4.2-mile underground line extending from North Abington Substation, through the former Weymouth naval air station to a new HMLP substation site at the South Hingham Industrial Park. Exh. HE-1, at 3-12.

NGRID's 115 kV C3-99 line is a tap line from the 115 kV C3 Line, which is a radial line supplied from the Auburn Street Substation #451 in Whitman. The C3 Line essentially parallels NGRID's S9 line, and the two lines supply several load serving substations in the South Shore area. In the event of loss of either of the two lines, all the load that is served by both lines would be picked up by the remaining line, either automatically or by way of post-contingency operator switching. *Id.*

This transmission option also would require modifications to the North Abington substation to accommodate the line extension. In addition to bus extensions and circuit breakers, these modifications likely would include the installation of dead-end structures, surge arresters, motor-operated disconnect switches, and remote SCADA control. *Id.*

The proposed transmission line route for Option 3 follows a cross-country corridor that would have significant environmental impacts as it crosses through rare and endangered species habitat, wetland resource areas, and the Whitmans Pond and Old Swamp River/South Cove ORWs. The corridor also parallels and is adjacent to French Stream and crosses the Old Swamp River.¹⁸ *Id.*

Option 3 (as well as Option 3 Variation) calls for construction of a new step-down station which requires integration of new distribution circuits into the existing HMLP system that is capable of carrying the entirety of the HMLP loads. The distribution system work necessary to integrate this transmission alternative with the existing distribution system would likely be significant as there are a limited number of feeders in the area of Hingham Industrial Park with limited street routes to connect to other feeders. Considerable feeder work would be necessary to extend remote circuits to this location if they are to serve as a back up to Hobart I Substation. The significant work needed to integrate with the distribution system would increase the costs of this option. Exh. HE-1, at 3-15.

At HMLP's request, NGRID provided an analysis in October 2018 which indicated

¹⁸ HMLP also analyzed a variation to Option 3 (Option 3 Variation) that reroutes much of the line to existing roadways, thereby reducing environmental impacts. Exh. HE-1, at 3-12.

reconductoring of portions of NGRID's transmission circuits would be required for this option as a result of adding the HMLP load to the lines during an outage event. Based on NGRID's analysis, which identified overloads associated with the interconnection, HMLP determined that 3.3 miles of existing transmission line would need to be reconducted for both the C3 circuit and the S9 circuit for this option.¹⁹ Accordingly, HMLP calculated an additional cost of approximately \$10 million for this option, not including all other Point of Interconnection costs and other potential terminal point upgrades. Exh. HE-1, at 3-12,

While Option 3 meets HMLP's identified need for additional energy resources to address reliability concerns, Option 3 (and Option 3 Variation) would result in a lower level of reliability relative to Option 2 because: (1) the longer transmission line supplying the new Industrial Park substation for Option 3 - which is approximately 1.8 miles longer than the line supplying the New Substation for Option 2 - could increase the failure rate when compared to Option 2; (2) the new Industrial Park substation, which would be fed by a single radial transmission line, would be lost in the event of an outage on that radial line; (3) Hobart I Substation would continue to be subject to a N-1 contingency in the event of the loss of a DCT; and (4) loss of the Industrial Park substation or loss of Hobart I Substation would require time-consuming field switching of distribution circuits within the HMLP distribution system. These factors led HMLP to conclude that Option 3 was considerably less reliable than Option 2. Exh. EFSB-PA-1(R), at 1.

The total estimated cost for Option 3 is \$175.5 Million (and the estimated cost of Option 3 Variation is \$183.7 Million) which is significantly higher than the cost of Option 2. The Option 3 estimates include the cost of reconductoring NGRID's C3 and S9 circuits, construction of the new underground line, interconnection of the new 115 kV transmission line to the North Abington substation, a new substation at the Hingham Industrial Park to step down the

¹⁹ The NGRID analysis identified that a DCT fault on the existing transmission lines serving HMLP followed by loss of the S9 line would transfer all of HMLP's load as well as all of the S9 line load onto the C3 Line. Based on the 2023 summer peak load forecast condition, this would result in overloading the segment of the C3 line. Since the C3 line is a Bulk Power System line (as defined by NERC), this N-1-1 contingency condition needs to be respected, and NGRID's line segment would require reconductoring. Although not specifically identified in the NGRID analysis, it was observed that the C3 and S9 circuits provide backup service for each other such that failure of either of these circuits results in all load being transferred to the remaining in-service circuit. The C3 and S9 circuits have similar ratings which led HMLP to consider that since the C3 circuit was found to be overloaded for loss of the S9 circuit followed by a DCT fault interrupting both of the Hingham supply circuits, an overload would also occur on the S9 circuit for loss of the C3 circuit followed by a DCT fault interrupting both of the Hingham supply circuits. Exh. HE-1, at 3-15, n.18.

transmission voltage to 13.8 kV, the distribution upgrades necessary to transfer HMLP's load to the new Industrial Park substation, and all work necessary to carry HMLP loads in the event of the loss of existing transmission lines and/or the existing Hobart I Substation. Exhs. HE-1, at 3-15; EFSB-PA-1(R) at 4-5.

From an environmental perspective, the underground route to a new substation at Hingham Industrial Park associated with Option 3 has greater environmental impacts than Option 2 based on its longer route and the cross-country corridor segment that would travel through previously undisturbed wetland resource areas and habitat for rare and endangered species. In addition, integrating the distribution system would require considerable feeder work to extend remote circuits to the Industrial Park and would likely result in further environmental impacts. Exh. HE-1, at 3-16.

c. HMLP's Proposed Project (Option 2) Is Superior to All Transmission Alternatives

As discussed in Section V.B.4, two transmission alternatives identified by HMLP – Option 6A and Option 6B – were eliminated from further consideration because each of these options failed to meet the identified need, *i.e.*, these options addressed N-1 contingencies, but not N-1-1 contingencies.

Moreover, Options 1, 4, and 5 were eliminated from further consideration because a host of cost, constructability, timing and environmental concerns rendered them infeasible.

With respect to the remaining transmission alternatives, while both Option 2 and Option 3 meet the identified need, *i.e.*, they each address both N-1 and N-1-1 contingencies, Option 2, the proposed Project, is superior to Option 3 for the following reasons:

From an environmental perspective, Option 3 requires a longer line than Option 2 and would cross through previously undisturbed wetland resource areas and habitat for rare and endangered species. Option 3 is also \$71 Million more expensive than Option 2 (with Option 3 Variation some \$78 Million more expensive than Option 2). Finally, as discussed above, Option 3 (and Option 3 Variation) would result in a lower level of reliability relative to Option 2. As such, Option 2 is superior to Option 3 (and Option 3 Variation) with respect to environmental impacts, cost and reliability.

In sum, HMLP's proposed Project (Option 2) is superior to all transmission alternatives with respect to meeting the identified need, cost and environmental impacts. Moreover, with respect to reliability, HMLP's proposed Project is superior to the only other alternative, Option 3, which meets the identified need.

5. Non-Transmission Alternatives (NTAs)

HMLP's firm load capability is 80 MVA and under N-1 or N-1-1 contingencies, the load carrying capacity of any alternative solution must be able to supply at least as much as HMLP's existing firm load capability. More specifically, viable alternatives for addressing the identified need must provide at least 80 MVA of peak load capacity while continuing to be available under both N-1 and N-1-1 contingency conditions for anywhere from 8 hours to one week or more in duration. As such, any NTA also must be able to serve up to 80 MVA and be available for extended periods of time -- for as long as from 8 hours up to a week or more -- which is considered to be the minimum amount of time necessary to ensure the availability of supply for the Town of Hingham resulting from loss of transmission service.²⁰ Exh. HE-1, at 3-29.

HMLP considered the following NTAs for meeting the identified need: (1) conservation efforts or interruption of firm and non-firm load; (2) wind resource; and (3) solar power paired with battery storage. *Id.* In addition, in response to questioning from the EFSB, HMLP addressed emergency generation as an NTA. Each of these options are addressed in the sections below.

a. Conservation/Interruption of Firm and Non-firm Load

As a preliminary matter, the record in this proceeding is replete with evidence that HMLP has pursued and continues to pursue energy efficiency, load management, and

²⁰ The HMLP system peak load of 57 MVA occurred on August 29, 2018. Exh. HE-1, at 3-2, n.11. However, providing supply capabilities that only match current peak load demands introduces adverse procedural and economic consequences. NTAs that only meet existing peak load demands would need to be expanded every time new loads are added to the system. Exh. EFSB-PA-3. HMLP's witness, Mr. Converse, rejected the concept that HMLP could address its reliability need with NTAs that meet current or projected peak load rather than the system's current 80 MVA capacity. Mr. Converse testified that such an approach would be impractical as it would require HMLP to go through the process of adding NTA capacity every time new load is added, or load growth is anticipated. Tr. 1, at 54-55. Simply put, the idea of ramping up capacity to address load growth as a means of addressing N-1 and N-1-1 contingencies associated with the current system is unworkable and at odds with GUP.

electrification programs, including active participation in the development of the Town of Hingham's Net Zero Plan, and offering rebates for heat pumps, EV chargers, induction ovens, heat pump dryers, weatherization and electric lawn equipment. Moreover, HMLP's Connected Homes and Shred the Peak programs reward customers for reducing or shifting electricity use during peak periods. Exh. EFSB-N-4, at 1-3.

However, conservation efforts and interruption of firm and non-firm load (or "rolling blackouts") - either on their own or together -- do not meet the identified need because, regardless of the popularity or efficacy of conservation and demand response programs, residents and businesses in Hingham would be without power when both lines currently serving Hingham are lost. HMLP does not have the ability to switch load to a "back-up substation", so conservation and/or partial load interruption would not avoid interruption of service to all HMLP customers since the N-1 or N-1-1 outage would interrupt all service to the Town. Exh. HE-1, at 3-29.

Accordingly, conservation measures and load interruption were rejected because they do not address the identified reliability need and would be inferior to the proposed Project.

b. Wind Resource

A wind solution would require approximately 35 to 40 2.5 MW turbines. Typical siting for a land-based wind turbine would require approximately 30-40 acres per turbine. HMLP is not aware of any proposed projects to construct this number of turbines as a single service territory solution, and there is no available land of this size in Hingham. Existing tracts of undeveloped land within the Town are typically dense with environmental resources and/or are protected open space subject to Article 97. Construction of a land-based wind facility would result in significant land use impacts, assuming sufficient land was even available. Additionally, due to the intermittent nature of wind generation, battery storage capacity would need to be part of this solution. *Id.*

Offshore wind was ruled out as a solution since there are no connections to the HMLP infrastructure that could be used to serve as a backstop to the existing transmission system. Moreover, even if sufficient land were available, wind as a solution is intermittent, which precludes it as an option absent additional energy storage capabilities. *Id.*

This NTA was considered to be cost prohibitive given the equipment costs and the inability to acquire the land necessary to site this number of wind generation units as well as the concomitant battery storage capacity. Exh. HE-1, at 3-29. As such, wind resources were determined to be inferior to the proposed Project.

c. Solar Power Paired with Battery Storage

Because solar is an intermittent resource, HMLP considered a non-transmission option combining solar with battery storage. Because battery storage systems typically only have two to four hours of availability, either individually or combined, this solution would require an extensive battery storage system that would be able to provide from 8 hours to up to a week of firm supply to meet peak demand during a N-1 or N-1-1 contingency. In addition, the combination of solar and battery storage necessary to meet the identified need would require approximately 900 acres at a cost of over \$160 Million for 80 MVA. Exh. EFSB-PA-5, at 1. Both the land requirements and the prohibitive costs make this option infeasible as a solution. Moreover, existing tracts of undeveloped land within the Town are typically dense with environmental resources and/or are protected open space subject to Article 97. Exh. HE-1, at 3-30. Finally, typical battery storage systems only provide two to four hours of availability, which would be wholly ineffective in the event of the extended outages that HMLP's Project is tailored to prevent. Exh. EFSB-PA-5, at 1.

As such, this alternative was deemed impractical and was rejected as a means of addressing HMLP's reliability need.

d. Emergency Generation

In response to Siting Board staff questions, HMLP addressed emergency generation – either on its own or in combination with battery storage – as a potential NTA.

HMLP indicated that it considered utility-scale emergency generation, including trailer mounted generators, as an alternative to the proposed Project. HMLP noted that the costs of these units – which are typically available as 4 MW rental units²¹ -- are especially high. Based on recent cost information, assuming 15 of these 4 MW generating units, rental costs could be in

²¹ HMLP indicated that 4 MW units appear to be the largest available unit size of so-called “mobile” generation units. HMLP also noted the 4 MW size coincides with an allowable ampacity of HMLP's 13.8 kV circuits. Larger units would not be mobile and would need to be connected at the substation supply point. Exh. EFSB-PA-10 at 2.

excess of \$12 Million per year, and over a 30-year lifetime would involve a total cost that exceeds \$300 Million. In addition, these trailer-mounted units present significant siting challenges due to their lot requirements. Moreover, the interconnection equipment requirements associated with connecting 15 units to the HMLP system would be substantial.²² Finally, the air quality and noise impacts associated with running such units would raise significant concerns. Exh. EFSB-PA-5, at 1.

HMLP explained that it was not practical to import mobile generators on an as-needed basis. In order for a transmission or non-transmission alternative to satisfy HMLP's need for additional energy resources, that alternative must be available to HMLP "365 days a year, 24 hours a day." For mobile generators to be able to be available to HMLP in the event of an N-1 or N-1-1 outage, those mobile generators need to be in place and connected to HMLP's distribution system so they can be dispatched immediately. Exh. EFSB-PA-10. Indeed, HMLP's witness, Mr. Converse, indicated that even if the mobile units were stored someplace nearby, it would take three to four hours to interconnect each generator to HMLP's distribution system. Tr. 1, at 105-108.

In response to questions from EFSB staff, HMLP also addressed the option of mobile or temporary battery storage as a solution. Here, as was the case with the NTA which pairs solar power with battery storage, HMLP indicated that cost, space limitations and infrastructure connection issues would present challenges in the siting of multiple mobile battery storage units. Although HMLP acknowledges that battery storage is better than mobile generators from an emissions and noise perspective, diesel generators can be refueled to provide continuous power during a reliability event. In contrast, batteries would need to be re-charged when depleted. Because of the risk of an extended outage affecting the entire Town, any generation or non-generation alternative must be immediately available and able to provide power during the entirety of an outage event. Exh. EFSB-PA-11.

In sum, the trailer-mounted emergency generation and temporary battery storage alternatives were rejected as each would be inferior to the proposed Project.

²² The necessary infrastructure for interconnecting utility-scale emergency generation units to HMLP's system would include step-up transformers and transmission switchgear, as well as equipment for integration into the existing Hobart I Substation. The interconnection costs alone for utility-scale emergency generation would well exceed \$20 Million. Exh. EFSB-PA-5, at 2.

e. Distribution Ties

HMLP determined that an alternative based solely on distribution system additions or modifications would not be viable because the Town of Hingham has only one substation and loss of that substation due to a transmission system outage interrupts service to all distribution facilities serving HMLP customers. There currently is only one substation in Hingham – the Hobart I Substation. Unlike larger and/or investor-owned utilities which often operate multiple substations in an area and can use distribution ties from adjacent substations upon loss of transmission lines or a substation, HMLP has no other substations to leverage in the event of either a N-1 or N-1-1 contingency. Accordingly, HMLP did not address any distribution alternatives in its Petition to Construct as a means to address the identified need. Exh. HE-1, at 3-28.

However, HMLP did look at certain distribution alternatives identified by Siting Board staff over the course of this proceeding.

HMLP has no distribution interties with neighboring utilities, including with Hull Municipal Light Plant, that can be used in the case of an outage to supply HMLP customers. Exh. EFSB-PA-2.

HMLP did identify five potential tie points with NGRID's distribution system. However, based on existing peak demand loading for these five NGRID circuits, the total excess capacity available to HMLP from these interties would be less than 20 MW (19.9 MW). Exh. EFSB-PA-7(R). In fact, 19.9 MW represents only 35% of the capacity needed to serve HMLP's peak in the event of an outage. Moreover, this evaluation does not address limitations that may be associated with NGRID's stepdown transformer capacity and/or transmission system capacity – both of which could require upgrades to support the distribution loads added from the HMLP interconnections.²³ *Id.*

Given that interties with NGRID potentially would provide only a portion of the capacity needed to serve HMLP's peak in the event of an outage, the Siting Board questioned whether

²³ HMLP's witness, Mr. Salamone, explained that any serious consideration of NGRID's distribution ties as a solution would require HMLP and NGRID to evaluate "upstream limitations, meaning the transformers and transmission lines that supply those distribution circuits may also have limitations. And to circumvent those limitations, you would be talking about upgrades to the National Grid system, which would introduce some substantial -- potentially substantial expenses." Tr. 1, at 98-99.

HMLP could combine potential NGRID interties with emergency generation to meet HMLP's full load in the event of an outage. Here, HMLP reiterated that the same issues associated with the employment of emergency generators as an NTA, either on their own or in combination with battery storage, *i.e.*, impracticality, prohibitive cost, emissions and noise, would be present under the scenario where NGRID distribution ties are combined with emergency generation to meet the identified need. As Mr. Salamone testified,

So we're still faced with a substantial expense in terms of reserving and paying for that generation resource, not to mention all of the difficulties and cost consequence associated with siting and interconnecting all of those generators to the system.

So while some tie capacity might help, the alternative -- the additional resource necessary to satisfy the reliability concern just is completely impractical and extremely expensive as compared to the project.

Tr. 1, at 100.

Accordingly, distribution interties – on their own or in conjunction with other NTAs -- fail to meet the identified need and represent an impractical and costly solution relative to the proposed Project.

6. Conclusion on Project Alternatives

As discussed in Section V.B.4, HMLP's proposed Project (Option 2) is superior to all transmission alternatives with respect to meeting the identified need, cost and environmental impacts. Further, with respect to reliability, HMLP's proposed Project is superior to Option 3, the only other transmission alternative which meets the identified need.

As discussed in Section V.B.5.a through V.B.5.d, *supra*, the non-transmission alternatives considered in this proceeding – conservation/interruption of firm or non-firm load, wind resources, solar power paired with battery storage, and emergency generation – were each deemed to be inferior to HMLP's proposed Project.

Finally, as discussed in Section V.B.5.e, distribution interties – on their own or in conjunction with other NTAs -- fail to meet the identified need and represent an impractical and costly solution relative to the proposed Project.

In sum, HMLP’s alternatives analysis demonstrates that the Project will best address the need for additional energy resources to address reliability concerns. Based on this analysis, and in accordance with Siting Board precedent, the Project is superior to alternative approaches in terms of reliability, cost, environmental impact, and ability to meet the previously identified need. *Eversource Mid-Cape* at 26; *Eversource Sudbury-Hudson* at 27.

C. HMLP’s Site and Route Selection Process Considered a Reasonable Range of Alternatives and Resulted in a Project That Provides a Reliable Supply of Energy While Minimizing Environmental Impacts and Costs

1. Standard of Review

G.L. c. 164, § 69J requires the Siting Board to review alternatives to planned projects, including “other site locations.” In implementing this statutory mandate, the Siting Board requires a petitioner to demonstrate that it has considered a reasonable range of practical siting alternatives and that the proposed facilities are sited (or routed, as the case may be) in locations that minimize costs and environmental impacts while ensuring a reliable energy supply. *Eversource Mid-Cape* at 39; *Eversource Andrew-Dewar* at 34; *Eversource Sudbury-Hudson* at 50. To do so, an applicant must satisfy a two-pronged test: (1) 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; and (2) the applicant must establish that it identified at least two noticed sites or routes with a measure of geographic diversity. *Eversource Mid-Cape* at 39; *Eversource Andrew-Dewar* at 34; *Eversource Sudbury-Hudson* at 50.

The Siting Board has found various criteria to be appropriate for identifying and evaluating route options for transmission lines and related facilities. These criteria include natural resource impacts, land use impacts, community impacts, cost, and reliability. *Eversource Cambridge-Somerville* at 37-38; *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 16-02/D.P.U. 16-77, at 30 (2018) (“*Needham-West Roxbury*”). 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 route selection process. *Eversource Cambridge-Somerville* at 37-38; *Needham-West Roxbury* at 30.

2. New Substation and New Tap Station Site Selection

HMLP assessed options to address the identified reliability need by connecting Hingham to the grid with a third 115 kV transmission line that is geographically distinct from the existing two transmission lines. The process for the transmission line routing could not begin until the locations for a substation in Hingham and a tap station to connect to the Eversource transmission lines in Weymouth were identified. Several sites were assessed in Hingham for the New Substation, all in proximity to the existing Hobart I Substation, and in Weymouth for the new Tap Station along and in proximity to the Eversource transmission line right-of-way. The sites were carefully evaluated for a variety of factors to determine the preferred sites for both the substation and tap station. Once these sites were determined, then the routing analysis for the transmission line commenced. Exh. HE-1, at 4-1 to 4-2.

In the sections below, HMLP describes its comprehensive site selection process for the New Substation and New Tap Station.

a. Site Selection – New Substation

In order to maximize reliability, HMLP focused on selecting a site for the substation in proximity to the existing Hobart I Substation in Hingham. This proximity would allow for the two substations to be connected in a ring-bus configuration, where one substation could back feed the other.²⁴ Exh. HE-1, at 4-7.

HMLP identified ten (10) town-owned parcels (in addition to the Cushing Street site) for consideration for a proposed New Substation. An open-air substation requires approximately 1 to 1.5 acres of land, while an enclosed substation requires as little as 15,000 square feet, but preferably a minimum of 20,000 square feet (approximately ½ acre). *Id.*

HMLP performed a desktop analysis of the ten municipally-owned properties²⁵ and determined that none of the parcels (or combination of adjacent parcels) were sufficiently large

²⁴ Although not in close proximity to the Hobart I Substation, HMLP did assess a site at 308 Cushing Street, but, that site was eliminated due to high costs associated with distribution system integration and limited reliability benefits. Exh. EFSB-RS-1, *citing* Exh. EFSB-PA-1.

²⁵ HMLP's desktop analysis focused on municipally-owned sites because HMLP faces certain obstacles with respect to acquiring privately-owned property. HMLP does not have legal authority to purchase privately-owned property on its own, so, in order to obtain custody and control of such property, the Select Board first would need to be authorized by a Town Meeting vote to acquire land for HMLP's purposes, and, then, depending on the costs of a privately-owned site (notwithstanding the scarcity of land available for development in Hingham), the purchase would likely need to be financed, which also would require Town Meeting approval.

to accommodate an open-air substation, so the analysis proceeded to identify areas that could accommodate an enclosed substation. *Id.*

The initial desktop analysis identified a few issues that required further consideration: (1) all sites other than the Hingham Transfer Station site were less than one acre, and many less than ½ acre; and (2) wetland resource areas further constrained most sites. Moreover, given that most sites were too small, the option of combining sites was included in the analysis. *Id.*

The desktop analysis identified wetland resource areas as potentially significant constraints to development at the parcels analyzed. In order to develop a more accurate picture of the impact of the wetland resource areas to the potential development of the parcels, a Tighe & Bond wetland scientist conducted a field delineation of wetland resource areas to identify the limits of these resource areas. The locations of the wetland resource areas as delineated in the field were then incorporated into the maps, and the jurisdictional buffer zones to the wetland resource areas were added. Exh. HE-1, at 4-9 to 4-10.

HMLP also consulted with the Senior Planner for the Hingham Conservation Commission, and was informed that Conservation Commission approval for any work within the inner 50-foot buffer zone to a wetland resource area, particularly if the buffer zone is previously undeveloped, would be extremely challenging.²⁶ The Senior Planner's view was later confirmed at a December 14, 2020 meeting with the Town's Department heads and a December 21, 2020 informal meeting with the Conservation Commission. *Id.*

HMLP proceeded to develop its full site analysis which incorporated the desktop analysis, field delineation, and feedback from various Town officials, including the Conservation Commission. The full site analysis included 10 municipally-owned parcels near the Hobart I Substation. For each identified parcel, the analysis evaluated information with respect to total parcel size, site constraints, particularly with respect to wetland resource areas, and usable area. For eight of the 10 parcels, it was determined that due to the presence of wetland resource areas and buffer zones, there was not adequate area for an enclosed substation. Exh. HE-1, at 4-10 to 4-12.

²⁶ The Hingham Conservation Commission regulates the buffer zone as a "no touch" resource area through the Town of Hingham Wetlands Protection Bylaw (General Bylaws of the Town of Hingham, Article 22). Exh. HE-1, at 4-7, n.22.

HMLP initially identified a parcel at 0 Hobart Street as its preferred site for the New Substation but based on input from neighbors with significant concerns regarding the use of this property and its proximity to residences, additional analysis of the transfer station parcel was conducted. Exh. HE-1, at 4-11 to 4-12.

HMLP initially was advised that there was no land available for a substation at the transfer station. However, after receiving negative public input on the use of the parcel at 0 Hobart Street, HMLP (1) reevaluated potential options within the transfer station parcel, and (2) was encouraged by the Hingham Select Board and Advisory Committee in the first quarter of 2021 to revisit the transfer station property. An approximately ½-acre area of undeveloped land was later identified at the northeastern corner of the transfer station parcel, adjacent to the exit road. This area has adequate capacity for the proposed New Substation and, importantly, the New Substation would not have a significant impact on transfer station operations. *Id.*

Based on the foregoing, HMLP selected the identified area in the northeastern corner of the transfer station parcel as its proposed site for the New Substation.

In sum, HMLP undertook a reasonable site selection process for the New Substation in Hingham. HMLP's process considered a wide range of sites, incorporated data with respect to total parcel size, site constraints, particularly with respect to wetland resource areas, and usable area. Importantly, the selection process also incorporated and valued feedback from affected residents and public officials.

Accordingly, based on the foregoing, HMLP has proposed a site for the New Substation in Hingham at a location that minimizes costs and environmental impacts while ensuring a reliable energy supply.

b. Site Selection – New Tap Station

After determining that Option 2, an underground transmission line from a Point of Interconnection on Eversource circuit 478-502 in Weymouth, was superior to other alternatives with respect to addressing HMLP's reliability need, HMLP began the process of identifying sites where it might interconnect to Eversource's transmission lines in Weymouth.

HMLP's assessment of potential tap sites focused on properties within and adjacent to the existing Eversource electric transmission ROW. Five (5) lots in proximity to the intersection of the transmission line ROW and Broad Street were initially assessed. HMLP also performed a

comprehensive assessment of an additional ten (10) parcels along the ROW in Weymouth. Exh. HE-1, at 4-12.

The five sites near the intersection of the transmission ROW and Broad Street were: three parcels north of Broad Street (one owned by Eversource and two owned by NGRID), and two lots south of Broad Street owned by Electros witch which are presently used for parking. *Id.*

HMLP reached out to Electros witch and learned that its lots were not available, so HMLP focused its desktop analysis on the three utility lots north of Broad Street. The desktop analysis determined that one of the NGRID lots was too small and that both NGRID properties were significantly constrained by wetland resource areas, leaving the Eversource-owned property, Parcel 20-220-1, an 11.6-acre parcel, as having adequate unconstrained area for a new tap station within an existing utility ROW. Exh. HE-1, at 4-13.

HMLP also assessed ten (10) additional properties within the ROW bounded by the Weymouth Fore River to the north and Route 53 to the south in order to confirm there was not a better tap station site than the Eversource parcel. HMLP's analysis revealed that the majority of these parcels were heavily constrained by wetland resource areas. Moreover, one parcel was protected open space. And, while four parcels that are privately owned at the southern end of the study area have adequate space, any interconnection at these lots would increase the length of the new transmission by one mile within roadways and/or require wetland resource area crossings. *Id.*

The Eversource parcel (Parcel 20-220-1) was determined to be the preferred site for the proposed tap station for the following reasons: its proximity to the electric transmission lines; the availability of land that is less constrained by environmental resource areas; its current use as electric transmission infrastructure; and its closer proximity to the proposed New Substation in Hingham. The proximity of the Eversource parcel to the New Substation site relative to other identified parcels both reduces Project costs by shortening the length of transmission lines needed for the interconnection and generally reduces impacts to the community that are associated with construction in public ways. Furthermore, the New Tap Station location on the Eversource ROW has no close residences or sensitive abutters. *Id.*

Based on the foregoing, HMLP selected Eversource Parcel 20-220-1 as the proposed site for the New Tap Station.

In sum, HMLP undertook a reasonable site selection process for the New Tap Station in Weymouth. HMLP's process considered a wide range of sites, incorporated data with respect to total parcel size, site constraints, particularly with respect to wetland resources, nearby residences and usable area.

Accordingly, based on the foregoing, HMLP has proposed a site for the New Tap Station in Weymouth at a location that minimizes costs and environmental impacts while ensuring a reliable energy supply.

3. Route Selection

a. Overview of Routing Analysis Objectives and Methodology

HMLP's employed a methodology for siting the proposed new electric transmission line, referred to as a "routing analysis," which is an adaptive and iterative approach to identify and evaluate possible routes for the proposed new transmission line between the proposed New Substation and proposed New Tap Station. The goal of the routing analysis was to identify the Preferred Route for the Project that best balances minimization of environmental impacts (including developed and natural environment impacts and constructability constraints), cost and reliability. The routing analysis also identified a Noticed Alternative Route that provides a geographically distinct alternative to the Project, while also attempting to strike a balance of the aforementioned factors. Exh. HE-1, at 4-2.

The specific objectives of the routing analysis included: (1) compliance with all applicable statutory requirements, regulations and state and federal siting agency policies; (2) achieving a reliable, operable and cost-effective solution; (3) maximizing the reasonable, practical and feasible use of existing linear corridors (*e.g.*, transmission line, highway, railroad, or pipeline ROWs); (4) minimizing the need to acquire property rights; and (5) maximizing the potential for direct routing options over circuitous routes. *Id.*

After HMLP identified preferred sites for the New Substation and New Tap Station, HMLP's routing analysis consisted of the following steps:

- **Identification of Project Study Area (Step 1)**: Identified a geographic area extending between the proposed Tap Station in Weymouth and the proposed New Substation in Hingham for purposes of commencing the routing analysis.

- Development of Universe of Routes (Step 2): Identified numerous routing options and associated variations in the Project Study Area to develop a set of potential routes.
- Identification of Potential Candidate Routes (Step 3): Identified and described the viable routes from the Universe of Routes (collectively referred to herein as “Candidate Routes”) that met the need for the Project and were consistent with the objectives of HMLP’s routing analysis.
- Candidate Route Analysis (Step 4): Compared the potential for natural environment and built environment impacts and technical constructability constraints along the Candidate Routes.
- Cost Analysis (Step 5): Compared the estimated costs of the Candidate Routes.
- Reliability Analysis (Step 6): Compared the reliability of the Candidate Routes.
- Selection of Routes (Step 7): Evaluated the results of the above analyses and identified a Preferred Route and a Noticed Alternative Route that best balance reliability, minimization of environmental impacts, constructability constraints and cost.

Exh. HE-1, at 4-2 to 4-3.

Informing all of these steps was the broad and comprehensive outreach effort conducted by HMLP. HMLP representatives met with state and municipal officials, residents, business owners and other stakeholders to discuss the substation and tap station sites, as well as the Universe of Routes under consideration for the New Line, and to obtain input on these siting and routing options. This process began in 2020 and, as of the date of this brief, has included 38 meetings.²⁷ Exhs. HE-1, at 4-3 to 4-5; EFSB-G-5. As discussed herein, these outreach meetings were critical to HMLP’s routing analysis and selection process.

HMLP provides information below regarding how each step of its routing analysis was implemented and taken together, how HMLP 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.

b. Identification of Project Study Area (Step 1):

HMLP reviewed the region between the proposed New Tap Station in Weymouth and the proposed New Substation in Hingham and demarcated a geographic “Project Study Area,” within

²⁷ As of November 13, 2024, the date the Petition to Construct was filed with the Siting Board, HMLP had participated in 32 meetings. Exh. HE-1, at 4-3. HMLP has participated in six outreach meetings in 2025. Exh. EFSB-G-5.

which to concentrate the investigation of potential routes. Exh. HE-1, at 4-16, 4-18 (Figure 4-3). The western boundary of the Project Study Area was the proposed interconnection with the HMLP transmission line at Broad Street in Weymouth. The eastern boundary of the Project Study Area is the proposed substation site, near the existing Hobart I Substation off Hobart Street in Hingham. The northern boundary of the Project Study Area is the MBTA railway, and the southern boundary of the Project Study Area is Lake Street (Whitmans Pond) in Weymouth and High Street in Hingham. The Project Study area includes primarily residential areas and commercial corridors, as well as several wetlands resource areas and protected open space (land protected by Article 97), including Connell Rink and Pool, Central Park, House Rock Park and Hoffman Park in Weymouth and Cranberry Pond Conservation area, Brewer Reservation and More-Brewer Park in Hingham. The Project Study Area also includes the Weymouth Back River ACEC. Exh. HE-1, at 4-16.

c. Development of Universe of Routes (Step 2):

Based on its routing objectives and in consideration of stakeholder input (including from the public and Town of Weymouth and Town of Hingham officials), HMLP reviewed USGS maps, MassGIS data and aerial photography and completed field reconnaissance to develop the Universe of Routes that could support a new underground line between the proposed Weymouth tap station and a new substation in Hingham. The Universe of Routes comprised the more direct routes between the two end points within the Project Study Area, and included the following seven routes:

1. Broad Street Route - This route heads east on Broad Street, until the intersection with Commercial Street. The route continues east on High Street, turns north on French Street, then finally east on Hobart Street.
2. Broad Street Variation Route - This route heads east on Broad Street, until the intersection with Commercial Street. The route turns north on Commercial Street, then turns east on Suwanee Road which transitions to Volusia Road. The route turns east on Manatee Road, north on French Street, and finally east on Hobart Street.
3. Commercial Street Route - This route heads east on Broad Street, turns north on Essex Street, turns east onto Commercial Street, and continues down Commercial Street until the intersection with Broad Street. The route then continues east on Broad Street, north on French Street and finally east on Hobart Street.

4. Lake Street Route - This route heads east on Broad Street, then southeast on Spring Street, which transitions to Essex Street. The route then travels east on Lake Street before turning south on Pleasant Street and turns north on Water Street. The route continues east on High Street, turns north on French Street, then finally east on Hobart Street.
5. Lake Street Variation Route - This route heads east on Broad Street, then southeast on Spring Street, which transitions to Essex Street. The route then travels east on Lake Street before turning north onto Shawmut Street then east on Broad Street. The route continues east on High Street, turns north on French Street, then finally east on Hobart Street.
6. MBTA Right of Way (MBTA ROW) - This route heads west on Roosevelt Road, north on Wilson Ave, and continues east on Commercial Street. The route turns northeast on Church Street, then northeast on Green Street. The route then travels the Greenbush Commuter Rail ROW until Fort Hill Street. The route then travels south on French Street and finally east on Hobart Street.
7. MBTA Right of Way Variation (MBTA ROW Variation) - This route heads east on Broad Street, north on Essex Street, east onto Commercial Street, northeast onto Church Street, and northeast onto Green Street. The route then travels the Greenbush Commuter Rail ROW until Fort Hill Street. The route then travels south on French Street and finally east on Hobart Street.

Exh. HE-1, at 4-16 to 4-17, and 4-19 (Figure 4-4) to 4-20.

d. Identification of Potential Candidate Routes (Step 3):

These seven route options were then advanced to the screening stage. The initial screening process included reviewing publicly available data to consider existing abutting land uses and the presence of natural resources such as wetlands, waterways and rare species habitats. HMLP also reviewed the routes for constructability constraints, such as difficult bends or current underground utility congestion. Importantly, HMLP also considered information received from meetings with municipal officials and staff. Exh. HE-1, at 4-21.

Based on this screening, two route options -- the MBTA ROW and the MBTA ROW Variation - were eliminated from further consideration as they were found to be unsuitable for transmission line development based on constructability and electrical system operations and maintenance concerns. Among other reasons, the two route options were eliminated because: limited area is available in the MBTA ROW for installation and construction of manholes and

duct banks²⁸ and much of the ROW is narrow with limited space between rails and other existing infrastructure. Moreover, the Project would not be able to comply with the MBTA's August 2014 Railroad Operations Directorate; and construction hours likely would be limited to the hours of 11:00 PM to 5:00 AM (or potentially even fewer hours) when the trains are not running, which would add months and significant costs to the project. Exh. HE-1, at 4-21 to 4-22.

e. Candidate Route Analysis (Step 4):

The five remaining Candidate Routes – (1) Broad Street; (2) Broad Street Variation; (3) Commercial Street; (4) Lake Street; and (5) Lake Street Variation -- were then analyzed and ranked.

HMLP evaluated and compared the Candidate Routes using a set of 14 criteria. The criteria were developed to reflect the defined routing objectives, public feedback, and environmental and constructability factors. The scoring criteria were grouped into the following three subcategories:

- ***Natural Environment Criteria*** compare existing conditions of, and potential impacts to, the natural environment.

The five (5) natural environmental criteria included in the analysis were: (1) Permanently Protected Open Space/Potential Article 97; (2) Public Shade Trees; (3) Wetland Resources; (4) Outstanding Resource Waters (ORWs) or Areas of Critical Environmental Concern (ACECs); and (5) Potential for Subsurface Soil Contamination.

- ***Technical Criteria*** compare route location and technical design factors that may add complexity to construction.

The four (4) technical criteria were: (1) Existing Road and Right of Way Width; (2) Existing Utility Density; (3) Hard Angles, and (4) High Impact Crossings.

- ***Built Environment Criteria*** compare existing conditions of, and potential impacts to, development and surrounding population.

The five (5) built environment criteria were: (1) Adjacent Land Uses – Residential; (2) Adjacent Land Uses – Commercial and Industrial; (3) Sensitive Receptors; (4) Historic and Archaeological Resources; and (5) Traffic Impacts.

²⁸ The total length of the MBTA ROW route option is 3.7 miles, and the length of the MBTA ROW Variation route option is 4.1 miles. For both of these options, the MBTA portion of the route is 2 miles. Exh. HE-1, at 4-20.

HMLP assigned a weight to each individual criterion. The weights were based on an assessment of the potential for temporary and permanent impacts and reflect stakeholder input, including both municipality and public feedback. The weighting scale ranges from 1 to 5, with 1 being the lowest weight and 5 being the highest weight (indicating greatest importance) that could be assigned to a particular criterion. For the routing analysis, lower total weighted ratio scores are better ranked. Exh. HE-1, at 4-22 to 4-23.

The lowest ratio score would equate to the route with the lowest potential for impact. For each criterion, the ratio score was then multiplied by its assigned weight to produce a weighted score that scaled the criterion by its relative importance. The ratio and weighted scores for each criterion were added to arrive at “total ratio scores” and “total weighted scores.” The total weighted scores were then sorted in order from low to high, to identify a given Candidate Route’s “rank.” The lowest weighted score would equate to the lowest potential for impact with emphasis on certain criteria as previously described above. The rankings developed in this routing analysis are based on the total weighted scores. Exh. HE-1, at 4-23.

After the Candidate Routes were ranked with respect to the above criteria, they were compared with respect to cost (Step 5, below) and reliability (Step 6, below).

In the sections that follow, HMLP provides details on each of the 14 criteria, how each criterion was weighted, the information and data that were obtained for the Candidate Routes for each criterion, and how the criterion was applied to the Candidate Routes.

Natural Environment Criteria:

(1) Permanently Protected Open Space/Potential Article 97

Land defined as open space may be protected by Article 97 of Amendments to the Massachusetts Constitution, which requires, in part, that certain land or easements taken or acquired for natural resource purposes shall not be used for other purposes unless the Massachusetts Legislature approves the change by a two-thirds vote. The ratio score for this criterion was calculated by dividing the total length of route segments adjacent to Article 97 lands along each Candidate Route by the greatest total length among all the Candidate Routes. HMLP assigned a weight of 4 (on a scale of 1 to 5) to this criterion. Exh. HE-1, at 4-25.

(2) Public Shade Trees

In consideration of the potential for cutting or affecting shade trees along the Candidate Routes during the construction process, public shade trees within the public way, as defined by G.L. c. 87, were counted along the Candidate Routes. A field reconnaissance was conducted to count all trees within the public way along the route regardless of diameter at breast height or distance from proposed trench. The scoring ratio for this criterion was calculated based on the total number of shade trees counted for each Candidate Route divided by the highest number of shade trees found along all candidate routes. HMLP assigned a weight of 4 to the Public Shade Trees criterion. *Id.*

(3) Wetland Resources

The evaluation of wetland resources incorporates river crossings and wetland resource area crossings (including the Riverfront Area and Bordering Land Subject to Flooding (“BLSF”)). The evaluation of the river crossing criterion involved reviewing MassGIS databases and conducting field reconnaissance to determine the number of rivers or waterbodies each Candidate Route would cross. In evaluating Candidate Routes, river crossing evaluations required consideration of crossing methods, including open trenching and trenchless methods, as well as options for available road bridge crossings. The evaluation of wetland resource area crossings involved reviewing MassGIS and conducting field reconnaissance to determine the number of state-regulated resource areas, as defined in the Massachusetts Wetlands Protection Act regulations (310 CMR 10.00 *et seq.*), including Bordering Vegetated Wetland (“BVW”) and River Bank and their associated 100-foot buffers, BLSF (100-year floodplain) and 200-foot Riverfront Area, that the proposed route would cross. The evaluation of Chapter 91 jurisdictional areas involved reviewing MassGIS data layers developed under G.L. c. 91. The ratio score was calculated by dividing the total number of wetland resource areas for each Candidate Route by the highest number of wetland resource areas found along all Candidate Routes. This criterion was assigned a weight of 4. Exh. HE-1, at 4-27.

(4) Outstanding Resource Waters or Areas of Critical Environmental Concern

The evaluation of ORWs and ACECs includes water body crossings and qualified land crossings. ACECs are places that receive special recognition because of the quality, uniqueness and significance of their natural and cultural resources. ORWs are waters designated for protection under 314 CMR 4.06 and include Class A Public Water Supplies and their tributaries, certain wetlands and other waters as determined by the Massachusetts Department of

Environmental Protection (“MassDEP”). This criterion was assigned a weight of 4. Exh. HE-1, at 4-27.

(5) Potential to Encounter Subsurface Contamination

Trench excavation in urban and built environment areas poses a potential to encounter contaminated soil and groundwater that can affect worker safety and requires special soil and water management and disposal procedures under federal and state hazardous material regulations. Releases of oil and/or hazardous material to the environment are required to be reported to the MassDEP’s Bureau of Waste Site Cleanup in accordance with G.L. c. 21E and procedures established in the Massachusetts Contingency Plan (“MCP”) (310 CMR 40.0000). MassDEP categorizes Oil or Hazardous Material (“OHM”) sites based on the level of contamination present and the level of remediation completed. HMLP’s route evaluation considered several groups of OHM sites that may have the potential to affect the Project based on their current status. Exh. HE-1, at 4-27.

An online search of the MassDEP Waste Site List in combination with a review of MassGIS databases was performed to determine the potential for each Candidate Route to encounter subsurface contamination from historical releases or former land development practices. The MassDEP online database was used to collect information on listed MassDEP sites within 500 feet of the Candidate Routes with a release tracking number (“RTN”). *Id.*

Sites included in the search are: Active Tier Classified Tier I and Tier II sites, Activity and Use Limitation (“AUL”) sites closed with ongoing maintenance conditions, Utility Related Abatement Measure (“URAM”) sites and Class C temporary solution sites. Exh. HE-1, at 4-28.

Each Candidate Route was assessed with regard to the number of these active sites located on property parcels within 500 feet of the Candidate Route. The raw scores for this criterion were determined based on the total number of these mapped active sites and the ratio score was calculated by dividing the total found for each individual route by the highest number of these sites found along the five Candidate Routes. This criterion was assigned a weight of 3. Exh. HE-1, at 4-27 to 4-28.

Technical Criteria

(1) Existing Road and Right of Way Width

The existing roadway width determines the available workspace above grade to perform the primary construction activities -- divert traffic, set up equipment, excavate trench and manhole areas, install pipe, backfill the trench and restore paving. A narrow roadway width of less than or equal to 30 feet generally has a greater probability of affecting traffic flow due to reduced lane widths and/or full closure of one or both lanes in the roadway. Road widths were estimated along the Candidate Routes by road-segment length using MassGIS maps and field reconnaissance. The linear lengths of narrow road segments were recorded. The ratio score was calculated by dividing the total length of narrow road segment determined for each Candidate Route by the highest total length of all candidate routes. HMLP assigned this criterion a weight of 4. Exh. HE-1, at 4-29.

(2) Existing Utility Density

The number of existing underground pipelines, utility conduits and related features such as manholes and catch basins, and the depth of these facilities in the roadway, affect the available space below grade to physically install the proposed transmission conduits and manhole system. Extensive utility density can significantly constrain available space, complicate the construction process, and increase construction duration, traffic disruption and costs. Utility density was assessed along the Candidate Routes using data compiled from available records as provided by utility companies, including HMLP and NGRID, Town of Weymouth GIS data, and Google Earth. Utility density was only assessed horizontally, as vertical data was not available at the time of analysis. Exh. HE-1, at 4-29.

The score for Existing Utility Density was calculated based on Usable Corridor Width, which assessed the maximum available underground space horizontally within each Candidate Route; Utility Crossings, which assesses utilities that perpendicularly intersect each Candidate Route, regardless of type, size or depth; and Heat Generating Sources, which include electric utilities perpendicularly intersecting each Candidate Route, regardless of size or depth. The route options were first separately scored for each of the three subcriteria. A weighted ratio was then assigned to the calculated score based on its relative significance to the overall estimate of utility density. The weighted scores for all factors were then added up for each route to develop a single “utility density” score for the route. This criterion was assigned a weight of 5. Exh. HE-1, at 4-29.

(3) Hard Angles

Hard Angles were estimated along Candidate Routes and were defined as a turn in the route that exceeds 30 degrees. Additionally, an S curve, or two immediate turns in the route are included in this definition. HMLP assigned this criterion a weight of 4. Exh. HE-1, at 4-30.

(4) High Impact Crossings

High impact crossings are the more significant transportation corridor crossings where, because of the amount of traffic and traffic patterns, greater consideration of alternative construction methods such as HDD is warranted. High impact crossings were defined as a Candidate Route crossing over or under a bridge, railroad or highway. This includes trenchless crossing methods where the traditional open-cut trench method is infeasible, so alternative methods such as jack-and-bore or horizontal directional drilling are required. The ratio score for this criterion was calculated based on the total length of high impact crossings found along each individual route divided by the highest length of high impact crossings found along the five Candidate Routes. This criterion was assigned a weight of 5. Exh. HE-1, at 4-30.

Built Environment Criteria

(1) Adjacent Land Uses – Residential

Residents along a Candidate Route could be subject to temporary access and traffic disruption, street closings, sound level increases and dust during construction. This criterion assesses the density of residences (single-family, multi-family, condominiums and mixed commercial and residential) on both sides of roadways along each Candidate Route. The number of residential structures along street segments was counted using MassGIS mapping, parcel data, Google Street View imagery, aerial photography and field verification. The “unit” attribute information included in the parcel layer was used to assign a unit count to each identified residential structure. A ratio score was calculated based on the total number of individual residences determined for each route divided by the highest number of residences found along the five Candidate Routes. This criterion was assigned a weight of 5. Exh. HE-1, at 4-33.

(2) Adjacent Land Use – Commercial and Industrial

Similar to residences, commercial and industrial businesses along a Candidate Route could be affected by temporary impacts during construction such as access and traffic disruption, street closings, sound level increases and potential dust. This criterion assessed the density of

commercial and industrial businesses along each route by counting the number of buildings adjacent to the route roadway. The number of commercial/industrial buildings along the route were counted using MassGIS mapping, parcel data, aerial photography, Google Street View imagery and/or field verification to determine the number of units along each route. The ratio score for this criterion was determined based on the total number of individual commercial/industrial building units determined for each route divided by the highest number of commercial/industrial building units found along the Candidate Routes. This criterion was assigned a weight of 4. Exh. HE-1, at 4-33.

(3) Sensitive Receptors

Sensitive receptors could be affected by temporary construction impacts such as access and traffic disruption, road closings, sound level increases and potential dust. The number of sensitive receptors along the route were counted using MassGIS databases, aerial photography, Internet searches, Google Street View and field verification. Consistent with similar petitions filed with the EFSB, the following sensitive receptors were assessed for each Candidate Route: police and fire stations, hospitals, schools, nursing homes/elder care (long term care), funeral homes, places of worship, daycares, and parks and recreational facilities. Police and fire stations, hospitals, schools, long-term care and parks and recreation facilities were determined using applicable MassGIS datalayers. Funeral homes and places of worship were identified using the latest available aerial imagery, internet searches and Google Street View. Daycare facilities were identified using the Massachusetts Early Education Search tool available through the Executive Office of Education's website. A ratio score was calculated based on the total number of sensitive receptors determined for each route divided by the highest number of sensitive receptors found along the Candidate Routes. HMLP assigned this criterion a weight of 5. Exh. HE-1, at 4-33.

(4) Historic and Archeological Resources

Historic and archeological resources could be affected by temporary construction impacts such as access and traffic disruption, earth movement, street closings, sound level increases and dust. Historical inventory was evaluated using the Massachusetts Cultural Resources Inventory System ("MACRIS") MassGIS datalayer maintained by the Massachusetts Historical Commission ("MHC"). These data include local and state listed historic structures, local historic districts and individual National Register-listed structures and districts. The number of cultural

resources was derived from the total number of historic sites and the number of historic districts or areas along each Candidate Route. MHC Inventory points were tallied within parcels that were directly adjacent to the property boundary of the public roadways along each Candidate Route. MHC Inventory Areas were quantified by tallying parcels within each area that are directly adjacent to the property boundary of the public roadway along each Candidate Route, excluding parcels that also contained historic sites, to avoid double counting. The ratio score was calculated by dividing the total number of cultural resources determined for each Candidate Route by the highest number of cultural resources found among all the Candidate Routes. This criterion was assigned a weight of 1. Exh. HE-1, at 4-34.

(5) Traffic Impacts

The potential for in-street trench construction to cause traffic-related congestion was evaluated for each Candidate Route. The evaluation was based on information obtained from MassGIS, aerial photography, relevant traffic and signal data from municipal agencies, field reconnaissance and familiarity and experience with the traffic flow and operations in the general area. Impacts can be caused by several factors, some of which can be anticipated and quantified (such as the effect of reducing travel lanes, eliminating a bus stop or closure of a sidewalk) and some factors that are temporary/unanticipated, such as weather conditions, crashes, other construction activity/detours in the area, and congestion on other area highways and routes that may reroute regional traffic onto local roadways. The analysis provides a relative comparison of the different routes using factors that are directly attributable to the congestion that could be caused by the construction activity. Presenting the review in the form of a relative comparison between routes using only pertinent factors removes the effect of temporary/unanticipated factors from the route selection process. Exh. HE-1, at 4-34.

Specifically, the typical multi-modal factors that were employed in the review include functional classification of the roadways, publicly-available roadway and intersection traffic volumes, roadway cross-sectional elements (such as width, number of travel lanes, on-street parking, shoulders, sidewalks and the types of uses they serve), bus routes and ridership data from the MBTA,²⁹ the number of major and minor traffic signals along the route, need to maintain loading/unloading areas for business deliveries and whether construction on a roadway

²⁹ See Exh-RR-Preble-1.

segment would cause just lane closures or require detours via other streets. HMLP collected information from sources, including the MBTA and MassDOT–Highway Division, and conducted field reconnaissance along each route to observe the general conditions along the routes. This information was evaluated to determine the potential for traffic congestion and parking and public transportation impacts for each route. Information collected included existing traffic volumes (where available), classification of major commuting routes, roadway width, number of travel lanes, existence of parking lanes and the presence of public transportation (bus routes or MBTA railway stations). More specifically, the following review factors were used by HMLP to evaluate the potential for traffic and other transportation impacts during construction: (1) Number of Lanes; (2) Number of Signalized Intersections; (3) Sidewalks, Breakdown Lanes, Roadside Parking; (4) One-Way Streets; (5) Public Transportation Routes: and (6) Commuter Routes. Exh. HE-1, at 4-34 to 4-36.

The route options were first separately scored for each of the review factors. A weighted ratio was then assigned to the calculated factor score based on its relative significance to the overall estimate of congestion potential. The weighted scores for all factors were then added up for each route to develop a single transportation impacts score for the route. This criterion was assigned a weight of 4. Exh. HE-1, at 4-36.

A summary of the routing criteria and the weights assigned to the routing criteria is set out below:

Routing Analysis Criteria Weights Summary

		Assigned
Criterion		Weight
Natural Environment	Permanently Protected Open Space / Article 97 Lands	4
	Public Shade Trees	4
	Wetland Resource Areas/River Crossings	4
	ORW/ACEC Crossings	4
	Potential to Encounter Subsurface Contamination	3
Technical/ Constructability	Existing Road/ROW Width	4
	Existing Utility Density	5
	Hard Angles (>30 degrees)	4
	High Impact/Trenchless Crossings	5
Built Environment	Adjacent Residential Land Uses	5
	Adjacent Commercial and/or Industrial Land Uses	4
	Sensitive Receptors	5
	Historical and Archaeological Resources	1
	Traffic Impacts	4

Using the methodology described above, HMLP ranked each of the Candidate Routes based on its total weighted score. Again, the lowest total weighted score equates to the lowest potential for impact. As set forth below, the Lake Street Route, with a total weighted score of 40.2, was ranked first. The Broad Street Route, with a slightly higher total weighted score of 40.5, was ranked second.

Rank by Total Weighted Scores

Candidate Route	Route Length (miles)	Total Weighted Score	Rank
Broad Street	3.2	40.5	2
Broad Street Variation	3.1	44.3	5
Commercial Street	4.3	42.2	4
Lake Street	3.7	40.2	1
Lake Street Variation	3.6	41.5	3

Exh. HE-1, at 4-38 (Table 4-8).

f. Cost Analysis (Step 5):

HMLP evaluated the order of magnitude estimates for total costs for each Candidate Route in order to rank the various Candidate Routes. Many factors can affect the actual cost of a transmission line project, including cost and availability of materials and equipment, labor, the presence of contaminated soils and the potential for work hour restrictions imposed by the local community or other entities. Subsurface conditions, such as the type and depth of soil and rock that must be excavated in order to install the duct bank, can also significantly affect project cost. Moreover, the total cost is influenced by the density of underground utilities.

HMLP determined that the estimated cost per mile of the proposed underground New Line is \$14.9 Million. Because the estimated cost of the New Tap Station and the estimated cost of the New Substation are the same for all routing options, only the cost of the New Line was calculated by HMLP. The summary of cost estimates provided below indicates that the Broad Street Variation (with an estimated cost of \$46.2 Million) has the lowest projected cost overall. The next lowest projected Candidate Route cost is Broad Street. The Broad Street Route, with a slightly higher estimated overall cost of \$47.7 Million, was ranked second.

Candidate Route Cost Estimates

Candidate Route	Project Cost	Rank	Percent Different Than Lowest Cost Option
Broad Street	\$47.7M	2	+3.2
Broad Street Variation	\$46.2M	1	0
Commercial Street	\$64M	5	+38.5
Lake Street	\$55.1M	4	+19.3
Lake Street Variation	\$53.6M	3	+16.1

Exh. EFSB-RS-2 (Table 4-9 Corrected).

g. Reliability Analysis (Step 6):

HMLP considered whether there was a difference in the Candidate Routes with regard to reliability. Where all the Candidate Routes are underground and have relatively small differences in design, HMLP determined there would not be any substantial difference in the level of reliability among the five Candidate Routes. Exh. HE-1, at 4-38.

h. Selection of Routes (Step 7):

Consistent with Siting Board requirements, HMLP balanced considerations of environmental impacts, reliability, and cost in identifying and selecting routes to meet the identified need for the Project. Moreover, HMLP received and incorporated substantial feedback from various town agencies in its routing analysis.

The table below provides a comprehensive summary of all Candidate Routes and their relative rankings with respect to the natural environment, technical constructability, built environment, overall score and cost.

Ranking Summary of Candidate Routes

Candidate Route	Natural Environment	Technical Constructability	Built Environment	Total	Cost
Broad Street	13.4	9.9	17.1	40.5	\$47.7M
Broad Street Variation	16.2	11.2	17.0	44.3	\$46.2M
Commercial Street	15.4	15.5	11.3	42.2	\$64M
Lake Street	13.4	15.1	11.8	40.2	\$55.1M
Lake Street Variation	14.0	14.6	12.8	41.5	\$53.6M

The Lake Street Route received the lowest overall scoring rank. The Broad Street Route, with a slightly higher total weighted score, was ranked second. As part of its comprehensive outreach efforts, HMLP had extensive consultations with Town of Weymouth and Town of Hingham officials and held multiple open houses during the routing analysis. Among other feedback, Town of Weymouth officials indicated that the timing of HMLP's Project was important because the Town has plans to construct street improvements along Lake Street prior to the construction of the proposed New Line. In addition, there are more residences along Lake Street, including Environmental Justice housing units directly adjacent to the Lake Street Route and Lake Street Variation Route.

With respect to the Broad Street Route, the Town of Weymouth has plans to redevelop Jackson Square. Feedback received at the Open Houses indicated a concern regarding impacts to traffic along the Broad Street Route during construction. Where the Broad Street Route and Lake Street Route ranked very close in score, HMLP determined that the Broad Street Route was its Preferred Route and the Lake Street Route was the Noticed Alternative Route advanced for further analysis. Moreover, where the Weymouth Conservation Agent and Herring Run Warden asked HMLP to look at a variation of the Lake Street Route near Water Street which avoided the Herring Run, HMLP carried both the Lake Street Route and Lake Street Variation Route forward for further analysis. While the Broad Street Route is the Preferred Route, HMLP is prepared to

move forward with either the Broad Street Route or the Lake Street Route (or its variation). Exh. HE-1, at 4-39 to 4-40.

i. Conclusion on Route Selection

In accordance with the Siting Board's standard of review, HMLP fairly and comprehensively assessed a wide array of potential routes and route variations within the bounds of an appropriately determined Project Study Area. Significantly, HMLP's route assessment benefited from significant and extensive input from a wide range of stakeholders. Moreover, the specific design of scoring and weighting methods for chosen criteria employed by HMLP in its routing analysis are consistent with route selection processes approved by the Siting Board in other proceedings. *Eversource Cambridge-Somerville* at 87; *Eversource Mid-Cape* at 48.

At the conclusion of this process, HMLP identified the top two routes (and one route variation) that best balance environmental impacts, costs and reliability and enable HMLP to meet its identified need. Specifically, the HMLP identified a preferred route and a noticed alternative route (as well as variation of the Noticed Alternative Route) with a significant measure of geographic diversity.

For the foregoing reasons, the Siting Board should find that (1) HMLP has 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; and (2) HMLP has identified at least two noticed sites or routes with a measure of geographic diversity.

4. Conclusion on Site Selection

As set forth in Section V.C.2.a, *supra*, HMLP has established that it has proposed a site for the New Substation in Hingham at a location that minimizes costs and environmental impacts while ensuring a reliable energy supply.

As set forth in Section V.C.2.b, *supra*, HMLP has established that it has proposed a site for the New Tap Station in Weymouth at a location that minimizes costs and environmental impacts while ensuring a reliable energy supply.

As set forth in Section V.C.3, *supra*, HMLP has established 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; and (2) the applicant must establish that it identified at least two noticed sites or routes with a measure of geographic diversity

As such, the Siting Board should approve the Company's site and route selection processes and the proposed sites and routes developed therefrom.

D. Comparison of the Preferred and Noticed Alternative Routes

1. Standard of Review

In implementing its statutory mandate to ensure a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost, 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. *Eversource Cambridge-Somerville* at 102; *Eversource Andrew-Dewar* at 44; *Eversource Sudbury-Hudson* at 78; *NSTAR Electric Company d/b/a Eversource Energy*, EFSB 15-04/D.P.U. 15-140/15-141 (2018), at 72 ("*Eversource Woburn-Wakefield*").

To evaluate the proposed facility, the Siting Board first determines whether the petitioner has provided sufficient information regarding environmental impacts and potential mitigation measures to enable the Siting Board to make such a determination. The Siting Board then examines the environmental impacts of the proposed facility and determines: (1) whether environmental impacts would be minimized; and (2) whether an appropriate balance would be achieved among conflicting environmental impacts as well as among environmental impacts, cost, and reliability. *Eversource Cambridge-Somerville* at 102-103; *Park City Wind* at 58; *Eversource Andrew-Dewar* at 44-45; *Eversource Mid-Cape* at 50-51; *NEP Beverly-Salem* at 41-42.

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 cost, environmental impact, and reliability of supply. *Eversource Andrew-Dewar* at 44; *Eversource Sudbury-Hudson* at 78; *Eversource Needham* at 32; *Eversource Woburn-Wakefield* at 72.

As set forth herein, HMLP conducted a comprehensive analysis of the environmental impacts, reliability, and costs of the Preferred and Noticed Alternative Route (and the Noticed Alternative Route Variation) and concluded that the Preferred Route is superior to the Noticed Alternative Route (and Noticed Alternative Route Variation) based upon a full consideration of reliability, costs, and environmental factors.

HMLP also conducted a comprehensive analysis of the environmental impacts of the New Substation and New Tap Station. (The costs of the New Substation and New Tap Station are discussed in Section III.D, *supra*.)

2. Overview of Preferred and Noticed Alternative Routes

a. Preferred Route

The total length of the Preferred Route, the Broad Street Route, is approximately 17,040 linear feet (about 3.2 miles) of which approximately 11,040 linear feet (2.1 miles) are in Weymouth and approximately 6,100 linear feet (1.1 miles) are in Hingham. This route exits the proposed New Substation at the transfer station site in Hingham and runs west on Hobart Street, turns south on French Street, then turns west on High Street and continues west into Weymouth on High Street which becomes Broad Street. Broad Street is followed for approximately 8,500 feet until ending at the New Tap Station Site at the Eversource ROW.³⁰

The Broad Street Route crosses Herring Run Brook and is in the vicinity of several major conservation areas, including the Ridgewood Crossing Conservation Area. Existing road widths range from 25 feet (French and Hobart Street) to 40 feet (Broad Street), with a medium existing utility density. There are eighteen MBTA bus stops along the MBTA Bus Route 222 which follows portions of Broad Street and High Street. The predominant adjacent land use is residential, with some commercial and industrial uses, one school, three places of worship, and parks and recreation facilities including Robert S. Hoffman Park and Connell Rink and Pool. Wetland resources in the vicinity of the Preferred Route include the 100-year floodplain, and Herring Run Brook. This route also crosses a portion of the Weymouth Back River ACEC. Work within wetland resource areas is within developed and previously disturbed areas. There are two

³⁰ The segments of the routes within Hingham are identical for the Preferred Route and Noticed Alternative Route. Exh. HE-1, at 5-1.

known sites with potential to encounter subsurface contamination near the Preferred Route. Exhs. HE-1, at 5-1 to 5-4 (Figures 5-1, 5-2, 5-3).

b. Noticed Alternative Route

The total length of the Noticed Alternative Route, the Lake Street Route, is approximately 19,600 linear feet (3.7 miles) of which approximately 13,500 linear feet (2.6 miles) are in Weymouth and approximately 6,100 linear feet (1.1 miles) are in Hingham. This route exits the proposed New Substation in Hingham and runs west on Hobart Street, then turns south on French Street and turns west on High Street. The route continues west into Weymouth continuing on High Street which becomes Broad Street. This route then turns south down Water Street, turning north on Pleasant Street, and travels west on Lake Street, and northwest on Essex Street, which transitions to Spring Street. The route turns west onto Broad Street and continues west on Broad Street to the New Tap Station site on Eversource's ROW in Weymouth. The Noticed Alternative Route is a combination of main and side streets and is relatively direct. As the Lake Street Route runs parallel to Herring Run, the Weymouth Conservation Agent and Herring Run Warden requested that HMLP consider a variation to the Noticed Alternative Route to avoid Water Street. HMLP added the Noticed Alternative Route Variation to follow Shawmut Street (rather than Water Street) to Broad Street. The predominant adjacent land use for the Noticed Alternative Route is residential, with some commercial and industrial uses and one school and one place of worship.

The Noticed Alternative Route crosses Herring Run Brook. There are two known sites along the Noticed Alternative Route that have potential for subsurface contamination. Protected open space is present along the route, including More-Brewer Park and Humphrey Field. The Noticed Alternative Route runs adjacent to Whitmans Pond, which is listed as an emergency surface water supply. This route also crosses a portion of the Weymouth Back River ACEC. The road widths range from 20 feet (Shawmut Street) to 40 feet (Broad Street). There are eleven MBTA bus stops along the Noticed Alternative Route. The overall existing utility density of the Lake Street route is slightly higher than the Preferred Route, having a medium-high density. Exh. HE-1, at 5-5 to 5-8, (Figures 5-4, 5-5, 5-6).

3. New Substation

As detailed in Section III.A.2, *supra*, the proposed New Substation would be constructed, owned and operated by HMLP and would be constructed on an approximately ½-acre area (approximately 24,000 square feet) of undeveloped land at the northeastern corner of the Hingham Transfer Station site, a 9.7-acre property owned by the Town of Hingham and located off Old Hobart Street in Hingham. The transfer station site has adequate capacity for the proposed New Substation, and construction and operation of the New Substation will not have a significant impact on the transfer station operations. Exh. HE-1, at 5-15.

The New Substation will include the following activities and equipment:

- Site clearing and grading within a defined limit of disturbance
- A retaining wall
- A stormwater management system
- Construction of a GIS substation within an enclosed structure
- Installation of fencing
- Installation of pad-mounted transformers
- Space for a future transformer and switchgear
- Space for roll-offs for use by the Town of Hingham Department of Public Works (“DPW”) as part of transfer station operations

Exh. HE-1, at 5-15.

Moreover, as noted in Section III.C.3, *supra*, on June 4, 2024, the Hingham Zoning Board of Appeals and Hingham Planning Board jointly voted to recommend conditions for the Select Board to consider in connection with their transfer of the custody and control of the New Substation parcel to HMLP.³¹ HMLP intends to comply with the Boards’ recommended conditions and supports these conditions being incorporated in the Siting Board’s Final Decision in these proceedings. Exh. HE-1, at 1-11.

As required by G.L. c. 164, § 69J, in the sections below, HMLP provides a full and accurate assessment of the environmental impacts and potential mitigation measures associated with construction and operation of the New Substation.

³¹ See Exhs. HE-1, Appendix 1-1, Exh. HE-2, Exhibit G.

c. Land Use Impacts

The transfer station site where the New Substation will be located is approximately 9.7 acres and is an active transfer station and capped landfill. The existing Hobart I Substation is located on a separate parcel at the northwest corner of the transfer station. The portion of land in the northeast corner of the transfer station site where the New Substation will be constructed is a forested embankment adjacent to the active transfer station operations that slopes from the existing paved area up to the bordering conservation area. Exh. HE-1, at 5-15 to 5-17 (Figures 5-9, 5-10).³²

The transfer station itself consists of truck loading areas, roll-off for refuse collection, scales, and driveway. The New Substation site in Hingham is abutted by the transfer station access road and Hobart Street to the north, Brewer Reservation municipal conservation land to the east, the former Hingham landfill to the south, and the Hingham transfer station to the west. Property uses near the proposed New Substation are generally conservation land and transfer station/former landfill. As discussed in Section V.C.2.a, *supra*, the New Substation site was chosen after an extensive assessment focused on municipal properties in the vicinity of the existing Hobart I Substation and input from the public. The total area of disturbance associated with the New Substation is approximately 31,000 square feet. Exh. HE-1, at 5-18.

Construction of the New Substation will not have a significant impact on the transfer station operations. The current hours of operation for the Hingham Transfer Station are 7:00 AM and 4:00 PM on Thursday through Sunday. Construction that would disrupt the traffic flow within the transfer station will occur outside of the transfer station's hours of operations. HMLP also intends to develop a construction schedule and traffic management plan ("TMP") which

³² In response to an inquiry regarding potential heat islands, HMLP noted that the area of new impervious surfaces proposed at the New Substation site is approximately 5,400 square feet. The majority of the both the New Substation and New Tap Station areas will be covered with a washed pea or crushed stone surface that promotes stormwater infiltration and has a high solar reflective index (SRI) of approximately 75. The porous nature of the pea or crushed stone cover, combined with the light color of the stone, will minimize the associated heat island effect by allowing the station sites to reflect a significant amount of solar radiation. The areas surrounding the New Substation and New Tap Station sites are not anticipated to experience detrimental heat island effects due to the limited amount of new impervious surfaces and the highly reflective nature of the materials proposed for the sites. Further mitigation at the New Substation site would include specifying a light-colored roof for the new building. Exh. EFSB-L-3.

ensure major deliveries and site work will minimize disruption to the transfer station operations. Exh. HE-1, at 5-21.

d. Wetland Resource Areas

Wetland resource areas in the vicinity of the New Substation site were delineated on December 15, 2020, and April 1, 2021. Wetland boundaries were established in accordance with the provisions of the Massachusetts Wetlands Protection Act, the Hingham Wetlands Regulations, and the United States Army Corps of Engineers methodology based on the plant community, soils, and hydrology. Exh. HE-1, at 5-18.

The New Substation is sited outside of the 50-foot buffer zone to a wetland resource area located across the transfer station access road. Approximately 7,100 square feet of work is proposed between the 50-foot and 100-foot Buffer Zone of delineated BVW resource areas. A small area (approximately 660 square feet) of work (minor grading and installation of erosion control measures) is proposed with the 50-foot Buffer Zone to BVW. Structural stormwater management BMPs will be implemented to treat and infiltrate stormwater runoff from the new impervious surfaces. No wetlands will be impacted by the New Substation construction, and no long-term impacts to such resources are anticipated associated with construction and operation of the New Substation. A Notice of Intent will be filed with the Hingham Conservation Commission requesting an Order of Conditions for this work. *Id.*

e. Stormwater Management/Flood Zone

The proposed stormwater management system will treat both the quality and the quantity of stormwater discharge from the New Substation site. The system includes BMPs such as deep-sump, hooded catch basins, proprietary stormwater treatment units, and a subsurface infiltration system, which are described as follows:

- Deep-Sump, Hooded Catch Basins: Catch basins provided throughout the site collect stormwater runoff from the proposed parking areas and are connected to the project's stormwater collection system. The deep-sump and hooded outlet provide runoff an opportunity to separate from solids and floatable pollutants prior to discharge and are used as a pretreatment device.
- Proprietary Treatment Devices: Structural stormwater treatment devices are designed to mechanically separate pollutants from stormwater flows through

centrifugal force and vortex separation. Units are proposed at the ends of both major treatment trains in the stormwater management system, prior to discharging into the subsurface infiltration system.

- Subsurface Infiltration System: The subsurface infiltration system consists of prefabricated chambers set in a bed of gravel. The system has been sized to infiltrate the required recharge volume. Once full, the subsurface infiltration system will discharge through an outlet manhole.

Exh. HE-1, at 5-19.

HMLP will develop and maintain a Stormwater Pollution Prevention Plan (“SWPPP”) for the Project, including the New Substation. The SWPPP will identify controls to manage construction-related stormwater discharges during construction. The SWPPP will include a construction personnel contact list, a description of the proposed work, stormwater controls and spill prevention measures, and inspection practices to be implemented. The SWPPP will be submitted to the Hingham Community Planning Department a minimum of three weeks prior to the start of any work. The Hingham Select Board may require, at the applicant’s expense, the establishment of a consultant fee account to fund the cost of the SWPPP review. The contractor(s) will be required to adhere to the SWPPP during all phases of Project construction in accordance with the general conditions prescribed in the USEPA National Pollutant Discharge Elimination System (“NPDES”) Construction General Permit. Exh. HE-1, at 5-30, Appendix 1-1.

Moreover, based on the National Flood Insurance Map, the New Substation site is not located within a designated Flood Zone. Construction and operation of the New Substation would not be expected to exacerbate local flooding as on-site stormwater management systems will be installed to control stormwater runoff from new impervious surfaces on-site. Exh. HE-1, at 5-19.

f. Visual Impacts

The New Substation will be located within the Hingham transfer station property approximately 100 feet from Hobart Street on a forested hillside. The proposed New Substation will be constructed on approximately ½ acre of land along the northeastern corner of the transfer station site.

Structures and equipment at the New Substation will include:

- New GIS Substation (enclosed, approximately 54 feet x 64 feet by 25 feet in height)
- Circuit breakers
- Bus work
- Protection and communications equipment
- Stormwater management system
- Retaining wall
- Space for a future transformer
- Space for future switchgear

Exh. HE-1, at 5-19 to 5-20.

The New Substation will be screened from Hobart Street by land that is part of the Brewer Reservation conservation area. The New Substation, which, at 25 feet, is the tallest structure within the New Substation site, will be visible from within the transfer station and from the Brewer Reservation. The New Substation will be enclosed in a steel building similar to the transfer station structures and will be surrounded by an 8-foot-tall chain link fence. Exh. HE-1, at 5-20.

The nearest residence to the New Substation is 194 Old Hobart Street, which is located approximately 380 feet to the west. Sam Ryder Road (the access road to the transfer station), the transfer station, and Hobart I Substation all lie between the nearest residence and the New Substation. A photograph provided by HMLP from the nearest residence depicts a berm and mature evergreen vegetation that screens the view of the Hobart I Substation and the transfer station. Because the New Substation would be located beyond the Hobart I Substation and transfer station, the New Substation will not be visible from the nearest residence. Exh. EFSB-V-2(S1).

Brewer Reservation, which is located immediately to the east of the New Substation, is at a higher elevation than the New Substation. Current views from Brewer Reservation include existing electrical and transfer station infrastructure. As depicted in the visual rendering prepared by HMLP, the New Substation would be consistent with the existing infrastructure equipment and views from the Brewer Reservation. Exhs. EFSB-V-2(S1), EFSB-V-2(S1). At this time, HMLP does not plan to remove any of the trees on the Brewer Reservation property depicted in the rendering of the view from Brewer Reservation. Tr. 2, at 179-180.

g. Noise Impacts

Work at the New Substation site will take place over an approximately 12-18 month period. Construction activities will include site preparation and the installation of a retaining wall, stormwater management system, the GIS building, new electrical equipment, support structures and foundations. The site has been chosen to minimize impacts to nearby residences. The nearest resident is located to the west of the transfer station, approximately 380 feet from the New Substation site. During construction, nearby residences may be affected by temporarily elevated noise levels associated with a typical construction site. Construction will comply with the Town of Hingham and MassDEP regulations related to noise. Exh. HE-1, at 5-20.

To further mitigate construction noise at nearby residences, HMLP plans to:

- Require well-maintained equipment with functioning mufflers
- Require strict compliance with MassDEP's Anti-Equipment Idling regulations
- Operate stationary noise generating equipment away from nearby residences
- Comply with municipal restrictions on construction hours when feasible
- Work with the Town to schedule construction outside these hours only where necessary.

Exh. HE-1, at 5-20.

HMLP anticipates that these mitigation measures will appropriately minimize construction-related noise impacts in the areas near the New Substation site and comply with the applicable noise ordinances. The primary sources of noise in the vicinity of the proposed New Substation include the existing Hobart I Substation and the transfer station, which are immediately adjacent to the New Substation area and closer to residences. *Id.*

Given that a transformer is not proposed at this time, no increase in operational noise is anticipated.³³ *Id.* When a transformer and switchgear are needed, equipment specifications will be reviewed for compliance with the local noise control by-law and MassDEP noise policy, and any necessary permits would be obtained. Exh. EFSB-NO-1.

³³ HMLP is not planning to install a transformer or switchgear at the New Substation site at this time. As discussed in Section III.A.2, *supra*, while not needed for capacity purposes in the near term, the proposed Project offers the distinct benefit of addressing peak winter load over the longer term in the high electrification case. While HMLP is forecasting limited load growth in the near term, HMLP has estimated the technical potential for system peak winter load with full electrification, and the projected winter peak under the full electrification scenario exceeds the current system capability of 80 MVA. Given the climate change goals of both the Town of Hingham and the Commonwealth, HMLP determined that it was reasonable and prudent to select a site for the New Substation large enough to accommodate a new transformer and switchgear when load growth warrants these additions. Exh. HE-1, at 1-5, n.2; *see also* Exh. EFSB-N-7.

Daytime and nighttime noise impacts from the New Substation and anticipated equipment installations are predicted to fully comply with the applicable Town of Hingham Noise Control By-law and MassDEP noise policy.

h. Traffic Impacts

Because the proposed New Substation will be located off public roads, limited impacts to traffic are anticipated during construction.

Access to the substation site will be through the Hingham Transfer Station access road. Traffic impacts associated with construction of the New Substation are expected to be minor and temporary in nature. As discussed in Section V.D.3.a, *supra*, HMLP will coordinate construction activities with the DPW so as to minimize impact on the transfer station operations. To the extent practicable, construction that will require work that would disrupt the traffic flow within the transfer station will occur outside of the hours of operations for the transfer station, which are currently between the hours of 7:00 AM and 4:00 PM Thursday through Sunday. Exh. HE-1, at 5-21. HMLP's witness, Mr. Converse, testified that HMLP will coordinate with the Town of Hingham to ensure construction-related deliveries are completed outside of the transfer station's hours of operation. Tr. 2, at 189-190.

Again, as discussed in Section V.D.3.a, *supra*, HMLP will coordinate with the Hingham Community Planning Department and DPW to minimize disruption to transfer station operations. Exh. HE-1, at 5-21.

The New Substation will not generate additional vehicular traffic during operations. The New Substation will be unstaffed, and absent an outage or operational issues, HMLP staff likely will make one trip per week to the New Substation on average. Exh. HE-1, at 5-21.

i. Public Shade Trees

The proposed construction of the New Substation is not expected to affect public shade trees. The proposed New Substation site is on a forested hillside that is part of the Hingham transfer station. Approximately 63 non-public shade trees of 6-inch diameter at breast height (dbh) or greater are proposed to be removed prior to site grading. Exh. HE-1, at 5-21.

The New Substation site has limited space to replace trees. The Hingham Conservation Commission has a Tree Removal and Replacement Policy for trees removed in Conservation Commission jurisdiction. HMLP will work with the Conservation Commission to identify

options for meeting this policy, such as funding the required tree replacement. Exhs. EFSB-L-1, EFSB-L-4(1).

j. Subsurface Contamination

Based on review of MassDEP's Waste Site List, there are no releases reported at the proposed site of the New Substation. While the New Substation will be located on a solid waste transfer station site and adjacent to a capped landfill, the New Substation site itself is not located in an area that was part of the active landfill. Exh. HE-1, at 5-21.

k. Air Quality

The New Substation will not adversely affect air quality, either locally or long-range. The potential for fugitive dust will be controlled at the construction site by use of appropriate methods, including covering temporary soil stockpiles. HMLP may also require contractors to place water trucks with misters in or near the work areas during construction activities and to install anti-tracking pads and institute regular sweeping of the pavement of adjacent roadway surfaces during the construction period to minimize the potential for construction traffic to kick up dust and particulate matter. Exh. HE-1, at 5-31 to 5-32.

l. Electric and Magnetic Fields

The term electric and magnetic field ("EMF") is used to describe fields created by electric voltage (electric fields) and electric current (magnetic fields). An electric field is present whenever voltage exists on an object and is not dependent on current. Similarly, a magnetic field ("MF") is present whenever current flows in a conductor and is not dependent on voltage. When an object has voltage and carries current, it produces both an electric and magnetic field. Exh. HE-1, at 5-21.

HMLP, like all North American electric utilities, supplies electricity at 60 Hz (60 cycles per second). Therefore, the electric utility system, and the equipment connected to it, produce 60-Hz (power-frequency) EMF. *Id.*

HMLP's consultant, Gradient, performed an independent EMF assessment covering all elements of the proposed Project, including the proposed New Substation in Hingham, the New Tap Station in Weymouth and the New Line. Exh. HE-1, Appendix 5-3.

The proposed New Substation will have GIS, which will allow the conductors within the proposed substation to be placed closer together than for AIS, enhancing the rapid drop-off of MF levels with distance away from the equipment. It is well-established that, for the types of electrical equipment present in the proposed New Substation (e.g., aboveground buswork, transformers, switchgear), where conductors are arranged in close proximity to each other, that EMF levels decrease rapidly to low levels inside the fence line; and the strongest fields near the perimeter fence are expected to be associated with the transmission and distribution lines entering/exiting the station. *IEEE Guide for the Design, Construction, and Operation of Electric Power Substations for Community Acceptance and Environmental Compatibility*, published by *Institute of Electrical and Electronics Engineers, Inc. [IEEE], 2014* (“IEEE 2014”); Exhs. HE-1, at 5-22, Appendix 5-3, at 1-2, 9; EFSB-EMF-1. Reducing conductor spacing is a key mitigation measure for reducing magnetic fields at substations and tap stations because it increases the phase-to-phase cancellation of magnetic fields (*IEEE, 2014*). Conductor spacing is a key factor controlling the rate at which magnetic fields change with distance from the source, with magnetic fields away from the conductors (e.g., at or near ground level) being approximately inversely proportional to the spacing between the phase conductors. Reducing the spacing between conductors by 50 percent will generally reduce the magnetic field levels at the ground surface by approximately 50 percent. Exh. EFSB-EMF-2.

As a result, it is expected that MFs outside the fence line of the new Substation will be dominated by MFs associated with the underground 115 kV transmission line and other transmission or distribution lines entering/exiting the station rather than equipment within the fence line. Exh. HE-1, at 5-21 to 5-22 and Appendix 5-3,³⁴ at 1-2, 9.

m. Areas of Critical Environmental Concern (“ACEC”) or Outstanding Resource Waters (“ORW”)

The Weymouth Back River ACEC includes More-Brewer Park, which is to the north of Hobart Street from the transfer station, and Bouve Pond and Cranberry Pond Conservation Area, to the west of the transfer station. The New Substation will not impact ACEC or ORWs. Exh. HE-1, at 5-22.

³⁴ See Gradient’s “Magnetic Field Modeling Analysis for the Hingham Electrical Infrastructure Reliability Report” (“EMF Report”), Exh. HE-1, Appendix 5-3.

n. Cultural Resources

Based on review of available records, no inventoried archaeological sites or historic properties on the Federal or State Register of Historic Places or the Massachusetts Historical Commission's Inventory of the Historic and Archaeological Assets of the Commonwealth are located on, or immediately adjacent to the New Substation site. Exh. HE-1, at 5-22.

As there are sites in proximity to the New Substation site, HMLP coordinated with the MHC to conduct field investigations on previously undeveloped portions of land near the substation site.

A Project Notification Form for the proposed Project, including the New Substation, was submitted by HMLP to MHC on April 23, 2024. In response, MHC recommended that HMLP prepare an intensive (locational) archaeological survey to locate and identify any significant historical and archaeological resources that may be affected by the project and to provide sufficient technical information to consider feasible alternatives in consultation with the MHC to avoid, minimize, or mitigate any project-related adverse effects. A report entitled, "Archaeological Intensive (Locational) Survey for the Hingham Municipal Light Plant Project, Hingham and Weymouth, Massachusetts," prepared by Commonwealth Heritage Group, dated December 24, 2024, was submitted to MHC. Exh. EFSB-L-2.

Based on the December 2024 report, MHC determined in a letter dated March 4, 2025, that no significant archaeological resources were identified during the archaeological survey and no further archaeological survey is necessary. Exhs. EFSB-L-2, EFSB-L-2(1).

As confirmed by MHC, the New Substation is not anticipated to result in impacts to cultural resources and therefore mitigation for cultural resource impacts is not proposed.

o. Conclusion on New Substation

As described in Sections V.D.3.a. through V.D.3.l, *supra*, HMLP has provided a full and accurate assessment of the environmental impacts and potential mitigation measures associated with construction and operation of the New Substation.

4. New Tap Station

As detailed in Section III.A.3, *supra*, the proposed New Tap Station, which would be constructed, owned and operated by Eversource, would be located on an 11.6-acre property

owned by Eversource within its existing transmission ROW property off Broad Street in Weymouth. Exh. HE-1, at 5-9.

The New Tap Station site is abutted by the Eversource ROW to the west, by Broad Street and electric transmission, residential, industrial, and religious uses to the south, by the Connell Rink and Pool and single-family residential uses to the east, and by single-family residential uses to the north. Exh. HE-1, at 5-9, 5-10 (Figure 5-7), 5-11 (Figure 5-8).³⁵ The nearest residence to the proposed Tap Station fenceline is located at 39 Roosevelt Road in Weymouth, approximately 395 feet away.

The New Tap Station will include the following activities and equipment:

- Construction of an AIS
- Construction of an electrical control house
- Three electric transition structures (two for the incoming 115 kV transmission line and one for the New Line)
- 210 feet of new transmission interconnections between the existing transmission lines and the New Tap Station
- One distribution tangent pole
- Four lightning masts (85 feet tall)
- Installation of security fencing
- Spreading of crushed stone within the security fence line
- Construction of associated parking
- New vegetated screening; installation of soil erosion and sediment control Best Management Practices BMPs
- Site clearing and grading within a defined limit of disturbance
- Upgrade of the existing gravel access road to support construction equipment
- Installation of stormwater management BMPs consisting of a sediment forebay and stormwater basin.

Exh. HE-1, at 5-9 to 5-11 (Figures 5-7, 5-8).

As required by G.L. c. 164, § 69J, in the sections below, HMLP provides a full and accurate assessment of the environmental impacts and potential mitigation measures associated with construction and operation of the New Tap Station.

a. Land Use Impacts

³⁵ An updated version of the Tap Station site plan (Figure 5-8), showing the addition of a bathroom, was provided by Eversource at the evidentiary hearing held on September 29, 2025. See Tr. 1, at 26.

The New Tap Station is located on an approximately 11.6-acre Eversource-owned parcel of land. The parcel landscape consists of various sloping topography and areas of exposed surficial ledge. An Eversource transmission ROW, which currently includes two sets of transmission structures and access roads, occupies approximately half of the site. The vegetation within this ROW is maintained in compliance with Eversource's Transmission Vegetation Management Plan. The remainder of the site is populated with a mixed hardwood forest. Exh. HE-1, at 5-12.

The New Tap Station site is abutted by the Eversource ROW to the west, by Broad Street and electric transmission, residential, industrial, and religious uses to the south, by the Connell Rink and Pool and single-family residential uses to the east, and by single-family residential uses to the north. Exh. HE-1, at 5-9, 5-10 (Figure 5-7), 5-11 (Updated Figure 5-8). The nearest residence to the proposed Tap Station fenceline is located at 39 Roosevelt Road in Weymouth, approximately 395 feet away. Exh. RR-EFSB-9.

The total area of land disturbance associated with the Tap Station would be approximately 2.5 acres. Nearby land uses are predominantly single-family residential, with some industrial and recreational uses. A church, Crossroads Worship Center, is located southeast of the site, across Broad Street. Exh. HE-1, at 5-12.

The ROW will continue to be used for electric transmission purposes. Upon completion of construction, the site not otherwise used for the New Tap Station and associated appurtenances will be restored by stabilizing disturbed soils and landscaped in a manner appropriate to the surroundings/neighborhood. *Id.*

b. Wetland Resource Areas

The New Tap Station is located within an existing transmission corridor. Wetland resource areas were delineated on August 2, 2022. Wetland boundaries were established in accordance with the provisions of the Massachusetts Wetlands Protection Act, the Weymouth Wetlands Protection Ordinance (Chapter 7, Section 301, Weymouth Code of Ordinances) and its implementing regulations, and the United States Army Corps of Engineers methodology based on the plant community, soils, hydrology, and other contributing factors, including topography. Exh. HE-1, at 5-12.

There is an unnamed waterway located to the north and east of the site that is shown as perennial on the latest USGS map. The BVW was delineated adjacent to the unnamed waterway. The Tap Station site is primarily forested, and vegetation removal will be required prior to grading of the site. Vegetation removal is proposed within the outer 100-foot Buffer Zone to the BVW and the outer 200-foot Riverfront Area to the unnamed waterway. The proposed vegetation removal within the Riverfront Area is limited to 4,000 sf of impact. This impact is unavoidable to provide for a safe and secure perimeter to the New Tap Station. In the Riverfront Area, selective tree trimming and removal will occur to meet safety and security standards and minimize disturbance to the resource area. *Id.*

A Notice of Intent will be filed with the Weymouth Conservation Commission requesting an Order of Conditions for this work. *Id.*

c. Stormwater Management/Flood Zone

A stormwater management system will be developed to treat both the quality and the quantity of stormwater discharge from the site. The stormwater BMPs will include a sediment forebay and stormwater basin to address peak runoff from the New Tap Station site. Exh. HE-1, at 5-12.

Moreover, based on the National Flood Insurance Maps, the New Tap Station site is not located within a designated Flood Zone. Construction and operation of the New Tap Station would not be expected to exacerbate local flooding as on-site stormwater management systems will be installed to control stormwater runoff from new impervious surfaces on-site. Exh. HE-1, at 5-12.

d. Visual Impacts

The proposed New Tap Station will be located along the central-eastern portion of the Eversource property. The New Tap Station will be visible from the adjacent Connell Rink and Pool and its access road, as the access road is partially located in the existing Eversource transmission ROW. The New Tap Station includes a structure to house electrical control and relay panels and AIS. The tallest structures within the New Tap Station site are four (4) lightning masts at 85 feet each. The New Tap Station will be surrounded by a 10-foot-tall chain link fence. Three transition poles will be installed within the ROW adjacent to the transmission lines. These new poles will be consistent with the existing infrastructure within the ROW. The New Tap

Station equipment is proposed to be set back approximately 550 feet from Broad Street, so visual impacts along Broad Street will be limited. Exh. HE-1, at 5-13.

The closest residence to the New Tap Station is approximately 395 feet away. Because the New Tap Station will be on the opposite of the transmission ROW from this residence – and the transmission ROW and a forested area lie between this residence and the New Tap Station -- visual impacts at this residence (and other nearby residences) is expected to be minimal. Exh. EFSB-V-1.

As the most significant visual impact will be from the Connell Pool and Rink, plantings are proposed along the east and south along the New Tap Station site and along the perimeter of the Connell Rink and Pool access road and parking area. Approximately 75 plantings are proposed.

The plant species will be selected using the following criteria:

- Species native to Massachusetts
- Hardy, non-deciduous low maintenance plantings with a typical mature height of 8-10 feet.
- Species exhibiting tolerance to drought conditions.
- Mix of aesthetic characteristics for year-round visual interest (features to consider and include in landscape plan: evergreen

Exh. EFSB-V-1.

Eversource and HMLP plan to provide a preliminary landscape plan for the New Tap Station to the Town of Weymouth and will consider any input, suggestions and concerns from neighbors and Town officials regarding potential visual impacts. A final landscape plan will be provided to the Town of Weymouth after consideration of feedback received. *Id.*

e. Noise Impacts

Construction of the New Tap Station will take place over an approximately 18-month period. Construction activities will include site preparation, including rock removal and grading, and the installation of new poles, electrical equipment, support structures and foundations. During this time, nearby residences may be affected by temporary elevated noise levels associated with a typical construction site. Construction will comply with the MassDEP noise policy related to noise. Exh. HE-1, at 5-13.

To further mitigate construction noise at nearby residences, Eversource plans to:

- Require well-maintained equipment with functioning mufflers
- Require strict compliance with MassDEP’s Anti-Equipment Idling regulations
- Operate stationary noise generating equipment away from nearby residences
- Work with the Town to schedule construction outside these hours where necessary.

Exh. HE-1, at 5-13. HMLP and Eversource anticipate that these measures will appropriately minimize construction-related noise impacts in the areas near the New Tap Station site. Given the significant distance of the nearest residence from the New Tap Station site³⁶ and the temporary nature of construction noise – sound walls are not proposed. Exh. Preb-N-1.

With respect to rock removal and grading, no decision has been made by Eversource as to whether blasting or grinding will be necessary. Eversource’s witness, Mr. Gerety, confirmed that it is Eversource’s intent “not to use blasting.” Mr. Gerety testified that blasting only will be used as a “last resort” for rock removal and that the Company is committed to considering and using all feasible means of rock removal before considering blasting. Tr. 1, at 145. Mr. Gerety further explained that in the event blasting is required, Eversource has two blasting procedures in place that are very prescriptive, and require pre-blasting inspections of foundations as well as post-blasting inspections. Tr. 1, at 144-145; Exhs. RR-EFSB-7; RR-EFSB-7(1), RR-EFSB-7(2). Finally, Eversource’s witness, Mr. Watkins, indicated that if blasting is necessary, Eversource’s outreach team would communicate with property owners by mail and/or in person to discuss the procedures and inspections. Tr. 1, at 146-147. All blasting planning and activity would follow all applicable state and local laws and professional best practices in accordance with Eversource’s practices and procedures. Exh. RR-EFSB-7.

With respect to operational noise, where no transformer is proposed at the New Tap Station, no noise is anticipated.

In sum, daytime and nighttime noise impacts from the construction and operation of the New Tap Station are expected to fully comply with the applicable MassDEP noise policy. Id.

f. Traffic Impacts

³⁶ Given sound attenuation, the average sound level during construction at the nearest residence – which is 395 feet away from the New Tap Station site – would be approximately 64 dBA, which is comparable to the sound of an air conditioning unit (approximately 60 dBA). Exh. RR-EFSB-9.

The proposed New Tap Station is located off public roads, and traffic impacts associated with the New Tap Station construction are expected to be minor and temporary in nature. Access to the New Tap Station site will be through the existing access road off of Broad Street, onto the gravel access road that runs parallel to the transmission lines in the Eversource ROW, as well as through a new access road off of the Connell Rink and Pool driveway, which is on Eversource property.³⁷ Eversource will coordinate construction activities with the adjacent Connell Rink and Pool so as to minimize impact on the facility operations.

After construction, the New Tap Station will not generate additional traffic. The New Tap Station will not be a manned facility and Eversource staff will access the New Tap Station as needed.

g. Public Shade Trees

The construction of the New Tap Station is not anticipated to affect public shade trees. The portion of the site where the New Tap Station is proposed is currently forested and will require removal of trees within the work area. Approximately 221 trees 6 dbh or greater diameter will be removed at the New Tap Station site. Exh. HE-1, at 5-14.

As discussed in Section V.D.4.d, *supra*, Eversource will provide landscaping and other visual mitigation and screening adjacent to the New Tap Station to minimize visual impacts. *See also* Exhs. EFSB-V-1, EFSB-L-1

h. Subsurface Contamination

Based on review of MassDEP's Waste Site & Reportable Releases site look-up tool, there are no releases reported at the New Tap Station site. Exh. HE-1, at 5-14.

i. Air Quality

The New Tap Station will not adversely affect air quality, either locally or long-range. The potential for fugitive dust will be controlled at the construction site by using appropriate methods, including dump trucks to move soil out of the construction zone, and by covering

³⁷ In response to a request by Siting Board Staff, Eversource provided a conceptual plan for temporary direct access to the New Tap Station site from Broad Street. Eversource explained that such a plan would be costly and, if constructed, likely would create traffic impacts along Broad Street when certain large construction vehicles are unable to make the turn directly from Broad Street to this new access road. Moreover, this new access road would not eliminate the need to use the existing gravel access road to safely allow larger construction vehicles. Exh. EFSB-T-2.

temporary soil stockpiles. HMLP and Eversource may also require contractors to place water trucks with misters in or near the work areas during construction activities. Exh. HE-1, at 5-31.

j. Electric and Magnetic Fields

As noted in Sections V.D.3.j, *supra*, an electric field is present whenever voltage exists on an object and is not dependent on current. Similarly, a MF is present whenever current flows in a conductor and is not dependent on voltage. When an object has voltage and carries current, it produces both an electric and magnetic field. Exh. HE-1, at 5-48.

HMLP's consultant, Gradient, performed an independent EMF assessment covering all elements of the proposed Project, including the proposed New Tap Station in Weymouth, the New Substation in Hingham, and the New Line. Exh. HE-1, Appendix 5-3.

An AIS will be used at the New Tap Station. MFs will diminish rapidly with distance from the New Tap Station equipment, and the New Tap Station will not abut any residential properties. Indeed, the residential properties on Broad Street, nearly 400 feet away, are in closer proximity to the proposed New Line than the New Tap Station. As such, for these properties, the New Line would be expected to be a larger potential source of MFs than the more distant New Tap Station.³⁸ Exhs. HE-1, at 5-14, Appendix 5-3 at 1-2, 9, EFSB-EMF-1.

Moreover, the closest residences to the New Tap Station on Roosevelt Road are on the other side of the Eversource ROW from the New Tap Station, so the New Tap Station would be expected to be a negligible source of MFs at these properties. In addition, engineering design diagrams indicate that the closest switchgear to the paved parking lot at the Connell Rink and Pool is to be located more than 50 feet from the parking lot edge, such that MFs from the New Tap Station equipment will have diminished to minimal levels at this lot. *Id.*

It is well established that, for the types of electrical equipment present in the proposed New Tap Station (e.g., aboveground buswork, switchgear), where conductors are arranged in close proximity to each other, that EMF levels decrease rapidly to low levels inside the fence line; and the strongest fields near the perimeter fence are expected to be associated with the transmission and distribution lines entering/exiting the station. Exh. HE-1, at 5-22. Reducing conductor spacing is a key mitigation measure for reducing magnetic fields at substations and tap

³⁸ As set out in Section V.D.5.g, *infra*, HMLP has established that all modeled EMF levels associated with the New Line are far below state, national, and international guidelines for EMF exposure.

stations because it increases the phase-to-phase cancellation of magnetic fields (*IEEE, 2014*). Conductor spacing is a key factor controlling the rate at which magnetic fields change with distance from the source, with magnetic fields away from the conductors (e.g., at or near ground level) being approximately inversely proportional to the spacing between the phase conductors. Reducing the spacing between conductors by 50 percent will generally reduce the magnetic field levels at the ground surface by approximately 50 percent. Exh. EFSB-EMF-2.

As a result, it is expected that MFs outside the fence line of the New Tap Station will be dominated by MFs associated with the proposed 115 kV underground New Line Project and other overhead lines within the existing ROW rather than equipment within the fence line of the New Tap Station. Exhs. HE-1, at 5-14, Appendix 5-3, at 1, 8-9, EFSB-EMF-1.

k. Areas of Critical Environmental Concern (“ACEC”) or Outstanding Resource Waters (“ORW”)

There are no ACECs or ORWs in proximity to the Tap Station Site. Exhs. HE-1, at 5-15.

l. Cultural Resources

Based on review of available records, no inventoried archaeological sites or historic properties on the Federal or State Register of Historic Places or the Massachusetts Historical Commission’s Inventory of the Historic and Archaeological Assets of the Commonwealth are located on the Tap Station Site. Exh. HE-1, at 5-15.

As there are sites in proximity to the New Tap Station site, HMLP coordinated with the MHC to conduct field investigations on previously undeveloped portions of land near the substation site.

A Project Notification Form for the proposed Project, including the New Tap Station, was submitted by HMLP to MHC on April 23, 2024. In response, MHC recommended that HMLP prepare an intensive (locational) archaeological survey to locate and identify any significant historical and archaeological resources that may be affected by the project and to provide sufficient technical information to consider feasible alternatives in consultation with the MHC to avoid, minimize, or mitigate any project-related adverse effects. A report entitled, “Archaeological Intensive (Locational) Survey for the Hingham Municipal Light Plant Project, Hingham and Weymouth, Massachusetts,” prepared by Commonwealth Heritage Group, dated December 24, 2024, was submitted to MHC. Exh. EFSB-L-2.

Based on the December 2024 report, MHC determined in a letter dated March 4, 2025, that no significant archaeological resources were identified during the archaeological survey and no further archaeological survey is necessary. Exhs. EFSB-L-2; EFSB L-2(1).

As confirmed by MHC, the New Tap Station is not anticipated to result in impacts to cultural resources and therefore mitigation for cultural resource impacts is not proposed.

m. Conclusion on New Tap Station

As described in Sections V.D.4.a. through V.D.4.l, *supra*, HMLP has provided a full and accurate assessment of the environmental impacts and potential mitigation measures associated with construction and operation of the New Tap Station.

5. Comparison of Impacts of Preferred and Noticed Alternative Routes

a. Land Use Impacts

The construction and operation of the New Line along either the Preferred Route or Noticed Alternative Route (or the Noticed Alternative Route Variation) is expected to have very limited impacts on adjacent land use.

Land use along the Preferred Route and Noticed Alternative Route was assessed using MassGIS 2016 Land Use data as well as MassGIS parcel data. Land use was tabulated in acres within approximately 100 feet of the edge of the existing roadway edge along each route. Exh. HE-1, at 5-36.

The table below summarizes the major land uses in acres within 100 feet of the Preferred Route and the Noticed Alternative Route (including the Noticed Alternative Route Variation).

Land Use within 100 Feet of Preferred and Noticed Alternative Routes

Land Use Type	Preferred Route (acres)	Noticed Alternative Route (acres)	Noticed Alternative Route – Variation (acres)
Commercial	6.64	4.01	3.96
Single-family Residential	28.04	36.03	35.54
Multi-family Residential	7.71	8.21	8.59
Open Land	7.34	7.04	7.55
Water	0.05	0.22	0.13
Right-of-Way	25.37	28.58	28.33
Tax-Exempt	2.55	4.71	3.75

HE-1, at 5-37 (Table 5-2).

For the Preferred Route, the dominant proximate land use is residential along the local streets, with approximately 35.75 acres of residential use within 100 feet of the route. There are approximately 604 residential units adjacent to the Preferred Route, as well as approximately 63 adjacent commercial and/or industrial land uses. Additional land uses along the Broad Street route include forests and open land.

There are 18 sensitive receptors located along the Preferred Route: Crossroads Worship Center, Crossroads Enrichment Center, Connell Rink and Pool, Academy Avenue School Playground, Clapp Memorial Park, Weymouth Afterschool Stars, Currie Daycare, Weymouth Preschool Stars, Weymouth Fire Department, Immaculate Conception, Weymouth United Methodist Church, East Weymouth Congregational Church/South Shore Stars Weymouth Preschool, Herring Run Park, Herring Run Pool Park, Lovell Field/Playground, Zsigalov Daycare, More-Brewer Park, and Brewer Reservation. Exh. HE-1, at 5-37.

For the Noticed Alternative Route, the dominant proximate land use is residential, with approximately 44.24 acres residential use within 100 feet of the route. There are approximately 878 residential units adjacent to the Noticed Alternative Route (with 813 residential units adjacent to the Noticed Alternative Route Variation), as well as approximately 22 adjacent

commercial and/or industrial land uses (with 38 adjacent to the Noticed Alternative Route Variation). Additional land uses along Lake Street include forests and open land and commercial. Exh. HE-1, at 5-38.

There are ten sensitive receptors located along the Noticed Alternative Route: Crossroads Worship Center, Crossroads Enrichment Center, Humphrey Field, Town of Weymouth Recreation, Weymouth Youth and Family Services, Herring Run Park, Herring Run Pool Park, More-Brewer Park, Zsigalov Daycare, and Brewer Reservation. There are eleven sensitive receptors along the Noticed Alternative Route Variation: Crossroads Worship Center, Crossroads Enrichment Center, Currie Daycare, Weymouth Preschool Stars, Humphrey Field, East Weymouth Congregational Church/ South Shore Stars Weymouth Preschool, More-Brewer Park, Herring Run Park, Herring Run Pool Park, Zsigalov Daycare and Brewer Reservation. Exh. HE-1, at 5-38.

The potential for construction of either the Preferred Route or Noticed Alternative Route (or the Noticed Alternative Route Variation) to affect adjacent land use is quite limited. There are no permanent changes to land use associated with construction of the New Line along either route. While temporary impacts to residences, businesses and sensitive receptors may include traffic disruption, such as roadway lane closures, and construction noise and air quality impacts, construction hours will be limited in the vicinity of schools and appropriate construction BMPs will be in place to reduce traffic, noise and air quality impacts. As such, these potential land use impacts will be temporary, monitored and effectively mitigated. Exh. HE-1, at 5-38.

In sum, the Preferred Route is shorter and is adjacent to more commercial and industrial uses than the Noticed Alternative Route. The Noticed Alternative Route (and Noticed Alternative Route Variation) is adjacent to more residential uses, including affordable housing developments. The Preferred Route has fewer residences and, as the route length is shorter, the duration and extent of transmission line construction near sensitive receptors and residences will be less.

Accordingly, the Preferred Route is superior to the Noticed Alternative with respect to land use impacts.

b. Traffic and Transportation Impacts

Traffic and transportation impacts associated with the underground work in public roads will be temporary in nature and confined to the period necessary to construct the New Line. A variety of mitigation measures will be used to minimize traffic disruption during construction. Implementation of a well-designed TMP will reduce the potential for inconvenience to drivers and those using public transportation, as well as any potential secondary effects on local businesses. Access to local businesses and residences will be maintained throughout Project construction and HMLP will coordinate closely with Town officials in Hingham and Weymouth to ensure construction-related traffic impacts are minimized. Exh. HE-1, at 5-39.

Regardless of the route selected, work within areas of traffic congestion or near certain sensitive receptors will be managed to minimize construction related impacts. The TMP will include active and passive traffic management measures, including the use of police details. Night work typically is implemented in areas that have the following characteristics: (1) the segment experiences high traffic volumes and congestion during the day; (2) the adjacent land uses are primarily commercial and/or industrial; and/or (3) the municipality has required HMLP to construct at night. The primary advantage of night work is that it can minimize traffic congestion by avoiding hours of peak traffic volumes and avoiding potential business interruptions. Any work outside of typical construction hours will be closely coordinated with local officials and any necessary local authorizations will be sought by HMLP. *Id.*

The TMP also will identify (1) specific locations where detours may be required, and (2) MBTA and school bus stops that may be affected during construction. Alternate arrangements, including temporary relocation of bus stops or consolidation of stops, will be coordinated with the MBTA and local school districts as the design of the New Line progresses. To the extent practicable, rerouting of bus service and consolidation of bus stops will be avoided. As the TMP is advanced, specific items that require review and coordination with the municipalities, MBTA and local school district staff will be identified. Exh. EFSB-T-1.

Anticipated impacts to high congestion areas and potential for delay will be limited and mitigated to the greatest extent practicable through consideration of traffic management options, including evaluation of potential detour routes and/or restriction of work hours. Notably, where police details are required, the detail officer can manage and balance delay based on actual traffic flow. Exh. EFSB-T-1.

The TMP also will address areas where sidewalks are impacted by construction. The TMP will include temporary ADA compliant pedestrian walkways and appropriate pedestrian detour signage where needed. Potential impacts to street parking will be limited to the construction hours. In determining potential parking limitations, HMLP will consider specific parking demand and timing, and HMLP will coordinate with the Hingham and Weymouth officials to identify alternate parking. Exh. EFSB-T-1.

In order to assess and compare potential traffic impacts of the Preferred Route and Noticed Alternative Route, HMLP 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 mitigation along each route. Exh. HE-1, at 5-39.

The Preferred Route is approximately 3.2 miles in length, with the majority of the route located within public roads. The majority of the roads comprising the Preferred Route can generally be described as medium volume roads with a mix of functional classifications of minor arterials and major collectors. The roads are all two-way roads and will require a combination of lane shifts and road closures/detours during construction. High Street and Broad Street are functionally classified as Minor Arterial Roads, and French Street and Hobart Street are functionally classified as Major Collector Roads.

MBTA Bus Route 222 (East Weymouth – Quincy Center Station) coincides with the Preferred Route along Broad Street and High Street; there are eighteen bus stops along the Preferred Route portion of Broad Street. Average daily ridership on MBTA Bus Route 222 on weekdays is 929 passengers and weekend ridership is 440 passengers. Buses run approximately every 40 minutes. Exhs. HE-1, at 5-39, RR-EFSB-10.

The Noticed Alternative Route³⁹ is approximately 3.7 miles in length, all of which is located within public roads. The majority of the roads comprising the Noticed Alternative Route can generally be described as low to medium volume local roads. As with the Preferred Route, the roads are all two-way roads and would require a combination of lane shifts and road closures/detours during construction. Essex Street, French Street, Hobart Street and Spring Street are functionally classified as Major Collector Roads; Broad Street and High Street are

³⁹ There is little difference between the Noticed Alternative Route and the Noticed Alternative Route Variation with respect to potential traffic impacts.

functionally classified as Minor Arterial Roads; and Lake Street and Shawmut Street are functionally classified as Local Roads. MBTA Bus Route 222 (East Weymouth – Quincy Center Station) includes eleven stops along the Noticed Alternative Route. Exh. HE-1, at 5-40.

As with the Preferred Route, work within areas of traffic congestion or near certain sensitive receptors would be managed to minimize impacts to traffic and disturbances affecting nearby residences and businesses. A TMP would be prepared and would include active and passive traffic management measures, including the use of police details. *Id.*

Using a number of indicators of potential traffic congestion and based on HMLP's comprehensive route evaluation and scoring analysis discussed in Section V.C.3.e, *supra*, the Noticed Alternative Route scored more favorably for transportation impacts than the Preferred Route, primarily due to the higher volume of traffic on Broad Street and the number of bus stops on Broad Street. At the same time, the Broad Street Route would provide greater flexibility for transportation management options than the Lake Street route due to the greater width of Broad Street. Exh. HE-1, at 5-41.

Notably, whichever route is selected, HMLP will employ traffic management strategies which, among other things, will maintain one lane in each direction, minimizing delay for motorists. Exh. EFSB-T-4. Further, regardless of the route selected, a TMP would be implemented and HMLP would coordinate closely with municipal officials in both Hingham and Weymouth. Measures in a TMP necessarily would include the use of police details and implementation of detours and lane closures. Exh. EFSB-HE-1, at 5-42.

Upon completion of the detailed design work and prior to the start of construction, HMLP would meet with officials in both towns to work on developing a TMP. The TMP is expected to address the following issues:

- Width and lane location of the work zone to minimize traffic impacts.
- Work schedule and duration of lane closures, road closures, or detours (where necessary).
- 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 to be placed as shown on plans and as approved by the Towns of Hingham and Weymouth.
- Locations where temporary provisions may be made to maintain access to homes and businesses.
- Routing and protection of pedestrian and bicycle traffic.
- Maintenance of MBTA service and school bus service.

- Communication with adjacent businesses, to ensure deliveries are not interrupted.
- Notification to municipal officials, local businesses, and the public of the timing and duration of closed curbside parking spaces and travel way restrictions.
- Coordination between HMLP and police and fire departments to ensure that emergency access through the route be provided at all times.

Id.

The scope of the TMP will include analysis of the roads affected by the transmission line construction. The TMP will be submitted for review and approval by appropriate municipal authorities prior to construction. Traffic-control plans will be developed consistent with the FHWA Manual of Uniform Traffic Control Devices for Streets and Highways and the MassDOT publication, “Work Zone Safety”. HMLP will also closely coordinate with local officials and abutting property owners. *Id.*

In sum, given the significant mitigation measures proposed by HMLP, measure which would be included in any TMP, traffic and transportation impacts will be minimized with respect to construction of the New Line along either the Preferred Route or the Noticed Alternative Route.

In comparing the routes, as set forth above, the Broad Street Route would provide greater flexibility for transportation management options than the Lake Street Route due to the greater width of Broad Street. Still, because of the higher volume of traffic and number of bus stops on Broad Street, the traffic impacts associated with the Noticed Alternative Route are expected to be somewhat less than the impacts along the Preferred Route.

Accordingly, the Noticed Alternative Route is superior to the Preferred Route with respect to traffic impacts and transportation.

c. Wetlands and Water Resources

While both the Preferred Route and Noticed Alternative Route will include crossings and work within jurisdictional wetland and water resources, the temporary impacts associated with this work are minor and there will be no permanent impacts.

Wetland and water resources include river crossings, wetland crossings, riverfront area, and Chapter 91 jurisdiction limits. HMLP’s evaluation of the wetland resource areas involved reviewing MassGIS databases and conducting field reconnaissance to determine the number of resource areas the routes would cross. The evaluation of wetland crossings involved reviewing

MassGIS data and conducting field reconnaissance to determine the number of local- and state-regulated resource areas, as defined in the Massachusetts Wetlands Protection Act (MWWPA) regulations (310 CMR 10.00 et seq.), including the BVW and Bank and their associated 100-foot buffers, Bordering Land Subject to Flooding (BLSF, 100-year floodplain) and 200-foot Riverfront Area, that the proposed routes would cross. The evaluation of Chapter 91 jurisdictional areas involved reviewing MassGIS data layers developed under Chapter 91, using a combination of contemporary high water, historic high water and landlocked tidelands to form the landward and seaward boundaries of landlocked tidelands. Significantly, no Chapter 91 jurisdictional areas are in the vicinity of the Preferred Route or Noticed Alternative Route. Exh. HE-1, at 5-42 to 5-43.

The following wetland resources wetland resources and stream crossings are associated with the Preferred Route:

- Approximately 2700 linear feet within 100-foot buffers.
- Crossing of Herring Run Brook and three unnamed streams
- 6400 square feet within Riverfront Area
- 800 square feet within 100-year Floodplain/BLSF

Exh. HE-1, at 5-43.

The Noticed Alternative Route is also within the vicinity of Whitmans Pond, which is an Emergency Surface Water Supply for the Town of Weymouth.

Because the underground cable construction associated with the Preferred Route is anticipated to occur within existing paved roadways and disturbed ROWs, no permanent impacts to wetlands or streams are anticipated. HMLP will be required to obtain an Order of Conditions from both the Hingham and Weymouth Conservation Commission. Exh. HE-1, at 5-43.

Significantly, HMLP is proposing to cross the Herring Run Brook through HDD⁴⁰ or pipe jacking technology to minimize impacts to this resource. Exhs. HE-1, at 5-43, EFSB-W-1.

⁴⁰ If utilized, the HDD methodology and details will be the responsibility of the Contractor performing the work. The Contractor will evaluate the potential for inadvertent releases during the selection of the final bore alignment and in consideration of the specific equipment, materials, and methods proposed by the Contractor. Measures to minimize inadvertent release risk include evaluation of the HDD drill fluid pressures and allowable formation pressures based on the available subsurface information. The Contractor will be required to include specific methods of monitoring and reporting inadvertent releases in a Monitoring and Operations Plan and Inadvertent Release Contingency Plan. These plans, along with any site-specific conditions from the Siting Board or other regulators, will be incorporated into the HDD contract as a requirement. Exh. EFSB-W-1.

The following wetland resources wetland resources and stream crossings are associated with the Noticed Alternative Route:

- Approximately 2850 linear feet within 100-foot buffers.
- Crossing of Herring Run Brook and two unnamed streams
- 17,600 sf within Riverfront Area
- 800 sf within 100-year Floodplain/BLSF
- 6700 linear Feet within the watershed to an ORW

Exh. HE-1, at 5-43.

Given that the underground cable construction associated with the Noticed Alternative Route is anticipated to occur within existing paved roadways and disturbed rights of way, no permanent impacts to wetlands or streams are anticipated. Like the Preferred Route, HMLP will be required to obtain an Order of Conditions from both the Hingham and Weymouth Conservation Commission for the Noticed Alternative Route. *Id.* Significantly, HMLP is proposing to cross the Herring Run Brook through HDD technology to minimize impacts to this resource. *Id.*

Regardless of the route selected, the potential wetlands and water resource impacts associated with the proposed New Line are limited and are all within the footprint of previously disturbed areas. Neither of the routes in public roads require any filling or clearing within wetlands. Moreover, HMLP proposes to avoid and minimize impacts to the Herring Run Brook and its associated 100-foot floodplain (BLSF) by using HDD construction or pipe jacking to install the New Line beneath the Herring Run Brook. Given that the vast majority of underground cable construction is anticipated to occur within existing paved roadways, no permanent impacts to wetlands or streams are anticipated. To address the potential for erosion and sedimentation within wetland resource areas, a SWPPP will be prepared. Exh. HE-1, at 5-44 to 5-45.

In sum, while both the Preferred Route and Noticed Alternative Route will include crossings of work within jurisdictional wetland and water resources, there will be no permanent impacts, and the temporary impacts will be minor. The wetland resource areas along the Preferred Route and Noticed Alternative Route consist of roadway ROWs and existing culverts, and therefore, the Preferred Route and Noticed Alternative Route will not alter the values of the resource areas. Moreover, all of the activities proposed in wetland and water resource areas and

buffer zones can be designed to conform to applicable local, state and Federal wetlands regulatory programs. However, because of the difference in Riverfront Area associated with the different routes (6400 square feet for the Broad Street Route and 17,600 square feet for the Lake Street Route), the Preferred Route is superior to the Noticed Alternative Route for this criterion due to less impacts within Riverfront Area. The Noticed Alternative Variation crosses the Herring Run at Broad Street and has similar wetland and water resource impacts, including Riverfront Area, to the Broad Street Route.

d. Public Shade Trees

Chapter 87 of the General Laws defines public shade trees as all trees within a public way or within the boundaries thereof. A field reconnaissance was conducted to count all trees within the public way along the Preferred Route and Noticed Alternative Route regardless of diameter at breast height or distance from the proposed cable trench. As is typical for this mostly residential environment, the canopies of certain trees on the Preferred Route and the Noticed Alternative Route extend out over the road. Construction proposed of the New Line in paved roadways is not anticipated to require the removal of any trees along either the Preferred Route or the Noticed Alternative Route. No permanent impacts to public shade trees are proposed; however potential temporary impacts include trimming of branches and exposure or cutting of roots. Exh. HE-1, at 5-45. It is very unlikely that trees will need to be replaced.

There are 27 public shade trees within the public way associated with the Preferred Route. No permanent impacts to public shade trees are anticipated to be required as part of the installation of the underground New Line within the Preferred Route. *Id.*

There are 33 public shade trees within the public way associated with the Noticed Alternative Route and 34 public shade trees associated with the Noticed Alternative Route Variation. No permanent impacts to public shade trees are anticipated to be required as part of the installation of the underground New Line within the Noticed Alternative Route (or Noticed Alternative Route Variation). *Id.*

For either the Preferred Route or the Noticed Alternative Route, HMLP plans to implement the following measures to protect public shade trees:

- Prior to construction, HMLP will meet with the local Tree Wardens to confirm the location and condition of public shade trees and other trees along the route relative to

construction work areas. HMLP will review BMPs and finalize a monitoring and mitigation plan for the protection of trees during construction.

- Where trees are encountered within 15 feet of trench edges, they will be protected from bark and limb damage by surrounding them with wire-bound 2x4 lumber to an appropriate height depending on the particular tree. Alternative tree protection may be used if accepted in advance by the property owner(s). Where tree roots are encountered during excavation, mechanical excavation will cease, roots will be exposed by hand (to the least extent possible and will be kept moist and covered with wet burlap or plastic throughout the exposure period).
- HMLP will erect and maintain a temporary fence around the perimeter of individual tree pits (typically the area between the curb and sidewalk where the tree resides). The temporary fence will remain in place for the duration of construction and will serve to prohibit the storage of construction materials, debris, or excavated material within tree pit area or on any sidewalks; and prohibit vehicles, equipment or foot traffic within tree pit area. Although unlikely, if excavation is required within the tree pit area and/or sidewalk, the Tree Wardens will be contacted before any work begins. The Tree Wardens will determine whether the contractor on site may commence work, or if a qualified arborist must be hired to conduct root pruning. If the root pruning is allowed to proceed, HMLP will implement various measures to protect trees.
- Trees and vegetation will be replaced in a manner approved by the Tree Wardens.

Exh. HE-1, at 5-45 to 5-46.

In sum, for both the Preferred Route and the Noticed Alternative Route, while no permanent impacts to public shade trees are proposed, potential temporary impacts to trees potentially could include trimming of branches and exposure or cutting of roots. HMLP will meet with the Tree Warden for each town in advance of construction, and, once construction begins, in the unlikely event that excavation is necessary within the tree pit area or sidewalk, HMLP's contractor will consult with the Tree Wardens before any root pruning would begin.

The Preferred Route and Noticed Alternative Route are comparable with respect to impacts on public shade trees.

e. Subsurface Contamination

Subsurface excavation associated with the New Line has the potential to encounter contaminated soils from historical releases and/or urban fill in the vicinity of both the Preferred Route and Noticed Alternative Route. HMLP reviewed the MassDEP waste site list on-line database to determine the potential to encounter subsurface contamination along each route at

listed sites. The online database was used to collect and review information on MassDEP-listed sites (sites issued an RTN) directly abutting the routes. Exh. HE-1, at 5-46.

There are four (4) MassDEP-listed sites with 500 feet of the Preferred Route, including one site with an AUL. There are also four (4) MassDEP-listed sites within 500 feet of the Noticed Alternative Route, including two sites with an AUL.⁴¹ Exh. HE-1, at 5-47 (Tables 5-7, 5-8).

Once a route is selected, HMLP will conduct geotechnical borings and environmental sampling of both soil and groundwater. Environmental sampling and analysis will be used to identify the potential for subsurface contamination along the route along with the information HMLP obtained from the MassDEP database. The data collected will be used to develop a Soil and Groundwater Management Plan (SGMP) to summarize procedures for the management of soil and groundwater, including disposal facilities, during construction of the New Line. Exh. EFSB-S-1.

If contaminated soils are encountered during construction, they will be managed pursuant to URAM provisions of the MCP. HMLP will have a SGMP in place and will contract with a Licensed Site Professional as necessitated by conditions encountered along the Project alignment, consistent with the requirements of the MCP at 310 CMR 40.0460 *et seq.*⁴² All excess soil will be managed in accordance with local, State and Federal regulations. Exhs. HE-1, at 5-48, EFSB-S-1.

Subsurface contamination is not anticipated to impact neighboring residents and businesses. If encountered during construction of the New Line, contaminated soil will be placed in dump trucks and hauled to a staging area or directly to a disposal facility. If necessary, misters will be used to minimize potential exposure through dust. Contaminated groundwater will be required to be treated in accordance with the NPDES Remediation and Dewatering General Permit requirements prior to discharge. Exh. EFSB-S-1.

⁴¹ The Noticed Alternative Route Variation includes one additional listed site. Exh. HE-1, at 5-47 (Table 5-8)

⁴² Where unexpected encounters with subsurface contamination occur, the impacted soil will need to be segregated, properly stored, and tested for potential contaminants. Based on the results of the testing, the available disposal facilities would be determined. Exh. EFSB-S-1.

In sum, for both the Preferred Route and the Noticed Alternative Route (including the Noticed Alternative Route Variation), any contaminated soils encountered during construction will be addressed and managed safely and consistently with all applicable requirements.

As noted above, both the Preferred Route and Noticed Alternative Route are located within 500 feet of four MassDEP-listed sites. Thus, the Preferred Route and Noticed Alternative Route are comparable with respect to this criterion.

f. Visual Impacts

Because the proposed New Line is underground, the only potential permanent visual impacts relevant to the New Line are those associated with vegetation clearing. As noted in Section V.D.5.c, above, the only potential vegetative impacts associated with construction of the New Line are potential impacts to public shade trees – impacts which are not expected.

Visual impacts associated with the Preferred Route are anticipated to be minimal, as no public shade trees are anticipated to be directly impacted by the installation of the New Line within the existing paved roadways of the Broad Street Route. *See* Section V.D.5.d, *supra*. Similarly, visual impacts associated with the Noticed Alternative Route are anticipated to be minimal, as no public shade trees are anticipated to be directly impacted by construction of the New Line along the existing paved roadways of the Lake Street Route. *See* Exh. HE-1, at 5-45. Moreover, as discussed in Section V.D.5.d, *supra*, HMLP anticipates coordination with the local Tree Wardens regarding public shade tree protection and replacement where required. Exh. HE-1, at 5-45 to 5-46.

Because the potential for visual impacts on both routes relative to construction of the New Line is similar, HMLP determined that the Preferred Route and Noticed Alternative Route (including the Noticed Alternative Route Variation) are comparable for this criterion.

g. Electric and Magnetic Fields

HMLP has analyzed the EMF effects of the New Line and has determined that there will be no aboveground electric fields for the underground line and that modeled MF levels are far below state, national, and international guidelines for MF exposure.⁴³

As noted in Sections V.D.3.j, *supra*, an electric field is present whenever voltage exists on an object and is not dependent on current. Similarly, a MF is present whenever current flows in a conductor and is not dependent on voltage. When an object has voltage and carries current, it produces both an electric and magnetic field. Exh. HE-1, at 5-48.

HMLP's consultant, Gradient, modeled EMF levels associated with the proposed transmission facilities at sections representative of the post-Project circuit configurations under average annual loading conditions and anticipated system peak loading conditions. The FIELDS computer program, designed by Southern California Edison, was utilized to calculate MF strengths from the Project's underground 115kV transmission line. This program operates using Maxwell's equations, which accurately apply the laws of physics as they relate to electricity and magnetism (EPRI, 1982, 1993). Modeled fields using this program are both precise and accurate for the input data utilized. Results of the model have been checked extensively against each other and against other software to ensure that the implementation of the laws of physics are consistent. These methods have been shown to accurately predict MF levels measured near transmission lines. The MF levels were calculated at one meter (3.28 feet) above ground, in accordance with standard protocols. Exh. HE-1, at 5-49; Appendix 5-3.

MF modeling was performed by Gradient for four representative Project underground line cross sections: Triangular Conductor Configuration for the Typical Underground Duct Bank Trenches; Horizontal Conductor Configuration for Flat Trenches; Vertical Conductor Configuration for Manhole Approaches; and HDD Bore Conductor Configuration. Exh. HE-1, at 5-49 to 5-50, Appendix 5-3, at 8-15. The MF modeling analysis showed that all modeled post-Project MF values for each representative cross section at both annual average load and system peak load levels, including directly above the circuit centerlines, are well below the International Commission on Non-Ionizing Radiation Protection (ICNIRP) health-based guideline of 2,000

⁴³ The expected EMF impacts of the New Substation and New Tap Station are set out in Sections V.D.3.j and V.D.4.j *supra*, respectively.

mG for allowable public exposure to 60-Hz AC magnetic fields (ICNIRP, 2010). This is the case despite a conservative modeling approach that did not consider the small reductions in magnetic fields from currents that will be induced on ground continuity conductors (GCCs) also to be installed in the underground duct banks. In all cases, aboveground MF values dropped off rapidly with increasing lateral distance from the circuit centerlines (*e.g.*, 88-93% reductions at lateral distances of ± 25 ft from circuit centerlines), such that aboveground MF levels decreased to negligible levels at short distances beyond the trenches. Exh. HE-1, at 5-50 to 5-51; Appendix 5-3, at 13-18.

The EMF levels for the Noticed Alternative and Noticed Alternative Variation would be the same as the Preferred Route. Exh. HE-1, at 5-51.

The EMF Report indicated that the HDD bore installation case is to be used for installing the New Line cables beneath Herring Run Brook in Weymouth. This installation case was found to have the lowest peak aboveground MF levels, 13.2 mG, directly above the circuit centerline of all identified cross sections due to the greater burial depth (minimum of four feet beneath the ground surface). Exh. HE-1, 5-49 to 5-50 (Table 5-9), Appendix 5-3, at 14.

The EMF Report also addressed concerns regarding the potential impacts of magnetic fields from the underground cables on river herring (alewife and blueback herring) during their annual migration to upstream spawning grounds via Herring Run Brook and indicated that the scientific literature has not established that river herring are either magnetosensitive or rely at all on the earth's geomagnetic field to navigate to their spawning grounds. Significantly, the EMF Report also concludes that even if river herring were considered magnetosensitive and use the earth's geomagnetic field for navigation/migration purposes, (1) the 60-Hz AC cables associated with HMLP's proposed New Line will generate time-varying AC magnetic fields that differ from the earth's static (*i.e.*, steady, 0 Hz) geomagnetic field; and (2) that there is also an absence of scientific evidence that magnetic field fluctuations could serve as major barriers to migration. Exh. HE-1, 5-49 to 5-50, Appendix 5-3, at 14.

In sum, HMLP has appropriately assessed and analyzed the EMF impacts of the New Line on the Preferred Route and Noticed Alternative Route (including the Noticed Alternative Route Variation) and has determined that all modeled MF levels associated with the New Line are far below state, national, and international guidelines for MF exposure.

Moreover, the anticipated EMF levels are comparable for the Preferred Line, the Noticed Alternative Line and the Noticed Alternative Line Variation.

h. Noise Impacts

Noise impacts associated with the proposed New Line are limited to temporary construction noise. As discussed in Section III.B.1, *supra*, there are four principal phases of construction for underground cable projects within the streets conducted in sequence at each location. Construction work for the transmission line will take place over an approximately 24-month period. Exh. HE-1, at 5-52.

Several phases of construction will likely be ongoing simultaneously along various sections of the route, such as manhole placement, roadway cutting, excavation of fill, conduit placement, and backfilling and temporary paving. During later portions of New Line construction, cable pulling and splicing (electrical) phases may overlap with ongoing civil construction activities. *Id.*

The potential for noise impacts from construction of the New Line is a function of the specific receptors along the route as well as the equipment used and proposed hours of operation. Construction is anticipated to occur during typical work hours, though in specific instances, at some locations, or at the request of Hingham or Weymouth, HMLP may seek municipal approval to work at night. *Id.*

Transmission line construction will generate noise levels that are periodically audible along the New Line route, at conductor pulling sites, and at staging areas. The construction equipment to be used will be similar to that used during typical public works projects (e.g., road resurfacing, storm sewer installation, water line installation). In general, the sound levels from construction activity will be dominated by the loudest piece of equipment operating at the time. *Id.*

Construction equipment proximity to noise-sensitive land uses will vary along the transmission line routes. Because sound levels from a point source drop off at a rate of 6 dB per

doubling of distance, the reference sound levels at 50 feet set out in the table below will decrease by 6 decibels (“dBA”) for locations 100 feet back from the edge of construction.⁴⁴ Id.

The table below sets out sound levels at 50 feet⁴⁵ from certain construction equipment:

⁴⁴ As an example, maximum excavator sound levels at 100 feet would be expected to be approximately 75 dBA. In a more urbanized area, setbacks may be only 25 feet from construction activity, thus increasing the sound levels from each piece of equipment by 6 dBA. For example, an excavator at 25 feet would be expected to produce a maximum sound level of 87 dBA. Exh. HE-1, at 5-52.

⁴⁵ A typical sound level distance of 50 feet from residences, businesses and sensitive receptors was provided for discussion purposes because HMLP has not yet identified the locations of the proposed duct bank, manholes and splicing locations within the public road alignments. The locations of these activities and structures relative to residences and sensitive receptors will be determined during the detailed design process. Exh. HE-1 at 5-52, n.27.

Reference Sound Levels of Construction Equipment at 50 feet

Activity	Type of Equipment	Typical Sound Levels dBA at 50 feet^{1, 2}	Familiar Sounds with Similar Noise Levels
Trench Excavation, Pile Install and Pavement Patching	Pavement Saw	90	Motorcycle at 25 feet, lawn mower
	Pneumatic Hammer	85	Blender, diesel truck (50 ft)
	Mounted Impact Hammer (hoe ram)	89	Heavy city traffic, shouted conversation
	Excavator	81	Hair dryer, busy restaurant
	Dump Truck	76	Dishwasher, TV audio (moderate)
	Pipe Crane	81	Hair dryer, busy restaurant
	Welding Machine/Generator	81	Hair dryer, busy restaurant
	Concrete Batch Truck	79	Noisy office, loud vacuum cleaner
Manhole Installation	Pavement Saw	90	Motorcycle at 25 feet, lawn mower
	Excavator	81	Hair dryer, busy restaurant
	Manhole Crane	81	Hair dryer, busy restaurant
	Dump Truck	76	Dishwasher, TV audio (moderate)
	Asphalt Paver	77	Passenger car at 65 mph at 25 ft
Cable Pulling, Splicing and Testing	Generator	81	Hair dryer, busy restaurant
	Splicing Van	75	Shower or toilet flushing
Final Pavement Restoration	Asphalt Paver	77	Passenger car at 65 mph at 25 ft

Exh. EFSB-NO-2 (Revised Table 5-12).

Notably, construction equipment is generally not operated continuously, with significant variation in power and usage. Sound levels can and will fluctuate, depending on the construction

activity, equipment type and separation distances between source and receiver. Other factors, such as vegetation, terrain and noise attenuating features, such as buildings, will further reduce construction noise levels. Exh. HE-1, at 5-53.

Noise impacts are regulated by the Town of Hingham Noise Control By-law as well as by MassDEP. Under the Hingham Noise Control By-law, construction is limited to the hours 7:00 AM to 7:00 PM, Monday through Friday, and between 8:00 AM to 7:00 PM on Saturday and Sunday, unless a permit is obtained from the Enforcement Official, which includes the Chief of Police or any Town board, department, or official having regulatory authority over construction activity. Hingham Noise Control By-law (Article 42), Sections 7(b), 8(b). Exh. HE-1, Appendix 5-2. Should off-hours construction be required, HMLP would seek a permit from the Town.⁴⁶ Daytime and nighttime noise impacts from the proposed Project and anticipated equipment installations are predicted to fully comply with the applicable Town of Hingham Noise Control By-law and MassDEP Air Pollution Control (310 CMR 7.00) and noise policy when compared to measured background sound levels at the closest sensitive receptor locations. Exh. EFSB-NO-2.

HMLP also plans to mitigate construction noise. Regardless of the route selected, noise from cable splicing operations would be minimized through use of specialized low-sound equipment such as low-noise generators, and by reducing or eliminating the use of motorized equipment during evening and overnight work. Other potential mitigation measures include use of a low-noise/muffled generator, portable sound walls (temporary noise barriers) as needed, blocking the path of generators, and working with the Towns to coordinate work. Exh. HE-1, at 5-54.

HMLP estimated that use of low-noise or muffled generator for cable splicing would reduce noise levels at a distance of 50 feet to approximately 72 dBA, and that a portable sound wall would reduce noise by 10 to 15 dBA per barrier. Exh. EFSB-NO-3. HMLP's witness, Mr. Morahan, testified that the generators associated with splicing mains are typically enclosed inside a confined area that has some noise mitigation. Tr. 2, at 183. However, given the

⁴⁶ HMLP's witness, Mr. Converse, testified that splicing might require expanded hours beyond those allowed by the Hingham Noise Control By-law. Ms. Adamski testified that, in such an instance, HMLP would identify the additional construction hours that are needed and "coordinate with the appropriate departments at Hingham to request the additional work hours." Tr. 2, at 181-182.

temporary and mobile nature of construction noise, HMLP indicated that use of sound walls and blocking is not practical. Exh. EFSB-NO-3.

In sum, HMLP has appropriately assessed the noise impacts associated with construction of New Line. Construction-related noise will be temporary in nature, and for both the Preferred Route and the Noticed Alternative Route, daytime and nighttime noise impacts associated with construction of the New Line are predicted to comply with the applicable Town of Hingham Noise Control By-law, MassDEP Air Pollution Control (310 CMR 7.00) and MassDEP noise policy when compared to measured background sound levels at the closest sensitive receptor locations. Moreover, as noted above, HMLP will seek a permit from Hingham if off-hours construction is required, and Town of Weymouth officials also will be consulted about construction practices and noise reduction strategies.

For the Preferred Route, sensitive receptors include park/recreation facilities, medical facilities, a school, and places of worship. In general, the area along the Preferred Route has a greater number of sensitive receptors, but a lower density of residences than the Noticed Alternative Route. Accordingly, Preferred Route is preferable to the Noticed Alternative Route (including the Noticed Alternative Route Variation) with respect to noise impacts.

i. Cultural Resources

HMLP undertook a cultural resource investigation to identify historic and archaeological resources adjacent to the underground segments of the Preferred Route and the Noticed Alternative Route. To be considered significant and eligible for listing on the State or National Registers of Historic Places, a cultural resource must exhibit physical integrity and contribute to American history, architecture, archaeology, technology, or culture. The Project is subject to review by the MHC in compliance with G.L. c. 9, §§ 26-27C, as amended by Chapter 254 of the Acts of 1988, and 950 CMR 71.00. HMLP's cultural resources investigation included review of MHC files and MACRIS to identify previously recorded historic and archaeological resources adjacent to the Preferred Route and Noticed Alternative Route. Exh. HE-1, at 5-44 to 5-45.

Based on its review, HMLP determined that there are 116 historic sites and 2 historic districts along the Preferred Route. The two historic districts are the Central Square Historic District and Jackson Square. There is one inventoried point, the Washington School Professional

Building, located at 8 School Street in Weymouth, which is included in the National Register of Historic Places (NRHP). Exh. HE-1, at 5-45.

HMLP determined that there are 69 historic sites and one historic district along the Noticed Alternative Route.⁴⁷ The historic district is Jackson Square. As is the case with the Preferred Route, the Washington School Professional Building is intersected by the Noticed Alternative Route. *Id.*

The proposed New Line is not anticipated to result in impacts to cultural resources and accordingly, mitigation for cultural resource impacts is not proposed.

A Project Notification Form was submitted by HMLP to MHC on April 23, 2024. In response, MHC recommended that HMLP prepare an intensive (locational) archaeological survey to locate and identify any significant historical and archaeological resources that may be affected by the project and to provide sufficient technical information to consider feasible alternatives in consultation with the MHC to avoid, minimize, or mitigate any project-related adverse effects. A report entitled, “Archaeological Intensive (Locational) Survey for the Hingham Municipal Light Plant Project, Hingham and Weymouth, Massachusetts,” prepared by Commonwealth Heritage Group, dated December 24, 2024, was submitted to MHC. Exh. EFSB-L-2.

Based on the December 2024 report, MHC determined in a letter dated March 4, 2025 that no significant archaeological resources were identified during the archaeological survey and no further archaeological survey is necessary. Furthermore, MHC stated that “the project as proposed will have “‘no adverse effect’ (36 CFR 800.5(b))” on the Central Square Historic District and the Jackson Square area. No further MHC review is required for the project as proposed.” Exhs. EFSB-L-2, EFSB-L-2(1).

As confirmed by MHC, the New Line is not anticipated to result in impacts to cultural resources and therefore mitigation for cultural resource impacts is not proposed.

While the Preferred Route traverses near more inventoried sites and intersects more inventoried historic areas than the Noticed Alternative Route (or the Noticed Alternative Route Variation), because the New Line will be installed underground within the existing paved limits

⁴⁷ The Noticed Alternative Route Variation is adjacent to 94 historic sites. Exh. HE-1, at 5-45.

of roadways, neither route is anticipated to result in impacts to historic resources. As such, the Preferred Route and Noticed Alternative Route are comparable with respect to this criterion.

j. Conclusion on Comparison of Preferred and Noticed Alternative Routes

In Sections V.D.5.a through V.D.5.i, *supra*, HMLP assessed the impacts of the Preferred Route and Notice Alternative Route (including the Noticed Alternative Route Variation) with respect to wide range of environmental criteria.

As discussed in the foregoing sections, the Preferred Route and the Noticed Alternative Route (including the Noticed Alternative Route Variation) were determined to be comparable with respect to the following criteria – Public Shade Trees; Potential for Subsurface Contamination; Visual Impacts; Electric and Magnetic Fields; and Cultural Resources.

The Preferred Route was determined to be preferable to the Noticed Alternative Route (including the Noticed Alternative Route Variation) with respect to Land Use; Wetlands and Water Resources; and Noise.

The Noticed Alternative Route is preferable to the Preferred Route with respect to Traffic and Transportation Impacts.

As discussed in Section V.C.3.f, *supra*, the estimated cost of the Preferred Route is \$47.7 Million, the estimated cost of the Noticed Alternative Route is \$55.1 Million, and the estimated cost of the Noticed Alternative Route Variation is \$53.6 Million. Accordingly, the Preferred Route is preferable to the Noticed Alternative Route (and the Noticed Alternative Route Variation) with respect to cost.

Finally, as discussed in Section V.C.3.g, *supra*, there is no difference between the Preferred Route and the Noticed Alternative Route (including the Noticed Alternative Route Variation) with respect to reliability.

The Preferred Route and the Noticed Alternative Route have similar and relatively minimal environmental effects, and the majority of those effects will be temporary and can be minimized using mitigation measures. After weighing all cost, environmental and reliability factors, HMLP selected the Broad Street Route as its Preferred Route. Moreover, Weymouth Town officials have expressed a preference for the Broad Street Route. Tr. 1, at 29. While the Broad Street Route is HMLP's Preferred Route, HMLP is prepared to move forward with either the Broad Street Route or the Lake Street Route.

E. HMLP's and Eversource's Plans for Construction of its New Facilities Are Consistent with the Current Health, Environmental Protection and Resource Use and Development Policies as Developed by the Commonwealth.

Pursuant to G.L. c. 164, § 69J, the Siting Board shall approve a petition to construct a facility if, inter alia, the Siting Board determines that “plans for expansion and 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.” The Project, which comprises the New Line, New Substation and New Tap Station, satisfies the requirements of this statute, and are also fully consistent with other important state energy policies as articulated in the Electric Utility Restructuring Act of 1997 (the “Restructuring Act”), the Green Communities Act (Chapter 169 of the Acts of 2008), the Global Warming Solutions Act (Chapter 298 of the Acts of 2008), the Energy Diversity Act (Chapter 188 of the Acts of 2016), the Clean Energy Act (Chapter 227 of the Acts of 2018) and an Act Creating a Next Generation Roadmap for Massachusetts Climate Policy (Chapter 8 of the Acts of 2021). Exh. HE-1, at 6-1 to 6-8. And, although not subject to the provisions of the recently enacted 2024 Climate Act (Chapter 239 of the Acts of 2024) relative to siting and permitting of energy facilities, the Project is consistent with objectives that have been added by the 2024 Climate Act to the Siting Board’s mandate.

1. The Project is Consistent with Health Policies of the Commonwealth.

The Project is consistent with the applicable health policies of the Commonwealth. The Restructuring Act provides that reliable electric service is of “utmost importance to the safety, health, and welfare of the Commonwealth’s citizens and economy.” The Siting Board has determined that projects that increase reliability in electric service to the community also can play a role in contributing to the health of the Commonwealth’s citizens. *Eversource Mid-Cape* at 89-90; *Eversource Sudbury-Hudson* at 188.

The Project will be fully consistent with these policies and Siting Board precedent. As discussed in Section V.A. above, the record demonstrates that the Project is needed for reliability purposes because the entire Town of Hingham presently is susceptible to an extended outage in the event of N-1 and N-1-1 contingencies. Exh. HE-1, at 1-5 to 1-6. Unlike investor-owned utilities with large service territories and multiple substations within an area that can backstop

their customer circuits via distribution tie circuits from other substations, HMLP is limited to one substation. *Id.* There are no other backstop transmission or distribution options available to HMLP, and one N-1 event could interrupt power to the Town for an extended period of time due to the lack of switching alternatives. *Id.*; *see also*, Exh. EFSB-N-2.; RR-EFSB-1.

Similarly, an outage event or maintenance requirement that takes one of the two circuits supplying HMLP out of service for an extended duration could result in loss of service to the entire Town if the second remaining transmission line were to experience an outage event (*i.e.*, an N-1-1 contingency). *Id.*; *see also*, Exhs. EFSB-HE-1, at 3-1 to 3-3; RR-EFSB-1. No backstop transmission or distribution options are available to HMLP which would prevent N-1-1 events from interrupting power to the Town for an extended period of time. *Id.* As such, the Project is critical to ensuring an adequate and reliable supply of electricity to the citizens and businesses of Hingham and of utmost importance to public safety, health and welfare.

Moreover, HMLP and Eversource will design, construct, and operate the facilities comprising this Project in a manner to ensure that the public health and safety is protected. In this regard, HMLP and Eversource will comply with all applicable federal, state, and local health and safety regulations, and industry standards and guidelines established for protection of the public and the Project will have no adverse health effects. Exh. HE-1, at 5-26, 5-28, 5-42.

2. The Project is Consistent with Environmental Protection Policies of the Commonwealth.

The Restructuring Act provides that the applicant must demonstrate that a project minimizes environmental impacts consistent with the minimization of costs associated with the mitigation, control and reduction of the environmental impacts of the project. Exh. HE-1, at 6-3. Accordingly, an assessment of all impacts of a proposed facility is used to determine whether an appropriate balance is achieved both among conflicting environmental concerns, as well as among environmental impacts, costs and reliability. *Id.*

As demonstrated in Sections III.B, and V.D of this brief, *supra*, HMLP has proposed specific plans to carefully mitigate environmental impacts associated with the construction, operation and maintenance of the Project consistent with cost minimization. HMLP and Eversource will obtain all environmental approvals and permits required by federal, state, and local agencies and will construct and operate the Project in full compliance with applicable

federal, state, and municipal statutes, regulations, and environmental policies. Exhs. HE-1, at 6-2 to 6-3 (Table 6-1); EFSB-G-6 (updated permit list and revised Table 6-1). As such, the Project will contribute to a reliable, low cost, diverse energy supply for the Commonwealth while avoiding, minimizing, and mitigating environmental impacts to the maximum extent practicable. By virtue of satisfying the requirements for obtaining each of the required federal, state, and local permits and approvals, the Project will comply with applicable state and local environmental policies.

With regard to other environmental and resource laws and policies of the Commonwealth, the Project is fully consistent with the Green Communities Act. The Green Communities Act encourages energy and building efficiency, promotes renewable energy, creates green communities, implements elements of the Regional Greenhouse Gas Initiative, and provides market incentives and funding for various types of energy generation. Exh. HE-1, at 6-4. The Green Communities Act (as amended and supplemented by St. 2012, c. 209, An Act Relative to Competitively Priced Electricity) has resulted in greater renewable supplies and substantial new conservation initiatives since enactment and continuing in future years. *Id.*

The record in this case demonstrates that the proposed Project will address a significant existing reliability issue in the Town of Hingham and ensure reliability of the Town's electricity supply for years to come. Exh. HE-1, at 2-1 to 2-6. While the proposed Project is needed to meet reliability standards, given the climate change goals of both the Town of Hingham and the Commonwealth, HMLP determined that it was reasonable and prudent to select a substation site and lay out its proposed New Substation to accommodate a new transformer and switchgear when load warrants these additions. Exh. HE-1, at 1-5, n.2.

HMLP has estimated the technical potential for system peak winter load with full electrification and that winter peak exceeds the current system capability. Exh. HE-1, at 1-5; *see also*, Exh. EFSB-N-7. Thus, while not needed for capacity purposes in the near-term, the proposed Project offers the distinct benefit of addressing peak winter load over the long term in the high-electrification case. *Id.* Moreover, the proposed Project will enable HMLP to continue to integrate clean energy generated by renewable sources, support electrification projects in Town, and accommodate increased usage of electric vehicles and the associated installation of electric charging stations, consistent with the Green Communities Act. *Id.* Accordingly, the

proposed Project will meet the identified need in a reliable, cost-effective, and environmentally benign manner and therefore, is consistent with the Green Communities Act.

The Global Warming Solutions Act (“GWSA”) establishes aggressive greenhouse gas (“GHG”) emissions reduction targets of 25 percent from 1990 levels by 2020 and 80 percent from 1990 levels by 2050. In December 2020, the Secretary of Energy and Environmental Affairs issued the Massachusetts 2050 Decarbonization Roadmap, which calls for increased electrification (*e.g.*, electric vehicles, electric home heating, new heat pump technologies), new local renewable resources (*e.g.*, wind, solar and battery storage), and the delivery of power from remote clean energy resources, such as offshore wind. On March 26, 2021, “An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy” was signed into law. St. 2021, c. 8 (the “Roadmap Act”). The Roadmap Act codifies the Commonwealth’s commitment to net-zero emissions by 2050, and advances and extends the goals of the GWSA by establishing new interim goals for emissions reductions and authorizing a voluntary energy efficient building code for municipalities. *Id.*

HMLP’s proposed Project is fully consistent with the policies established by the GWSA and Roadmap Act. GHG emissions associated with the Project will be *de minimis* during the construction phase, and short-term localized air quality effects will be minimal. Exh. HE-1, at 5-31 to 5-32. The proposed Project will have no adverse climate change impacts or adverse effects on sea levels. Exh. HE-1, at 5-14, 5-21, and 5-31 to 5-32. The proposed Project is needed to maintain reliability of service for the Town of Hingham and will enable HMLP to meet regional reliability standards. Exh. HE-1, at 1-5 to 1-6, 2-1 to 2-6, and 3-8 to 3-11. Additionally, while not needed for capacity purposes in the near-term, and as mentioned above, the proposed Project offers the distinct benefit of addressing peak winter load over the long term in the high electrification case. Exh. HE-1, at 1-5, n.2. Because the proposed Project will enable HMLP to continue to integrate clean energy generated by renewables sources, support electrification projects in the own, and accommodate increased usage of electric vehicles and the associated installation of electric charging stations, the Project as designed is consistent with both the Commonwealth’s requirements for siting of electric facilities as well as future state and local planning initiatives. Consequently, the Project is consistent with the GWSA and the Roadmap Act. Further, the infrastructure proposed for the Project will help support achievement of the

goals and commitments established by the Commonwealth through the GWSA and Roadmap Act. Exh. ESFB-RR-12.

The Project will improve the reliability of HMLP's transmission system and also will allow HMLP to continue to integrate clean energy resources, such as solar, wind and battery storage, support electrification projects in Town, and accommodate increased usage of electric vehicles and the associated installation of electric charging stations. Exh. HE-1, at 6-6; *see also* Exh. EFSB-RR-12. The implementation of these clean energy projects by third parties along with the ability of HMLP and Eversource to integrate these energy sources into the electrical grid for use within the region supports the Commonwealth's clean energy goals codified under the Clean Energy Act and Energy Diversity Act. *Id.* Accordingly, the Project is consistent with the Energy Diversity Act as amended by the Clean Energy Act.

On November 20, 2024, Governor Healey signed into law the 2024 Climate Act, St. 2024, c. 239. Among other things, the 2024 Climate Act reforms the siting and permitting processes for clean energy infrastructure facilities and significantly changes the statutory obligations of the Siting Board. HMLP's Petition to Construct and HMLP's and Eversource's Joint Zoning Exemption Petition were filed on November 13, 2024 – prior to the effective date of the 2024 Climate Act (February 18, 2025) and well as in advance of July 1, 2026, the date when projects submitted to the Siting Board for approval become subject to the EFSB's new siting and permitting regulations. As such, the instant petitions are not being reviewed pursuant to the 2024 Climate Act and will not be subject to any of the siting and permitting rules promulgated by the EFSB pursuant to the 2024 Climate Act.

While the proposed Project is not subject to the 2024 Climate Act, the Project is consistent with objectives that have been added by the 2024 Climate Act to the Siting Board's mandate under G.L. c. 164, § 69H. As stated above, the proposed Project (1) will enable HMLP to continue to integrate clean energy generated by renewable sources, support electrification projects in the Town, and promote resiliency; (2) has been designed to avoid and/or minimize or mitigate environmental impacts and negative health impacts; and (3) complies with energy, environmental, land use, labor, economic justice, environmental justice and equity, and the public health and safety policies of the Commonwealth and the Towns of Hingham and

Weymouth. Exh. RR-EFSB-12. In this way, the HMLP’s infrastructure proposal – which comprises the New Line, New Substation and New Tap Station – is fully consistent with the new objectives added to the Siting Board’s mandate by the 2024 Climate Act. More specifically, HMLP’s siting analysis and HMLP’s and Eversource’s extensive outreach efforts are consistent with the goals and intent of the 2024 Climate Act. Exh. RR-EFSB-12.

3. The Project is Consistent with Resource Use and Development Policies of the Commonwealth.

The Project, which the record shows will ensure the reliability of HMLP’s transmission system, will be constructed and operated in compliance with Massachusetts’s policies regarding resource use and development. In 2007, the EOEEA’s Smart Growth/Smart Energy policy established the Commonwealth’s Sustainable Development Principles, including: (1) supporting the revitalization of city centers and neighborhoods by promoting development that is compact, conserves land, protects historic resources and integrates uses; (2) encouraging remediation and reuse of existing sites, structures and infrastructure rather than new construction in undeveloped areas; and (3) protecting environmentally sensitive lands, natural resources, critical habitats, wetlands and water resources and cultural and historic landscapes. Exh. HE-1, at 6-8. The Project will support these principles because the New Line will be located in public ways and the New Substation, and New Tap Station will be located within previously disturbed parcels of land. In addition, in selecting a route for the New Line and locations for the New Substation and New Tap Station, HMLP employed a site and route selection process which identified and highly disfavored Open Space and Article 97 land. Exh. HE-1, at 4-5 to 4-6, 4-25, and 4-36 to 4-38. Accordingly, the Project is in compliance with, and furthers the Commonwealth’s policies regarding resource use and development and does not result in the loss of Article 97 lands.

4. The Project is Consistent with the Environmental Justice Policies.

The Roadmap Act has defined environmental justice populations and environmental burdens, and has charged agencies of the Commonwealth to meaningfully involve all people in decisions and policies and to consider the equitable distribution of environmental benefits and burdens. These principles support protection from environmental pollution and the ability to live in and enjoy 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. Exh. HE-1, at 6-6.

Accordingly, in designing the Project, HMLP and Eversource engaged in enhanced public outreach with intent to engage environmental justice populations and evaluate environmental burdens. The Preferred and Noticed Alternative Routes cross through areas within Weymouth mapped as environmental justice populations as defined by minority status and income status, as defined by the Roadmap Act.⁴⁸ *Id.* As set forth in Section III.C, *supra*, HMLP and Eversource conducted numerous in-person and Zoom meetings to provide opportunities to environmental justice populations and others potentially impacted by the Project to learn more about the Project and provide their comments and input.⁴⁹ Meetings were held at different times of the day in accessible locations and were generally well attended, including a Zoom Open House to reach people who were unable to attend in person, and interpreters were made available at meetings held by Eversource in Weymouth. Exhs. HE-1, at 1-10, 4-3 to 4-5 (Table 4-1) and 6-6 to 6-7.

HMLP maintains a website with information on the Project, which is regularly updated, with a link to provide feedback to HMLP. See www.heirp.com. Working with Eversource, HMLP will continue to communicate status updates on the Project via its website, notices and other media, offering opportunities for public input throughout the siting, permitting and construction phases. Exhs. HE-1, at 6-7; EFSB-G-2; Tr. 1, at 32-34.

While HMLP looked at several alternatives to the Project, since there are no existing transmission lines for HMLP to tap into within Hingham, impacts to the Town of Weymouth are unavoidable. The purpose of the proposed Project is to provide a reliable energy source to HMLP's customers. Due to the limited number of practical points of interconnection in the area, the Project needs to cross Weymouth to reach Hingham. Exh. HE-1, at 6-7.

⁴⁸ Review of the Massachusetts EJ mapper – languages spoken map – indicates that there are no census tracts within one mile of the project where at least 5% of the population are speakers who report they do not speak English “very well.” Exh. HE-1, at 6-6.

⁴⁹ HMLP also contacted the Executive Office of Energy and Environmental Affairs' Office of Environmental Justice & Equity for a list of Environmental Justice Community Based Organizations (“CBOs”) in the project area. A letter with project information and an offer to meet to discuss the Project was mailed to each CBO in March 2023. No response was received. Exh. HE-1, at 4-5.

In analyzing several sites for both the New Tap Station and New Substation, HMLP chose locations that were adjacent to existing infrastructure and away from residences to minimize the environmental burden. The New Tap Station site is located in an area mapped as Environmental Justice for the income criteria. As noted previously, this site is adjacent to existing electrical transmission infrastructure and the New Tap Station has been sited away from residences. The New Line will be underground, and the primary impact of the Project will be related to construction, similar to other underground infrastructure projects (*e.g.*, water, sewer, stormwater). Underground infrastructure is prevalent throughout Massachusetts and within the Project area. Exh. HE-1, at 6-7.

HMLP has designed the Project to minimize the Project's impacts to all populations, including environmental justice populations. HMLP has undertaken, and will continue to undertake, ongoing community outreach in environmental justice communities in or adjacent to the Project area to facilitate the meaningful opportunity to participate by all. *Id.* The continued outreach to environmental justice communities will be consistent with the Roadmap Act and the rules and protocols promulgated thereunder. As such, the Project is consistent with the Commonwealth's environmental justice policies as codified in the Roadmap Act.

VI. THE PROJECT SATISFIES STATUTORY STANDARDS FOR THE GRANT OF INDIVIDUAL AND COMPREHENSIVE ZONING EXEMPTIONS

Pursuant to G.L. c. 40A, § 3, HMLP and Eversource filed a Joint Zoning Exemption Petition seeking individual and comprehensive exemptions from operation of (1) the zoning bylaws of Hingham in connection with HMLP's construction and operation of the New Substation, and (2) zoning ordinances of the Town of Weymouth in connection with Eversource's construction and operation of the New Tap Station. Exh. HE-2. As set forth below, consistent with G.L. c. 40A, § 3 and Siting Board precedent, (1) individual and comprehensive exemptions to the zoning bylaws of Hingham should be granted to HMLP with respect to construction and operation of the New Substation; and (2) individual and comprehensive exemptions to the zoning ordinances of Weymouth should be granted to Eversource with respect to construction and operation of the New Tap Station. The record in this case conclusively demonstrates that all criteria have been satisfied by HMLP and Eversource.

A. HMLP and Eversource are Public Service Corporations.

In determining whether a petitioner qualifies as a “public service corporation,” the SJC has stated:

[A]mong the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.

Save the Bay, 366 Mass. at 680; *see also Park City Wind* at 170; *Eversource Sudbury-Hudson* at 194; *Berkshire Power Development, Inc.*, D.P.U. 96-104, at 26-36 (1997) (“*Berkshire Power*”).

The Department has stated that it interprets this list not as a test, but rather as guidance to ensure that the intent of G.L. c. 40A, § 3 will be realized, which includes that a present or proposed use of land or structure that the Department determines is “reasonably necessary for the convenience or welfare of the public” is not foreclosed due to local opposition. *See, e.g., Berkshire Power* at 30; *Save the Bay*, 366 Mass. at 685-686; *Braintree Electric Light Department*, EFSB 07-01/D.T.E./D.P.U. 07-05, at 86 (2008).

The Department and Siting Board have interpreted the “pertinent considerations” in its analysis as a “flexible set of criteria which allow the Department to respond to changes in the environment in which the industries it regulates operate and still provide for the public welfare.” *Eversource Sudbury-Hudson* at 194; *Berkshire Power* at 30; *see also Dispatch Communications of New England d/b/a Nextel Communications, Inc.*, D.P.U./D.T.E. 95-59B/95-80/95-112/96-113, at 6 (1998).

Eversource is an electric company as defined in G.L. c. 164, § 1 and, therefore, is a public service corporation authorized to transmit and distribute electricity. *See e.g., Eversource Sudbury-Hudson* at 194. As an electric company and public service corporation in the Commonwealth, the Company is entitled to seek a zoning exemption pursuant to G.L. c. 40A, § 3. *Eversource Sudbury-Hudson* at 194; *Save the Bay*, 366 Mass. at 680.

Further, the SJC has determined, in upholding a Department decision, that municipal light plants like HMLP are “public service corporations” for the purposes of G.L. c. 40A, § 3. *Planning Board of Braintree, v. Department of Public Utilities*, 420 Mass. 22, 26 (1995)

(affirming *Braintree Electric Light Department*, D.P.U. 90-263 (1991)). In that case, the SJC found that “[b]ecause they have the same duty to serve as private utilities, municipal utilities need to have the same tools available to perform their duty, including the G.L. c. 40A, § 3 exemption.” *Planning Board of Braintree*, 420 Mass. at 28. Accordingly, HMLP qualifies as a public service corporation entitled to seek a zoning exemption pursuant to G.L. c. 40A, § 3.

HMLP notes that G.L. c. 40A, § 1A was amended in 2024, and made effective February 18, 2025, adding a new definition of “public service corporation.” St. 2024, c. 239, § 36. The term “public service corporation” is now defined as:

a corporation or other entity duly qualified to conduct business in the commonwealth that owns or operates or proposes to own or operate assets or facilities to provide electricity, gas, telecommunications, cable, water or other similar services of public need or convenience to the public directly or indirectly, including, but not limited to, an entity that owns or operates or proposes to own or operate electricity generation, storage, transmission or distribution facilities, or natural gas facilities including pipelines, and manufacturing and storage facilities; rates or proposes to own or operate facilities necessary for its operations.

The Joint Zoning Exemption Petition was filed one week before the law containing this new definition was enacted and more than three months before the new law took effect. While there is no indication that the Legislature intended for this law to apply on a retroactive basis (*see e.g., Hanscom v. Malden & Melrose Gas Light Co.*, 220 Mass. 1, 3 (1914)), HMLP nonetheless qualifies as a “public service corporation” under the new definition in G.L. c. 40A, § 1. The definition added by St. 2024, c. 239, § 36 operates to expand rather than narrow the category of entities eligible to petition the Siting Board for relief and codifies much of the precedent existing relative to who qualifies as a “public service corporation” for the purposes of G.L. c. 40A, § 3.⁵⁰ Previously, the issue raised in *Planning Board of Braintree*, *supra*, was that a municipal light department was not a “corporation” and therefore could not petition the Department for a zoning exemption. Thus, the SJC looked to the public service obligations of municipal light

⁵⁰ Prior to the enactment of St. 2024, c. 239, § 36, the Department and Siting Board determined that the following non-utility entities qualified as “public service corporations” for purposes of seeking an exemption under G.L. c. 40A, § 3: the developer of a battery storage project (*Cranberry Point Energy Storage LLC*, D.P.U. 22-59 (2023), at 31-38); developers of off-shore wind generating facilities seeking exemptions under G.L. c. 40A, § 3 for on-shore transmission facilities (*Park City Wind* at 172; *Vineyard Wind* at 135); and non-utility owners of generating assets in Massachusetts (*NRG Canal 3 Development LLC*, EFSB 15-06/D.P.U. 15-180 (2017) at 142-143) (*Exelon West Medway LLC*, EFSB 15-01/D.P.U. 15-25 (2016), at 136).

departments to determine that they should have the same tools as investor-owned or “corporate” utilities. *Planning Board of Braintree, supra* at 28. By virtue of the addition of the “other entity” language, HMLP is inarguably a “public service corporation,” as it is an “entity...that own or operates...assets or facilities to provide electricity...to the public directly....” G.L. c. 40A, § 1A.

B. The New Substation and Tap Station are Reasonably Necessary for the Public Convenience and Welfare.

When making a determination as to whether a petitioner’s present or proposed use is reasonably necessary for the public convenience or welfare, the Department and the Siting Board balance the interests of the general public against the local interest and determine whether the present or proposed use of the land or structures is reasonably necessary for the convenience or welfare of the public. *See Save the Bay*, 366 Mass. at 680; *Town of Truro v. Department of Public Utilities*, 365 Mass. 407, 410-411 (1974); *Eversource Woburn-Wakefield* at 4. Specifically, the Department and the Siting Board undertake “a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [an] examination of the local and individual interests which might be affected.” *New York Central Railroad v. Department of Public Utilities*, 347 Mass. 586, 592 (1964); *see also, Eversource Sudbury-Hudson* at 195. When reviewing a petition for a zoning exemption, the Department and the Siting Board consider the public effects of the requested exemption in the state, as a whole, and upon the territory served by the petitioner. *See Save the Bay*, 366 Mass. at 685; *New York Central Railroad*, 347 Mass. at 592.

Therefore, when making the determination as to whether a petitioner’s present or proposed use is reasonably necessary for the public convenience or welfare, the Siting Board examines: (1) the present or proposed use and any alternatives or alternative sites identified; (2) the need for, or public benefits of, the present or proposed use; and (3) the environmental impacts or any other impacts of the present or proposed use. *See Eversource Sudbury-Hudson* at 195. The record in this proceeding conclusively demonstrates that the Project is reasonably necessary for the public convenience and welfare.

1. The New Substation and New Tap Station are Needed

The need for the Project, which includes the New Substation and New Tap Station, are addressed comprehensively in Section V.A., *supra*. See also Exh. HE-1, at 2-1 to 2-6. The uncontested record evidence demonstrates that the Project is needed for HMLP to meet reliability standards under certain contingencies given existing loads. HMLP's reliability needs are immediate and require resolution in order to ensure that HMLP's service territory does not suffer an extended outage. Exh. HE-2, at 7-8. Accordingly, the Siting Board should find that the Project, including the New Substation and New Tap Station, is needed to ensure a reliable supply of electricity to the Town of Hingham.

2. Alternatives to the Project and Proposed Sites Have Been Fully Evaluated

As described in detail in Section V.B., *supra*, HMLP extensively analyzed several alternatives to the proposed Project that might address the need for a reliable supply of electricity to the Town of Hingham. Moreover, in Section V.C.2.a and V.C.2.b, *supra*, HMLP demonstrated that it employed a comprehensive site selection process in selecting proposed sites for the New Substation in Hingham and the New Tap Station in Weymouth at locations that minimize costs and environmental impacts while ensuring a reliable energy supply. See also Exh. HE-1, Sections 3 and 4. Based on these comprehensive analyses of alternatives, HMLP has demonstrated that the Project, which includes the New Substation and New Tap Station, is superior to alternative approaches in terms of reliability, cost, environmental impact, and ability to meet the previously identified need. *Eversource Mid-Cape* at 26; *Eversource Sudbury-Hudson* at 27.

3. There Will be Minimum Impacts from the New Substation and New Tap Station

As detailed in Section V.D., *supra*, HMLP conducted a comprehensive analysis of the environmental impacts of the Project, including the New Substation and New Tap Station, and has appropriately minimized and mitigated those impacts while also balancing considerations of safety, design standards, cost and reliability. See also Exh. HE-1, Section 5. As detailed in Section V.E., *supra*, HMLP has also demonstrated that the New Substation and New Tap Station

are consistent with the Commonwealth's current health, environmental protection and resource use and development policies. Exh. HE-1, Section 6.

For the foregoing reasons, the Siting Board should find that the New Substation and New Tap Station are reasonably necessary for the convenience and welfare of the public.

C. The New Substation Requires Individual and Comprehensive Zoning Exemptions.

1. Standard of Review

In determining whether an exemption from a particular provision of a zoning bylaw is "required," the Siting Board looks to whether the exemption is necessary in order to allow construction or operation of the petitioner's project as proposed. *Park City Wind* at 177; *NEP Beverly-Salem* at 120; *Eversource Sudbury-Hudson* at 196; *Vineyard Wind* at 139. It is a petitioner's burden to identify the individual zoning provisions applicable to the project and then to establish on the record that exemption from each of those provisions is required:

The Company is both in a better position to identify its needs, and has the responsibility to fully plead its own case . . . The Department fully expects that, henceforth, all public service corporations seeking exemptions under c. 40A, § 3 will identify fully and in a timely manner all exemptions that are necessary for the corporation to proceed with its proposed activities, so that the Department is provided ample opportunity to investigate the need for the required exemptions.

New York Cellular Geographic Service Area, Inc., D.P.U. 94-44, at 18 (1995); *Park City Wind* at 177-178; *Eversource Mid-Cape* at 102-103; *Vineyard Wind* at 139; *NEP Beverly-Salem* at 120-121.

The Siting Board favors the resolution of local issues at the local level when possible to reduce concern regarding any intrusion on home rule. The Department and Siting Board have expressed that the most effective approach for doing so is for a petitioner to consult with local officials regarding its project before seeking zoning exemptions pursuant to G.L. c. 40A, § 3. *Park City Wind* at 169-170; *Eversource Sudbury-Hudson* at 193; *Vineyard Wind* at 132; *Russell Biomass LLC and Western Massachusetts Electric Company*, EFSB 07-4/D.P.U. 07-35/07-36, at 61-62 (2009). HMLP and Eversource have complied with both of these requirements.

2. Municipal Outreach

HMLP and Eversource have satisfied the Siting Board's standards with respect to consultation with local officials in the affected municipalities of Hingham and Weymouth. The multiple meetings and communications are described in Section III.C, *supra*. See also, Exhs. EFSB G-4, EFSB G-5, RR-EFSB-11.

HMLP and Eversource have actively engaged the two communities and the responsible officials in Hingham and Weymouth to discuss the applicability of local zoning provisions, the need for both the individual and comprehensive zoning exemptions. and HMLP's and Eversource's plans to seek zoning exemptions from the Siting Board. The officials indicated no opposition to those plans. Exhs. EFSB-HE-1, at 1-11 to 1-12; RR-EFSB-11. HMLP, both on its own and in conjunction with Eversource, has held multiple meetings with officials, residents and businesses in both Hingham and Weymouth.

HMLP and Eversource met with the Planning Director of Weymouth to discuss the New Tap Station and the zoning process. In an email dated December 14, 2022, the Weymouth Planning Director stated that he had spoken with the Weymouth Inspector of Buildings, and that "[s]ince switching stations are not allowed in R-1 zones and Weymouth does not allow use variances, you will need to seek relief from the appropriate state board." Exh. RR-EFSB-11, Attachment EFSB-11(2), at 1.

HMLP also met with the Hingham Planning Board and Zoning Board of Appeals, who, along with Town staff understood that HMLP would seek a zoning exemption. The community engagement in Hingham included an informal review of the proposed New Substation by the Hingham Planning Board and Zoning Board of Appeals, in lieu of formal zoning and planning reviews, including a widely-noticed, joint public meeting held by those two boards on June 4, 2024. Exhs. RR-EFSB-11; RR-EFSB-11(1). At the June 4, 2024 public meeting, the Zoning and Planning Boards received public comments, expressed no opposition to the proposed substation, and voted to recommend conditions for the Hingham Select Board to consider in connection with their transfer of the custody and control of the New Substation parcel to HMLP. Exh. HE-1, Appendix 1-1.

Accordingly, HMLP and Eversource have satisfied the Department's and Siting Board's standards regarding consultation with municipal officials in Hingham and Weymouth.

3. **The New Substation Requires Individual Exemptions from the Operation of the Hingham Zoning By-Law**⁵¹

As described in detail in the Joint Zoning Exemption Petition, the New Substation requires relief from the Hingham Zoning By-law in several respects. Exh. HE-2, Section VII.B. As demonstrated in Section V.A, *supra*, the New Substation is needed in the near-term in order to provide reliable service to Hingham. The zoning relief sought by HMLP in connection with the New Substation is necessary to allow for the timely, efficient and consistent construction of the Project.

As explained in the Joint Zoning Exemption Petition, the New Substation will be located in an Official and Open Space zoning district, as well as the Personal Wireless Services Overlay zoning district. Exh. HE-2, Section VII.B. Per Schedule III-A – Schedule of Uses in the Hingham Zoning By-law, public utility buildings and structures are permitted in the Official & Open Space zoning district, but only through approval of a Special Permit A1. Exh. HE-2, Exhibit G. Further, an additional special permit would be required with respect to parking per Section V-A of the Zoning By-law. *Id.* HMLP's proposed use is not listed. For uses not specifically covered by the Zoning By-law, parking requirements are determined by Special Permit A3. *Id.* As the New Substation will be uncrewed, and vehicles are parked only intermittently, a Special Permit A3 would be needed to determine the required number of parking spaces. Exh. HE-2, at 38. Therefore, HMLP seeks an exemption from any parking requirements per Section V-A of the Zoning By-law.

Further, the New Substation would require variances as it does not meet all dimensional requirements as set forth below:

- **Front Yard Setback:** Section IV-A, Schedule of Dimensional Requirements, requires a minimum front yard setback in the Official and Open Space Zoning District of 40 feet. The proposed front yard setback for the New Substation is 6 feet. HMLP would require a variance from the front yard setback requirement in Section IV-A Schedule of Dimensional Requirements of the Hingham Zoning By-law and therefore is seeking an exemption.

⁵¹ In its separate initial brief, Eversource demonstrates that individual and comprehensive exemptions to the Weymouth Zoning Ordinance should be granted with respect to the New Tap Station.

- Minimum Landscaping Requirements. Section IV-B, Special Requirements to Schedule of Dimensional Requirements for the Official and Open Space District, includes requirements for a green or landscaped strip not less than 15 feet wide along the entire street frontage of a lot, and a green yard space of not less than 20 feet in width along each side lot line and rear lot line. As these landscaping requirements cannot be met by the New Substation, a variance from these provisions of the Hingham Zoning By-law is required. HMLP seeks an exemption from the minimum landscaping requirements Section IV-B Special Requirements to Schedule of Dimensional Requirements for the Official and Open Space District.

HMLP would require variances from these requirements. In order to grant a variance, the Hingham Zoning Board of Appeals would need to find all of the following in accordance with G.L. c. 40A, § 10: that (a) due to circumstances exist relating to soil conditions, shape or topography of the particular parcel or structure that do not affect generally the zoning district in which the parcel or structure is located; (b) a literal enforcement of the provisions of the bylaw would involve substantial hardship to the applicant and there is a nexus between the special circumstance and the hardship; and (c) the relief requested may be granted without substantial detriment to the public good and without nullifying or substantially derogating from the intent or purpose of the bylaw. (Section I, subsection D of the Hingham Zoning By-law tracks this language.) The courts have held that no one is entitled to a variance, and that they are to be granted sparingly. *See e.g., Damaskos v. Board of Appeal of Boston*, 359 Mass. 55, 61 (1971). As a result, variances can be notoriously difficult to obtain. By virtue of the statutory requirements, while the grant of a variance would require detailed findings by the Zoning Board of Appeals, less would be required for a denial. *See Gamache v. Acushnet*, 14 Mass.App.Ct. 215, 220 (1982).

In HMLP's case, it would be difficult, if not impossible, to demonstrate the existence of unique conditions relating to soil conditions, shape or topography of the transfer station parcel that generally do not affect the rest of the Official and Open Space district. Further, it would be difficult to demonstrate the nexus between HMLP's hardship and the special circumstance where, as here, HMLP chose the site knowing it could not meet certain setback and landscape requirements. Even though the record demonstrates there is a scarcity of suitable sites in Hingham and the price of those sites would be prohibitive (Exh. HE-1, at 3-6, 4-7), these factors would be insufficient to satisfy the hardship requirement. The courts have found "financial

hardship” insufficient to satisfy the “substantial hardship” requirement of G.L c. 40A, § 10. *See e.g., McNeely v. Board of Appeal of Boston*, 358 Mass. 94, 101 (1970).

While it may be possible for HMLP to demonstrate the third criteria (*i.e.*, no substantial harm to public good and no derogation of the intent of the bylaw), failure to meet even one of the criteria would doom the grant of a variance. *See Kirkwood v Board of Appeals of Rockport*, 17 Mass.App.Ct 423, 428 (1984). Moreover, variances are a legally disfavored form of relief. *See e.g., Cornell v. Board of Appeals of Dracut*, 453 Mass. 888, 895 (2009); *Planning Board of Nantucket v. Board of Appeals of Nantucket*, 15 Mass.App.Ct 733, 738 (1983). Finally, even if granted, variances are susceptible to legal challenge and the courts undertake review of variances on a *de novo* basis, requiring them to make independent findings of fact. *See, e.g., Kirkwood, supra* at 426-427. Because of the legal uncertainty in obtaining variances, and the potential for adverse interpretations, delay, burden and undue expense associated with the permitting process and appeals therefrom, HMLP seeks an exemption from both the front yard setback and minimum landscaping requirements of the Hingham Zoning By-law.

Further, with respect to the Special Permit A1 (public utility buildings and structures in the Official & Open Space zoning district) and the Special Permit A3 (parking), standards for granting a special permit are subjective, the grant of a special permit is discretionary, and a special permit could contain burdensome or restrictive conditions that could impede HMLP from constructing the New Substation in accordance with applicable state and industry standards. Moreover, the process of obtaining Special Permits, as well as any appeals could further delay the construction and operation of the New Substation. As set forth in Section V.A, *supra*, because HMLP’s need for additional energy resources is current and immediate, delays would be contrary to the public interest because timely construction of the Project is necessary to ensure reliable service.

Additionally, Major Site Plan review is required for Special Permit A2 and A3 projects, or where land disturbance or drainage patterns over a combined area equal to or greater than 20,000 square feet; or land disturbance or drainage patterns over a combined area equal to or greater than 5,000 square feet where slopes exceed 10%; or a larger common plan of development disturbing one acre or more in the aggregate. Exh. HE-2, Exhibit A, Section I-I.2(a)(i)-(iii). Because the total land disturbance associated with the New Substation will be 31,000 square feet, HMLP would be subject to Major Site Plan Review.

As detailed in the Joint Zoning Exemption Petition, the Hingham Site Plan Review is a lengthy, iterative process. Exh. HE-2, at 42. Because substations are required to comply with numerous regulations such as the National Electric Safety Code (“NESC”), complying with several of the design and performance standards identified above would be difficult, if not impossible, where those standards conflict with NESC requirements. As further explained, it would be difficult to preserve and enhance natural features of the New Substation footprint, given the necessity of installing a retaining wall under the Zoning By-law, which would also make it difficult to blend into surrounding natural landscape and to replace removed trees and shrubs, especially in light of the surrounding ongoing transfer station activities. Finally, many provisions of Site Plan Review are simply inapplicable here, where pedestrians will not have access to the New Substation, members of the public will not be visiting the New Substation, there are no parking needs and the New Substation will not generate traffic.

Importantly, both the Hingham Planning Board and Zoning Board of Appeals reviewed the New Substation plans through an informal review process. On June 4, 2024, the Boards reviewed the Project, accepted public comment, indicated no opposition to the proposed substation, and voted to recommend conditions for the Select Board to consider in connection with their transfer of the custody and control of the Substation parcel to HMLP, with which HMLP intends to comply. Exhs. HE-1, at 1-11; HE-2, Exhibit G.

To avoid vagueness and subjectivity in the Hingham Zoning By-law, and the need to seek special permits, dimensional variances and other zoning relief, HMLP seeks the following exemptions in order to construct, operate and maintain the New Substation in Hingham:

Zoning Relief Requested from Hingham Zoning By-law

Zoning Provision	Criteria	Proposed	Relief Required
Section III-A Schedule of Use	Public utility uses are only permitted pursuant to criteria for Special Permit A1.	Public Utility Use requires Special Permit A1.	Zoning exemption will be required in lieu of Special Permit A1.
Section I-I Site Plan Review	Major Site Plan Review required for land disturbance greater than 20,000 sf.	Approximately 31,000 sf of disturbance requires Major Site Plan Review.	Zoning exemption will be required in lieu of Major Site Plan Review.
Section IV-A Schedule of Dimensional Requirements	Minimum Front Yard Setback is 40 feet.	Proposed Front Yard Setback is 6 feet	Variance from 40-foot setback requirement; zoning exemption will be required.
Section IV-B Special Requirements to Schedule of Dimensional Requirements for the Official and Open Space District	A minimum of 15% of the area of each lot shall not be built upon, paved or parked upon, and shall be maintained either in its natural state or landscaped. Along the entire street frontage of each lot a green or landscaped strip not less than 15' wide shall be maintained in its natural state or landscaped with grass, trees and shrubs, not paved except for driveways, not parked upon and not built upon except for signs. The required 15% may include the 15' green strip.	The New Substation abuts Old Hobart Road. The building and retaining wall extend to within 6 feet of the Old Hobart Road right of way.	Variance from the 15' wide green or landscaped strip requirement along the frontage; zoning exemption will be required.
Section IV-B Special Requirements to Schedule of Dimensional Requirements for the Official and Open Space district	A green yard space not less than twenty (20) feet wide shall be maintained open and green with grass, bushes, flowers or trees or any combination of them, along the entire length of each side lot line or rear lot line of such a lot and (except for entrance and exit driveways) along the	A green planted yard space is not proposed.	Variance from 20-foot green yard requirement; zoning exemption will be required.

Zoning Relief Requested from Hingham Zoning By-law

Zoning Provision	Criteria	Proposed	Relief Required
	entire street frontage of such lot, and such yard space shall not be built on nor paved nor used for automobile parking. Not less than 80% of the land area of such a lot shall remain open and unbuilt on, but such open space may be used for automobile off-street parking, driveways, sidewalks and store service yards, except that such use shall not be permitted in any part of the 20' wide green perimeter strip above specified. Notwithstanding the foregoing, a green yard space not less than fifty (50) feet wide shall be maintained open and green with grass, bushes, flowers, trees, or in an undisturbed natural condition, or any combination of the foregoing, along the entire length of each side lot line and rear lot line of such lot where such side lot line or rear lot line abuts a Residence A or Residence B or Residence C District.		
Section V-A. Off-Street Parking Requirements	For uses not specifically covered by the Zoning By-law, parking requirements shall be determined by Special Permit A3.	No parking spaces are proposed.	Zoning exemption will be required in lieu of Special Permit A3.

Exh. HE-2, at 44-45.

4. The New Substation Requires Comprehensive Zoning Exemptions

HMLP also requests comprehensive exemptions from the operation of the Hingham Zoning By-law with respect to the New Substation. The grant of a comprehensive zoning

exemption is based on the specifics of each case. *See e.g., Eversource Sudbury-Hudson* at 215. The Siting Board will grant comprehensive exemptions on “a case-by-case basis where the applicant demonstrates that issuance of a comprehensive exemption could avoid substantial public harm by serving to prevent a delay in the construction and operation of the proposed use.” *Park City Wind* at 208; *NEP Beverly-Salem* at 126-127; *Eversource Sudbury-Hudson* at 215; *Vineyard Wind* at 109-110. In order to make a determination regarding substantial public harm, the Department and the Siting Board have articulated relevant factors, including whether: (1) the project contributes to a reliable energy supply for the Commonwealth; (2) the project is time-sensitive; (3) the project involves multiple municipalities with potentially conflicting zoning provisions that could hinder the uniform development of a large project spanning these communities; (4) the proponent of the project has actively engaged the communities and responsible officials to discuss the applicability of local zoning provisions to the project and any local concerns; and (5) the affected communities do not oppose the issuance of the comprehensive exemption. *Park City Wind* at 208; *Eversource Mid-Cape* at 109-110; *Eversource Sudbury-Hudson* at 215; *Vineyard Wind* at 153.

The grant of a comprehensive zoning exemption is necessary even where individual zoning exemptions are granted, as the two types of zoning exemptions serve distinct needs. An individual zoning exemption relates to specific provisions in the Hingham Zoning By-law *currently* in effect, that have the potential to conflict or be inconsistent with, prevent, delay or obstruct the construction or operation of the Project. Comprehensive zoning exemptions are also necessary with regard to provisions currently in effect because zoning bylaws are rarely written with unique energy infrastructure facilities in mind. The lack of clearly defined and specific regulation of electric infrastructure in the zoning enactments, and the vague and subjective terms and provisions of zoning bylaws result in an imprecise, at best, application of the zoning provisions to energy infrastructure projects. Comprehensive zoning exemptions also go beyond the provisions in the current Zoning By-law (from which an individual zoning exemption may be granted), to exempt the Project from any *future* zoning enactment that comes into effect that has the potential to jeopardize the Project (in the same manner described above for individual zoning exemptions). The grant of comprehensive exemptions would remove any reasonable doubt as to the ability of the Project to move forward without violating any terms of the Hingham Zoning By-law.

In this manner, the two types of zoning exemptions work in tandem to ensure that meritorious energy facilities like the New Substation, and the Project as a whole, are constructed as approved by the Siting Board without undue delay. The very purpose of a comprehensive zoning exemption is thus to provide a mechanism for relief from local zoning that would not be available if only individual zoning exemptions were able to be secured. A comprehensive zoning exemption would also ensure the timely construction of the Project in the event that a Project design change is required.

As set forth herein, the New Substation satisfies the Siting Board's standards for the grant of comprehensive zoning exemptions. With respect to the first two factors, as described in detail in Section V.A, and Section VI.B, *supra*, the New Substation is necessary in order to ensure system reliability, and the need for the Project is immediate given that HMLP's current system does not meet established transmission reliability standards. With respect to the third factor, because the Project involves the construction of two stations in two municipalities – Hingham and Weymouth - potentially conflicting zoning provisions exist that might hinder the uniform and coordinated development of a complex project spanning these two communities.

With respect to the fourth and fifth factors, as discussed in Section VI.C.2, *supra*, HMLP and Eversource have actively engaged the two communities and the responsible officials in Hingham and Weymouth to discuss the applicability of local zoning provisions, the need for both the individual and comprehensive zoning exemptions and HMLP's and Eversource's plans to seek exemptions from the Siting Board. There was no opposition to these plans. *Id.*

In sum, comprehensive zoning exemptions from the operation of the Hingham Zoning By-law would ensure the timely construction of this important and time-sensitive reliability Project.

D. Conclusion on Zoning Exemptions.

For all of the foregoing reasons, HMLP requests that pursuant to G.L. c. 40A, § 3, the Siting Board determine that construction of the New Substation is reasonably necessary for the public welfare and convenience, and that the New Substation, the site on which the New Substation will be located, the uses to be made of it, and the structures to be built and maintained thereon by HMLP, be individually and comprehensively exempt from the operation of the Hingham Zoning By-law.

VII. CONCLUSION

For the foregoing reasons, and for the reasons articulated in Eversource's initial brief, HMLP requests that the Siting Board approve (1) HMLP's Petition to Construct the New Line, New Substation and New Tap Station pursuant to G.L. c. 164, § 69J, and (2) HMLP's and Eversource's Joint Petition for individual and comprehensive zoning exemptions with respect to the New Substation and New Tap Station pursuant to G.L. 40A, § 3.

Respectfully Submitted,

Hingham Municipal Lighting Plant

By its attorneys,

/s/ Robert D. Shapiro

Robert D. Shapiro

Diedre T. Lawrence

Duncan & Allen NE, LLC

25 Braintree Hill Office Park, Suite 200

Braintree, MA 02184

617-817-9365 (Shapiro)

617-435-2546 (Lawrence)

rds@duncanallen.com

dtl@duncanallen.com

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