The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 15-85 March 28, 2016

Petition of NSTAR Electric Company d/b/a Eversource Energy pursuant to G.L. c. 40A § 3 for Exemptions from the Zoning Ordinances of the City of Woburn.

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I. INTRODUCTION

A. Description of the Proposed Project

On June 30, 2015, NSTAR Electric Company d/b/a Eversource Energy ("Eversource" or "Company") filed with the Department of Public Utilities ("Department") a Petition for individual and comprehensive zoning exemptions from the Zoning Ordinances of the City of Woburn ("Woburn Zoning Ordinances") pursuant to G.L. c. 40A, § 3. Eversource seeks the exemptions in connection with proposed modifications to the Company's existing Station No. 211 ("Woburn Substation" or "Substation") located at 240 Cove Street, Woburn ("Project") (Exhs. EV-1, at 1; DPU-G-10). The usual access to the existing Substation property is via Pond Street in Winchester, while all Substation components, including those proposed in connection with the Project, are located in the City of Woburn ("City" or "Woburn") (Exh. EV-1, at 2).

The Company proposes to make the following modifications to the Woburn Substation, all within the existing fence line:

- Replacement of an existing 345/115 kilovolt ("kV") autotransformer with a new higher-capacity 345/115 kV autotransformer, and installation of a 115 kV gas-insulated bus to connect the replacement autotransformer;
- Installation of a second 345-kV gas-insulated circuit breaker in series with existing circuit breaker 104;
- Installation of a double-breaker module, replacing one existing 345 kV air-insulated circuit breaker;
- Addition of gas-insulated switchgear ("GIS") with three 345 kV gas-insulated breakers and two underground gas-insulated bus sections, creating two new connecting positions for 345-kV lines or equipment;
- Reconnection of Line 338 to one of the two new connecting positions via a new section of gas-insulated line;

- Reconnection of Line 346 to a new switching position; and
- Installation of a new control center for 345 kV equipment in a vacant room in the existing building at the Substation.

(Exhs. EV-1, at 2-3).

The Company estimated that the Project would cost $40 million, and would be in service by the end of 2017 (Exhs. EV-1, at 4; DPU-G-1).

B. Procedural History

On September 9, 2015, Department staff conducted a Project site visit followed by a duly-noticed public hearing in Woburn. The Department received no petitions to intervene. The Company sponsored the following witnesses at the evidentiary hearings held in Boston on December 2, and 3, 2015: (1) Beverly A. Schultz, Project Manager; (2) John M. Zicko, Director of Substation and Overhead Transmission Line Engineering; (3) Elizabeth J. Leonard, Senior Engineer; (4) David C. Klinch, Epsilon Associates, Inc.; (5) Peter A. Valberg, Gradient; (6) Kevin McCune, Supervisor of the Environmental Permitting Department; and (7) Cory Emil, Senior Engineer, Epsilon Associates, Inc.

The record in this case includes the Petition and its exhibits as well as responses to information requests and record requests. The Company filed its brief on December 23, 2015.

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 bylaw if, upon petition of the corporation, the [Department] shall, after notice

> given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public.

Thus, a petitioner seeking exemption from a local zoning bylaw under G.L. c. 40A, § 3, must meet three criteria. First, the petitioner must qualify as a public service corporation. NSTAR Electric Company d/b/a Eversource Energy, D.P.U. 15-02, at 3 (2015) ("NSTAR Hopkinton"). New England Power Company d/b/a National Grid, D.P.U. 14-128/14-129, at 3 (2015) ("NEP Cabot Taps"); 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. NSTAR Hopkinton at 3; NEP Cabot Taps at 3; Tennessee Gas Pipeline Company, D.T.E. 01-57, at 4 (2002). Finally, the petitioner must establish that it requires exemption from the zoning ordinance or bylaw. NSTAR Hopkinton at 4; NEP Cabot Taps at 3; 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, 366 Mass. at 680. See also NSTAR Hopkinton, at 6-7; NEP Cabot Taps at 4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997) ("Berkshire Power").

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. Save the Bay 366 Mass. at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407, 410 (1974) ("Town of Truro"); NEP Cabot Taps at 4. 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." NSTAR Hopkinton at 4-5; NEP Cabot Taps at 4; see also Dispatch Communications of New England d/b/a Nextel Communications, Inc., D.P.U./D.T.E. 95-59-B/95-80/95-112/96-13, 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. NSTAR Hopkinton at 5; NEP Cabot Taps at 4; Berkshire Power 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; NEP Cabot Taps at 5. 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) ("New York Central Railroad"); NEP Cabot Taps at 5.

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; NEP Cabot Taps at 5.

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. NSTAR Hopkinton at 6; NEP Cabot Tap at 5-6; Tennessee Gas Company, D.T.E. 98-33, at 4-5 (1998).

3. Exemptions Required

In determining whether exemption from a particular provision of a zoning bylaw 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. NSTAR Hopkinton at 6; NEP Cabot Taps at 6; 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); NSTAR Hopkinton at 6; NEP Cabot Taps at 6.

B. Public Service Corporation Status

Eversource is an electric company as defined by G.L. c. 164, § 1, and, as such, is a public service corporation. NSTAR Hopkinton at 6-7; NSTAR Electric Company, D.P.U. 13-177/13-178 (2015) at 10-11 ("NSTAR Seafood Way"); NSTAR Electric Company, D.P.U. 11-80, at 7 (2012) ("NSTAR Plympton"). Accordingly, the Department finds that Eversource 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 and Contingency Issues

According to the Company, the Woburn Substation plays an important role in interconnecting the 345 kV and 115 kV transmission systems in the Greater Boston area, transferring power from the 345 kV lines in the north to the 115 kV transmission system serving Woburn, Stoneham, Reading, Burlington, Lexington, Winchester, and Billerica (Exh. DPU-N-1; Tr. at 16). The Substation contains one 345/115 kV autotransformer with a 180/240/300 megavolt-ampere ("MVA") capacity ("Existing Autotransformer"), which converts the voltage of electricity running through it from 345 kV to 115 kV (Exhs. EV-1, at 9; DPU-N-1).

According to the Company, the Greater Boston Area Updated Transmission Needs Assessment ("2015 Needs Assessment"), led by ISO New England ("ISO-NE"), identified four N-1, and hundreds of N-1-1 contingencies,[1] that would result in thermal overloads in excess of the long-term emergency rating ("LTE") of the Existing Autotransformer under modeled summer 2023 peak demand conditions (Exh. EV-1, at 9, exh. B at 3). The Company stated that these violations would first arise under pre-2013 load levels, and were identified under a variety of system conditions, including base cases that incorporated: (1) high

[1] An "N-1" contingency is a circumstance in which there is an unexpected fault or loss of a single electric element (including the loss of a double-circuit transmission tower). If after the first contingency has occurred, a second unrelated transmission or generation outage follows, the two contingencies together are referred to as an "N-1-1" contingency.

north-to-south flows (power flowing from northern New England south into southern New England) along with high southeastern Massachusetts/Rhode Island ("SEMA/RI") flows (power flowing out of SEMA/RI to the north and west); (2) high north-south flows with low flows out of SEMA/RI; and (3) low north-south flows with high flows out of SEMA/RI (id. at 8, exh. B at 115; Exhs. DPU-N-1; DPU-N-17). The Company stated that such modeled overloads violate planning standards and criteria established by the North American Energy Reliability Corporation ("NERC"), the Northeast Power Coordinating Council ("NPCC"), and ISO-NE (Exh. DPU-N-7).

Eversource stated that additional post-contingency violations were identified in the 2015 Needs Assessment involving N-1-1 contingencies involving the failure of an existing 345 kV breaker at the Woburn Substation ("Woburn Substation Breaker 104") (Exhs. EV-1, at 11; DPU-N-10). According to the Company, such a failure would result in the loss of two of the three 345 kV transmission lines at the Woburn Substation, and would have a substantial impact on the Company's ability to transmit power (Tr. at 19-20). These post-contingency violations would also arise at pre-2013 load levels (Exh. EV-1, exh. B at 115).

Finally, Eversource stated that the existing 345 kV bus arrangement at the Substation is a ring-bus design, with five circuit breakers and connections for five key transmission elements including the Existing Autotransformer ("Existing Bus Arrangement") (id. at 10). According to the Company, ISO-NE Planning Procedure No. 9 ("PP09"), effective May 2008, provides guidelines for major substation bus arrangements with which the Existing Bus Arrangement does not comply (id.). Specifically, ISO-NE recommends a breaker-and-a-half arrangement

where more than four network transmission lines or autotransformers are interconnected (id.). The Company stated that, while PP09 does not require the Company to retrofit existing substations, upgrading the Existing Bus Arrangement to a breaker-and-a-half arrangement is required at this time due to the scope of work proposed with the Project and two other major transmission projects recommended by ISO-NE (id.; Exhs. DPU-N-8; DPU-N-18).[2] The Company stated that if all three of these transmission projects are approved by the Department and/or Energy Facilities Siting Board, the Substation's 345 kV bus would connect five 345 kV transmission lines, a 345 kV autotransformer, and a shunt reactor (Exh. DPU-N-18). Eversource stated that the existing Substation does not have a sufficient number of 345 kV switching positions to accommodate these facilities and, that when designing the Substation expansion, the Company would be required to meet the PP09 standards (id.; Tr. at 22).

The Company further stated that regardless of whether or not these additional facilities were approved, upgrading the Existing Bus Arrangement to a breaker-and-a-half arrangement would be warranted at this time due to space limitations within the Substation, and because this new bus arrangement would provide greater operational flexibility, improved reliability, and easier isolation of equipment for maintenance compared to the Existing Bus Arrangement (Exhs. EV-1, at 10; DPU-N-18; Tr. at 24-25). Proceeding with the upgraded bus arrangement at this time would allow the Company to install a new autotransformer at the Substation

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[2] In addition to the Project, the Company has filed applications for two additional transmission projects with the Department and the Energy Facilities Siting Board in association with work proposed at the Woburn Substation; these facilities are the subject of EFSB 15-3/D.P.U. 15-64/65 and EFSB 15-4/D.P.U. 15-140/141.

without the need for extended outages to the Existing Autotransformer, which would greatly reduce risk to the transmission system during Project construction (Exh. EV-1, at 11; Tr. at 24-25).

b. Company Recommended Solution

Eversource's recommended solution to address the reliability concerns described above is to replace the Existing Autotransformer with a new 290/390/490 MVA autotransformer ("Replacement Autotransformer"), install a second 345 kV breaker in series with the existing Woburn Substation Breaker 104, upgrade the Existing Bus Arrangement to a breaker-and-a-half design, and make other associated investments at the Substation (Exh. EV-1, at 3-4). According to the Company, installation of the Project would fully resolve the post-contingency thermal overloads associated with the Existing Autotransformer and failure of the Woburn Substation Breaker 104, and would bring the Woburn Substation design into compliance with PP09 (id. at 9; Exh. DPU-N-18; Tr. at 26). Furthermore, the Company stated that the Project is part of the set of solutions recommended by ISO-NE in the Final Greater Boston Area Transmission Solutions Study to address the reliability needs of the Greater Boston Area (Exh. DPU-N-15).

c. Analysis and Findings

The Company has shown that: (1) there is a need for enhancements to the transmission connection between the 345 kV and 115 kV systems at the Woburn Substation and to the existing Woburn Substation Breaker 104; and (2) improvements to the Existing Bus Arrangement at the Substation are warranted at this time. The Department finds that, given

the potential for post-contingency thermal overloads as well as the reliability and operating benefits of compliance with ISO-NE's PP09, there is an immediate need for the Project, and that its construction and operation would result in public benefits.

2. Alternatives Explored

In assessing alternative solutions to meet the identified need, Eversource explored the potential for a non-transmission alternative ("NTA"), as well as the installation of a second autotransformer at the Woburn Substation ("Second Autotransformer Alternative").

a. Non-Transmission Alternatives

In response to inquiries from Department staff, Eversource reported on the potential for an NTA solution to address the identified reliability need (Exh. DPU-PA-1). The Company stated that approximately 400 MVA of power would be required on the 115 kV system to address the overloads on the Existing Autotransformer (id.). According to the Company, energy efficiency ("EE"), demand response ("DR"), or energy storage NTAs would not be feasible on this scale in the Woburn area (id.). Eversource stated that the most feasible NTA solution would be the installation of large-scale generation at the Hartwell Avenue and/or Woburn substations that could start up and provide power within five minutes of a contingency (id.; Tr. at 2-287). The Company stated that the cost and the time to site and build such large-scale generation would far exceed both the cost and the time necessary to complete the Project (Exh. DPU-PA-1). The Company also expressed concerns about the acquisition of a suitable site for the generation facility (Tr. at 29). Accordingly, the Company did not consider this option further (Exh. DPU-PA-1).

b. Second Autotransformer Alternative

As an alternative to the installation of the Replacement Autotransformer, the Company explored the installation of a second autotransformer at the Woburn Substation (Exh. EV-1, at 12).[3] The Company's evaluation of the Second Autotransformer Alternative included a comparison of the associated cost and environmental impacts (id. at 12-13).

Eversource stated that the Second Autotransformer Alternative would require the installation of a second autotransformer with a top rating of 490 MVA, a new 115 kV breaker, a second 345 kV gas-insulated circuit breaker in series with Woburn Substation Breaker 104, and new 345 kV and 115 kV switching equipment (Exhs. DPU-PA-3; DPU-PA-6; Tr. at 31-34). The Company further stated that under this option the Existing Autotransformer would also need to be replaced with a high-capacity unit in order to address certain novel N-1-1 contingencies involving the loss of the second autotransformer (Exh. EV-1, at 12). The Company also identified a resulting need to install a new 6.4-mile long 115 kV transmission line between its Hartwell and Woburn Substations to address post-contingency thermal overloads on the 115 kV system that would result from the addition of a second autotransformer at the Woburn Substation (id.; Exh. DPU-PA-2; Tr. at 30). The Company

[3] In addition to the Second Autotransformer Alternative, Eversource stated that the Company considered, and eliminated, transmission solutions that would not require replacement of the Existing Autotransformer (Exh. DPU-PA-9; Tr. at 34-35). According to the Company, any such solution would require numerous new transmission lines and breakers across the transmission system to address the various contingencies of concern and would have significantly greater cost (Exh. DPU-PA-9).

estimated the cost of the Second Autotransformer Alternative at approximately $56.5 million – approximately $16.5 million more than the cost of the Project (Exh. DPU-PA-4; Tr. at 31).

With regard to environmental impacts, Eversource stated that the potential for impacts associated with the construction and operation of the Second Autotransformer Alternative would be considerably greater than impacts associated with the Project due to the construction and operation of a new 115 kV transmission line as part of the alternative (Exh. EV-1, at 12-13). The Company stated that this transmission line would cross twelve waterways, three major highways, 16 wetlands, one area of protected species habitat, several sensitive receptors, recreation and conservation properties, and lands protected under Article 97 of the Amendments to the Massachusetts Constitution ("Article 97") (id.; Exh. DPU-PA-7). In comparison, the Company stated that all work associated with the Project would occur within the existing Substation, or immediately adjacent to the Substation fence line (Exh. DPU-W-5).

The Company stated that because the overall cost and environmental impacts of the alternative would be significantly greater than the Project, it dismissed the Second Autotransformer Alternative (Exh. EV-1, at 13).

c. Analysis and Findings

The record demonstrates that the NTA would not offer an adequate alternative to the Project. To avoid post-contingency thermal overloads on the Existing Autotransformer, approximately 400 MVA of power would be required on the 115 kV system, which cannot be feasibly or cost effectively supplied through an EE, DR, energy storage, or local generation alternative, especially in light of the immediate nature of the area's reliability need. The

Department continues to expect that Eversource will strongly encourage its customers, both existing and new, to take full advantage of EE programs. Eversource should also continue to explore creative ways to use NTAs (individually or in combination) to avoid or delay the need for new transmission infrastructure.

With respect to the Second Autotransformer Alternative, this alternative would require similar work within the Woburn Substation as the Project, in addition to the installation of a second autotransformer and the development of a new 6.4-mile long 115 kV transmission line. The new transmission line would have significantly greater potential environmental impacts than the Project, and would cost approximately $16.5 million more than the Project. For these reasons, the Department finds that the Second Autotransformer Alternative would be inferior compared to the Project.

Accordingly, the Department finds that the Company's decision to pursue the Project rather than the alternatives is reasonable.

3. Impacts of the Proposed Use

a. Land Use Impacts

The Project would occupy approximately 15,000 square feet of space within the existing over 450,000 square foot Woburn Substation (Exh. DPU-LU-5). Part of the 15,000 square feet is currently occupied by an existing circuit breaker, which would be removed as part of the Project, and part is currently unoccupied (Exh. DPU-LU-6). Eversource stated that the Project would not require an increase in the fenced area of the

Substation, nor clearing of any existing vegetation, with the exception of ruderal vegetation[4] along the northern side of the Substation fence line, which the Company stated would be removed specifically in order to accommodate landscaping requested by the City (Exhs. EV-1, at 14; DPU-LU-2; DPU-V-2; Tr. at 35-37). The Company noted that land use at the Substation would be consistent with current conditions following completion of the Project (Exh. EV-1, at 14).

Eversource stated that the Substation is bordered to the north by Horn Pond and the Horn Pond Recreation Area, which contains forested land that also extends around the western and southern sides of the Substation property (id.). An existing overhead transmission right-of-way extends west from the Substation (id. at 14-15). The Substation parcel is bordered on the east by Pond Street, which is lined with residential uses (id. at 15). Eversource stated that there are 13 residences and two sensitive receptors (the Horn Pond Recreation Area and the Lynch Elementary School Athletic Fields) and one facility (the City's Drinking Water Supply Well Field and Horn Pond Pumping and Treatment Station) within 250 feet of the Substation (Exh. DPU-LU-1). The closest residence is located approximately 80 feet from the Substation fence line (Exh. DPU-LU-7).

Eversource stated that Project is not located within an Area of Critical Environmental Concern ("ACEC"), Priority Habitat or Estimated Habitat for rare species, nor any National or Local Historic Districts or any Inventoried Areas, and that the Substation does not contain any known archaeological sites (Exh. EV-1, at 18).

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[4] Ruderal vegetation is typically low-growing and quick-growing vegetation that naturally colonizes areas that have previously been disturbed (Tr. at 37).

b. Visual Impacts

Views of the Substation from Pond Street are largely screened by an existing brick building, which houses some Substation equipment (Exhs. EV-1, at 16; DPU-V-1(2)). Project components would be partially visible from the recreational paths located to the north of the Substation in the Horn Pond Recreation Area (Exh. EV-1, at 16; Tr. at 45). However, the Company stated that visual impacts associated with the Project would be minor and incremental in nature as the Project components would look generally similar to existing equipment on the site (Exh. EV-1, at 16). Furthermore, the Company stated that in response to a request from City officials, it would install a three-sided wall around the Replacement Autotransformer that would shield the autotransformer from the view of individuals on the recreational path (id.; Exh. DPU-G-4).[5] Additionally, the Company stated that it will replace and refurbish an existing fence that separates the Substation from the Horn Pond Recreation Area to the north, and add landscaping along the fence outside of the Substation on City property (Exhs. EV-1(S) at ¶49A; DPU-G-4). The Company's landscaping plan includes a mix of native evergreen and deciduous small trees and shrubs (Exh. DPU-V-4(S1)). The Company stated that the plant species were selected to mimic the style of the existing natural vegetation, and in combination with the proposed fence, would enhance the quantity and quality of the existing vegetative buffer (id.).

[5] The Company stated that, while not directly related to Project, it would also install visual screening around a set of existing nitrogen tanks on the Substation property in response to a request from City officials (Exh. EV-1, at 16).

c. Noise Impacts

With regard to operational noise, the Company stated that it would install a 35-foot high three-sided sound wall immediately to the north, east, and south of the Replacement Autotransformer, which would limit any ongoing noise impacts from the Project (Exhs. EV-1, at 17, exh. D; DPU-NO-3). The Company determined that, with the installation of the proposed sound wall, future sound level increases due to the Project would be well below the Massachusetts Department of Environmental Protection's ("MassDEP") noise policy limit of 10 A-weighted decibels ("dBA") over pre-existing ambient levels, and would not result in any "pure tone" conditions, as defined by MassDEP (Exh. EV-1, exh. L at 16).[6] Table 1 below presents a summary of the L_{90} sound level impacts measured and predicted for nighttime conditions at six locations representative of the closest residential receptors to the Project,[7] and shows a maximum increase of 5 dBA over existing conditions at the nearest property line, and 3 dBA at the nearest residence (id., exh. L at 13; Exh. DPU-NO-7). The Existing Autotransformer is located 270 feet from the nearest residential abutters, whereas the Replacement Autotransformer would be located at the opposite end of the Substation – some 440 feet from the nearest residential receptors (Tr. at 48-49; RR-DPU-1).

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6 The MassDEP defines a pure tone condition where any one octave band sound pressure level exceeds the two adjacent frequency bands by three decibels or more.

7 The L_{90} sound level is the sound level that is exceeded during 90 percent of the measurement period and is used by the MassDEP to define "ambient" conditions (Exh. EV-1, exh. L at 6).

Table 1. Nighttime Broadband L_{90} Sound Pressure Level Evaluation as Presented by the Company (dBA)

Receptor ID[8]	Measured Background Noise Level	Combined Project and Background Noise Level	Increase Over Existing Ambient
R1	35	37	2
R2	38	40	3
R3	36	39	2
PL1	35	38	2
PL2	38	39	2
PL3	36	41	5

Source: Exh. EV-1, exh. L at 15.

With regard to construction-related noise, Eversource proposed a six-day per week construction schedule, Monday through Saturday, from 7:00 a.m. to 6:00 p.m., or later when daylight permits (Exh. EV-1, at 14). The Company stated that Saturday construction would be limited to quiet assembly and testing activities (where noise generating equipment would not be in use) and to large equipment deliveries, expected three or four times throughout the duration of the Project (Exh. DPU-NO-1; Tr. 46-47). The Company noted that once it starts some activities such as vacuum processing and filling the autotransformer with dielectric fluid, these activities must occur continuously until they are completed (Exhs. EV-1, at 14; DPU-NO-12). Additionally, the Company stated that the Replacement Autotransformer would be delivered at night in order to avoid traffic disruptions associated with this oversized equipment delivery (Exh. DPU-NO-2).

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[8] Receptor identification numbers (IDs) beginning with "R" indicate the closest residences (Exh. EV-1, exh. L at 10). Receptor IDs beginning with "PL" indicate a location on the property line nearest the Substation in the direction of the closest residences (id.).

The Company would minimize construction-related noise impacts by using the smallest sized equipment suitable for the work, locating noise-generating construction equipment behind an existing brick building when possible, selecting foundation designs that minimize digging, and by using off-site preassembly of Project components (Exh. EV-1, at 14; Tr. at 47-48).

d. Wetlands and Water Resources

Eversource stated that there are no wetland resource areas within the Substation; however, Horn Pond is located approximately 40 feet from its nearest point to the existing Substation fence line. Some of the Project work would take place in the 100-foot Wetland Protection Act buffer, and some within a 150-foot buffer zone established by the City's by-law for Adjoining Land Area, that applies to wetland resources areas associated with Horn Pond (Exh. EV-1, at 15). The 100-year floodplain associated with Horn Pond and the Horn Pond Brook is also mapped just north of the Substation fence line (id.). According to the Company, portions of the Substation site are located within a MassDEP Zone I and Zone II groundwater protection area, as well as within a groundwater protection district, which is a zoning overlay defined by the City (id. at 16; Tr. at 66-68).[9] Eversource stated that there is one potential vernal pool within 500 feet of the Project, but that it is separated from the Substation by an elevated ridge, and that there is no apparent surficial flow between it and the Substation (Exh. DPU-W-4).

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[9] The Company indicated that within its eastern Massachusetts service territory, the Woburn Substation is the only substation with oil-containing equipment that is located within a Zone I groundwater protection area (Exh. EFSB 15-3/D.P.U. 15-64/15-65 EFSB-HW-9(S-1)).

The Company stated that because all proposed Substation improvements would be located within, or immediately adjacent to the existing Substation fence line, the Project would not cause any direct impacts to sensitive environmental receptors, such as wetlands, streams, or floodplains (Exhs. EV-1, at 15; DPU-W-5). Additionally, the Company stated that application of appropriate mitigation measures during Project construction and operation, such as sedimentation and erosion control devices and adherence to the Company's Spill Prevention, Control, and Countermeasure Plan, is expected to protect the environment and prevent any impacts to these resources (Exh. DPU-W-5).

With regards to the MassDEP Zone I groundwater protection area, three public supply wells are located within 400 feet of the Substation (Exh. DPU-W-8; RR-DPU-6). The Company stated that it would not apply any herbicides during Project construction, nor within 400 feet of a public water supply following Project completion (Exhs. DPU-LU-2; DPU-W-8; Tr. at 91, 100).[10] Vegetation growth within the Substation, but outside of the MassDEP Zone I 400 foot groundwater protection area, would be controlled with a foliar herbicide

[10] For at least the past 30 years, the Company has been applying glyphosate herbicides within the Woburn Substation (RR-DPU-16). To protect the drinking water wells, Eversource maintains that it has had a longstanding arrangement with the City of Woburn not to spray within 100 feet of the Woburn Substation fence line nearest the reservoir to the north of the Substation (Exhs. RR-DPU-8; Attachment RR-PU-8(1); RR-DPU-11). However, the Company's historical no-spray area did not incorporate the entire 400 foot radius of the Zone I groundwater protection areas associated with three of the drinking water wells (Exh. RR-DPU-17; Tr. at 88). As noted above, the Company has agreed to refrain in the future from spraying within the Zone I groundwater protection areas located within the substation, and to better demarcate the Zone I area located within the Woburn Substation so that applicators are better aware of the Zone I boundaries (Tr. at 88-89).

application and not bare-ground application (Tr. at 75, 91). Additionally, Eversource stated that the Replacement Autotransformer would contain approximately 40,000 gallons of mineral oil dielectric fluid ("MODF"), and that in the event of a release, the MODF would be contained within a concrete secondary containment sump under the transformer (Exhs. EV-1, at 16; DPU-S-4). The containment structure would be capable of holding 110 percent of the MODF used in the Replacement Autotransformer, and would utilize a system of imbiber beads drains, which would allow rain water to pass, but would expand to seal shut should the beads come into contact with the MODF (Exh. DPU-S-4).

In response to questions from Department staff, Eversource also provided information on the amount of MODF contained in other electrical equipment located within the Substation (id.). According to the Company, three operational transformers (transformers 14A, 14B, 14C), containing a total of approximately 6,000 gallons of MODF, do not currently have secondary containment (Exhs. DPU-S-4; DPU-S-5).[11,12] The Company indicated that one of

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[11] Eversource also identified one spare 345/115 kV autotransformer (transformer 345B), containing 22,480 gallons of MODF, that does not have secondary containment (Exhs. DPU-S-4; DPU-S-5). The 345B spare transformer that is not in operation is located within a MassDEP Zone II groundwater protection area in a portion of the Substation that is a significant distance away from the existing 14A, 14B, and 14C transformers, and is not connected to the transmission system (Exhs. DPU-S-3(3); DPU-S-5; EFSB 15-3/ D.P.U. 15-64/15-65 EFSB-RR-17). The Company stated that without being electrified, the risk of potential damage to the 345B transformer tank, and the associated risk of an MODF release, is greatly reduced (Tr. at 58-59).

[12] Eversource stated that requirements for containment under electrical substation equipment are regulated by the U.S. Environmental Protection Agency's ("USEPA") Spill Prevention, Control and Countermeasures ("SPCC") regulations, which state that a release from a facility that stores a total aggregate of 1,320 gallons of fluid in containers of greater than 55 gallons in size must not impact a waterway

these transformers (transformer 14C) is located within a MassDEP Zone I groundwater protection area, while the remaining two are located in close proximity within a MassDEP Zone II groundwater protection area (Exh. DPU-S-3(3); RR-DPU-17(1); EFSB 15-3/ D.P.U. 15-64/15-65 EFSB-RR-17). The Company indicated that installing containment under these transformers would take up to approximately nine months, and cost no more than $500,000 (RR-DPU-3).[13,14] The Company stated that this work would best be completed either before or after the construction activities proposed within the Woburn Substation in association with the Project and the Mystic-Woburn and Woburn-Wakefield Projects in order to allow for appropriate work staging and to protect worker safety (RR-DPU-3; EFSB 15-3/ D.P.U. 15-64/15-65 Tr. 2, at 285). Eversource stated that environmental impacts related to the installation of containment would be temporary in nature and would involve construction-related noise impacts similar to those associated with the Project (EFSB 15-3/D.P.U. 15-64/15-65 Tr. 2, at 288-292).

(EFSB 15-3/D.P.U. 15-64/15-65 Tr. 2, at 273, 278-279). The Company asserted that a release from any of the four transformers without secondary containment would be highly unlikely to reach groundwater, and that additional containment is not required under the SPCC (EFSB 15-3/D.P.U. 15-64/15-65 EFSB-RR-17 and Tr. 2, at 273, 278-279, 301).

13 The Company's estimate of the cost and time required to install secondary containment at the Substation included transformers 14A, 14B, 14C, and 345B (RR-DPU-3).

14 The Company indicated that it has undertaken similar retrofitting activities within the Substation previously, upgrading the foundations associated with transformers 110C, 110D, and the Existing Transformer to including secondary containment concurrent with other major work on these transformers (Exh. DPU-S-5).

e. Traffic

Vehicular access to the Substation is off of Pond Street, which according to the Company experiences moderate traffic volumes (Exh. EV-1, at 17). The Company stated that because the Substation property is large enough to accommodate construction vehicles and staging areas, traffic impacts associated with the Project are expected to be minor and temporary in nature (Exh. DPU-T-1). The Company stated that a traffic management plan would be developed with the City and Town of Winchester ("Town" or "Winchester") and would include information such as the material delivery route, the number and size of vehicles to be used, and any time-of-day delivery restrictions (id.). A mitigation plan would be developed to limit Project-related traffic impacts during drop-off and pick-up times for the nearby Lynch Elementary School (Exh. DPU-T-5). Finally, the Company also committed to coordinating delivery of the Replacement Autotransformer with other utilities, state and local officials, and police and fire departments (Exh. DPU-T-4).

f. Air Impacts

In response to questions from the Department, Eversource reported on its use of sulfur hexafluoride ("SF_6"), a gas identified as a non-toxic but highly potent greenhouse gas ("GHG") (Exh. DPU-A-3).[15] New equipment at the Substation that would contain SF_6 would

[15] SF_6 is a GHG that is considered by the Massachusetts Clean Energy and Climate Plan ("Plan") to be 23,900 times more potent than CO_2. Thus, one pound of SF_6 has the same global warming impact as eleven tons of CO_2. The Plan, issued by the Secretary of Energy and Environmental Affairs on December 29, 2010, adopts a 2020 statewide GHG emissions limit 25 percent below 1990 emissions levels and sets forth an integrated portfolio of policies to reach the Commonwealth's clean energy and climate

include the 345 kV circuit breakers and bus work (approximately 10,000 pounds of SF_6), and would be designed by manufacturers for an annual emission rate of 0.1 percent (id.). Eversource stated that the Company currently uses SF_6 at the Substation for circuit breakers and switches, which have a combined nameplate capacity of 5,286 pounds (id.).

Eversource reported that filling new equipment with SF_6 would take place at installation, and that no SF_6 would be stored on site once the Project is complete (Exh. DPU-A-3). Eversource employees who handle or supervise handling of SF_6 receive training from the equipment manufacturer (id.). A specialty gas vendor recovers and reclaims SF_6 gas at equipment retirement (id.).

Construction vehicle idling would be limited in accordance with the Massachusetts anti-idling law and with Eversource's company-wide idling reduction policy (Exh. DPU-A-2). The Company also committed to use USEPA-verified (or equivalent) emission control devices, such as oxidation catalysts or other comparable technologies, in all diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project (id.). The Company would minimize fugitive dust impacts through the implementation of best management practices, such as water misting and street sweeping (Exh. DPU-A-1).

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goals. Reduction of an amount of SF_6 equivalent to a reduction of 0.2 million metric tons of CO_2 by 2020 is one of the policies set forth in the Plan. See G.L. c. 21N.

g. Hazardous Materials

The Company stated that once construction is complete, the Substation would include equipment containing substances with the potential to cause negative impacts to the environment if released (Exh. DPU-S-2). These substances include SF_6 and MODF (as discussed above), and batteries with electrolytes containing sulfuric acid (id.). Each of these substances is present at the Substation today (id.). Eversource stated that it anticipates the need for larger control batteries within the Substation as a result of the Project (id.; Tr. at 137). The Company stated that these batteries would have a spill containment and acid-neutralization system that would prevent the release of electrolytes in the event of a spill and would comply with the governing National Electric Safety Code requirements (Exh. DPU-S-2; Tr. at 137; RR-DPU-18).

h. Magnetic Fields

In response to questions from Department staff, Eversource provided an assessment of the potential magnetic field impacts associated with the Project (Exh. DPU-EMF-1(S1)). The Company stated that the Project would not appreciably alter the existing magnetic field levels produced by Substation equipment, and that the highest magnetic field levels outside of the Substation would occur to the west where a number of overhead transmission lines enter the Substation, a location distant from residential abutters (id.; Exh. DPU-EMF-3). According to the Company, post-Project peak magnetic field levels would be between 50 and 100 milligauss ("mG") directly beneath these transmission lines, and between 25 and 50 mG on portions of the near-by walking path between the Substation and Horn Pond (Exh. DPU-EMF-2).

The Company stated that because the existing transmission lines are the most significant contributor to magnetic field levels near the Substation, no practical or effective mitigation measures could be undertaken to reduce post-Project magnetic field levels other than a major renovation of these lines (id.; Exh. DPU-EMF-3; Tr. at 146-147).

i. Analysis and Findings

The land use impacts of the Project would be similar to the existing impacts at the Substation. No expansion of the existing Substation fence line is proposed, and only minor vegetation clearing is planned along the northern portion of the Substation fence, which would be replanted with a mix of native evergreen and deciduous small trees and shrubs in response to a request from the City. The Project is not in an ACEC, Priority Habitat, Estimated Habitat for rare species, nor any National or Local Historic Districts or any Inventoried Areas. The Substation does not contain any known archaeological sites.

Project components would be partially visible from the recreational paths located to the north of the Substation, however visual impacts would be minor as the Project facilities would look generally similar to existing equipment at the Substation. The installation of a three-sided sound wall around the Replacement Autotransformer, visual screening for a set of existing nitrogen tanks, and a new fence and landscaping along the northern boundary between the Substation and the Horn Pond Recreation Area would further improve visual screening of the facility.

The Company proposed a six-day per week construction schedule, Monday through Saturday, from 7:00 a.m. to 6:00 p.m., or later when daylight permits. The Company would

mitigate construction-related noise impacts by using smaller equipment, minimizing digging, and maximizing use of pre-assembled components. Saturday construction activities would be limited to large equipment deliveries, of which three to four instances are anticipated, and to quiet assembly and testing activities. The closest residence is approximately 80 feet away from the Substation fence line, with a total of 13 residences within 250 feet of the Substation. Given the limited scope of work proposed for Saturdays, the Department approves a construction schedule of Monday through Friday from 7:00 a.m. to 6:00 p.m., and Saturdays from 9:00 a.m. to 5:00 p.m., with Saturday construction activities limited to large equipment deliveries and to quiet assembly and testing activities. Should the Company need to extend construction work beyond those hours and days (with the exception of emergency circumstances on a given day that necessitate work beyond such times), the Company is directed to seek written permission from the relevant City authorities prior to the commencement of such work and to provide the Department with a copy of such permission. If the Company and City officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Department and shall provide the City with a copy of any such request.

The Company shall inform the Department and the City in writing within 72 hours of any work that continues beyond the hours allowed by the Department, or, if granted extended work hours in writing by the City, work that continues past the hours allowed by the City. The Company shall also send a copy to the Department, within 72 hours of receipt, of any authorization for an extension of work hours issued by the City. Furthermore, the Company

shall keep a record of the dates, times, locations, and durations of all instances in which work continues beyond the hours allowed by the Department, or, if granted extended work hours in writing by the City, work that continues past the hours allowed by the City, and must submit such record to the Department within 90 days of Project completion.

The Company committed to install a three-sided sound wall to the north, east, and south of the Replacement Autotransformer to limit the operational noise impacts of the Project. Modeled nighttime sound levels showed an up to 5 dBA increase after completion of the Project, which would be in compliance with the maximum 10 dBA increase defined in MassDEP's noise policy, and consistent with impacts allowed in past Department Orders. Additionally, no potential pure tones were identified in association with the Project.

The Substation is located approximately 40 feet from Horn Pond, and some of the work associated with the Project would take place within the 100-foot and the 150-foot buffer zones to wetland resources areas associated with Horn Pond. Additionally, portions of the Substation property are located within MassDEP Zone I and Zone II groundwater protection areas, as well as the Woburn Groundwater Protection District. Direct and indirect impacts to wetland and water resources would be limited due to the location of Project related-work within, or immediately adjacent to the existing Substation fence line, and through the Company's use of appropriate mitigation measures, such as sedimentation and erosion control devices and adherence to the Company's Spill Prevention, Control, and Countermeasure Plan.
No herbicides would be used within the MassDEP Zone I groundwater protection area, and herbicide use elsewhere in the Substation would be limited to a foliar-based application.

Sulfuric-acid containing batteries, as well as approximately 40,000 gallons of MODF, would be added at the Substation as a result of the Project. The Company would install containment systems to protect against any accidental releases of these fluids.

Approximately 6,000 gallons of MODF is currently contained within three transformers that are in use at the Substation and do not have secondary containment. The Company estimated that it would require up to approximately nine months to retrofit these transformers with containment facilities, at a cost of up to $500,000.[16] Noise impacts associated with this work would be temporary in nature and similar to noise impacts resulting from the Project. To limit the risk of MODF spills within the MassDEP Zone I or Zone II groundwater protection areas, and the potential for contamination of the three public drinking supply wells, the Department directs the Company to install secondary containment under the existing 14A, 14B, and 14C transformers.[17,18] The Company should file a construction plan for this retrofit

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[16] The scope of the Company's cost and time includes the installation of secondary containment for the 345B spare transformer, which the Department is not requiring. Therefore, the actual cost and time requirements for the installation of secondary containment for existing transformers at the Substation are likely to be reduced.

[17] In two recent cases, electric distribution companies have agreed to municipal requests for retrofitting of secondary containment for existing substation equipment; compliance with such retrofits have been included as Department conditions of the approval of those cases. See NSTAR Electric Company D.P.U. 13-64 (2014). See also NSTAR Electric Company D.P.U. 14-03 (2015).

[18] The Department agrees with the Company's position that the risk of a release of MODF from the existing 345B transformer is greatly reduced because this equipment is not in active use at the Substation, and notes that this equipment is located at a significantly greater distance away from the MassDEP Zone I groundwater protection area than the 14A and 14B transformers. Accordingly, the Department will not require secondary

work with the Department for its review and approval within six months of the issuance of this Order. The construction plan should, at a minimum, lay out the Company's proposed scope of work for the secondary containment facilities, the proposed initiation and completion dates for the work, and plans for how the work will be coordinated with activities proposed within the Woburn Substation in association with the Project and the Mystic-Woburn and Woburn-Wakefield Projects.

With respect to traffic impacts, construction vehicles and crew parking would be accommodated on the Substation property, and the Company committed to develop a traffic management plan in coordination with the City and the Town.

The Project is subject to idling restrictions imposed by MassDEP, and the Company committed to use USEPA-verified (or equivalent) emission control devices in all diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project.

New equipment requiring SF_6 would include 345 kV circuit breakers and bus work. The equipment would have a design leakage rate of 0.1 percent per year. The Department directs Eversource to inform the Department if it adds additional SF_6 to any equipment at the Substation or replaces any equipment at the Substation due to SF_6 loss within five years of the completion and initial operation of the Project, after which time the Company will consult with

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containment be installed in association with the existing 345B spare autotransformer at this time.

the Department to determine whether the Department will require continued reporting, as it deems appropriate.

The highest post-Project magnetic field levels outside of the Substation would continue to exist to the west of the Substation in the vicinity of an existing transmission right-of-way. No practical or effective mitigation measures were identified that could reduce magnetic field levels in the vicinity of the Substation.

In order to ensure that information about construction and operation of the Project is disseminated more widely within the communities, the Department directs the Company, in consultation with the City and 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: (1) the scheduled start, duration, and hours of construction; (2) any construction that must take place outside the hours or days indicated below; (3) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (4) complaint and response procedures including contact information.

The Department concludes that the impacts of the Project will be minimized, with the Project's compliance with: (1) all applicable federal, state, and local laws and regulations; (2) the avoidance, minimization and mitigation measures that Eversource has stated it will implement during Project construction; and (3) the Department's conditions as discussed above and set forth below.

D. Conclusion on Public Convenience and Public Interest

Based on the foregoing analysis of: (1) the need for or public benefit of the proposed use; (2) alternatives explored; and (3) impacts of the proposed use, the Department finds that that the Project is necessary for the purpose alleged, that the benefits of the Project to the general public exceed the local impacts, and that the Project will serve the public convenience and is consistent with the public interest.

E. Exemptions Required

1. Individual Exemptions

Eversource is seeking exemptions from five individual provisions of the Woburn Zoning Ordinance (Exh. EV-1, at 28-29). The Company is also seeking a comprehensive zoning exemption from the Woburn Zoning Ordinance (id. at 29).

Table 3, below, presents: (1) each of the specific provisions of the Woburn Zoning Ordinance from which the Company seeks an exemption; (2) the relief available through the Town's local zoning process; and (3) the Company's argument as to why it cannot comply with the identified zoning provision or why the available zoning relief is inadequate.

Table 3. Requested Individual Exemptions from the Woburn Zoning Ordinance – Summary of Company's Position

Section of the Zoning Bylaws	Available Relief	Why Exemption is Required: Company's Position
Use Regulations Section 5.2, subsection 1, parts 1 and 3 and Section 5.2, subsection 2	None Available	The Company maintains that an exemption is required from these provisions that regulate nuisances because there is no zoning ordinance standard that defines what constitutes a "nuisance" (Exh. EV-1, at 28). In addition, use variances are not authorized by the Zoning Ordinance and, accordingly, an exemption would be required because no local zoning relief is available (id.).
Use Regulations Section 5.3 (fences)	Variance	A variance is needed for the replacement fence to exceed six feet in height. To avoid the uncertainty and delay associated with seeming a dimensional variance, and any appeals therefrom, the Company seeks an exemption from the fence height limitation in Section 5.3 (Company Brief at 36).
Groundwater Protection District Section 15	None Available	The Substation is located in the Groundwater Protection Overlay District, and the proposed use is not allowed in the underlying residential district. According to the Company, since use variances are not authorized by the Zoning Ordinance, no local zoning relief would be available. Section 15(6)(B)(1)(ii) prohibits the storage of liquid petroleum products in the Groundwater Protection District. According to the Company, the proposed Replacement Autotransformer uses MODF, a liquid petroleum product (Exh. EV-1, at 24). Section 15(6)(C)(ii) regulates the application of pesticides, including herbicides, etc., for non-domestic or non-agricultural uses. The Company currently controls vegetation within the Substation fence using a glyphosate-based herbicide application on foliage (Exh. DPU-W-8).
Table of Dimensional Regulations Section 6.1	Variance	Walls 35 feet high to surround the Replacement Autotransformer and a 100-foot shielding mast would be constructed above the maximum height limit of 30 feet. The Company notes that it is difficult to meet the criteria for the grant of a variance, and such a variance is susceptible to appeal even if granted.

Section of the Zoning Bylaws	Available Relief	Why Exemption is Required: Company's Position
Off Street Parking and Loading Facilities Sections 8.1 through 8.6	Variance	The Company seeks exemptions from the parking requirement provisions to the extent that they would apply to the Project because the Substation is unmanned and will remain so. The Company notes that variances are difficult to obtain and susceptible to appeal even if granted.
Sign Regulations Section 13	Variances	The Company maintains that it must post signs on the Substation site identifying itself as the property owner and providing a telephone number. To the extent that such information is not allowed under Section 13, the Company requests an exemption. The local zoning relief would otherwise be a variance, which is difficult to obtain, and susceptible to appeal even if granted.

The Company requests exemptions from Section 5.2, subsections 1 and 2 (environmental nuisances such as odors, noise, dust, etc.) for both construction and the ongoing operation of the Project (Company Brief at 35). According to the Company, Section 5.2 makes no distinction between construction and operation of the Project (id.). The Company argues that an exemption from this section for both construction and ongoing operation of the Project is appropriate in this case because Woburn would be able to regulate such matters pursuant to the City's general bylaws even if the Department grants a zoning exemption (id. at 35-36).

The Company requests an exemption from the entirety of Section 15, including from Section 15(6)(C)(ii), which prohibits the application of herbicides, among other things, for non-domestic or non-agricultural use (Company Brief at 37-38). According to the Company, this section allows for a special permit to be granted for the use of herbicides if applicable state and federal standards are met (id. at 38). However, the Company maintains that because its

use of the Woburn Substation is not a permitted use, the Company cannot obtain a special permit, which would be available only for permitted uses (id. at 38-39).

2. Company Consultation with Local Officials and Community Outreach

The Company stated that prior to filing of the Petition, it held two meetings with City officials to discuss the requested zoning exemptions:

- In June and July 2015, the Company met with the City's building commissioner and city engineer to discuss the Project and the requested zoning relief (Exh. DPU-Z-1).
- The Company stated that the municipal officials' only expressed concerns were whether the Company would provide visual screening at the substation in the form of a new landscaped fence, screening for a set of existing nitrogen tanks, and a wall around the transformer and shunt reactor (Exh. DPU-Z-1). According to the Company, municipal officials also discussed safeguards against the inadvertent release of MODF (Exh. EV-1, at 5; DPU-Z-1, DPU-Z-8; DPU-Z-13). The Company agreed to incorporate provisions to address these concerns into the Project plans (Exh. EV-1(S)).
- The Mayor of Woburn sent a letter to the Company, dated July 27, 2015, confirming his support for the Company's decision to seek both individual and comprehensive zoning exemptions from the Woburn Zoning Ordinance for the Project (Exh. DPU-1, exh. F).

3. Analysis and Findings

a. Use Variances

The record shows that construction of the Project would require that the Company obtain use variances from the Woburn Zoning Ordinance Section 5 Use Regulations. However, the Company correctly states that Section 11.9 of the Zoning Ordinance prohibits the City's Board of Appeals ("Board of Appeals") from granting use variances (Exh. EV-1, at 23). As a result, there is no local zoning relief available to the Company from the operation

of the Woburn Zoning Ordinance use provisions. The Department finds that exemptions from the identified provisions of the Zoning Ordinance are required within the meaning of G.L. c. 40A, § 3.

The Department notes that the Company's past practice concerning the application of herbicides inside the Woburn Substation may not have been consistent with the MassDEP drinking water protection requirements for Zone I. In this case, the Company has recognized the need to improve its practices to comply with state law. Given the Company's commitment to strictly observe MassDEP's Zone I drinking water protection requirements henceforth, which address the same purposes as Section 15 of the City's Zoning By-Laws dealing with groundwater protection, exemption from Section 15 of the Zoning By-Law is granted.

The Company maintains that the Department should grant the full extent of the Company's requested exemption from Section 5.2, subsection 1, parts 1 and 3, and subsection 2 (environmental nuisance regulations) for both the construction and ongoing operation of the Project because "it is within the Department's authority to do so and municipalities such as Woburn remain free to regulate such matters pursuant to general (i.e., non-zoning) bylaws and ordinances (Company Brief at 36). The Department notes that it has not generally granted exemptions from zoning bylaws or ordinances relating to environmental aspects of the ongoing operation of a proposed project. NEP Cabot Taps at 45-46; Northfield/Erving at 50-51; Electric Avenue at 34-35. The Department previously has expressed its concern that granting such exemptions would prevent a city or town from exercising control over the on-going operation of a project. The Company's argument seeks to

shift the burden of a city or town that has elected to use its zoning bylaws to regulate environmental nuisances to instead adopt ordinances outside of zoning to accomplish the same objective. While it may be correct that a city or town is free to regulate nuisances pursuant to non-zoning bylaws, the Department finds no reason to require a city or town to adopt new ordinances where their existing zoning bylaws provide the desired regulation of nuisance. Accordingly, the Department is not persuaded that an exemption is necessary from Section 5.2, subsection 1, parts 1 and 3, and subsection 2, for the ongoing operation of the Project. However, an exemption is granted from these provisions as they relate to the *construction* of the Project only. In addition, the Department grants the Company an exemption from Section 5.3 (fences).

b. Non-Use Variances

As described above in Table 3, the record shows that construction of the Project would also require the Company to obtain certain variances. The Department accepts the Company's argument that the criteria for obtaining variances are difficult to fulfill. See G.L. c. 40A, § 10; see also, 28 Mass.Prac.Series, Real Estate Law, § 23.24 (4th ed.) ("[e]stablishing each one of the three requirements [for obtaining a variance] is a very difficult task"). Additionally, we note that the granting of a variance may be appealed. See G.L. c. 40A, § 17, see also, 28 Mass.Prac.Series, Real Estate Law, § 23.24 (4th ed.) ("it is not surprising that few variances stand up when challenged in court"). Consequently, requiring the Company to obtain variances could, at a minimum, result in significant Project delay or create additional vulnerabilities to appeal.

Accordingly, we find that exemptions from the identified provisions of the Woburn Zoning Ordinance that would require the Company to obtain a variance to construct and operate the Project are required within the meaning of G.L. c. 40A, § 3. Specifically, exemptions are granted from the following provisions of the Woburn Zoning Ordinance: Section 6.1 (table of dimensional regulations); Sections 8.1 through 8.6 (off-street parking and loading facilities regulations); and Section 13 (sign regulations).

4. Consultation with Municipality

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. NEP Cabot Taps at 41-42; NSTAR Electric Company, D.P.U. 14-55/14-56, at 41 (May 26, 2015) ("NSTAR Belmont"); Russell Biomass LLC/Western Massachusetts Electric Company, 17 DOMSB 1, EFSB 07-4/D.P.U. 07-35/ 07-36, at 60-65 ("Russell Biomass"). 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. NEP Cabot Taps at 41-42; NSTAR Belmont at 41; Seafood Way at 36.

The record shows that the Company consulted with local Woburn officials on more than one occasion, and that these meetings took place well before the Company filed its zoning exemption petition with the Department. As a result of those discussions, Woburn's mayor expressed his support for the granting of individual zoning exemptions. Accordingly, we find that the Company made a good faith effort to consult with municipal authorities, and that the

Company's communications have been consistent with the spirit and intent of Russell Biomass and the other cases cited above.

5. Conclusion on Request for Individual Zoning Exemptions

As described above, the Department finds that: (1) Eversource is a public service corporation; (2) the proposed use is reasonably necessary for the public convenience and welfare; and (3) the specifically identified zoning exemptions are required for purposes of G.L. c. 40A, § 3. Additionally, we find that the Company engaged in good faith consultations with the City. Accordingly, we grant the Company's request for the individual zoning exemptions listed above in Table 4, with the exception of Section 5.2, subsection 1, parts 1 and 3, and subsection 2, as these sections relate to the ongoing operation of the Project.

III. REQUEST FOR A COMPREHENSIVE EXEMPTION

A. Standard of Review

The Department considers requests for comprehensive zoning exemptions on a case-by-case basis. NSTAR Hopkinton at 44; Seafood Way at 37-38; NSTAR Electric Company, D.P.U. 07-60/07-61, at 50-51 (2008) ("NSTAR Carver"), citing Princeton Municipal Light Department, D.T.E./D.P.U. 06-11, at 37 (2007). The Department will not consider the number of exemptions required as a sole basis for granting a comprehensive exemption. Rather, the Department will consider a request for comprehensive zoning relief only when issuance of a comprehensive exemption would avoid substantial public harm. NSTAR Hopkinton at 42; Seafood Way at 37-38; NSTAR Carver at 51-52.

B. The Company's Position

In addition to the individual exemptions discussed above, the Company has also requested a comprehensive exemption from the Woburn Zoning Ordinance (Exh. EV-1, at 29). In support of its position, the Company asserts that there are five factors that the Department has articulated relevant to deciding whether to grant a comprehensive exemption. They are whether: (1) the project is needed for reliability; (2) the project is time sensitive; (3) there are multiple municipalities involved that could have conflicting zoning provisions that might hinder the uniform development of a large project spanning these communities; (4) the project proponent has actively engaged the communities and responsible officials to discuss the applicability of local zoning provisions and address local concerns; and (5) the communities affected by the project do not oppose the issuance of a comprehensive zoning exemption (id. at 29-30 (citations omitted)).

Addressing the first two factors, the Company argues that the Project is needed in order to improve system reliability and that this need is time-sensitive because the year of need is before 2013 (Company Brief at 44). In addition, the Company contends that the timing of the Project is necessary for construction sequencing at the Woburn Substation and to avoid prolonged outages of the Existing Autotransformer (id.). The Company maintains that it has actively engaged the community and responsible officials to discuss the applicability of local zoning provisions and address local concerns (id. at 32). Finally, the Company contends that it has satisfied the fifth factor because the City, acting through a letter from the mayor, supported the issuance of a comprehensive zoning exemption (id.).

Furthermore, the Company maintains that the Department's grant of a comprehensive zoning exemption would provide greater certainty with respect to all provisions of the Zoning Ordinance whether they are in existence or subsequently enacted and made applicable to the Project (Exh. EV-1, at 32). According to the Company, local zoning bylaws and ordinances often: (1) directly conflict with overarching state and industrial safety and engineering standards; (2) are vague, ambiguous and difficult to apply to unique energy infrastructure; or (3) are discretionary in nature and can result in burdensome or restrictive conditions (id. at 31).

C. Analysis and Findings

The grant of a comprehensive exemption is based on the specifics of each case. Compared to the grant of individual zoning exemptions, which are tailored to meet the construction requirements of a particular project, the grant 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 grant 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. NSTAR Electric Company, D.P.U. 13-126/13-127, at 34-35 (2014) ("Electric Avenue") at 37; New England Power Company d/b/a National Grid/Westborough, D.P.U. 12-02, at 35-37 (2012); NSTAR Electric Company Waltham, D.P.U. 08-1, at 35-37 (2009).

Department and Siting Board cases that have considered and granted comprehensive exemptions have often involved projects that were time sensitive and that dealt with the zoning ordinances of multiple municipalities, where conflicting interpretations could arise. NEP Cabot Taps at 45; New England Power Company d/b/a National Grid, EFSB 12-1/ D.P.U. 12-46/12-47 (2014); GSRP Decision at 136.

In this case, the Project does not span more than one municipality. However, construction of the Project is necessary immediately for system reliability, thereby making the Project time sensitive. Moreover, the Company has consulted extensively with the City, and the mayor supports the granting of a comprehensive exemption. Consequently, the Department finds that the comprehensive exemption, with the exception of Section 5.2, subsection 1, parts 1, 2, and 3, and subsection 2 (as these sections relate to the ongoing operation of the Project), from the Woburn Zoning Bylaw would avoid substantial public harm.

IV. SECTION 61 FINDINGS

The Massachusetts Environmental Policy Act ("MEPA") provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact" ("Section 61 findings"). G.L. c. 30, § 61. Pursuant to 301 C.M.R. § 11.01(3), Section 61 findings are necessary when an Environmental Impact Report ("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). In an affidavit dated June 30, 2015, Kevin McCune, supervisor

environmental affairs for Eversource, stated that the Project would not exceed any of the applicable MEPA review thresholds and, accordingly, that the Project does not require a MEPA filing (Exh. EV-1, exh. I). Accordingly, Section 61 findings are not necessary in this case.[19]

V. ORDER

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

ORDERED: That the petition of Eversource, pursuant to G.L. c. 40A, § 3, seeking the specific exemptions set forth in Table 3 from the operation of the Woburn Zoning Ordinance, with the exception of Section 5.2, subsection 1, parts 1 and 3, and subsection 2, for the ongoing operation of the Project, is granted; and it is

FURTHER ORDERED: That the petition of Eversource seeking a comprehensive exemption from the operation of the Woburn Zoning Ordinance pursuant to G.L. c. 40A, § 3, is granted (with the exception of Section 5.2, subsection 1, parts 1, 2, and 3, and subsection 2 for the ongoing operation of the Project); and it is

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[19] The Department notes the requirements set forth in G.L. c. 30, § 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 would have minimal greenhouse gas emissions, as it consists of modifications to an existing Substation. As such, the Project would have minimal direct emissions from a stationary source under normal operations and would have minimal indirect emissions from transportation sources limited to construction, occasional repair, or maintenance activities. The Department addresses Project SF_6 in Section II.C.3.f, above.

FURTHER ORDERED: That Eversource limit Project construction to Monday through Friday from 7:00 a.m. to 6:00 p.m., and Saturday from 9:00 a.m. to 5:00 p.m., with Saturday construction activities limited to large equipment deliveries and to quiet assembly and testing activities. Should the Company need to extend construction work beyond those hours and days (with the exception of emergency circumstances on a given day that necessitate work beyond such times), the Company is directed to seek written permission from the relevant City authorities prior to the commencement of such work and to provide the Department with a copy of such permission. If the Company and City officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Department and provide the City with a copy of such request; and it is

FURTHER ORDERED: That the Company shall inform the Department and the City in writing within 72 hours of any work that continues beyond the hours allowed by the Department, or, if granted extended work hours in writing by the City, work that continues past the hours allowed by the City. The Company shall also send a copy to the Department, within 72 hours of receipt, of any authorization for an extension of work hours issued by the City. Furthermore, the Company shall keep a record of the dates, times, locations, and durations of all instances in which work continues beyond the hours allowed by the Department, or, if granted extended work hours in writing by the City, work that continues past the hours allowed by the City, and must submit such record to the Department within 90 days of Project completion; and it is

FURTHER ORDERED: That Eversource inform the Department if it adds SF_6 to any equipment at the Woburn Substation or replaces any equipment there due to SF_6 loss within five years of the completion and operation of the Project, and thereafter consult with the Department to determine whether any continued reporting will be required by the Department; and it is

FURTHER ORDERED: That Eversource, in consultation with the City of Woburn and the Town of Winchester, 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: (1) the scheduled start, duration, and hours of construction; (2) any construction that must take place outside the hours or days indicated below; (3) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (4) complaint and response procedures including contact information; and it is

FURTHER ORDERED: That Eversource and its contractors and subcontractors refrain from spraying any herbicides or pesticides within the Zone I groundwater protection areas located within the Woburn Substation; and it is

FURTHER ORDERED: That Eversource install secondary containment under the existing 14A, 14B, and 14C transformers located within the Woburn Substation; and it is

FURTHER ORDERED: That Eversource file a construction plan for the installation of secondary containment under the existing 14A, 14B, and 14C transformers with the Department for its review and approval within six months of the issuance of this Order. The

construction plan should, at a minimum, lay out the Company's proposed scope of work for the secondary containment facilities, the proposed initiation and completion dates for the retrofit work, and plans for how the retrofit work will be coordinated with activities proposed within the Woburn Substation in association with the Project and the Mystic-Woburn and Woburn-Wakefield projects; and it is

FURTHER ORDERED: That Eversource obtain all other government approvals necessary for the Project; and it is

FURTHER ORDERED: That Eversource and its contractors and subcontractors comply with all applicable federal, state, and local laws, regulations, and ordinances for which the Company has not received an exemption; and it is

FURTHER ORDERED: That Eversource and its successors in interest notify the Department of any changes other than minor variations to the Project so that the Department may decide whether to inquire further into a particular issue; and it is

FURTHER ORDERED: That because the issues addressed in this Order relative to this Project are subject to change over time, construction of the Project commence within three years of the date of this Order; and it is

FURTHER ORDERED: That within 90 days of Project completion, the Company must submit a report to the Department documenting compliance with all conditions in this Order, noting any outstanding conditions yet to be satisfied and the expected date and status of such resolution; and it is

FURTHER ORDERED: That the Secretary of the Department transmit a certified copy of this Order to the City of Woburn by serving a copy of this Order on the mayor of Woburn, and that the Company transmits a certified copy of this Order to the Woburn City Council, the Woburn Planning Board, and the Woburn Board of Appeals within five business days of its issuance, and that the Company certify to the Secretary of the Department within ten business days of its issuance that such service has been accomplished; and that said certification be served upon the Hearing Officer to this proceeding.

By Order of the Department

Angela M. O'Connor, Chairman

Jolette A. Westbrook, Commissioner

Robert Hayden, Commissioner

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.