# The Commonwealth of Massachusetts

## DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 11-80 July 9, 2012

Petition of NSTAR Electric Company for zoning exemptions pursuant to G.L. c. 40A, § 3 to construct, operate, and maintain modifications to an existing electric switching station in the Town of Plympton.

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# I. INTRODUCTION

## A. Description of Proposed Project

On August 26, 2011, NSTAR Electric Company ("NSTAR" or "Company") filed a petition ("Petition") for individual and comprehensive zoning exemptions from the Town of Plympton ("Town" or "Plympton") Zoning By-laws ("By-laws") pursuant to G.L. c. 40A, § 3 in connection with the Company's plan to modify its existing 115 kilovolt ("kV") Brook Street Switching Station in Plympton ("Station") to interconnect with the existing 23 kV Kingston Line 15 ("the Project") (Exh. NSTAR-1, at 31-32).[1]

The 3.47-acre Station, built in 2007, is located in a Business District (Exhs. NSTAR-1, at 2, 10; NSTAR-1(4)). The neighborhood in the vicinity of the Station is predominantly rural residential, with uses to the east of the Station that include commercial and industrial enterprises (e.g., sand and gravel and log-chipping operations) (Tr. 1, at 32, 57, 59, 60, 70, 108). An aerial view of the existing Station and its immediate surroundings is shown in Figure 1.

The Station has electrical buses and switches that interconnect five 115 kV transmission lines, including lines that connect the Station to the rest of the grid at Kingston Substation in Kingston, Carver Substation in Carver, and Auburn Substation in Whitman, as well as a pair

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[1] The Project consists of the following components: a 115 kV/23 kV transformer; two additional 115 kV circuit breakers with associated disconnect switches, a circuit switcher, bus work, and concrete foundations to complete the third bay of the breaker-and-one-half bus arrangement already at the Station; new supports for 115 kV bus work to connect the transformer; one bus section of 23 kV switchgear; one 4.8 megavolt-ampere, reactive, ("MVAR") capacitor bank; and protective relaying, metering, control wiring, and related equipment.

of radial lines serving West Pond Substation in Plymouth (Exhs. NSTAR-1, at 2-3; DPU 2-66(1) at 1). Adjacent to the Station, but not connecting to it, are a 345 kV line and the 23 kV Kingston Line 15 ("Line 15"); there are currently no facilities for voltage transformation at the Station (Exhs. NSTAR-1, at 2-3; DPU 2-66(1) at 1).

Line 15 is a 23 kV subtransmission feeder originating at Kingston Substation in Kingston, supplying approximately 20 megavolt-amperes ("MVA") of load to the west side of Kingston, much of Plympton, and part of Carver (Exh. DPU 1-13(S)(1)). The area currently served by Line 15 is shown in orange in Figure 2 (id.). According to NSTAR, Line 15 is nearing its normal rated capacity, and at 115 miles in total length (including five distribution circuits), it is vulnerable to contingencies that have resulted in distribution system reliability problems in prior years (Exh. NSTAR-1, at 19-21). The Company also cited the recent construction of a Sysco food warehouse in Plympton, and its load addition of approximately 4 MVA as a key reason for the increased importance and immediacy of addressing longstanding distribution system needs in the Plymouth District[2] (Exh. NSTAR-1, at 20). As part of the Project, NSTAR proposes to cut Line 15 adjacent to the Station and connect the cut ends into a proposed new 115 kV/23 kV step-down transformer that the Company would interconnect with the 115 kV service at the Station (Exh. NSTAR-1, at 25). These changes, in conjunction with opening a switch on Line 15 between Kingston Substation and the Station, would effectively split the existing load served by Line 15 into three different 23 kV radial

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[2] The Plymouth District includes the towns of Plymouth, Plympton, Kingston, and Carver.

feeders – two originating from the Station and one from Kingston Substation (id.). The areas to be served by the three feeders are shown in yellow, blue, and magenta on Figure 3.[3]

The Project would expand the Station's existing chain-link fence, increasing the fenced area at the Station from 31,000 to 39,000 square feet (Exh. NSTAR-1, at 4-5, 31-32). The estimated cost of the Project is approximately $5,700,000 and the estimated construction time is approximately six months (id. at 5).

B. Procedural History

The Company filed its zoning exemption petition on August 26, 2011. On October 19, 2011, the Department conducted a site visit and public hearing in Plympton. The Department conducted an evidentiary hearing at its offices in Boston on January 24, 2012. The Company sponsored four witnesses in the proceeding: John Zicko, Manager of Substation Design Engineering at NSTAR; Keith L. Jones, Senior Planning Engineer in the Transmission and Distribution Planning Group at NSTAR; Kevin McCune, Senior Environmental Engineer at NSTAR; and Peter A. Valberg, Principal with Gradient. The Department did not receive any petitions to intervene. The evidentiary record consists of the Company's zoning petition, prefiled testimony, responses to the Department's information requests, responses to the Department's record requests, and hearing testimony.

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[3] The area shown in blue on Figure 3 also reflects the Company's plan to switch load from a heavily loaded 23 kV feeder originating at West Pond Substation onto the westernmost of the segments to be derived from Line 15 (Exh. DPU 1-13(S)).

## II. REQUEST FOR INDIVIDUAL ZONING EXEMPTIONS PURSUANT TO G.L. c. 40A, § 3

### A. Standard of Review

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

> Land 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 by-law 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. Department of Public Utilities, 366 Mass. 667 (1975) ("Save the Bay"). Second, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public. Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 3-4 (2002) ("Tennessee Gas Pipeline Company (2002)"). Finally, the petitioner must establish that it requires exemption from the zoning ordinance or by-law. Boston Gas Company, D.T.E. 00-24, at 3 (2001).

#### 1. Public Service Corporation

In determining whether a petitioner qualifies as a "public service corporation" ("PSC") for the purposes of G.L. c. 40A, § 3, the Massachusetts Supreme Judicial Court has stated:

> among 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 at 680. See also D.T.E. 00-24, at 3-4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997).

The Department 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, i.e., that a present or proposed use of land or structure that is determined by the Department to be "reasonably necessary for the convenience or welfare of the public" not be foreclosed due to local opposition. See D.P.U. 96-104, at 30; Save the Bay at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407, at 410 (1974). The Department has interpreted the "pertinent considerations" 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." D.P.U. 96-104, at 30; see also Dispatch Communications of New England d/b/a Nextel Communications, Inc., D.P.U./D.T.E. 95-59-B/95-80/95-112/96-113, at 6 (1998). The Department has determined that it is not necessary for a petitioner to demonstrate the existence of "an appropriate franchise" in order to establish PSC status. D.P.U. 96-104, at 31.

2. Public Convenience and Welfare

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Save the Bay, 366 Mass. at 680; Town of Truro, 365 Mass. at 410. Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make 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). When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory served by the applicant. Save the Bay, 366 Mass. at 685; New York Central Railroad, 347 Mass. at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require the petitioner to demonstrate that its primary site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the primary site is reasonably necessary for the convenience or welfare of the public. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, 347 Mass. at 591.

Therefore, 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 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. The Department then balances the interests of the general public against the local interest, and determines whether the present or proposed use of the land or structures is reasonably necessary for the convenience or

welfare of the public. D.T.E. 00-24, at 2-6; D.T.E. 01-77, at 5-6; D.T.E. 01-57, at 5-6; Tennessee Gas Company, D.T.E. 98-33, at 4-5 (1998).

3. Exemption Required

In determining whether exemption from a particular provision of a zoning by-law is "required" for purposes of G.L. c. 40A, § 3, the Department makes a determination whether the exemption is necessary to allow construction or operation of the petitioner's Project. See D.T.E. 01-77, at 4-5; D.T.E. 01-57, at 5; Western Massachusetts Electric Company, D.P.U./D.T.E. 99-35, at 4, 6-8 (1999); Tennessee Gas Company, D.P.U. 92-261, at 20-21 (1993). 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).

B. Public Service Corporation Status

NSTAR is an electric company as defined by G.L. c. 164, § 1, and, as such, is a public service corporation. NSTAR Electric Company, D.P.U. 07-60/07-61, at 47 (2008); Commonwealth Electric Company d/b/a NSTAR, D.T.E. 03-7, at 5 (2003). Accordingly, the Department finds that NSTAR qualifies as a public service corporation for the purposes of G.L. c. 40A, § 3.

C. Public Convenience and Welfare

1. Need for or Public Benefit of Use

a. Capacity Issues

According to NSTAR, the primary purpose of the Project is to address normal capacity requirements (Exh. NSTAR-1, at 19). Kingston Transformer 193 (one of two transformers at Kingston Substation) and Line 15 will both reach 90 percent of their respective capacity in summer 2013 under normal conditions[4] (id. at 20). The Company attributed this expected growth to an additional 4 MVA of load (about 20 percent of the capacities of both Transformer 193 and Line 15) associated with construction and interconnection of the Sysco warehouse in Plympton and 2.7 megawatts ("MW) of annual load growth in the area (id. at 10, 20).[5, 6] The Company asserts that the Project would relieve Transformer 193 and Line 15 of a substantial amount of load, such that neither would be operating near capacity (id. at 24).

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[4] For purposes of this analysis, "normal conditions" means electric flows with no contingency loss of transmission or distribution elements. Normal conditions may include flows anticipated for peak loads such as a hot summer day.

[5] The Company's witness testified that Sysco operations would begin at the end of February 2012 (Tr. 1, at 10-11). Operation of the Sysco warehouse prior to completion of the Project is possible due to measures taken by Sysco and the Company, including transfer of a portion of the load usually served by Kingston Line 15 to West Pond Line 10 (Tr. 1, at 11). These measures currently are in place (id. at 10-11).

[6] The Company did not provide information showing that future growth in the area would likely cause the capacity of these elements to be exceeded under normal conditions in any particular future year.

b. Service Quality Issues

The Company indicated that five 23 kV distribution circuits, supplied by Line 15, had periods of above-average frequency and/or duration of interruption[7] from January 2008 through October 2011 (Exh. DPU 1-13). NSTAR described the circuits as "relatively inferior reliability performers," attributing this under performance to the length of the Line 15 circuits, which total approximately 115 miles including Line 15 itself and the distribution circuits it serves (Exh. NSTAR-1, at 24-25). NSTAR asserted that installing a new distribution transformer and breaking up Line 15 into three separate circuits would reduce both customer and equipment exposures to outages (Exh. NSTAR-1, at 25; Tr. 1 at 21-24). NSTAR asserted that the proposed reconfiguration would substantially enhance the reliability of area distribution circuits, in part by reducing the number of customers served by individual feeders (id. at 25; Exh. DPU-1-13(S)).

c. Contingency Issues

The Company operates Line 15 and West Pond Line 10 as radial feeders; all load served by either line is dropped in the event of contingency loss of the feeder (id.; Exh. NSTAR-1, at 23). The Company stated that, while it is often able to transfer loads among feeders to return service to customers, at higher load levels there may be insufficient residual capacity available to transfer loads between the lines (Exhs. DPU 1-8; DPU 1-10).

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[7] The reference is to two measurements of circuit performance, the System Average Interruption Frequency Index ("SAIFI"), and the System Average Interruption Duration Index ("SAIDI") (Exh. DPU 1-13).

The Company indicated, for example, that if Kingston Line 15, which serves as backup for West Pond Line 10, is near capacity, a single contingency outage of Line 10 could result in a failure to serve up to 22 MVA of load after switching because Line 15 will have no appreciable excess capacity to absorb switched customers (Exh. NSTAR-1, at 20-21). West Pond Line 10 is likewise backup for Kingston Line 15 and has inadequate capacity to serve customers for both areas in a single contingency outage of Line 15 (id. at 21). Attempts to serve all customers with the backup line would lead to exceedances of thermal limits of the feeder lines and/or transformers, as well as low voltage conditions (id. at 21-24; Exh. DPU 1-8).

NSTAR stated that it had identified recommended upgrades at the Brook Street Station in 2010, before Sysco proposed its warehouse, on the basis of the inability of West Pond Line 10 and Kingston Line 15 to provide sufficient mutual backup service during system contingencies (Exhs. NSTAR-1, at 23; DPU 1-8). The Company anticipated that operation of the new Sysco warehouse would exacerbate existing capacity constraints (Exh. NSTAR-1, at 21-24).

d. Remedial and Short-Term Measures Instituted

The Company indicated that it has already undertaken several measures to resolve outage performance issues on the various 23 kV and 4 kV circuits fed by Kingston Line 15 (Tr. 1, at 22-23; Exh. DPU 1-13). These measures include inspecting poles to identify problems with cross-arms, insulators, conductors, or the poles themselves; conducting targeted vegetation management; and reconfiguring selected circuits to convert some single-phase to multi-phase areas (Tr. 1, at 22-23; Exh. DPU 1-13). In anticipation of the addition of the new

Sysco warehouse to Line 15, the Company transferred some load from Line 15 to West Pond Line 10, allowing for operation of Sysco (Tr. 1, at 11). As a consequence of the latter reconfiguration, the Company indicated its current ability to serve all system load, including load from the new Sysco warehouse, under normal (non-contingency) conditions (Tr. 1, at 11).

The Company also identified a spare 12/16/20 MVA transformer owned by the Company and stored on-site at the Kingston substation that could be used during a contingency response involving Sysco or the NSTAR system in the vicinity of Sysco (Tr. 1, at 11-13). In addition, the Company noted that Sysco would have use of its own 4,000 kW on-site emergency generator in the event of a system contingency affecting the Sysco warehouse (id.). This generator, however, would serve Sysco only in the event of a power outage or other contingency and it would not be available to other NSTAR customers (Exh. DPU 2-49). The Company further stated that, in its role as a public service corporation providing substation and bulk-supply distribution, NSTAR is obligated to serve and cannot rely on a customer's installed backup generation to resolve the Company's own system constraints (Tr. 1, at 15-16). The Company noted that Sysco's emergency generator would be subject to air emission restrictions that might also limit its operation (id.).

NSTAR reported that remediated circuits were performing well as of 2011, but that even with the Company's short-term transfer of load, system capacity constraint issues have not been resolved (Exhs. DPU 1-13, DPU 1-13(S), DPU 2-49; Tr. 1, at 21-22). According to the Company, the Project is still required in order to increase capacity and thus avoid identified

capacity constraints through 2021 and to reduce outages on Line 15 (Exhs. DPU 1-13, DPU 1-13(S); Tr. 1, at 21-22).

e. Energy Efficiency and Renewables to Address Need

The Company indicated that renewable generation sources such as wind turbines or photovoltaic ("PV") arrays would not be viable as an alternative to the Project, either at Sysco or elsewhere on the Company's system (Exh. DPU 1-12). The Company stated that because both wind turbines and PV are intermittent sources and non-dispatchable, their output could not be relied upon to serve load at any particular time (id.). The Company argued that these forms of distributed generation would therefore be ineffective in reliably supplying the load requirements for Sysco, or for offsetting the need for the upgrades described in the Company's Petition (id.).

The Company also stated that energy efficiency would not defer need for the Project despite the fact that Sysco has implemented NSTAR's most comprehensive energy efficiency measures (Exh. DPU 1-12).[8] The Company indicated that its Project assumed that Sysco would use all recommended energy efficiency measures (id.). The Company explained that it also has extensive energy efficiency programs available to other customers in the Plymouth

[8] The Company indicated that this program, NSTAR's "Comprehensive Design Approach," targets overall building energy savings of twenty to thirty percent for new building construction as compared to Massachusetts Building Code requirements (Exh. DPU 1-12).

District, but that given the rural-residential and light-commercial character of the area, it would not be possible to completely offset the step load increase related to Sysco (id.).[9]

f. The Company's Position

The Company stated that the Project is needed to improve reliability and increase the capacity of the electric system serving the Plymouth District (Exh. NSTAR-1, at 19). The Company indicated that the transformer addition at the Station is required to: (1) resolve high loading conditions at NSTAR Electric's Kingston Substation that will result from construction and operation of a new 700,000-square-foot Sysco warehouse, and (2) improve reliability of the Kingston Line 15 23 kV distribution supply feeder that will serve the new load addition and that currently serves several distribution circuits that historically have had reliability problems (id. at 20).

The Company asserted that installing a new distribution transformer and breaking up Line 15 into three separate circuits would reduce both customer and equipment exposure to outages (Exh. NSTAR-1, at 25; Tr. 1 at 21-24).[10] The Company stated that it proposed reconfiguration of Line 15 because of the Company's responsibility to plan for any reasonably foreseeable outage of its transmission and distribution system, including loss of a transmission line, substation transformer, or distribution feeder (Tr. 1, at 24). The Company indicated that

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[9] NSTAR stated that it must obtain 4 MW of summer peak load relief to offset the load increase from Sysco (Exh. DPU 1-12).

[10] The Company indicated that the proposed modifications would reduce both the total length of Kingston Line 15 (to approximately 49 miles) and the length of its associated circuits (Exh. NSTAR-1, at 25). The Company's modifications would create two new 23 kV feeders from the Station, one heading north approximately 21 miles, and another heading south for approximately 44 miles (id.).

planning criteria in its 2011 Annual Planning and Reliability Report filing with the Department also support need for the Project (Tr. 1, at 20).

g. Analysis and Findings

The Company maintains that its electric system serving the Plymouth District requires the addition of a new 115 kV/23kV, 30/40/50 MVA step-down transformer and associated switching equipment at the Company's existing Brook Street Station. The record shows that the Company included the Project as part of its 2011 Annual Planning and Reliability Report filing with the Department, but did not assign the project a high priority ranking. The Project became a high priority with the addition of the Sysco warehouse.

As described above, Kingston Line 15 and the transformer serving Line 15 are expected to be operating close to capacity in summer 2013 even under normal operating conditions, due in part to the interconnection of the Sysco warehouse. The Project would increase the capacity of the distribution system in the Kingston and Plympton area, and allow for additional growth in load through 2021.

Periods of below-average service quality, as discussed in Section II.C.1.b, above, have been experienced on some circuits served by Kingston Line 15. Interruptions of service caused by events on the lower voltage distribution lines, including short-term interruptions due to transient losses, can be reduced by decreasing the mileage of circuitry served by a single radial feeder. The Project, which would break up Kingston Line 15 into three separate circuits, should therefore improve the quality of service experienced by customers in the area served by Line 15.

Lines 15 and 10 lack sufficient capacity to provide backup, post-single contingency and post-switching, to provide service to customers on the other line, when loads are high. The Project would increase the spare capacity of 23 kV feeders in the Kingston/Plympton area, thereby providing a way to restore power to customers in the event of a contingency loss of a transformer or 23 kV line.

Prior to providing service to Sysco, the Company has taken measures to mitigate some of the capacity, service quality, and flexibility issues resulting from the combination of high usage and addition of a major customer. While useful in the short term to ensure that element capabilities are not exceeded, these short-term measures do not fully resolve load growth, service quality, and system flexibility issues. Thus, some flexibility exists with respect to the timing of initial Project operation, but there is a long-term need for the Project.

Based on: (1) potential for load growth to exceed normal operating limits of the 23 kV system in the Kingston/Plympton area in the near future; (2) longstanding service quality issues on many of the distribution circuits served by Kingston Line 15; and (3) single-contingency exposure of distribution customers in the area to load shedding, the Department concludes that the Project is needed and will provide public benefits.

2. Alternative System Modifications Explored

In addition to exploring whether energy efficiency or distributed generation might meet the need for the Project, NSTAR evaluated two alternatives to the Project that would involve system modification. The Company's evaluation of these two alternatives included cost, reliability, and environmental information, summarized in Table 1, below.

**Table 1. Project and Alternatives Comparison Summary**

| | Project | Alternative One | Alternative Two |
|---|---|---|---|
| **Description** | Install 115 kV breakers & new 115 kV bay at Brook St. Station. Install new transformer and 23 kV bus section and cutovers of Line 15 into new station. | Replace both transformers at Kingston Substation and upgrade 23 kV secondary breakers and buswork. Upgrade 8.7 miles of 23 kV distribution lines. | Install package substation at Sysco and tie-in with existing 23 kV system. Install 115 kV switches and bring new 115 kV line tap into station. |
| **Total Cost** | $5,700,000 | $6,200,000 | $6,500,000 |
| **Reliability Need**: Reliability performance of 23 kV Kingston Line 15 | Reduces number of customers served and exposure to outages by reconfiguring existing Line 15 with a total of 115 wire miles into 3 shorter circuits (49, 21, and 44 miles). Creates the potential to reconfigure other 23kV feeders that end very close to Station site. | No significant improvement: no new circuits created, no reduction of existing circuit lengths. More exposure to system during construction. | Allows similar reconfiguration of line as proposed Project; however, system would not be as robust. Increased exposure: loss of 115 kV line would result in loss of package substation. |
| **Construction Period** (assumes shovel-ready site) | 6-month duration; construction at Brook St. Station. | 12-month duration; construction at Kingston Substation and on public ways and ROWs. | 5-month duration; construction on Sysco site or ROW. |
| **Environmental Concerns** | | | |
| Land Use | Land use at Brook St. Station consistent with current use. | Land use at Kingston consistent with current use, but approximately 8.6 miles of existing conductor would be upgraded. | There is not an existing switching station or substation at this site. |
| Wetland Resource Areas | Not located in area regulated under Wetland Protection Act, Wetland Protection Regulations or Town of Plympton Wetland Bylaws. No certified or potential vernal pools within 750 feet of site, or any rivers or streams within 200 feet of site. | Portions would cross several wetland resource areas and streams, as well as be within 750 feet of at least one Certified Vernal Pool. Use of temporary construction matting possibly necessary to access structures and/or establish pull point work zones. | Not located in area regulated under Wetland Protection Act, Wetland Protection Regulations or Town of Plympton Wetland Bylaws. No certified or potential vernal pools within 750 feet of site, or any rivers or streams within 200 feet of site. |
| Wellhead Protection & Water Supply Resource Areas | Not within DEP Zone II Wellhead Protection Area or Interim Wellhead Protection Area | Portions located within areas designated as DEP Zone II Wellhead Protection and Interim Wellhead Protection Areas. | Not within DEP Zone II Wellhead Protection Area or Interim Wellhead Protection Area. |
| Groundwater | Located within Groundwater Protection Overlay District (GPD). Company must seek exemptions from certain use activities. | Portions would be located within the Plympton GPD, but no exemptions would be required. | Located within Groundwater Protection Overlay District (GPD). Company must seek exemptions from certain use activities. |

**Table 1. Project and Alternatives Comparison Summary**

| | Project | Alternative One | Alternative Two |
|---|---|---|---|
| Visual | Visual panorama will be essentially unchanged. | Increased visual impacts resulting from additional lines and structures; likely that certain pole heights along the 8.6 miles of distribution lines will need to be increased. | Increased visual impact with regards to a new substation. |
| Noise | Greatest noise impacts will be temporary in nature and will occur during construction at a site already in public utility use. | Greater construction noise impacts over a wider geographical area since construction would occur at the Kingston Substation and along public streets and ROW. | Greatest noise impacts will be temporary in nature and will occur during construction at a new site for public utility use. |
| Traffic | Not located on, nor does it cross over, a public roadway. | Would involve crossing of several public streets as well as construction along approximately 5 miles of streets within Carver. During construction, it may be necessary to temporarily stop or re-route traffic. Police traffic details necessary. | Not located on, nor does it cross over a public roadway. |
| Areas of Critical Environmental Concern ("ACEC") | Not located within an ACEC. | Not located within an ACEC. | Not located within an ACEC. |
| Historic Resources | No known cultural or historic sites. | Portions pass through Lakenham Historic District. | No known cultural or historic sites. |
| Flood Zone | Not located in area designated as flood zone, velocity zone, or over-wash zone according to Flood Insurance Rate Map ("FIRM") and Federal Energy Management Agency ("FEMA") data from Mass GIS. | Portions located within FIRM and/or FEMA designated Flood Zones, but not anticipated that construction would have any adverse affect on these areas. | Not located in area designated as flood zone, velocity zone, or over-wash zone according to Flood Insurance Rate Map ("FIRM") and Federal Energy Management Agency ("FEMA") data from Mass GIS. |
| Protected Species and Habitat | Not located within a Priority or Estimated Habitat Area. | Portions located within Priority Habitat. | Portions, and possibly all of the project will be located within Priority Habitat. |

Sources: Exhs. DPU 1-15(1); DPU 1-15(S)(1); RR-DPU-8; Tr. 1, at 126.

a. Alternative One

NSTAR's first alternative to the Project ("Alternative One") would replace the two existing 12/16/20 MVA transformers at the Kingston substation with two 30/40/50 MVA transformers (Exh. NSTAR 1, at 26). In addition, the Company would upgrade: (1) approximately 3.9 miles of existing conductor on Kingston Line 15; (2) 1.4 miles of existing conductor on West Pond Line 10; and (3) 3.4 miles of West Pond Circuit 930 from its tap point with West Pond Line 10 in Carver to its tie point with Kingston Circuit 901 in Plympton (id.).

The Company stated that Alternative One would meet the Sysco load addition and NSTAR's forecasted area load growth through 2021, the last year of the current ten-year load forecast (Exh. NSTAR 1, at 26-27). The Company emphasized, however, that there would be no reliability improvement on Kingston Line 15 and its associated circuits since they would not be reconfigured and/or shortened as part of Alternative One (id.). The Company also noted that required outages of both transformers at the Kingston substation would make construction arrangements more complicated for Alternative One than for the Project (id. at 27-28).

The Company asserted that the environmental impacts of the Project are less significant than those for Alternative One, except with respect to potential impacts to groundwater, ACECs, and flood zones (Exh. DPU 1-15(1)).[11] Regarding groundwater, the Company noted that it must seek certain use exemptions for the Project, given its location within the Plympton Groundwater Protection Overlay District ("GPD"), whereas the Company could construct

[11] NSTAR also noted that temporary traffic and noise impacts would be greater for Alternative One than for the Project because of the longer construction time (an additional six months) that Alternative One would require (Exh. DPU 1-15(1)).

Alternative One in compliance with the existing GPD use restriction (id.). The Company indicated that the Project and Alternative One would have comparable impacts to ACECs and flood zones (id.).

b. Alternative Two

The Company also evaluated a second alternative ("Alternative Two") involving the construction of a new "package substation" [12] 1.6 miles south of the Station at the Sysco site to serve Sysco and other NSTAR customers (Exh. NSTAR 1, at 28). The Company indicated that it would locate the package substation for Alternative Two either on the Sysco site or on an adjacent NSTAR ROW (id. at 29; Tr. 1, at 25-27; RR-DPU-2).[13]

The Company stated that, similar to the Project, installing a package substation would allow NSTAR to reconfigure Kingston Line 15 into several shorter lines, each with fewer customers (Tr. 1, at 28-29). While Alternative Two would be comparable to the Project in the near term with respect to addressing the Sysco load increase and reducing exposure to outages, the Company contended it would add only half the capacity of the Project (id.). According to the Company, Alternative Two would therefore not remedy all capacity constraints in the load area through 2021 (id. at 29).

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[12] A package substation comes with all 115 kV switching equipment, 25 kV switching equipment, and control and protection equipment installed, pre-wired, and factory assembled in a shipping container (Exh. NSTAR 1, at 28). The substation would also have a 25 MVA transformer that the Company would install separately (id.).

[13] The Company stated that, were it to go forward with Alternative Two, its preference would be to construct on the ROW, owned by NSTAR and adjacent to the Sysco property, because it would eliminate the need for a real estate negotiation with Sysco or another landowner in the area (Tr. 1, at 25-26). The ROW presently carries a single 345 kV line (id. at 25).

According to the Company's review of the environmental impacts, the Project would be preferable to Alternative Two with respect to construction duration, land use impacts, visual issues, noise concerns, and impacts to protected species and habitat. The Company's review indicated that the environmental impacts of the Project and Alternative Two would otherwise be comparable (id.).

c. Analysis and Findings

Each of the alternatives would be more costly than the Project and would involve more construction-related impacts. Furthermore, in comparison to the Project, Alternative One would do less to address identified reliability concerns in the Plympton-Kingston load area and Alternative Two would potentially fall short of remedying capacity constraints in the load area through the end of the current ten-year load forecast in 2021. Accordingly, the Department finds that the Company's decision to pursue the Project rather than the alternatives is reasonable and appropriate.

3. Impacts of the Proposed Use

a. Land Use Impacts

The Company stated that land use impacts of the Project would be limited because installation of the Project on NSTAR property would be consistent with the current land use (Exh. DPU 1-15(1)). NSTAR indicated that the Project would involve modifying a 115 kV transmission line connection point within the Station, but would not require transmission line work outside the Station (Exh. NSTAR-1, at 31-32). Construction of the Project would enlarge the Station fenced area by approximately 8,000 square feet to a total area of approximately 39,000 square feet (id.). In addition, the Company addressed a concern raised by the Town regarding where the Company would site a 100-foot mast necessary for lightning

protection of the Project (Exh. DPU 1-7).[14] The Company explained that it would install the mast in the center of its Station parcel and that the Station footprint would more than encompass both the mast and its 100-foot-radius drop area (id.; Exhs. DPU 1-7(1); DPU 1-7(2)).[15]

The Company indicated that there are no known cultural or historic resources at the Project site, and that the location is outside ACECs (Exh. DPU 1-15(1)). Project construction would not require tree clearing or other disturbances to land, vegetation or habitat areas (id.)

b. Visual

The Company indicated that Project construction at the Station would not require any additional vegetation removal (Exhs. DPU 1-20; DPU 2-54; Tr. 1, at 44-46, 52; RR-DPU-3).[16] Expansion of NSTAR's facilities at the Project site would be on the side of the Station parallel to and farthest from Brook Street (Exhs. 2-54(S); 2-54(S)(1); Tr. 1, at 44-45; RR-DPU-4). As a result, existing Station structures would screen views of new equipment from the street and vegetation management would not cause visual impacts at abutting properties (Exhs. 2-54(S); 2-54(S)(1); Tr. 1, at 44-45, 52; RR-DPU-4). The Company indicated that as part of its

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[14] The Electrical Inspector/Zoning Officer of the Town of Plympton raised questions on behalf of the Town with respect to the mast and its drop area (i.e., where the mast would land if it fell) at a public hearing regarding the Project held in Plympton by the Department (Public Hearing Tr. at 15-16).

[15] In support of its statement, the Company submitted a large-scale map of the Station and the vicinity as well as a copy of the site plan for the enlarged Station, both displaying the location of the mast and drop area (Exhs. DPU 1-7(1); DPU 1-7(2)).

[16] Removal of the identified arborvitae at the Station was required under NSTAR's vegetation management program and is now complete (Exhs. DPU 2-54; DPU 2-54(S)(1); Tr. 1, at 44-46).

vegetation management program, it would replace those arborvitae removed with new plants[17] not exceeding 15 feet in height when mature (Tr. 1, at 45-47). The Company explained that its intent is not to screen the Station, but to maintain the character of the area and break up the visual impact experienced by passersby (id.).

With respect to the 100-foot mast that NSTAR proposes installing at the Station, the Company stated that it would be a flagpole-like structure, constructed of unpainted galvanized steel, no taller than some of the 345-kV transmission towers already located immediately nearby at the rear of the Station (Tr. 1, at 43-44; Exhs. DPU 1-25; DPU-2-59). The Company indicated that the mast would be no more intrusive than existing facilities and equipment at the Project site (Tr. 1, at 43-44).

While it planned no specific visual impact mitigation as part of the Project, NSTAR would work closely with any abutter with specific concerns[18] about visual impacts (Exh. DPU 1-18). The Company stated that individual abutters[19] expressed a number of concerns during the public hearing related to Station lighting at night, vegetative screening, and the existing and potential visual impacts of Station facilities at their residences (Tr. 1, at 105-107). With respect to visual impacts of Station lighting at night, the Company explained that it was planning to wire upward- and downward-facing lighting separately and would leave upward-

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[17] The Company stated that for replacement purposes it would select a variety of deciduous and evergreen trees from such species as high bush blueberry, witch hazel, hinoki cypress, holly, or shadblow (Exh. DPU 2-54).

[18] The Company stated that Project abutters and the Town would have the telephone number of the Company's Community Relations Manager for the area (Exh. DPU 1-2). They would also be able to bring their concerns directly to NSTAR's Site Supervisor, who usually would be present on site during construction (id.).

[19] Figure 1 shows the location of abutters relative to the Station.

facing lights off should downward-facing lights be required for night maintenance or security (id. at 75-76, 106-107). The Company stated that, during the past year, yard lights were on at the Station less than two percent of nighttime hours, and only for work dictated by an emergency or by other special system conditions (RR-DPU-7).

c. Wetlands and Water Resources

The Company indicated that construction and operation of the Project would not occur in (1) a FIRM- or FEMA-designated flood, velocity, or over-wash zone, or (2) an area regulated under the Wetland Protection Act, Wetlands Protection Regulations or Town of Plympton Wetland By-laws (Exh. DPU 1-15(1)). The Company reported the absence of certified or potential vernal pools within 750 feet of the Project site, and of rivers and streams within 200 feet of the Project site (id.). The Company also indicated that it does not anticipate contamination of groundwater by stormwater, and further explained that containment built around the transformer as part of the Project would protect stormwater and groundwater from an accidental release of mineral oil dielectric fluid ("MODF") (Tr. 1, at 62-63; Exh. DPU 1-43(R)). [20]

Further, the Company contends that factors such as the location of the Project relative to surficial water resources, the depth of groundwater resources, and contaminant measures at

[20] The Company provided a copy of its Spill Notification and Response Procedures (Exh. DPU 1-42). NSTAR stated that it would activate its spill notification procedure in the event of any release to the environment (Exh. DPU 1-43(R)). The Company further indicated that, upon completion of Project construction, it would develop a Station-specific Spill Prevention Control and Countermeasure ("SPCC") Plan for implementation at the Station in conjunction with local fire, health, and safety authorities (Exh. DPU 1-44).

the Station would all serve to prevent impacts to wetlands and water resources due to Project construction and operation (Exh. DPU 2-60; Tr. 1, at 63-64).[21]

d. Traffic

Five to 15 vehicles would likely arrive and depart in the vicinity of the Project at typical morning and evening rush hours during Project construction (Exh. DPU 1-33). The Company stated that sufficient off-street parking would be available on Company property at the Station for vehicles and that access would be via the main gate on Brook Street (Exh. DPU 1-34). The Company stated that it would coordinate arrangements for any additional parking and for traffic management, as necessary, with the Plympton Police Department (id.).

Materials and large equipment such as excavators and cranes would arrive at the site via trailer, and would remain off-road for the duration of construction after off-loading; cement trucks would pour equipment foundations at the Station (Exhs. DPU 1-35; DPU 1-36). Staging and laydown of equipment and materials would be within an area at the Station where three large transmission ROWs converge (Exh. DPU 1-35). The Company noted that movement of materials from the laydown area for installation or use at the Project site would not involve travel on a public roadway (id.).

The Company stated that it would hire a police detail for assistance with traffic control should maneuvering a transformer, metal clad switchgear, or other large equipment onto the Project site require temporary blocking of Brook Street (Exh. DPU 1-36). The Company

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[21] The Station is, nonetheless, located within the Town of Plympton's Groundwater Protection Overlay District, "GPD Type 1" (Exh. DPU 2-60). See Section III for discussion of the Company's concerns regarding compliance with the Town's By-laws, including GPD-Type-1 requirements.

contends there would be no need for detours or changes in traffic patterns on such occasions because any traffic disruption would be infrequent and of limited duration (id.).

e. Noise Impacts

The Company described noise impacts of the Project as primarily construction-related, typical of equipment used for light excavation, concrete delivery, and installation of steel/aluminum structures, i.e., 55 to 70 decibels at a distance of 300 feet (Exh. NSTAR-1, at 34; Exh. DPU 1-30). To minimize noise during construction, the Company stated that it anticipated using foundations placed during the initial construction of the Station, limiting the size of construction equipment when possible, and preparing certain Project elements off site for rigging and assembly upon delivery (Exh. DPU 1-30).

The Company estimated completion of its Project in six months, assuming work from 7:00 a.m. to 6:00 p.m., Monday through Saturday, for the duration of construction (Tr. 1, at 38; Exh. DPU 1-32). The Company stated that if a work-related outage were required outside of the requested work hours, the Company would undertake construction activities such as wiring and cutover work that would not necessitate use of heavy equipment (Tr. 1, at 38).[22]

The Company further stated that NSTAR or its contractors would use sound-attenuated generators for construction (id. at 41-42). The Company stated that its usual practice is to give Town officials and local residents approximately two weeks' notice[23] of any and all impending

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[22] The Company also indicated it would be filling a power transformer with oil for the Project, an activity that, once begun, would continue without interruption for 24 hours or more until completed (Tr. 1, at 39). NSTAR reported that it typically uses an oil processing rig in a trailer with sound-attenuation for this operation (id.).

[23] The Company specified that it would notify abutters and abutters to abutters within 300 feet of the proposed Project site (Tr. 1, at 40-41).

construction and anticipated construction-related noise (id. at 37, 40-42). The Company expressed its readiness to address, on a case-by-case basis, impacts related to construction noise, particularly impacts resulting from construction early or late in the day Monday through Friday or any time during construction hours on Saturday (id. at 39).

The Company anticipated that the transformer would be the only continuous noise source associated with the Project after its completion (Exh. DPU-1-30; Tr. 1, at 36). The Company indicated that it would limit noise impacts to abutters from the transformer by placing the transformer on the side of the Station site away from residences (Exh. DPU-1-30). The Company noted that the closest abutting property line is 228 feet from the Station parcel; the closest residential structure to the Project would be approximately 300 feet from the transformer (id. at 34-35; DPU-RR-9). Further, to mitigate the impact of transformer noise, the Company stated that the transformer would incorporate built-in sound-walls and other features to attenuate sound (id.). With these features in place, the Company estimated that transformer noise would be 34 dB(A) to the east (375 feet away), 37 dB(A) to the south-southwest (250 feet away), and 38 dB(A) to the west (228 feet away) at the closest property lines of the closest residences to the transformer, with lower levels of noise experienced at residences (RR-DPU-9).[24,25]

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[24] The Company estimate of anticipated noise from the transformer at the Station property lines would be 41 dB(A) to the west and 46 dB(A) both to the east and along Brook Street closest to the transformer (RR-DPU-9).

[25] The Company indicated that its noise estimates might overstate noise from the transformer because the estimates did not reflect noise attenuation resulting from structures and vegetation between the transformer and nearby residences (Tr. 1, at 108).

The Company anticipated that noise from transformer operation would result in an increase at the Station's property lines of approximately 4 dB(A) to the east, 7 dB(A) to the south-southwest, and 8 dB(A) to the west above a nighttime $L_{90}$ ambient estimate of 30 dB(A) (DPU-RR-9).[26,27]

f. Air Impacts

The air impacts of the Project would be predominantly construction related. NSTAR submitted a list of measures that the Company uses to control and/or suppress dust during construction and operation of its facilities (Exh. DPU 1-37). The measures listed by the Company include controlling dust from construction with water or by covering potential dust sources with a vegetative, stone, plastic, or calcium chloride cover (id.).

The Company provided a preliminary list of diesel-powered non-road construction equipment with engine horsepower ratings of 50 horsepower or above that it anticipated likely would be used on the Project (Exh. DPU 1-38). NSTAR stated that it would incorporate a contractual requirement for contractors to retrofit with appropriate emission control devices[28] any diesel-powered non-road construction equipment rated equal to or greater than 50 horsepower to be used for 30 or more days over the course of the Project (id.). The Company

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26 The Company stated that it arrived at a 30 dB(A) nighttime $L_{90}$ ambient by adjusting downward for the absence of any traffic at Plympton from ambient sound level measurements recently taken by NSTAR at a rural location in Stoughton, MA (RR-DPU-9). The Company stated that in rural areas such as Plympton, a 30 dB(A) nighttime $L_{90}$ ambient is common (Tr. 1, at 108).

27 The Company noted that although the Station is in a rural area, two industrial sources of noise, a gravel operation and a log-chipping concern, operate nearby and contribute to ambient noise during the day (Tr. 1, at 108).

28 Such devices are verified by the U.S. Environmental Protection Agency ("USEPA") (Exh. DPU 1-38).

stated that the Project would not involve use of diesel-powered non-road equipment owned by NSTAR, nor would NSTAR directly lease any diesel non-road equipment for the Project (id.).

NSTAR stated that it has a Company-wide idling reduction policy that would apply to all phases of construction for the Project (Exh. DPU 1-39).[29] NSTAR further stated that it would incorporate a line item for vehicle idling into the construction inspection checklist for the Project to ensure strict adherence to state law (id.).

NSTAR provided information in response to questions from the Department regarding its use of sulfur hexafluoride ("$SF_6$"), a gas that has been identified as a non-toxic but highly potent greenhouse gas ("GHG"). The Massachusetts Clean Energy and Climate Plan[30] adopts a 2020 statewide GHG emissions limit of 25 percent below 1990 emissions levels and sets forth an integrated portfolio of policies to reach the Commonwealth's clean energy and climate goals.[31] One of the policies set forth in the Plan is reducing $SF_6$ emissions by 2020, equivalent to a reduction of 0.2 million metric tons of $CO_2$, which by itself would reduce state-wide GHG emissions by approximately 0.2 percent.

As of December 31, 2010, NSTAR reported an $SF_6$ nameplate capacity of 67,207.5 pounds of gas under the USEPA "$SF_6$ Emission Reduction Partnership for Electric Power

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29 The Company indicated that NSTAR's idling reduction policy prohibits idling of Company and contractor vehicles and construction equipment for more than five minutes unless the equipment in question is in use under certain conditions in accordance with the Massachusetts Anti-Idling Law, G.L. c. 90 § 16A, c. 111, §§ 142A – 142M, and 310 CMR § 7.11 (id.).

30 On December 29, 2010, the Secretary of Energy and Environmental Affairs issued the Massachusetts Clean Energy and Climate Plan for 2020. See G.L. c. 21N.

31 $SF_6$ is a GHG that is 23,900 times more potent than $CO_2$. One pound of $SF_6$ has the same global warming impact as eleven tons of $CO_2$. See the Massachusetts Clean Energy and Climate Plan for 2020, at 77.

Systems" program (Exh. DPU 2-69). The Company indicated that it would use $SF_6$ in the 115 kV circuit breakers and circuit switcher for the Project as an electrical insulating and interrupting medium (Exh. DPU 1-41). The circuit switch would contain six pounds of $SF_6$ gas and each of the two circuit breakers would contain 64 pounds of $SF_6$ gas (id.). NSTAR further stated that it would not otherwise store $SF_6$ on the Project site (id.). NSTAR records indicated that the Brook Street Station currently has a nameplate capacity of 448 pounds of $SF_6$ (Exh. DPU 2-69). The Company estimated its 2011 emissions rate for the Station at 2.9 percent based on its use of 13 pounds to top off equipment at the Station (id.). The Company reported that equipment proposed for installation at the Station would have a "design emission rate" of less than 0.1 percent per year (id.).[32,33]

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[32] The Company indicated that its current practice is to install "third generation" $SF_6$-filled equipment, designed with a leakage rate of less than 0.1 percent per year (Exh. DPU 2-69). The Company also reported implementing an active monitoring and repair program in an effort to reduce $SF_6$ emissions from existing equipment (id.). The Company indicated that, as part of this program, maintenance personnel record the amount of $SF_6$ added to any equipment; the information recorded by maintenance personnel then becomes part of a database used by the Company to monitor and prioritize $SF_6$-filled equipment for repair (id.).

[33] The Company indicated that new $SF_6$ equipment is filled by NSTAR personnel trained by the equipment manufacturer or by contractor personnel working under NSTAR supervision (Exh. DPU 2-69). The Company stated that if any equipment required "topping off" while in operation, trained NSTAR employees would carry out this task according to instructions from the manufacturer (id.). The Company further stated that it would ship $SF_6$ in cylinders approved by the U.S. Department of Transportation and handle $SF_6$ in accordance with all applicable guidelines (e.g., guidelines of both gas and equipment manufacturers) (id.). The Company explained that equipment is typically filled once in its lifetime; however, should it be necessary to open equipment, the Company would use a gas cart for $SF_6$ capture (id.). The Company stated that, to minimize atmospheric releases, a specialty gas vendor would recover and reclaim $SF_6$ upon equipment retirement (id.).

g. Magnetic Fields

The Company provided an assessment, conducted by its consultant, of potential magnetic field impacts associated with upgrades to the Brook Street Station (Exh. DPU 2-66(1) at 1). The Company explained that the 23 kV overhead Line 15 currently carries power south along Brook Street, but would feed power both north and south after the upgrade (id.; Exhs. DPU 1-13(S)(1); DPU 1-13(S)(2). The Company provided modeled magnetic field impacts from structural changes (transformer and additional buswork) in the Station as well as from changes in the projected loads on the nearby transmission and distribution lines due to the proposed upgrade (Exh. DPU 2-66(1) at 1).

The Company reported that, overall, the magnetic fields at the fence line of the Station would be reduced by the proposed changes to the Station (Exh. DPU 2-66(1) at 1). The Company indicated that, in the existing configuration, the maximum magnetic field at the fence line is 75 milligauss ("mG"), found on the east side of the Station, while in the proposed configuration the maximum magnetic field for peak loading would be 63 mG, found on the southern portion of the fence line under the 115-kV Line 116 (id.). The Company's consultant testified that, at the nearest residence to the Project, 300 feet west of the Station across Brook Street, the magnetic field resulting from the Station and nearby lines under maximum loading conditions would be at most 5 mG at the residence property line and 2 mG at the home itself (Tr. 1, at 71; Exh. DPU 1-40(S) at 3).

The Company reported that opportunities for minimizing magnetic fields by phase cancellation were limited since adjacent Lines 117 and 194 were in good phasing arrangement already and rotation of these phases would not likely provide significant additional cancellation of EMF (Exh. DPU 1-40(S)(1) at 6). The Company reported that Lines 116, 132, and 133

were similarly in good phasing arrangement; thus, phase rotation would not likely provide significant additional magnetic field cancellation (id.).

h. Analysis and Findings

The Project would expand the footprint of NSTAR's existing Brook Street Station, but the expansion would be away from residences into an existing distribution line ROW alongside the Station. Project land uses would be consistent with current land uses at the Station and ROW; in addition, the Project would be constructed outside areas of identified cultural, historical, or critical environmental concern.

While visual impacts before and after construction of the Project would largely remain consistent, there are two issues of particular concern with respect to visual impacts at the Station: (1) Station lighting; and (2) replacement of some arborvitae along Brook Street with a mix of shorter (15 feet high at most) deciduous and evergreen plants.

With respect to the Company's night maintenance and security lighting needs, re-wiring at the Station will make possible separate control of upward and downward facing lights, including existing as well as new fixtures. The Company has indicated that it is willing to institute a policy of keeping upward facing lights off except when required for maintenance at night, an uncommon occurrence. Regarding screening, the record shows that the Company also is prepared to work with the Town or with concerned abutters to address concerns stemming from screening or lighting at the Station.

Accordingly, the Department directs NSTAR to implement a policy of keeping upward facing lights off at the Station except when they are required for maintenance at night, and to keep downward facing lights off except when they are required for maintenance and specific security-related events. The Department further directs NSTAR, to the extent feasible, to

mitigate lighting-related impacts and address visual impacts arising from the Project at the Station upon reasonable request of any concerned Project abutter or other resident or property owner within 300 feet of the Project site or any Town official. Upon completion of Project construction, NSTAR shall make known this option to the Town, all residents of property abutting the Project, and other residents or owners of property within 300 feet of the Project site.

The Project would have minimal wetlands and water resources impacts due to its distance from rivers and streams, and its location outside wellhead protection, wetland resources, and potential vernal pool areas. Furthermore, the Company plans containment around the transformer that would prevent accidental release of MODF from contaminating stormwater or groundwater resources. However, because its location would be in a GPD-Type-1 classified area, the Project would be subject to certain use prohibitions of the Town of Plympton's Zoning By-laws. The Company's request for exemption from these use prohibitions of the By-law are discussed in Section III, below.

Traffic flow impacts of the Project would be minimal. On a daily basis, five to 15 vehicles would arrive at and depart from off-street parking at the Station via the Station's main gate on Brook Street. After delivery, construction equipment would remain and operate off-street at the Company's Station site and associated ROWs. The record shows that staging areas and laydown areas would be located off public ways, as would any mixing of cement at the Station site. As planned by NSTAR, coordination with the Plympton Police Department with respect to traffic and parking management measures will further reduce vehicular impacts, and must be undertaken.

The Company has proposed confining construction and associated noise-related impacts to a Monday-Saturday, 7:00 a.m. to 6:00 p.m. work schedule. The Company has proposed both design features and operational practices that would mitigate potential noise impacts to area residents. The Company has chosen a transformer with built-in sound-walls and other sound-attenuation features to mitigate transformer noise impacts and, consequently, increases above nighttime $L_{90}$ ambient levels would likely be less than 8 dB(A) to the west, less than 7 dB(A) to the south-southwest, and less than 4 dB(A) to the east at the closest property lines of the closest residences, with lower levels of noise experienced at the residences themselves.

Although the measured construction noise levels at the nearest residences are not projected to be excessive, it would be reasonable to avoid all evening hours and start construction later on Saturday mornings. Therefore, the Company shall limit construction activities to the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturday. Further, to the extent the Company finds that construction performed on Sundays or holidays, or outside the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturday is necessary, the Department directs the Company to seek written permission from the relevant Town authority prior to the commencement of such work and to provide the Department with a copy of such permission. If the Company and Town officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Department. The Company shall provide the Town with a copy of any such request. Further, the Company shall: (a) notify abutters and other residents or owners of property within 300 feet of the Project site as well as Town officials before commencing construction; and, (b) on a

case-by-case basis, work to resolve issues related to construction noise, particularly concerns resulting from construction early or late in the day on Monday through Friday or any time during construction hours on Saturday, Sunday or holidays.

In order to ensure that information about construction and operation of the Project is disseminated more widely within the community, the Department directs the Company, in consultation with the Town, to develop a community outreach plan for Project construction and operation. The outreach plan should, at a minimum, lay out procedures for providing prior notification to affected residents of: (a) the scheduled start, duration, and hours of construction; (b) any construction that must take place outside the hours or days indicated above; (c) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (d) complaint and response procedures including contact information.

With respect to air impacts, NSTAR would institute measures to control and/or suppress dust during construction and operation of its Project. The Company is actively engaged in proper handling of $SF_6$ and minimization of $SF_6$ emissions from its facilities as a whole, including at facilities such as the Station. Measures taken at the Project to minimize $SF_6$ emissions would include installation and proper monitoring and repair of third-generation $SF_6$-filled equipment designed with a leakage rate of less than 0.1 percent per year. The Company would also add $SF_6$ use for the Project to its existing $SF_6$ database; ensure proper transportation of $SF_6$ for the Project as well as for existing Station equipment; and properly maintain and repair existing equipment at the Station. There is to be no reserve storage of $SF_6$ on the Project site.

With respect to reducing air impacts from idling vehicles and from diesel-powered non-road construction equipment, the record shows that NSTAR would: (a) apply a Company-wide idling reduction policy; and (b) contractually require its contractors to employ USEPA-verified or equivalent emission control devices on any diesel-powered non-road construction equipment rated equal to or greater than 50 horsepower to be used for 30 or more days over the course of the Project.

As reflected in the Company's proposed measures to mitigate air impacts of the Project, and consistent with the Department's practice of requiring applicants to reduce emissions from diesel-powered off-road construction vehicles, the Department directs NSTAR to comply with the following condition:

> All diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of Project construction must have USEPA-verified (or equivalent) emission control devices, such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine. Prior to the commencement of construction, the Company shall submit to the Department certification of compliance with this condition and a list of retrofitted equipment, including type of equipment, make/model, model year, engine horsepower, and the type of emission control technology installed.

Further, the Department directs NSTAR to use ultra-low diesel in all its off-road construction equipment.

With respect to magnetic fields, the record shows that the Project would result, overall, in lower magnetic fields at the fence line of the Station. The magnetic field resulting from the Station and nearby lines under maximum loading conditions would be 5 mG or less at the nearest residential property line to the Project and 2 mG or less at the residence itself. The record further shows that conductors are already configured to allow for the greatest potential

cancellation of magnetic fields. Therefore, the magnetic field impacts of the Project would be minimized.

Thus, the Department concludes that with compliance with (1) applicable state and local regulations and (2) the directives herein, the Project would include feasible measures to avoid or minimize environmental impacts.

4. Conclusion on Public Convenience and Welfare

Based on the foregoing analysis of: (1) need for or public benefit of use; (2) alternatives explored; and (3) impacts of the proposed use, the Department finds that the benefits of the Project exceed any adverse local impacts, and thus, that the proposed use is reasonably necessary for the public convenience or welfare.

D. Exemptions Required

1. Introduction

NSTAR is seeking a number of individual exemptions and a comprehensive exemption from the provisions of the Plympton Zoning By-laws (Exh. NSTAR-1, at 1). The Company asserts that the requested exemptions are necessary because the Project is needed and time-sensitive, and attempting to obtain the identified local zoning approvals could preclude or delay Project implementation (id. at 3). In support, the Company cites: (1) the Project's need under the By-laws for variances, and the unavailability of, or high legal standard for, obtaining a variance; (2) the Project's need for special permits and site plan review, and the discretionary nature of such relief; (3) the potential for the appeal of local zoning decisions, and accompanying Project delay; (4) the difficulty of timing and coordination between state and local approvals and potential permit lapsing issues; and (5) the potential for inconsistency of

local zoning decisions with state and industry standards governing the design and construction of electric transmission facilities (Exh. NSTAR-1, at 10-18; Company Brief at 40-41).

2. Individual Exemptions

a. The Company's Position

In addition to the general reasons cited above, Table 2, below, summarizes the provisions of the By-laws from which the Company seeks exemption, the relief available from the Town, and the Company's position regarding why the Project cannot comply with the identified zoning provisions.

**Table 2. The Company's Position – Plympton Zoning By-laws Exemptions**

| **Individual Zoning Exemption Requested** | **Available Relief from Town** | **Why Project Cannot Comply: Company's Position** |
|---|---|---|
| **Use**<br>Sections 4.1 and 4.2 | None | On its face would prohibit the Project, as the Project is located in a business district and public utility uses are not permitted in business districts; pursuant to By-laws ¶ 2.4.3, no use variances are allowed. |
| **Setbacks**<br>Section 5.1.2 | Variance | The Project will not meet rear yard 30-foot setback requirement. May result in an adverse outcome, as variances are legally difficult to obtain and are a disfavored form of relief. |
| **Height**<br>Section 5.1.3 | Variance | The 100-foot high shielding mast may be construed as in excess of 35-foot building height limit. May result in an adverse outcome, as variances are legally difficult to obtain and are a disfavored form of relief. |
| **Signs**<br>Section 6.1 | Variance | Signs allowed for permitted uses, but the Project is not a permitted use in a business district. May result in an adverse outcome, as variances are legally difficult to obtain and are a disfavored form of relief. |

**Table 2. The Company's Position – Plympton Zoning By-laws Exemptions**

| **Individual Zoning Exemption Requested** | **Available Relief from Town** | **Why Project Cannot Comply: Company's Position** |
|---|---|---|
| **Trailers** Section 6.3 | Special Permit | The Company may need to store trailers on-site for more than the 60 days allowed by the By-laws. Special permits are discretionary and may result in an adverse outcome or burdensome, restrictive or inconsistent requirements. |
| **Parking** Section 6.4 | Variance | Ambiguous as to whether the parking requirements apply to the Project; parking area exists on-site. May result in an adverse outcome, as variances are legally difficult to obtain and are a disfavored form of relief. |
| **Site Plan Approval/and Site Plan Review** Section 6.7.1 | Site Plan Approval | Site plan review requires that a project comply with all zoning requirements; as an unpermitted use in the district, the Project cannot comply with all zoning requirements. Site plan approval is discretionary and subjective and may result in conflicts with industry standards. |
| **Lighting** Section 6.9 | Variance | The Project may not comply with outdoor lighting requirements. May result in an adverse outcome, as variances are legally difficult to obtain and are a disfavored form of relief. |
| **Petroleum Storage** Section 8.3.5(2) | None | The Project is in a Groundwater Protection District ("GPD"). Petroleum storage is not allowed in a GPD. |
| **Soil Removal/Regrading** Section 8.3.5(11) | None | Removal or regrading of soil cover with a finished grade within ten feet of spring high water level is not allowed in a GPD. |
| **Pesticide Use** Section 8.3.5(16) | Special Permit | Pesticide use is not allowed in a GPD without a special permit. Special permits are discretionary in nature and may impose burdensome, restrictive or inconsistent requirements. |

Sources: Exhs. NSTAR 1, at 10-16; DPU 2-71; Company Brief at 36-38.

b. Analysis and Findings

The Project is located in a business district (Exh. NSTAR-1, at 10). NSTAR seeks exemption from the use provisions of the By-laws because the Project is not a permitted use in a business district and the By-laws prohibit use variances (id. at 10-11; Exhs DPU-2-71; NSTAR-1(1)(R) at ¶ 2.4.3). Thus, the By-laws on their face would preclude the Project. Accordingly we find that NSTAR requires an exemption from the use provisions of the By-laws (Sections 4.1 and 4.2). The Project also is located in a GPD (NSTAR-1, at 15). Because the Project is prohibited in the underlying business district, it also is prohibited in the GPD (Section 8.3.5) (Exh. DPU-2-71; Company Brief at 36). Accordingly, we find that exemption is required from the general use prohibition in By-laws Section 8.3.5. In addition to a general use prohibition, Section 8.3.5 includes specific prohibitions or restrictions pertaining to the storage of petroleum products (Section 8.3.5(2)), the removal or re-grading of soil (Section 8.3.5(11)), and the application of pesticides in a GPD (Section 8.3.5(16)). The Company has requested exemption from the first two of these provisions on the grounds that the Project may not be able to comply with them; specifically, the transformer on-site will contain petroleum-based insulating fluid in potential contravention of Section 8.3.5(2) and the Company may need to re-grade the site in a manner inconsistent with the provisions of Section 8.3.5(11).[34] The Company seeks exemption from the third provision because Section 8.3.5(16) would require the Company to obtain a special permit to use herbicides on-site (Exh. NSTAR-1, at 15-16). We find that NSTAR requires exemption from Section 8.3.5 with respect to petroleum storage

[34] However, the Company stated that, based on prior experience at the Station site, it does not expect site re-grading to result in groundwater impacts. See Section II.C.3.c, above.

(Section 8.3.5(2)); soil removal and re-grading (Section 8.3.5(11)) and pesticide use (Section 8.3.5(16)).[35]

The Project would require variances with respect to several provisions of the By-laws. Specifically, the Project would not meet, and thus would require a variance from, the rear-yard setback requirement of 30 feet (Section 5.1.2) and may not meet, and thus would require a variance from, the 35-foot building height limitation (Section 5.1.3). Signs are allowed only for permitted uses (Section 6.1); since the Project is not permitted in the district in which it is located, a variance would be required from Section 6.1 (Exh. NSTAR-1, at 12-13). For parking, it is unclear whether the requirements apply to the Project (Section 6.4). If they do apply, the Company also would require a variance from By-laws Section 6.4 (Exh. NSTAR-1, at 13). To the extent that new lighting would not conform to zoning requirements, a variance would be required (Section 6.9) (Exh. NSTAR 1, at 14-15). The Department concurs with the Company that attempting to obtain variances can cause undue delays and would subject the Project to a difficult legal standard to meet and uphold in court. The Department thus finds that the Company requires exemption from By-laws Sections 5.1.2, 5.1.3, 6.1, 6.4, and 6.9.

With regard to the provisions relating to site plan review (Section 6.7.1) and the temporary placement of trailers on the site (Section 6.3) the Department acknowledges that these provisions do not on their face prevent the development of the Project. However, there is some likelihood that requiring compliance with these provisions, which would require

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[35] Section 8.3.5(16) refers to pesticides in general. However, the Company seeks, and we grant, an exemption with respect to herbicides only (Exh. NSTAR-1, at 16). NSTAR states that it uses only those herbicides approved by the Massachusetts Department of Agricultural Resources ("MDAR"). The MDAR regulates and permits herbicide use and application in the Commonwealth (id.).

obtaining zoning approvals, could result in an adverse outcome, a burdensome requirement, or an unnecessary delay as part of zoning review. Therefore, the Department finds that the Company requires exemption from Sections 6.7.1 and 6.3.

3. Consultation with the Municipality

a. Introduction

NSTAR states that it met with two of Plympton's three Selectmen on June 17, 2011 (approximately three months before the Company filed its Zoning Exemption Petition) (Exh. NSTAR-1, at 5). The Company states that it discussed its proposal to add a transformer at the Brook Street Station, potential alternatives and the need for zoning relief (id. at 6). The Company states that after consulting with the Selectmen, "NSTAR Electric and the Town concluded that the best approach to resolving zoning issues related to construction of the Project was to seek the necessary exemptions from the Department" (id. at 6). Also on June 17, 2011, the Chairman of the Board of Selectmen provided NSTAR with a letter in support of the Project and in support of expediting the Project (Exh. NG-1, Att. 6). The Chairman of the Board of Selectmen sent NSTAR a second letter on January 23, 2012 (Exh. NSTAR-JZ-3). This letter also supported the Project; stated the Town's view that going through the local zoning process was "not necessary" and would place a burden on the Town's resources; and specifically supported the granting of a comprehensive zoning exemption (id.). The Town of Plympton did not seek to intervene in this proceeding.

b. Analysis and Findings

The Department continues to favor the resolution of local issues on a local level whenever possible to reduce concern regarding any intrusion on home rule. Russell Biomass LLC/Western Massachusetts Electric Company, EFSB 07-4/D.P.U. 07-35/07-36, at 60-65

(2009) ("Russell"). The Department believes that the most effective approach for doing so is for applicants to consult with local officials regarding their projects before seeking zoning exemptions pursuant to G.L. c. 40A, § 3. Tennessee Gas Pipeline Company Southwick, D.P.U. 11-26, at 26; New England Power Company , D.P.U. 09-136/09-137, at 36, fn. 15 (2011) ("New England Power Company Millbury"); New England Power Company, EFSB at 09-1/D.P.U. 09-52/09-53, at 76-77 (2011) ("NGrid Worcester").

In this case, the Company had contact with local Plympton authorities regarding the Company's Project, prior to seeking zoning relief from the Department. The record shows that the Town of Plympton affirmatively supports the Project and the Company's request for zoning exemptions. We find that the Company made a good faith effort to consult with municipal authorities and that the Company's communications were consistent with the spirit and intent of Russell.

4. Conclusion on Request for Individual Zoning Exemptions

As described above, the Department finds that: (1) NSTAR is a public service corporation; (2) the proposed use is reasonably necessary for the public convenience or welfare; and (3) the specifically identified zoning exemptions are required for purposes of G.L. c. 40A, § 3. Accordingly, we grant the Company's request for the individual zoning exemptions listed above in Table 2.

## III. REQUEST FOR A COMPREHENSIVE EXEMPTION

### A. Standard of Review

The Department has granted requests for a comprehensive zoning exemption on a case-by-case basis. NSTAR Electric Company, D.P.U. 07-60/07-61, at 50-51 (2008), citing Princeton Municipal Light Department, D.T.E./D.P.U. 06-11, at 37 (2007) ("Princeton");

NSTAR Electric Company, D.T.E./D.P.U. 07-9/07-10, at 37 (2007). The Department will not consider the number of exemptions required as a sole basis for granting a comprehensive exemption. Princeton at 37 (2007). Rather, the Department will consider a request for comprehensive zoning relief only when issuance of a comprehensive exemption would avoid substantial public harm. Id.; see also NSTAR Electric Company, D.P.U. 07-60/07-61, at 51-52.

B. The Company's Position

In addition to the individual exemptions listed above, the Company requests a comprehensive zoning exemption from the Plympton Zoning By-laws (Exh. NSTAR-1, at 16-18). The Company asserts that granting a comprehensive exemption is appropriate because the need for the Project "is immediate" and a comprehensive zoning exemption would ensure timely construction of the Project ((Exh. NSTAR-1, at 17-18). Specifically, according to the Company, a comprehensive exemption would (1) allow the Project to proceed without the delays, excessive cost, redundancy of process and/or burdensome requirements involved in obtaining local zoning approvals; (2) prevent the situation where, because a zoning by-law is vague and open to interpretation, adverse parties could contend that zoning requirements other than the specific exemptions requested apply to the Project; (3) allow the Project to proceed if there are subsequent amendments to the By-laws; and (4) allow the Company to promptly address and implement design changes to reduce impacts associated with the Project (id.).

C. Analysis and Findings

The granting of a comprehensive exemption is based on the specifics of each case. As compared to the granting of individual zoning exemptions, which are tailored to meet the construction requirements of a particular project, the granting of a comprehensive exemption

serves to nullify a municipality's zoning code in its entirety with respect to the project under review. Thus, compared to the granting of individual zoning exemptions, a comprehensive zoning exemption constitutes a broader incursion upon municipal home rule authority. In the absence of a showing that substantial public harm may be avoided by granting a comprehensive exemption, the granting of such extraordinary relief is not justified. Tennessee Southwick, D.P.U. 11-26, at 31; NSTAR Electric Company, D.P.U. 08-1, at 35-37 (2009) ("NSTAR Waltham"); Massachusetts Electric Company, D.T.E. 04-66/04-81, at 24-26 (2005).

Department and Siting Board cases that have considered and granted comprehensive exemptions have involved projects that were time sensitive and frequently involved the zoning ordinances of multiple municipalities, where conflicting interpretations could arise. NGrid Worcester, EFSB 09-1/D.P.U. 09-131/09-132; Western Massachusetts Electric Company, EFSB 08-2/D.P.U. 08-105/08-106 (2010) ("GSRP"); New England Power Company Millbury, D.P.U. 09-136/09-137; New England Power Company, D.P.U. 09-27/09-28 (2010); Western Massachusetts Electric Company, D.P.U. 09-24/09-25 (2010).

As discussed in Section II.C.1, above, the record shows that Sysco and the Company have instituted measures that would allow the Sysco facility to operate until the Project becomes operational (Tr. 1, at 10-12). Specifically, the Company has reconfigured the 23 kV distribution system in the Kingston, Plympton and Carver areas to transfer a portion of the load normally served by Kingston Line 15 over to West Pond Line 10, so that under normal conditions the Company can continue to serve all load including the new Sysco warehouse load (Tr. 1, at 11). For contingency situations, Sysco has a 4,000 KW emergency generator on site

which could be used in the event of a feeder outage,[36] and the Company has a spare 12/16/20 MVA transformer stored on-site at the Kingston substation in the event of a loss of a transformer there (Tr. 1, at 10-12). Thus, completion of the Project is not so acutely time sensitive that a comprehensive exemption is required to avoid substantial public harm. In addition, the Project is subject to a single town's zoning ordinance, which eliminates the concern regarding numerous and potentially conflicting zoning provisions for a project involving multiple municipalities. See GSRP, EFSB 08-2/D.P.U. 08-105/08-106, at 137. Considering all the circumstances, NSTAR's request for a comprehensive zoning exemption is denied.[37]

## IV. SECTION 61 FINDINGS

MEPA provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact" ("Section 61

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[36] The presence of a customer-owned emergency generator serves to mitigate the potential for substantial public harm in this case were an outage to occur prior to completion of the Project, although it does not alter the Company's obligation to plan for and provide reliable service to Sysco and other firm customers.

[37] The Department denies the Company's request for a comprehensive exemption even though the Town of Plympton Board of Selectmen has indicated that it does not object to the issuance of such an exemption (Exh. NSTAR-JZ-3). Municipal acceptance is one factor in determining whether the issuance of a comprehensive zoning exemption under G.L. c. 30A, § 3 is appropriate. See NSTAR Electric Company, EFSB 10-2/DPU 10-131/132, at 111 (2012). However, as discussed above, the standard for the granting of a comprehensive exemption is whether substantial public harm will be avoided. The record is sufficiently clear in this case that the issuance of a comprehensive zoning exemption is not necessary to avoid the occurrence of substantial public harm.

findings"). G.L. c. 30, § 61. Pursuant to 301 C.M.R. § 11.01(3), Section 61 findings are necessary when an EIR is submitted to the Secretary of Energy and Environmental Affairs, and should be based on such EIR. Where an EIR is not required, Section 61 findings are not necessary. 301 C.M.R. § 11.01(3). The Company has submitted an affidavit of counsel stating that the Project does not require the preparation of an EIR (Exh. NSTAR-DSR-1). Accordingly, Section 61 findings are not necessary in this case.[38]

## V. ORDER

Accordingly, after due notice, hearing, and consideration, it is hereby

ORDERED: That the petition of NSTAR Electric Company seeking the specific exemptions set forth in Table 2, from the operation of the Town of Plympton Zoning By-laws pursuant to G.L. c. 40A, § 3 is allowed; and it is

FURTHER ORDERED: That the petition of NSTAR seeking comprehensive exemption from the operation of the Town of Plympton Zoning By-laws is denied; and it is

FURTHER ORDERED: That NSTAR implement a policy of keeping upward facing lights off at the Station except when they are required for maintenance at night, and of keeping downward facing lights off except when they are required for maintenance and specific

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[38] The Department notes the requirements set forth in G.L. c. 30A, § 61 effective November 5, 2008, regarding findings related to climate change impacts. Since Section 61 findings are not required in this case, the Project is not subject to the Greenhouse Gas Emissions Policy and Protocol. The Department nonetheless notes that this Project will have minimal greenhouse gas emissions, as it consists of modifications to an existing switching station and distribution lines. As such, the Project will have minimal direct emissions from a stationary source under normal operations and will have minimal indirect emissions from transportation sources limited to construction, occasional repair, or maintenance activities. The Department addresses Project $SF_6$ emissions and temporary emissions from off-road construction vehicles in Section III.C.3.e, above.

security-related events. NSTAR shall, to the extent feasible, mitigate lighting-related impacts and address visual impacts arising from the Project at the Station upon reasonable request of any concerned Project abutter or other resident or property owner within 300 feet of the Project site or any Town official. Upon completion of Project construction, NSTAR shall make known this option to the Town, all residents of property abutting the Project, and other residents or property owners within 300 feet of the Project site; and it is

FURTHER ORDERED: That to help mitigate noise impacts from construction, NSTAR shall limit construction activities to the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturday. Further, to the extent the Company finds that construction performed on Sundays or holidays, or outside the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, and 8:00 a.m. to 5:00 p.m. on Saturday is necessary, the Department directs the Company to seek written permission from the relevant Town authority prior to the commencement of such work and to provide the Department with a copy of such permission. If the Company and Town officials are not able to agree on whether Sunday, holiday, or extended weekday construction should occur, the Company may request prior authorization from the Department, provided that it also notifies the relevant Town authorities in writing of such request. Further, the Company shall: (a) notify abutters and other residents or property owners within 300 feet of the Project site as well as Town officials before impending construction and anticipated construction-related noise; and, (b) on a case-by-case basis, work to resolve issues related to construction noise, particularly concerns resulting from construction early or late in the day on Monday through Friday or anytime during construction hours on Saturday; and it is

FURTHER ORDERED: That to ensure that information about construction and operation of the Project is disseminated more widely within the community, the Department directs the Company, in consultation with the Town, to develop a community outreach plan for Project construction and operation. The outreach plan should, at a minimum, lay out procedures for providing prior notification to affected residents of: (a) the scheduled start, duration, and hours of construction; (b) any construction that must take place outside the hours or days indicated above; (c) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (d) complaint and response procedures including contact information; and it is

FURTHER ORDERED: That to help mitigate air impacts from construction, all diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of Project construction must have USEPA-verified (or equivalent) emission control devices, such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine. Prior to the commencement of construction, the Company shall submit to the Department certification of compliance with this condition and a list of retrofitted equipment, including type of equipment, make/model, model year, engine horsepower, and the type of emission control technology installed; and it is

FURTHER ORDERED: That to help mitigate air impacts from construction, all off-road construction equipment used during project construction shall use ultra-low diesel; and it is

FURTHER ORDERED: That NSTAR work cooperatively with municipal and state officials and affected property owners in Plympton to minimize any noise, visual, traffic, or other local impacts associated with the Project; and it is

FURTHER ORDERED: That NSTAR and its contractors and subcontractors shall comply with all applicable state and local regulations for which the Company has not received an exemption, including those pertaining to noise, emissions, herbicides, and hazardous materials; and it is

FURTHER ORDERED: That NSTAR and its successors in interest notify the Department of any significant changes in the planned timing, design, or environmental impacts of the Project so that the Department may decide whether to inquire further into a particular issue; and it is

FURTHER ORDERED: That NSTAR shall obtain all other governmental approvals necessary for the Project; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Town of Plympton, and that NSTAR shall serve a copy of this Order on the Plympton Board of Selectmen, the Plympton Planning Board and the Plympton Zoning Board of Appeals within five business days of its issuance and shall certify to the Secretary of the Department within ten business days of its issuance that such service has been accomplished.

By Order of the Department:

_____
Ann G. Berwick, Chair

_____
Jolette A. Westbrook, Commissioner

_____
David W. Cash, Commissioner

Figure 1

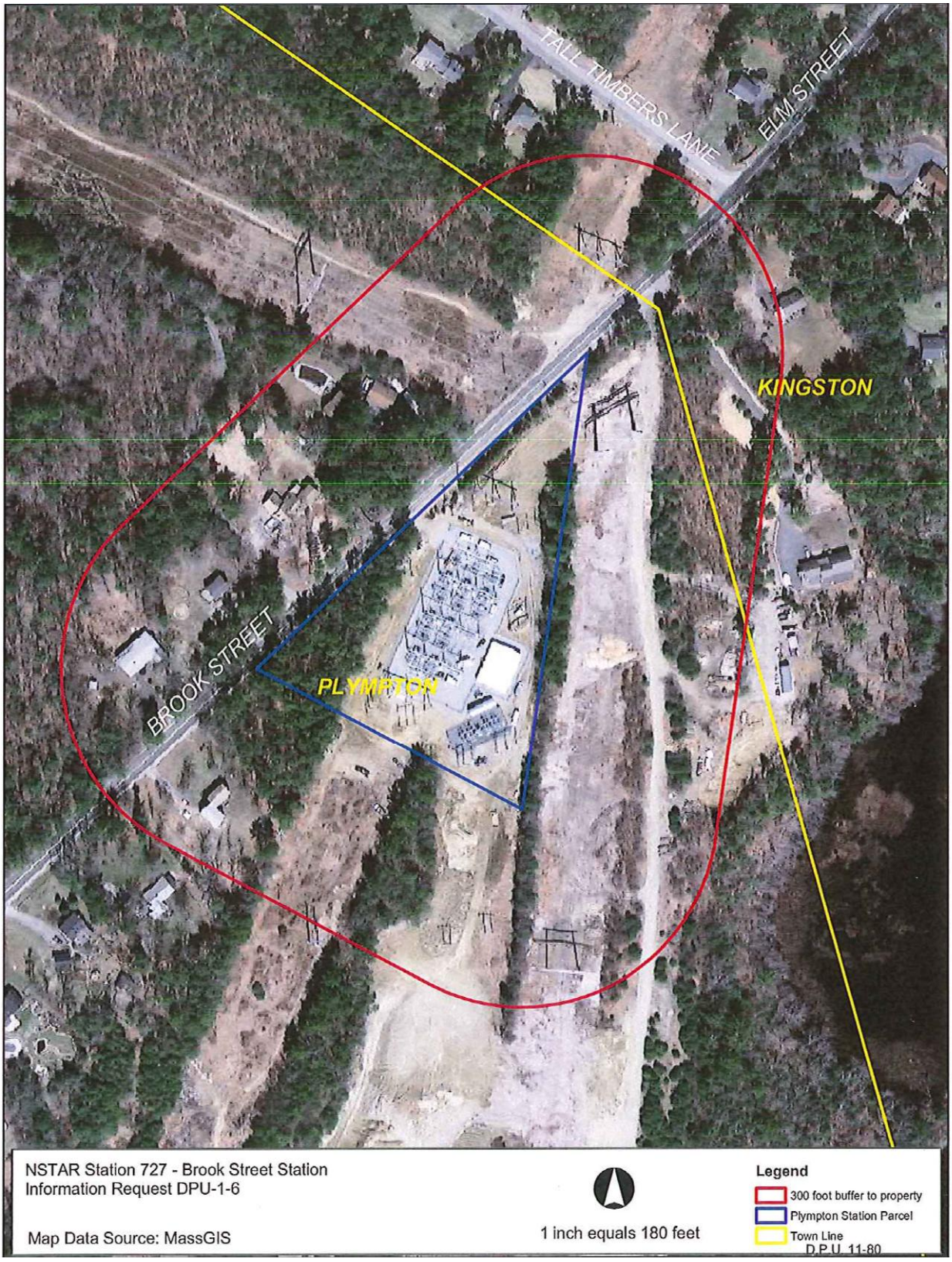

TALL TIMBERS LANE
ELM STREET
KINGSTON
BROOK STREET
PLYMPTON
NSTAR Station 727 - Brook Street Station
Information Request DPU-1-6
Map Data Source: MassGIS
1 inch equals 180 feet
Legend
300 foot buffer to property
Plympton Station Parcel
Town Line
D.P.U. 11-80

Figure 2

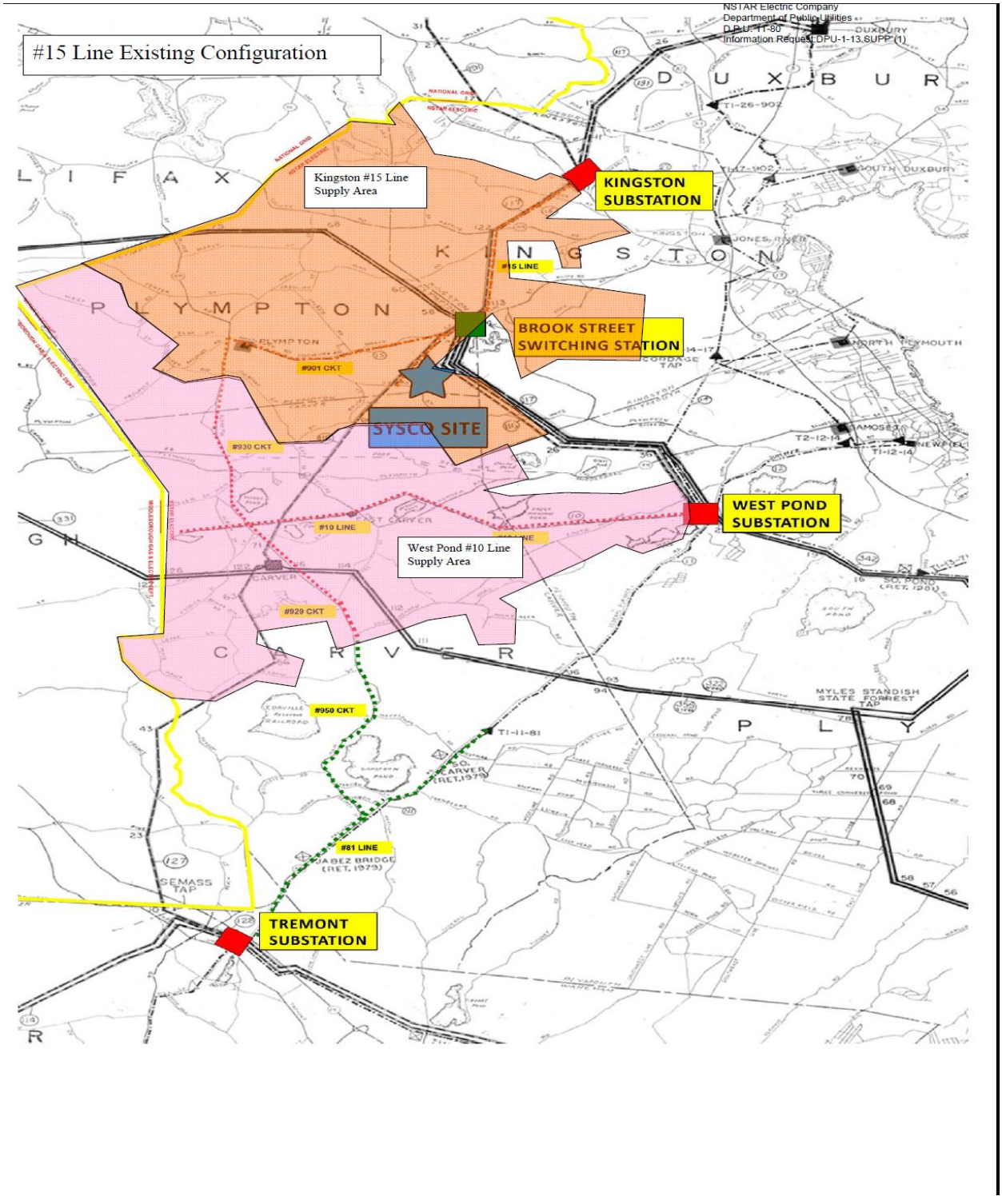
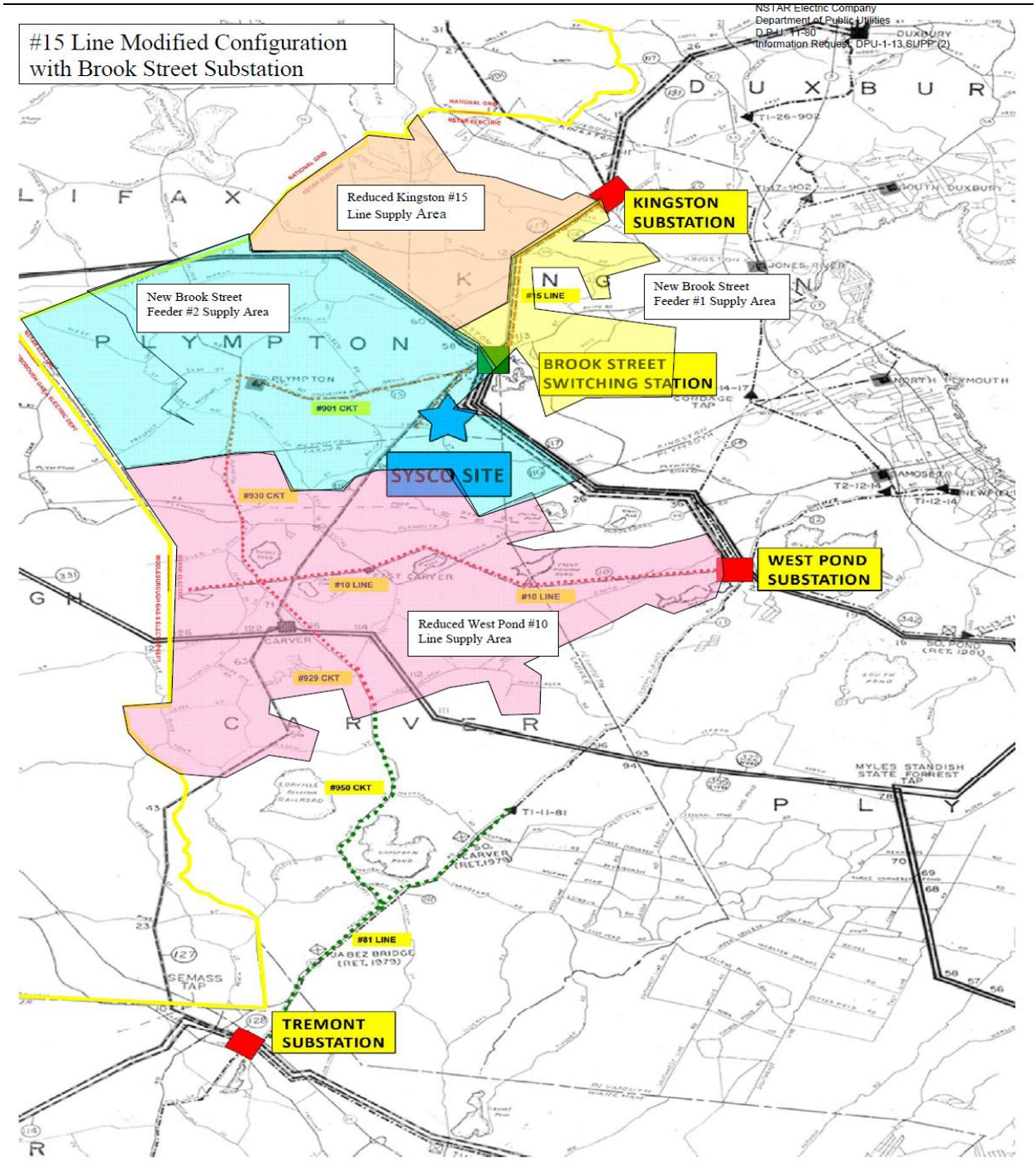

NSTAR Electric Company
Department of Public Utilities
D.P.U. 11-80
Information Request DPU-1-13 SUPP (1)
#15 Line Existing Configuration
Kingston #15 Line
Supply Area
KINGSTON
SUBSTATION
BROOK STREET
SWITCHING STATION
SYSCO SITE
WEST POND
SUBSTATION
West Pond #10 Line
Supply Area
TREMONT
SUBSTATION
#15 LINE
#901 CKT
#930 CKT
#10 LINE
#929 CKT
#950 CKT
#81 LINE
DUXBURY
PLYMPTON
KINGSTON
CARVER
MYLES STANDISH
STATE FORREST
TAP

Figure 3


NSTAR Electric Company
Department of Public Utilities
D.P.U. 11-80
Information Request DPU-1-13 SUPP (2)
#15 Line Modified Configuration with Brook Street Substation
Reduced Kingston #15 Line Supply Area
KINGSTON SUBSTATION
New Brook Street Feeder #2 Supply Area
New Brook Street Feeder #1 Supply Area
BROOK STREET SWITCHING STATION
SYSCO SITE
WEST POND SUBSTATION
Reduced West Pond #10 Line Supply Area
TREMONT SUBSTATION
#15 LINE
#901 CKT
#930 CKT
#10 LINE
#929 CKT
#950 CKT
#81 LINE
DUXBURY
PLYMPTON
CARVER
PLY

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