STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

DOCKET NO. 461 – EVERSOURCE ENERGY APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF A 115-KILOVOLT (KV) BULK SUBSTATION LOCATED AT 290 RAILROAD AVENUE, GREENWICH, CONNECTICUT, AND TWO 115-KV UNDERGROUND TRANSMISSION CIRCUITS EXTENDING APPROXIMATELY 2.3 MILES BETWEEN THE PROPOSED SUBSTATION AND THE EXISTING COS COB SUBSTATION, GREENWICH, CONNECTICUT, AND RELATED SUBSTATION IMPROVEMENTS	:	**DOCKET NO. 461** APRIL 11, 2016

POST-HEARING BRIEF OF
THE CONNECTICUT LIGHT AND POWER COMPANY
DOING BUSINESS AS EVERSOURCE ENERGY

The Connecticut Light and Power Company doing business as Eversource Energy

By: Marianne Barbino Dubuque, Esq.
Janie L. McDermott, Esq.
of Carmody Torrance Sandak & Hennessey LLP
Its Attorneys
50 Leavenworth Street
Waterbury, CT 06702
(203) 573-1200

Jeffery D. Cochran, Esq.
Senior Counsel
Eversource Energy
107 Selden Street
Berlin, CT 06037
(860) 665-3548

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INTRODUCTION AND SUMMARY

On June 26, 2015, The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") filed an application (the "Application") requesting that the Connecticut Siting Council ("Council") issue a Certificate of Environmental Compatibility and Public Need ("Certificate") for the Greenwich Substation and Line Project (the "Project").

The Project consists of a new 115-kilovolt ("kV") bulk substation located in Greenwich, Connecticut (the "Greenwich Substation"); the installation of two new transmission lines extending approximately 2 miles between the proposed Greenwich Substation and the existing Cos Cob Substation in Greenwich, Connecticut; and related upgrades to the Cos Cob Substation. In the Application, Eversource proposed a preferred route with underground transmission cables (the "Preferred Route"). During the Council's evidentiary hearing process, Eversource identified a primarily overhead alternative along the Metro-North Railroad ("MNRR") corridor that is feasible, less costly and would satisfy a number of stakeholders' concerns (the "Hybrid Route"). (PFOF ¶¶ 1, 281, 289)

The Project

Eversource is proposing a new Greenwich Substation to be a Gas Insulated Substation ("GIS") located at the site identified as the "Proposed Site" in its Application - 290 Railroad Avenue in Greenwich. Eversource also identified an alternate site, located at 281 Railroad Avenue in Greenwich, for the proposed Greenwich Substation (the "Alternate Site"). If selected by the Council, the Alternate Site would also use GIS technology and equipment. However, due to the size of the subject property, the location and orientation of the substation equipment would likely cause noise regulations and ordinances to be exceeded at the property line. Therefore, Eversource anticipates that at least three abutting properties would need to be acquired for

compliance with noise regulations/ordinances if the Alternate Site for the proposed substation were chosen. (Eversource 1, pp. H-7 – H-8; PFOF ¶¶ 208, 214, 217)

Eversource designed the Greenwich Substation based upon extensive consultations with municipal officials. (Eversource 1, pp. ES-3, N-1 – N-2; Eversource 9, p. 54; PFOF ¶ 234) The GIS equipment would be housed in a 32-foot wide by 121-foot long building with reduced height and increased setback to make it more compatible with the neighborhood. Eversource proposed concrete panels and brick accents for the building's façade. However, as discussed herein, Eversource committed to working cooperatively with the Town officials to propose a façade that is more acceptable to the Town. (Transcript 7, pp. 124-125)

The GIS building would have circuit breakers, disconnect switches, protective relaying and control equipment, and the battery and charger associated with the transmission equipment. (Eversource 1, p. ES-3; PFOF ¶ 235) An exterior yard would contain circuit switchers and power transformers, and a metal switchgear enclosure would house switching and relay and control equipment for the 13.2-kV distribution feeders. (Eversource 1, p, ES-3; PFOF ¶ 236, 237) Eversource incorporated safety and security measures into the design of the Greenwich Substation. (Eversource 1, pp. ES-3; L-1 – L-2; PFOF ¶¶ 241-243, 409-413, 415-420)

The Project also includes two new transmission lines to connect the Greenwich Substation to the existing Cos Cob Substation. Initially, Eversource proposed two underground transmission cables between the two substations along the Preferred Route. (Eversource 1, p. G-9) However, Eversource also evaluated the Hybrid Route. The Hybrid Route would include the two new lines, supported primarily on double circuit line support structures, which would run primarily from the Cos Cob Substation to the proposed Greenwich Substation along a route adjacent to Interstate-95 and south of the MNRR. (Eversource 34, Q-LF-003; PFOF ¶¶ 289,

292) The Hybrid Route also includes potential underground segments. The overhead line alternative in the Hybrid Route satisfies many stakeholder concerns. In particular, it avoids underground cables within Bruce Park, which have been discussed at length during the Council's proceedings for this Project; and it addresses some of the cost issues that the Council, Town of Greenwich and Office of Consumer Counsel ("OCC") have raised. The Hybrid Route would be the Town of Greenwich's preferred route, if the Project is to be approved, because it avoids Bruce Park. Connecticut Department of Transportation ("CTDOT") and MNRR have also supported Eversource's overhead line alternative, as it was presented to them. (Transcript 7, p. 42; PFOF ¶ 304)

The new transmission lines would connect to the existing Cos Cob Substation, which would require a modest, 140-foot expansion of the substation fence for the installation of new equipment to support the new transmission lines and provide for safe and proper operation of substation equipment. (Eversource 1, pp. ES-3, G-7, App. C; Eversource 9, p. 19; Transcript 1, pp. 21-23; PFOF ¶¶ 245, 248) The proposed modifications to the Cos Cob Substation reflect consideration of feedback from municipal entities and would avoid impacts to Cos Cob Park. (Eversource 1, pp. ES-3, G-9; PFOF ¶ 249)

The Project fulfills a clear public need by adding necessary system capacity and providing immediate load relief to the electric distribution supply system in Greenwich. (Eversource 1, pp. ES-1, E-1, E-3; PFOF ¶ 2) Presently, the area is served primarily by only one bulk substation – the Cos Cob Substation, which has reached its capacity based on current load forecasts. (Eversource 1, p. E-1; PFOF ¶ 35, 76) Additional capacity is necessary in order to avoid system overloads during certain contingency conditions, which may occur as early as 2017, in the absence of system upgrades. (Eversource 1, pp. E-1, E-5; PFOF ¶ 35) Such

overloads would result in widespread service disruptions to homes and businesses, and could result in damage to Eversource's equipment. (Eversource 1, pp. E-1, E-6)

The Project would also eliminate potential overloads on distribution feeders that supply power to Prospect Substation from Cos Cob Substation and would reduce the risk of transformer overloads at Prospect Substation. (Eversource 1, pp. E-6 – E-8; Eversource 39, p. 4) Prospect Substation is over 80 years old; although it is a distribution substation, it carries more load than many existing bulk substations. (Eversource 1, pp. E-7 – E-8, E-15; PFOF ¶¶ 95-96)

A robust bulk power solution is necessary to address all of these concerns, and would enable two bulk substations (Cos Cob Substation and the proposed Greenwich Substation) to share and transfer the load, and provide for continuity of service in contingency events. (Eversource 1, p. E-1; PFOF ¶ 147-150) By establishing the new bulk substation near the center of the customer electrical demand, or "load," the Project would reduce the risk of projected overloads on both distribution lines and transformers. (Eversource 1, pp. ES-1 – ES-2, A-1, E-1, E-2, E-3; PFOF ¶ 42) The new bulk substation would also support anticipated future load growth in the Town of Greenwich. (Eversource 1, pp. E-1, E-3; PFOF ¶ 41)

There are no feasible alternatives to the Project that are both available and sufficient to provide the demand relief to the distribution system that is needed. (Eversource 1, pp. E-17, F-2 to F-3, F-18; PFOF ¶¶ 179, 181, 200)

Analysis of the Project during the course of this Docket has shown that the Hybrid Route is the most cost-effective alternative for the transmission component of the Project. The estimated cost of the hybrid transmission route would be approximately $50 million, which is $22 million less than the estimated cost of the transmission lines along the Preferred Route. (PFOF ¶ 294)

Based upon Eversource's design of the Project, including the development of an overhead transmission line option, the construction and operation of the Project would not have any significant permanent adverse effects on the environment. Eversource has incorporated measures into all phases of the Project development to ensure that the environment is protected in accordance with federal and state requirements. It has consulted with the U.S. Fish and Wildlife Service and the Connecticut Department of Energy and Environmental Protection ("CT DEEP") to confirm that there are no federally-listed or proposed, threatened or endangered species or critical habitat known to occur in the Project areas; and it has taken careful steps to ensure that safety measures are in place to avoid any permanent adverse impacts to topography, watercourses, or air quality during the construction process. Eversource also recognizes that Bruce Park is a valued recreational asset of the Town of Greenwich; as a result, the Project includes added safety features to avoid any adverse impacts to this important area if the Preferred Route was to be selected by the Council. (PFOF ¶¶ 329-360)

As discussed at length in Section IV, *infra*, the need for the Project has not been effectively called into question by any qualified experts. The Parties and Intervenors to the proceeding have failed to present any sworn pre-filed testimony or offer any technical evidence to refute the Project's need. Eversource, on the other hand, has provided extensive testimony by qualified experts who are familiar with the relevant engineering, forecasting, and operating issues associated with this Project. All of these experts have unequivocally presented a pressing need for each component of this Project in order to avert serious capacity issues in Greenwich in the near future.

Eversource announced the need for a new Greenwich substation in 2011, after significant customer outages. The Town specifically acknowledged the need for a new substation as a

priority in its 2013/2014 Fiscal Report. (Eversource Admin. Notice 34, p. 14) Eversource's filings with the Council and CT DEEP since 2012 have also clearly identified the plan for a new substation in Greenwich. Significantly, in Docket 435, in which the OCC participated as a party, Eversource expressed its intention to site a new substation in Greenwich as the next step after the Stamford Reliability Cable Project. The need for the proposed substation is not a recent discovery, but rather a result of careful, long-term planning.

The Town of Greenwich has challenged the current need for this Project based on its relatively stable population over the years, and the purported absence of significant development opportunities within Greenwich. These bases are inconsistent with evidence in the Record. Although the Town saw a population increase of only slightly more than 3,000 between 1990 and 2010, its electrical demand increased during the same period by 45 percent. In fact, the Town of Greenwich has a per capita ranking as the highest user of electric service among the 149 municipalities served by Eversource. It has the third highest usage overall, behind the cities of Hartford and Stamford, which have substantially larger populations. (PFOF ¶ 37-38, 159) Further, the Town's Fiscal Report for 2013/2014 reflected substantial increases in building permits, add and alter permits, demolition permits, and estimated construction value. (PFOF ¶ ¶ 155-158; Eversource Admin. Notice 34, pp. 113-114)

Several of the Parties and Intervenors have not taken issue with the construction of new facilities to service Greenwich electric customers; rather, their opposition to the Project has been focused on the location of such facilities within Greenwich. The tenor of the interrogatories from some of the Parties and Intervenors underscore a common view that Stamford, Rye or Port Chester, New York would be a preferable location for a new substation that serves Greenwich's energy needs. Several have also implied that if new facilities were to be built in Greenwich,

such facilities should not be used to serve other Eversource customers, including those in Stamford, although substations in Stamford currently serve customers in Greenwich.

Eversource has an obligation to provide reliable service to all of its customers in Greenwich. Mindful of this obligation, Eversource has proposed the Project facilities precisely where they are needed. It cannot risk interruptions in service to its customers and loss of life of its equipment because opponents would prefer that such facilities be located elsewhere.

The Docket Record

The Docket Record reflects Eversource's careful and thorough examination of all issues relevant to the siting of the substation and transmission lines as required by the governing statutes, the Public Utility Environmental Standards Act ("PUESA"). (Eversource 1, p. ES-1) Significantly, Eversource submitted the following documents in this Docket:

- Application with Appendices A-H;
- Bulk Filings #1 and #2;
- 44 Exhibits including 6 sets of pre-filed testimony, 25 Late Filed Exhibits, and responses to interrogatories from
  - (i) the Council (3 sets);
  - (ii) the OCC (6 sets);
  - (iii) Pet Pantry Super Discount Stores LLC ("Pet Pantry") (2 sets)
  - (iv) Field Point Estate Townhouses, Inc. ("FPET") (3 sets);
  - (v) Bella Nonna Restaurant & Pizzeria; and
  - (vi) Greenwich Chiropractic & Nutrition.

In addition, Eversource presented a panel of highly qualified witnesses, including the lead witnesses, Mr. Kenneth Bowes, Mr. Raymond Gagnon, Ms. Jacqueline Gardell and Mr. Michael

Libertine. (Eversource 10, a-c; Eversource 11) In contrast, the Parties and Intervenors did not file any pre-filed testimony nor did they present any witnesses with any qualifications concerning electric transmission and distribution system planning, engineering or operations issues that are critical to an understanding of the Project. Rather, the Parties and Intervenors relied on advice from sources that they would not or could not identify, or from the Internet. (Transcript 6, p. 101) Finally, information was submitted by one party, the Town of Greenwich, concerning the Cos Cob Substation transformer issues without the knowledge of the parties furnishing the information, and without information filed by Eversource that could have shed light on the basis for Eversource's expert opinion. (Transcript 6, pp. 19-20, 108-109)[1]

PROCEDURAL BACKGROUND

The Project initially arose from a 1989 analysis by Eversource of the electric distribution system in Greenwich, which identified the need for a new substation in Greenwich due to projected capacity deficiencies. (Eversource 1, p. E-9; PFOF ¶ 44) After years of implementing various short-term solutions to address this capacity concern, in June 2011, Eversource announced its commitment to construct a new bulk substation in Greenwich, following a string of cascading outages on the 27.6-kV system supplying Greenwich's distribution substations. (Eversource 1, pp. E-9 – E-11; Eversource 9, p. 32; PFOF ¶ 46)

After this announcement, and pursuant to Connecticut General Statutes ("Conn. Gen. Stats") § 16-50*l*(e), beginning in June 2011 and throughout the period prior to and at least 60 days before filing the Application with the Council, Eversource consulted with and undertook a detailed and formal municipal consultation process with the Town of Greenwich. (Eversource 1, pp. N-1 – N-2; PFOF ¶ 18) During this time, Eversource consulted on numerous occasions with

[1] In particular, the Town's witness, Ms. Katie DeLuca, admitted that she did not furnish Mr. Bowes' pre-filed testimony or request a load tap changer from transformer manufacturers she contacted concerning the issue of larger transformers at Cos Cob Substation.

the First Selectman of Greenwich, Greenwich Department Heads, and the Greenwich General Assembly Delegation. (Eversource 1, pp. N-1 to N-2) Eversource also consulted with the Greenwich Director of Planning, the Greenwich Inland Wetlands & Watercourses Agency, the Greenwich Architectural Review Committee, and the Greenwich Planning & Zoning Commission. (Eversource 1, pp. N-1 to N-2; Eversource 9, p. 54)

In accordance with Conn. Gen. Stats. § 16-50*l*(e), in February 2015, Eversource filed a formal Municipal Consultation Filing with the Town of Greenwich in order to provide technical information about the Project to representatives of Greenwich and the public, and to solicit public participation during the development of the Project so as to address any potential issues of concern. (Eversource 1, Bulk Filing #1, MCF; PFOF ¶ 20) To further facilitate public involvement and provide an opportunity for the public to learn about the Project, Eversource hosted an Open House in Greenwich on March 3, 2015. (Eversource 1, pp. ES-10, N-1) Eversource also developed a Project website, an e-mail address, and a hotline for residents and stakeholders to provide an opportunity to ask questions about the Project. (Eversource 1, p. A-1) On July 15, 2015, Eversource held a second Open House in Greenwich. (PFOF ¶ 21)

Pursuant to Conn. Gen. Stats. § 16-50*l*(b), Eversource provided notice of the Project by certified mail to property owners abutting the Proposed and Alternate Sites for the new Greenwich Substation and for Cos Cob Substation; provided each Eversource customer in the vicinity of the Project with a notice in their monthly utility bill (which included all customers in Greenwich); and published a notice of the Application in The Greenwich Time and The Stamford Advocate. (Eversource 1, p. Q-15; Eversource 1, (i) – Bulk Filing #1; Eversource 3, Q-CSC-014; Eversource 9, p. 55; PFOF ¶¶ 6-9) Service of the Application was made on all state and local officials and agencies described in Conn. Gen. Stats. § 16-50*l*(b). (Eversource 1, p. Q-

14; PFOF ¶ 10) Eversource also provided notification to community groups and the Aquarion Water Company of the filing of the Application. (Eversource 1, pp. Q-14 – Q-15; PFOF ¶ ¶ 12-13)

A duly noticed public hearing in relation to the Application was held by the Council at the Greenwich Library, 101 West Putnam Avenue, Greenwich, Connecticut, on September 1, 2015 at 6:00 p.m. In addition, six evidentiary hearings on the Application were held by the Council on September 1, 2015 at 3:00 p.m. at the Greenwich Library; and on October 6, 2015, December 1, 2015, January 12, 2016, February 23, 2016, and March 10, 2016 at the Connecticut Siting Council, 10 Franklin Square, New Britain, Connecticut. (PFOF ¶ ¶ 15-16)

During these hearings, various entities and individuals were granted party or intervenor status by the Council subsequent to the filing of the Application and over the course of the proceeding - the OCC (Party), Parker Stacy (Intervenor), Pet Pantry (Intervenor), FPET (Intervenor), Christine Edwards (Intervenor), Richard Granoff (Intervenor), Bella Nonna Restaurant & Pizzeria (Intervenor), Cecilia Morgan (Intervenor), Greenwich Chiropractic & Nutrition (Intervenor), Joel Paul Berger (Intervenor), Meg Glass (Intervenor), and the Town of Greenwich (Party). (PFOF ¶ 5) OCC and the Town of Greenwich are collectively referred to as the "Parties"; all of the intervenors are collectively referred to as the "Intervenors".

The Parties and the Intervenors were provided ample opportunities to participate and to conduct cross-examination during the hearings. Many of the Intervenors did not attend some or all of the hearings. Most failed to offer any pre-filed testimony. Many failed to cross-examine Eversource's witnesses. Notably, none of the Parties or Intervenors presented any technical evidence or expert witnesses; the evidence and testimony presented on behalf of Eversource by

its witnesses with technical expertise fully addressed the comments and questions raised by the Parties and Intervenors.

Eversource complied with, and exceeded, all pertinent procedural and public notice and participation requirements set forth in the Connecticut General Statutes, the Regulations of State Agencies, and the Council's two applicable Application Guides: Application Guide for an Electric and Fuel Transmission Line Facility (April 2010), and Application Guide for an Electric Substation Facility (April 2010), as well as the requirements set forth in PUESA.

DESCRIPTION OF THE PROJECT

The Project consists of a new Greenwich Substation with associated transmission supply lines to relieve distribution system overloads and add transformation capacity, and related necessary modifications to the existing Cos Cob Substation, as described in further detail below.

I. GREENWICH SUBSTATION

The new Greenwich Substation is proposed as a 115- to 13.2-kV bulk substation, to be located at 290 Railroad Avenue in Greenwich, Connecticut (the "Property"). (Eversource 1, pp. ES-2, E-17; PFOF ¶ 1) The Property is the preferred location for the new Greenwich Substation because it best achieves Eversource's electrical system objectives for a new substation site; to wit, location of a new power source in proximity to the customer load pocket and existing distribution feeders, and mitigation of potential adverse effects on the community and environment. (Eversource 1, pp. ES-2, H-6; Eversource 9, pp. 7-8; PFOF ¶¶ 209-213)

Eversource currently leases the Property and has the option to purchase the Property when the lease term ends on February 28, 2021. (Eversource 1, p. G-1; PFOF ¶ 208) Under the lease, Eversource has the right to demolish existing structures and to construct the proposed substation. (Eversource 1, p. G-1) Although Eversource subleased the Property to Pet Pantry

and its predecessor starting in 1971, Pet Pantry's rights were terminated as of October 8, 2015 due to Eversource's exercise on October 7, 2013 of the sublease's cancellation provision. (Eversource 1, p. G-2)

The Greenwich Substation could be supplied from an underground circuit configuration that exits Cos Cob Substation on Sound Shore Drive and extends approximately 2.3 miles. Two new transmission supply lines would enter the new substation via underground pipes and terminate at GIS equipment. (Eversource 1, p. G-2; Appendix B; PFOF ¶¶ 231-232) However, Eversource also identified the Hybrid Route – with overhead and underground options that would involve two overhead transmission supply lines originating from Cos Cob Substation, which would transition from overhead to underground via riser poles near Steamboat Road, and terminate at the Greenwich Substation, at GIS equipment housed in a 121-foot by 32-foot building on Railroad Avenue. (Eversource 34, Q-LF-003)

This GIS building was designed with an angled façade parallel to Field Point Road, which extends the southern footprint of the building by 13 feet. (Eversource 1, p. G-2) The main roof of the building would be 31 feet tall, with towers on either end extending 36 feet high. (Eversource 1, pp. G-2 to G-3; Appendix B; PFOF ¶ 232) The building would have a small rear annex to the east that extends approximately 19 feet into the substation yard. (Eversource 1, p. G-3; Figure G-1, Appendix B; PFOF ¶ 232) The design of the GIS building would be a pre-cast façade set back more than 16 feet from the edge of the property on Railroad Avenue. (Eversource 1, p. G-3; Figure G-2; Appendix B; PFOF ¶ 233)

The configuration and design of the Greenwich Substation presented in the Application reflects changes made based upon the comments and input Eversource received from the Town of Greenwich during the municipal consultations. (Eversource 1, p. G-3; Figures G-1, G-2;

Appendix B; PFOF ¶ 234) The final configuration and design of the substation would be proposed in the Development and Management Plan ("D&M Plan"). Eversource has committed to working cooperatively with the Town of Greenwich on the final design aspects of the substation site. (Transcript 7, pp. 124-125)

The GIS building would house six 115-kV circuit breakers and associated disconnect switches, protective relay and control equipment, and a battery and charger for the transmission equipment. (Eversource 1, p. G-3; Figure G-1; Appendix B; PFOF ¶ 235) The substation yard would have three 115-kV circuit switchers with integral disconnect switches and three 60-Megavolt-Ampere ("MVA") power transformers to step down the voltage. (Eversource 1, p. G-3; Appendix B; PFOF ¶ 236) The transformers would contain insulating oil that did not contain polychlorinated biphenyls ("PCBs"); each would have secondary containment to more than adequately contain such oil. (Eversource 1, p. G-3) The containment areas would be subject to periodic inspections by Eversource to confirm that systems are properly functioning. (Eversource 1, p. G-3) A metal switchgear enclosure measuring 108-feet long by 24-feet wide by 14-feet tall would also be installed to house equipment. (Eversource 1, p. G-3) The substation yard would have a 20-feet wide gated entrance on Field Point Road, and would be covered with a trap rock surface. (Eversource 1, p. G-3; PFOF ¶ 241)

Eversource's safety and security features of the Greenwich Substation include an 8-feet high security fence surrounding the Substation yard, low-level security lighting, and 65-feet tall lightning masts. (Eversource 1, pp. ES-3, G-3; PFOF ¶¶ 242-243) Additional lighting would be installed to facilitate work at the substation yard under emergency conditions or during inclement weather. There would also be adequate space for a future mobile transformer. The Greenwich

Substation would be designed to have a service life of approximately 40 years. (Eversource 1, pp. G-3 – G-4; PFOF ¶¶ 243-244)

If the Preferred Route is approved by the Council, a pump house to support the high pressure fluid filled ("HPFF") transmission underground cables would be constructed at the Greenwich Substation. (Eversource 1, p. G-4; PFOF ¶ 238) The pump house would be located on the southwest corner of the Property along the fence line next to Field Point Road, and would measure approximately 12 feet high by 50 feet long by 12 feet wide. (Eversource 1, p. G-4; Figure G-3; PFOF ¶ 239) The structure would contain circulating pumps, valves, controls, recorders, alarms, and a reservoir tank. It would be serviced by two separate distribution circuits with automatic backup in the event of power loss. (Eversource 1, p. G-4; PFOF ¶ 240)

Lastly, the Greenwich Substation would require three new distribution duct banks and cables, which would tie into existing distribution feeders beneath Railroad Avenue and Prospect Street. (Eversource 1, p. G-7) The proposed configuration would be capable of supporting 18 feeders to accommodate future load. (Eversource 1, p. G-7)

II. TWO NEW TRANSMISSION LINES CONNECTING GREENWICH SUBSTATION TO COS COB SUBSTATION

A. Underground Route

The underground route, identified by Eversource in its Application as the Preferred Route, was chosen after evaluation and analysis of numerous overhead, underground, marine, and hybrid combination routes. The Route would exit Cos Cob Substation on Sound Shore Drive under the MNRR and turn west along Station Drive, crossing beneath Interstate 95 and extending to Town-owned property west of Indian Field Road and north of the MNRR. Approximately 1,500 feet of horizontal directional drilling ("HDD") beneath the MNRR and Interstate 95 would be required to a staging site at the end and west of Kinsman Lane, where

open trenching would continue in or adjacent to the road and into Bruce Park. HDD technology would then be used to span Bruce Park and Indian Harbor for nearly 0.5 mile, to Davis Avenue near Home Place. The route would follow Davis Avenue, Indian Harbor Drive and Museum Drive westward before turning north onto Arch Street and extending beneath Interstate 95 and the MNRR to Railroad Avenue. The route would then turn west and follow Railroad Avenue to the Proposed Site at 290 Railroad Avenue. (Eversource 1, p. G-15; PFOF ¶¶ 251, 281)

Eversource selected the Preferred Route based on engineering, environmental, cultural, economic, and community considerations and Project routing objectives. The Preferred Route minimizes conflicts with existing utilities; meets operations and maintenance requirements; limits the need for additional ROWs and easements; minimizes surface disruption impacts; provides a fairly direct path between the two substations; and allows for relative ease of constructability. Based on a comparative analysis with other identified underground alternatives, the Preferred Route is also the most economically feasible route initially identified by Eversource. (Eversource 1, pp. ES-6 – ES-7, H-28 – H-29; Eversource 9, pp. 21 - 22; PFOF ¶ 280)

B. Hybrid Route

Subsequent to the filing of the Application, at the request of the Council, Eversource developed overhead transmission line options for the Project to connect the Greenwich Substation to the existing Cos Cob Substation. Eversource reviewed various overhead route variations and developed the Hybrid Route, which is the most cost-effective of the feasible routes. The Hybrid Route would extend approximately 2 miles between the proposed Greenwich Substation and the existing Cos Cob Substation in the area primarily north of Interstate 95 and

within the MNRR corridor and south of the railroad tracks. (Eversource 34, Q-LF-003; PFOF ¶ 289)

The two new overhead lines would be supported primarily on double-circuit line support structures ranging in height from approximately 80 to 150 feet. To address narrow overhead corridors, and reduce costs, Eversource would use smaller 556 ACSS conductors. The design would require only a 40 foot right-of-way ("ROW"), which is narrower than the customary 50 feet, because the lines would be adjacent to the railroad and/or highway. Line conductors could blow out into available aerial space without compromising necessary clearance distances for the lines. The structures would be built 15 feet from railroad catenary structures and 25 feet from the edge of the MNRR ROW. (Eversource 34, Q-LF-003; PFOF ¶ 290)

The Hybrid Route consists of four segments, with options. The lowest cost option would involve Segments 1A, 2B, 3B, and 4B. Segment 1A would start as an underground "getaway" that exits the Cos Cob Substation and extends west on the Cos Cob Park driveway. It would run under Sound Shore Drive to two riser poles, to be located in the MNRR parking lot, at which point the line would transition to an overhead position. The lines would then extend west over Interstate 95 and the MNRR to an area between the MNRR and Station Drive, and remain in this area adjacent to the north side of the MNRR extending to Indian Field Road. Segment 2B would extend along the south side of the MNRR north of the CTDOT taking line. Segment 3B would extend the two overhead circuits along the south side of the MNRR, but north of the CTDOT taking line. At Segment 4B, the lines would transition from overhead to underground at riser poles installed near Steamboat Road, then head north along Steamboat Road and west on Railroad Avenue to the proposed Greenwich Substation. (Eversource 34, Q-LF-003) The Hybrid Route would require a license from the railroad, minimal easements, and no property

acquisitions. This Route would cost approximately $22 million less than the Preferred Route. (Eversource 34, Q-LF-003; PFOF ¶¶ 289, 295)

Segment 1B would avoid the Cos Cob Park driveway. It would extend along the western edge of the substation within the fence line until it reaches the northern boundary of the fence line and then continue under Sound Shore Drive to two riser poles to be located in the MNRR parking lot south of the railroad. (Eversource 34, Q-LF-003)

III. COS COB SUBSTATION MODIFICATIONS

The Project necessitates certain modifications to the existing Cos Cob Substation for the installation of new equipment to support the new transmission lines. (Eversource 1, p. G-7; PFOF ¶ 245) This equipment is proposed to be installed in an existing CTDOT easement area on the south side of the substation, and includes circuit breakers, disconnect switches, transformers, cable termination structures, support structures, an A-Frame line structure, conduits and duct banks, an 85-feet tall monopole line structure, a steel structure for a mobile transformer, relays, control and communication equipment, bus work, and underground cable vaults. (Eversource 1, p. G-8; PFOF ¶ 246) Certain existing equipment would be removed to accommodate the new equipment, including steel A-Frame structures, overhead bus sections, a line trap, a disconnect switch, a wood pole structure and a lattice line structure. (Eversource 1, p. G-8; PFOF ¶ 250) The fence of the substation would be partially extended by approximately 140 feet to the south to accommodate the new equipment. (Eversource 1, p. G-7; PFOF ¶ 248) Due consideration was given to input Eversource received from Greenwich officials concerning the modifications to Cos Cob Substation; as a result, the design minimizes the extension of the fence line and avoids impacts to the municipally owned Cos Cob Park. (Eversource 1, p. G-9; PFOF ¶ 249)

DISCUSSION

This portion of the Brief summarizes the evidence showing that:

- The Project is needed (Section I);
- The environmental effects of the Project are acceptable (Section II);
- The Project is consistent with the Council's Electromagnetic Field ("EMF") Best Management Practices and with statutory requirements (Section III); and
- No Parties or Intervenors have effectively disputed the need for the Project or provided any feasible, cost-effective alternatives that achieve the Project's benefits (Section IV).

Appendix A to this Brief lists conclusory findings that the Council is directed to make by PUESA in order to issue a Certificate, and provides citations to the relevant paragraphs of the Proposed Findings of Fact ("PFOF") that support those findings.

I. THERE IS AN IMMINENT PUBLIC NEED FOR THE PROJECT

A. The Project is Needed to Ensure Reliable Electric Service to Greenwich (Conn. Gen. Stats. § 16-50p(a)(3)(A))

1. Background

The existing electric distribution system in Greenwich has been the subject of ongoing study and analysis over the past few decades. Greenwich is served by one bulk substation, Cos Cob Substation, which supplies power to Prospect, Byram, and North Greenwich distribution substations via distribution feeders. (Eversource 1, p. E-12; PFOF ¶ 76-77) As early as 1989, Eversource identified a need for a new substation in Greenwich west of Indian Harbor because projections indicated that the Cos Cob Substation would reach capacity in 1994. (Eversource 1, p. E-9; PFOF ¶ 44) Eversource was able to postpone the construction of a new substation by implementing a number of short-term, interim solutions. (Eversource 1, pp. E-9 – E-10) In particular, in 1994, Eversource upgraded the existing Tomac Substation, which allowed it to "tap

into" an existing 115-kV transmission line in order to provide additional capacity; in 2000, it added a 25-MVA transformer at the Cos Cob Substation to address incremental load growth; from 2010 to 2012, Eversource upgraded equipment at various existing Greenwich substations (Cos Cob, Byram, Mianus, and North Greenwich); and from 2011-2013, Eversource moved load to the Waterside Substation in Stamford, Connecticut to relieve the Tomac Substation in Greenwich. (Eversource 1, pp. E-9 – E-10, E-16, Table E-4; PFOF ¶ 45)

However, none of these interim measures constituted a long-term solution for the need to have a new substation closer to the customer load center. (Eversource 1, p. E-10) In 2011, long-term improvements to system reliability became more apparent after a heat wave and two-day lightning storm event. As a result, the Cos Cob Substation lost three circuits, disrupting service to more than 5,000 customers. During this event, Eversource was forced to de-energize approximately 2,300 Greenwich customers in order to prevent damage to the electrical distribution system; request that customers conserve energy and operate their on-site generation; continuously shift loads between available sources in the town to avoid overloading equipment capabilities; and mobilize an emergency bulk substation transformer and other equipment in order to mitigate the risk of additional contingency events. (Eversource 1, pp. E-10 – E-11) In the aftermath of these events, which distinctly highlighted critical vulnerabilities to the Greenwich electric system, Eversource accelerated its long-term plans for a new bulk substation. (Eversource 1, p. E-11)

Greenwich's electrical distribution vulnerabilities were made apparent again in 2015, when three contingency situations occurred on three different underground feeders between Cos Cob and Prospect that exceeded normal ratings. As a result, Eversource was forced to use emergency ratings for its remaining cables; in one case, the emergency ratings were utilized for

more than a 24-hour period. Through the use of emergency ratings, Eversource narrowly avoided the need to again disrupt customer service. The contingency situations were the result of cable failures on the 27-kV system between the Cos Cob and Prospect Substations. (Eversource 36, Q-OCC-042; Transcript 1, p. 58; Transcript 3, pp. 53, 138; Transcript 4, p. 72; PFOF ¶ 33)

Of the 149 towns served by Eversource, Greenwich is the only town in the last five years in which Eversource was forced to shed customer load during peak conditions. This is because the capacity was not available and the cascading distribution failures on the underground feeders could not otherwise be controlled. (Transcript 7, p. 77)

Based on a careful examination of actual and projected loads and current conditions at each of the Greenwich area substations, Eversource concluded that the existing distribution system is subject to various constraints, is beyond the capabilities of its current design, and cannot be strengthened without a new bulk substation located west of Indian Harbor. (Eversource 1, pp. E-12, E-14, E-15)

2. The Project Would Fulfill Capacity and Reliability Needs in Greenwich

The Project fulfills a clear public need by adding necessary system capacity and greatly improving reliability of the entire Greenwich electric distribution system.

(a) The Project Would Avoid Cos Cob Transformer Overloads

Cos Cob Substation is the cornerstone of the electric distribution system in Greenwich. (Eversource 1, p. E-3; Figure E-1; PFOF ¶ 31) It performs critical functions, including acting as an electrical "off-ramp," taking power at 115 kV from the transmission system and reducing the transmission voltage levels down to distribution voltage levels, which are further reduced to serve homes and businesses. The Substation also supplies power at 27.6 kV to other substations in Greenwich to enable those substations to serve homes and businesses, and supplies power at

27.6 kV to large commercial customers and the secondary network in downtown Greenwich. (Eversource 1, pp. E-3, E-4; Eversource 39, pp. 3-4) Currently, Cos Cob Substation is the most heavily loaded bulk substation in Connecticut. (Eversource 1, p. E-9; PFOF ¶ 32)

Eversource's analysis of actual and projected load levels on the system revealed that Cos Cob Substation transformers could be overloaded starting in 2017 under peak load conditions and certain contingency events, and that load relief is also needed at two distribution substations – Prospect and Byram Substations. (Eversource 1, p. E-5; PFOF ¶ 35) Such local load deficiencies are the result of inadequate transformer and feeder capacities at Cos Cob Substation. As a result of its analysis, Eversource determined that relief must be in place by 2018 to avoid system overloading. (Eversource 1, p. E-5; PFOF ¶ 36)

The proposed Greenwich Substation would transfer load off transformers at the Prospect and Byram Substations to new transformers at the new bulk substation, thus providing the load relief necessary to avoid system overloads. (Eversource 1, p. E-5; PFOF ¶ 135) Notably, a new bulk substation is consistent with Eversource's current electric distribution system design in Connecticut, where in most geographic areas, two or more bulk substations with multiple transmission supply lines are available to serve areas with large amounts of customer load. Such a design allows for one bulk substation to supply needed power if the other supply source(s) is unavailable; significant load can be quickly transferred under contingency conditions. (Eversource 1, p. E-6; PFOF ¶ 122)

(b) <u>The Project Would Eliminate Potential Distribution Feeder Overloads</u>

Because Greenwich currently depends on one bulk substation to supply the majority of Greenwich customer load through multiple lengthy—approximately 2.3 miles long—distribution feeders of limited capacity, the system is vulnerable to feeder failures and overloads and

resulting outages under contingency conditions. (Eversource 1, pp. E-6 – E-7) Based on current and projected loads in Greenwich, the transformation capacity and distribution feeders are at or near their maximum load levels in peak or near peak conditions. (Eversource 1, pp. E-6 – E-7) Notably, any event that causes a loss of a system component would stress other components that are forced to carry higher loads, which further increases risk of component failure and "double contingencies," where an initial loss "expands" into additional components throughout the system. (Eversource 1, p. E-7) Because all power comes from the Cos Cob Substation via long distribution feeders, the system is susceptible to load loss, which has already occurred in Greenwich. (Eversource 1, p. E-7) This design provides insufficient reliability of service to the majority of customers in Greenwich.

The new Greenwich Substation would bring a transmission source into the center of customer demand. (Eversource 1, p. E-7) In so doing, the new substation would substantially reduce reliability vulnerabilities resulting from the current dependence of the system on long distribution feeders to deliver electricity. (Eversource 1, pp. E-6 – E-7)

(c) The Project Would Reduce the Risk Of Overloads On Prospect Substation

As currently configured and due to high levels of electricity demand in Greenwich, the Prospect Substation, a non-bulk distribution substation originally built in 1934, carries more-than-typical load and more load than many existing bulk substations. (Eversource 1, pp. E-8, E-15; PFOF ¶¶ 95-96) This substation is supplied only by the Cos Cob Substation and has very limited backup if that source fails. (Eversource 1, p. E-8) Eversource has projected that under current conditions, overloads on the Prospect Substation may begin to occur by 2021. (Eversource 1, p. E-8, Table E-2; PFOF ¶ 97) The proposed Greenwich Substation would provide the additional capacity the Greenwich electric distribution system needs, thereby

reducing the risk of transformer overloads at the Prospect Substation. (Eversource 1, pp. E-7 – E-8)

As part of the Project, Eversource would remove distribution transformers and associated equipment at Prospect Substation. It would continue to serve as a critical distribution tie station for the existing 27.6-kV system. (Eversource 1, pp. E-18, G-9; Eversource 9, p. 20; Eversource 43, Q-OCC-077; PFOF ¶ 145)

(d) The Project Would Locate A Source Of Electric Supply Near The Load Center

The current electricity load in Greenwich is concentrated in its downtown area, well west of the heavily loaded Cos Cob Substation. (Eversource 1, p. E-9; PFOF ¶ 76) The Proposed Site for the Greenwich Substation would be ideally located in the heart of the greatest customer demand areas of the Town. (Eversource 1, p. E-9) The proximity of the new substation to the highest load areas substantially reduces reliability risks stemming from the Town's current reliance on power supplied by lengthy distribution feeders. (Eversource 1, p. E-9)

3. ***There Are No Practical System Alternatives That Would Properly Resolve The Problems Addressed By The Project In A Cost-Effective Manner***

(a) No Action Alternative

Taking no action would do nothing to increase capacity and thereby eliminate the risk to the Town of Greenwich of system overloads, and would be inconsistent with Eversource's obligation to provide reliable electric service. (Eversource 1, p. F-1; PFOF ¶ 180) This is not a responsible course of action that the Council could properly require. No customer deserves better service than another, but all customers should be provided a base level of service that ensures their lights do not go out on a hot day or in the middle of winter. (Transcript 4, p. 61; PFOF ¶ 167)

(b) Transmission Alternatives

The identified need cannot be resolved with new or upgraded transmission facilities alone, because such an alternative would not add the additional capacity to the Greenwich electric system necessary to meet existing and projected demand. (Eversource 1, p. F-1)

(c) Distribution Alternatives

i. Eversource Has Exhausted All Interim Distribution System Measures

Starting in 2010, Eversource implemented various interim measures to bolster the functioning and increase the capacity of the substations and distribution system in Greenwich until a new substation could be constructed. (Eversource 1, p. E-16; PFOF ¶ 118) In particular, Eversource upgraded switchgear, added a new transformer, and initiated a connection between two other transformers at the Cos Cob Substation; upgraded equipment at the Byram and Mianus Substations; and added an aerial feed and replaced three distribution transformers at the North Greenwich Substation. Eversource also replaced distribution cables from the Cos Cob Substation to the Prospect Substation, and replaced the underground distribution cable from the Cos Cob Substation to Sound Shore Drive. (Eversource 1, p. E-16; PFOF ¶ 118)

Overall, Eversource invested $36.3 million dollars in these substation and distribution system improvements. (Eversource 1, p. E-16) Because Eversource's transmission lines end at Cos Cob Substation, and distribution substations which serve a large amount of Greenwich's customer load are fed by distribution feeders that originate at Cos Cob Substation, Greenwich is electrically isolated. There are currently no additional feasible interim measures at the distribution level that could be undertaken to allow for reliable electric service in Greenwich, aside from constructing a new substation in Greenwich. (Eversource 1, p. E-17; Eversource 9, pp. 31, 35-36; Transcript 4, p. 147; PFOF ¶ 179) The improvements made to the Greenwich

substations and distribution system were short-term measures that Eversource implemented to keep the system operational until a long-term solution could be implemented. The time for a long-term solution is now. (Eversource 1, p. E-7)

ii. Distribution System Alternatives Are Not Practical Or Cost-Effective

As an alternative to the Project, Eversource analyzed an option of implementing a number of actions involving *only* improvements to its current distribution system to achieve the necessary load relief. (Eversource 1, pp. F-2 – F-3; PFOF ¶ 170) This option included (1) expanding the Cos Cob Substation to include additional transformers, switchgear, and underground cable connections; (2) modifying the Prospect Substation to increase transformer capacity, replace switchgear, and install flood protection measures; (3) constructing two-duct bank systems to extend near the center of demand in Greenwich; and (4) re-designing and constructing distribution loop schemes of the system. (Eversource 1, pp. F-2 – F-3)

However, this distribution option presented a number of challenges. First, an expansion of the Cos Cob Substation would require additional property in order to accommodate any added transformers, and there is no available land to accommodate such an expansion due to existing surrounding land uses. (Eversource 1, pp. F-2 – F-3) Second, the estimated cost of this alternative is very high - $50 million in excess of the cost of the proposed Project - but would achieve an increase in capacity that is 60 MVA lower than the increase achieved by the Project. (Eversource 1, p. F-3; Eversource 9, p. 36). Finally, the long-term reliability needs that would be addressed by the Project (i.e., adding capacity and bringing a reliable source of power supply to the center of customer demand) would not be addressed by the distribution alternative. (Eversource 1, p. F-3; Eversource 9, p. 36)

Moreover, other modifications or expansions to existing substations serving Greenwich are not practical for achieving the necessary capacity increases and meeting the load demand.

- *Cos Cob Substation.* This bulk substation was built in 1964 on two properties consisting of 2 acres – 1.506 acres owned by Eversource (a portion of which is subject to an exclusive third-party easement) and 2.5 acres owned by CTDOT (a portion of which is subject to an easement in favor of Eversource). There is insufficient space on the property to add transformers and associated feeders, and the property is constrained by a public road, CTDOT property, and Cos Cob Park. (Eversource 1, p. E-15; PFOF ¶¶ 76, 84)

- *Prospect Substation.* This is a distribution substation built in 1934 on 0.35 acres of a 1.3-acre property, and it currently carries more load than many existing bulk substations. It is bounded by public roads, bisected by an underground brook and municipal sewer main, and partially located within a 500-year flood plain. (Eversource 1, p. E-15; PFOF ¶¶ 95-96)

- *Byram Substation.* This distribution substation was built in 1955 on 0.2 acres of a 1.7-acre property, and is too far west to serve the customer load pocket. The property has severe slopes and is bounded by residential properties, Pemberwick Road, and commercial property. (Eversource 1, p. E-15; PFOF ¶ 99-101)

- *North Greenwich Substation.* This distribution substation was built in 1972 on a 0.47-acre property with very little existing unused space. There is no abutting property that would be sufficient or available for either expansion or new construction at the site. It is located too far from the center of customer load. (Eversource 1, p. E-15; Eversource 41, Q-LF-011; PFOF ¶¶ 102-103)

- *Mianus Substation.* This distribution substation was built in 1965 on a 0.31-acre property and is bounded by the Mianus River, a senior care facility, a public road and a business. The substation is located too far from the center of customer load. (Eversource 1, p. E-15; PFOF ¶¶ 109-111)

- *Tomac Substation.* This limited bulk substation was built in 1971 on 0.45 acres of a 0.86-acre property, portions of which are subject to an access easement to the railroad. It is bounded by wetlands, a golf course, the railroad, and a public road. The substation is located too far east from the center of customer load. (Eversource 1, p. E-15; PFOF ¶¶ 112-114)

As these summaries make clear, expansion and/or modification of existing substations in Greenwich are not technically feasible. Most face geographical constraints due to lack of proximity to the load pocket, or insufficient expansion space. Moreover, such modifications would fail to address reliability issues associated with distribution feeders between the distribution substations and Cos Cob Substation. Additional substation modifications, absent construction of a new substation near the customer load pocket, would be nothing more than costly incremental measures that fail to address the full scope of Greenwich's pressing electric energy needs.

iii. *Improvements to North Greenwich Substation Would Not Supplant the Need for the Project*

The North Greenwich Substation is not an adequate location for a bulk substation expansion. Not only does the site contain very little unused space, but there is no abutting property which would be sufficient or available for either expansion or construction of a new bulk substation. The site of the Substation is constrained immediately to the north and west by Converse Pond Brook and associated wetlands. Land to the south and east is owned and maintained by CTDOT as part of the Merritt Parkway ROW corridor. (PFOF ¶ 103)

Although the transformers at North Greenwich have additional available capacity, the transfer of load from Prospect Substation to North Greenwich Substation would not reduce any of the load on Cos Cob Substation; both Prospect and North Greenwich Substations are supplied from Cos Cob's 27.6-kV supply. Alternatively, if the existing distribution substation at North Greenwich were to be replaced with a new bulk substation, the scope of construction would be similar to that of the proposed Greenwich Substation. However, the cost of construction of a bulk substation in North Greenwich would be even greater than the Greenwich Substation because expansion at the 115-kV source substation for a bulk substation in North Greenwich, as

well as the 115-kV supply lines to that source substation, would also be required. (Eversource 36, Q-OCC-057; Eversource 41, Q-LF-011; PFOF ¶¶ 107-108)

(d) Non-Transmission Alternatives

Eversource carefully considered non-transmission energy and demand side management alternatives to the Project. (Eversource 1, p. F-1) Although certain of such alternatives, either individually or combined, have the potential to provide some relief to the distribution system in Greenwich, such options are either not currently available, or not available in sufficient amounts to meet the pressing capacity needs that the Project would fulfill. (Eversource 1, pp. F-1, F-2, F-18; PFOF ¶ 181) No such alternatives could be developed at costs that are comparable to the Project's cost or less. (Eversource 1, p. F-2) Importantly, the implementation of such alternatives by the time increased capacity is needed for Greenwich would also be challenging. (Eversource 1, p. F-2) Non-transmission alternatives would also fail to achieve the long-term reliability benefits to the existing distribution system as a whole that the Project would achieve in a cost effective manner, or provide for future demand and infrastructure needs of the area. (Eversource 1, pp. F-1 – F-2, F-18; PFOF ¶ 200)

i. Energy Alternatives

Eversource considered generation as an alternative to provide capacity to the Greenwich electric system. (Eversource 1, pp. F-3 – F-10) However, there are no large scale generation projects currently planned or awaiting approval in Greenwich, let alone in an area near the center of demand in Greenwich. The development of any new such projects would likely fail to meet the proposed in-service date for the Project (i.e., the second quarter of 2018) to address the immediate capacity need. (Eversource 1, pp. F-4 – F-5) Any such projects would also be substantially more costly than the Project. (Eversource 1, p. F-10) Notably, Eversource

determined that renewable energy generation facilities - solar photovoltaic panels, wind turbines, and geothermal - do not constitute realistic alternatives to the Project, given the much higher capital costs and large or location- specific areas needed to implement such options. (Eversource 1, pp. F-7 – F-8, F-10) Moreover, solar energy reaches peak generation capacity between ten and eleven in the morning; the peak load in Greenwich occurs between four and six in the afternoon. Significantly, while solar can curtail the peak in the early afternoon hours, it drops off dramatically into the midafternoon hours when almost no solar is available at three to four in the afternoon. (Transcript 3, pp. 63-65; PFOF ¶ 191) There are a number of solar installations in Greenwich and none have disconnected from Eversource service – all customers in Greenwich with solar continue to rely on Eversource to provide service when solar power is unavailable. Typically, those customers receive service from Eversource for 18-20 hours per day. (Transcript 4, p. 108)

In order for generation to be an adequate alternative to the Project and relieve potential system overloads, it must be interconnected to substations in the Greenwich area to reduce demand. Eversource's review of Greenwich area substations indicated that the options for interconnecting generation are limited. (Eversource 1, p. F-8) Connecting generation facilities to the Cos Cob Substation would not alleviate the capacity need in Greenwich or reduce overloads on the transformers or distribution feeders, because the demand on these components would remain the same. (Eversource 1, pp. F-4, F-8) The Prospect Substation does not have any space for interconnection facilities, additional substation equipment, or new generation facilities. (Eversource 1, p. F-9) Any large amount of generation interconnected at the Byram Substation could result in power flows back into the distribution circuits that supply Byram Substation. This would require additional relay equipment at the Substation, and result in challenges to system

protection and voltage control that could impose limitations on generation. (Eversource 1, p. F-9; PFOF ¶ 182)

Eversource further determined that any generation alternatives, even if they could be sited and constructed in time to meet capacity needs in Greenwich, would not achieve the various benefits that would be realized by the Project. (Eversource 1, p. F-10) New generation only has the capability of providing incremental load relief benefits to the system, and would not provide enhanced reliability to the distribution system or extend the bulk power transmission system near the load center of Greenwich. (Eversource 1, p. F-10) The Greenwich Substation and proposed transmission lines have a lower cost and provide more long-term capacity than potential generation alternatives. (Eversource 1, p. F-10)

ii. Microgrids

Eversource also considered the viability of microgrids, an emerging application of small-scale distributed generation ("DG"), as an alternative to the Project. (Eversource 1, pp. F-10 – F-11) However, Eversource concluded that a microgrid was not a technically-feasible alternative to the Greenwich Substation because Connecticut's microgrid program is currently designed to support critical facilities only, as identified by the CT DEEP and municipalities, which neither CT DEEP nor Greenwich has done. Given the state of the technology, the potential DG capacity from microgrids is insufficient and impractical to eliminate the risk of transformer overloads in Greenwich. (Eversource 1, p. F-12; PFOF ¶ 193) As recognized by the CT DEEP, there are economic challenges associated with microgrids, many of which are not fully understood. This includes uncertainties in the costs of ongoing microgrid maintenance and major capital requirements as the system ages. (Eversource 1, p. F-12; PFOF ¶ 194) For these reasons, Eversource removed this option from further consideration.

iii. Demand Side Management Alternatives

Eversource considered demand side management measures; however, it determined that such options only provide limited, incremental effects and cannot constitute a comprehensive alternative to the distribution system relief that a new substation would achieve. (Eversource 1, p. F-13)

Eversource determined that both passive and active demand resources - including programs that target increasing energy efficiency for new and existing equipment, generation located on the customer's side of the electric meter that reduces electric system demand when turned on, DG, and real-time emergency generation - are not viable alternatives to the Project. Such resources would only provide marginal reductions in demand, and would be insufficient to alleviate the risk of distribution system overloads. They would also fail to bolster overall system reliability, which would be achieved by the proposed Greenwich Substation. (Eversource 1, pp. F-12 – F-17) Eversource also rejected a load curtailment alternative because there are no Eversource customers in Greenwich participating in its Load Curtailment Program with the ability to decrease demand in the manner needed when called upon. (Eversource 1, p. F-17)

Eversource representatives have worked with Greenwich's Conservation Committee to promote energy efficiency campaigns and workshops. However, on the whole, there has been limited participation by Greenwich customers. Only approximately five-percent of Greenwich homeowners had participated in residential programs from January 2010 to July 2015. (Eversource 32, p. 4; PFOF ¶ 187) Of the twelve towns targeted by Eversource for energy efficiency participation, Greenwich had the lowest participation rate for Residential Program Participation, and the second lowest participation rate for Business and Municipal Program Participation. (Eversource 44, Q-LF-017; PFOF ¶ 185)

Energy efficiency is a two-way street. Eversource, which is a national leader in its commitment to conservation programs, is doing its part in promoting energy efficiency, but it cannot force customers to participate. Eversource has an obligation to serve all customers, even those who choose not to do their part by taking advantage of energy efficiency programs. (Transcript 3, pp. 88-90)

Based on its experience with targeted programs, Eversource believes an aggressive program of load management, along with solar, electric and thermal treatments, would not have a material effect on the load in Greenwich. Success or failure of such a program is based upon customer choice and customer behavior. (Transcript 7, p. 134-135)

(e) There Are No Practical Alternative Site Locations For A New Bulk Substation

Eversource conducted a careful search for potential site locations for a new bulk substation, taking into consideration engineering, environmental, community, and economic factors. (Eversource 1, p. H-3; PFOF ¶ 201) Although three alternative sites were identified for the location of the new substation, they were evaluated and found to be unsuitable. Eversource determined that 290 Railroad Avenue was the site that could best provide the reliability and flexibility necessary to achieve the objectives of the Project. (Eversource 1, pp. H-3 – H-12) Eversource also identified an alternate site where a new substation could be built.

Selection of an appropriate site for a substation is a careful and multi-faceted process. Eversource's criteria for evaluating a substation site's viability include: proximity to customer demand, or "load pocket," and existing feeders; proximity to existing transmission electrical circuits; ease of access for construction and maintenance; earthwork requirements; sufficient size and shape; zoning and land-use constraints; minimizing effects on the environment; proximity to

public water supply, watershed, and aquifer areas; and other relevant factors, including community impacts, cost, construction complexities, and timing. (Eversource 1, p. H-3)

Based on candidate site review, four sites were identified for further consideration and evaluated against the selection criteria:

- 290 Railroad Avenue (the "Proposed Site");
- 281 Railroad Avenue (the "Alternate Site");
- 330 Railroad Avenue; and
- Old Track Road.

(Eversource 1, pp. H-4 to H-11)

Eversource determined that 290 Railroad Avenue best satisfies the site evaluation criteria. (Eversource 1, pp. H-6 – H-7, Table H-1) This site fulfills the need for proximity to the load pocket, and is adjacent to existing distribution feeders. (Eversource 1, p. H-6; PFOF ¶ 209) A substation at the Proposed Site is compatible with existing commercial land uses in the vicinity, including warehouses, an electric substation (Eversource's Prospect Substation), utility storage yard and an active rail line. (Eversource 1, pp. G-1, H-6; PFOF ¶ 209) The site is not proximate to any wetlands or watercourses, or residential properties. (Eversource 1, pp. H-6 – H-7; PFOF ¶ 212) Its size and shape are sufficient to properly configure the substation within the property boundaries. (Eversource 1, p. H-6) This site is level and would require minimal earthwork, and after the removal of an existing building, would pose no physical encumbrances that would impede its development. (Eversource 1, p. H-6; PFOF ¶ 210)

The property at 281 Railroad Avenue is owned by Eversource and currently used as a storage area/pole yard. (Eversource 1, p. H-7; PFOF ¶ 214) However, a substation sited on the property would likely result in violations of State and local noise ordinances at the property line.

(Eversource 1, p. H-7; PFOF ¶ 217) Eversource would have to acquire at least three abutting properties, two residential properties and one commercial property, in order to provide a buffer to mitigate noise along the property lines of abutting properties if the proposed substation were located at 281 Railroad Avenue. (Eversource 1, p. H-7; Transcript 1, p. 59) Additionally, 281 Railroad Avenue is abutted by residential properties; it would be visible from Woodland Drive and from residential properties on both the west and east side. (Eversource 1, p. H-7; Transcript 1, p. 48; PFOF ¶ 218) However, a new Greenwich Substation at this location is a feasible alternative to 290 Railroad Avenue.

The property at 330 Railroad Avenue is also owned by Eversource, and is the site of the Prospect Substation. (Eversource 1, p. H-8; PFOF ¶ 219) Eversource determined that this property was not a viable location for a new substation because it contains too many physical impediments—an underground brook (Horseneck Brook) and associated 16 foot culvert (bisecting the property), a municipal sewer main, a floodplain area, and overall limited space. These impediments would be difficult to effectively manage, and would increase the Project's cost. (Eversource 1, pp. H-8 – H-9; Transcript 1, p. 71; PFOF ¶ 221) Eversource also determined that this site has constructability uncertainties, including the fact that most of the site is located within the 500-year flood plain and would require additional design features for consistency with Eversource's substation reinforcement initiative for storm resiliency; this has the potential to put the Project schedule at risk. (Eversource 1, p. H-8) Eversource has since put this site up for sale and signed a contract for sale. (Transcript 4, p. 122; PFOF ¶ 224)

The fourth site considered by Eversource is located on Old Track Road. It is a privately owned commercial property that was suggested by the Town of Greenwich as a potential site for the substation. (Eversource 1, p. H-10; PFOF ¶ 225) Eversource rejected this site as not viable

based on engineering, constructability and cost factors, as well as the visual impacts a substation would have on surrounding residential properties. (Eversource 1, p. H-10; PFOF ¶¶ 226-228) The new transmission lines related to the Project would have to be extended and built around an existing culvert and sewer lines; the new distribution feeders associated with the new substation would have to be significantly longer. (Eversource 1, pp. H-10 – H-11; PFOF ¶ 227) In addition, future expansion of additional feeders to the Greenwich electric system (which is contemplated as part of the Project) would be costly and require easements over private property. (Eversource 1, p. H-11; PFOF ¶ 226)

Moreover, Eversource conducted an additional search for feasible sites in 2014 to see if any new potential parcels had become available. However, Eversource was unable to find any new parcels that would be suitable for the development of the proposed substation. (Eversource 1, p. H-4; PFOF ¶ 205) Based on a thorough comparison using its evaluation criteria, Eversource selected 290 Railroad Avenue as the Proposed Site location for the Greenwich Substation. (Eversource 1, p. H-11, Table H-1)

4. The Project Would Not Only Support Anticipated Load in Greenwich But Also Accommodate Future Loads

The proposed Greenwich Substation is needed and beneficial because it would provide a margin for, and accommodate, anticipated future load growth in Greenwich. (Eversource 1, pp. E-1, E-3) This is a critical attribute of the Project because the Southwest Connecticut Region, and Greenwich in particular, continues to experience increases in electric loads. (Eversource 1, p. E-6) The new substation would enable Eversource to not only meet projected loads for 2018, but also to meet load growth for the next 30 years, and provide capacity for additional load increases likely to occur as a result of continuing usage trends. (Eversource 1, pp. E-6, E-22, F-10; PFOF ¶ 41) The Town of Greenwich's 2013/2014 Annual Report illustrates an increase in

energy usage. Metrics around building permits and demolitions within the Town were in a positive direction, with some construction numbers at their highest point since the economic downturn in 2007/2008. (Transcript 7, pp. 53-54; PFOF ¶ 154) The Report lists an uptick in building permits, including a 63% increase in new residential permits and a 47% increase in demolition permits over the 2012/2013 fiscal year. (Eversource Admin. Notice 34, Transcript 6, pp. 103-104; PFOF ¶ 157) As of March 2015, the number of service upgrade requests in Greenwich totaled 115. In each of those cases, the average service size has more than doubled. (Transcript 7, p. 52; PFOF ¶ 153)

B. The Project Conforms To A Long-Range Plan For Expansion Of The Electric Power Grid Of The Electric Systems Serving the State and Interconnected Utility Systems (Conn. Gen. Stat. § 16-50p(a)(3)(D))

The Project is a crucial step forward in the efforts to eliminate the inadequacies of the Greenwich electric system, which have been known for decades. Eversource's long-range plan for the Stamford-Greenwich sub-area began with the Stamford Reliability Cable Project ("SRCP"), which was designed to bring the benefits of major transmission improvements in Southwest Connecticut to this sub-area. The next step in the long-range plan for this area is to address the local load area deficiency by adding a new bulk substation and transmission connections to the Greenwich electric system. (Eversource 1, p. E-22; PFOF ¶ 56) Thus, the Project clearly conforms to a long-range effort to expand the electric power grid serving the area in accordance with Conn. Gen. Stat. § 16-50p(a)(3)(D).

C. The Project Would Serve The Public Need For Economic Service And Serve The Interests Of System Economy (Conn. Gen. Stat. § 16-50p(a)(3)(D))

1. The Project Would Provide the Needed Improvements at the Lowest Reasonable Cost

The proposed Greenwich Substation, the modifications to Cos Cob Substation, and the Hybrid Route would provide needed improvements to the Town's electric system at the lowest reasonable cost, with the most system benefit and fewest adverse environmental effects.

With respect to the new bulk substation, Eversource assessed various potential distribution and non-transmission alternatives for achieving the necessary capacity relief for the Greenwich distribution system, and determined that the cost of such alternatives would far exceed those associated with the proposed substation. (Eversource 1, pp. F-1 – F-18) In relation to the transmission portion of the Project, the proposed Hybrid Route was developed in an effort to reduce overall costs of the transmission lines; in fact, the lowest cost estimate for the primarily overhead transmission line route achieves an approximately $22 million savings over the estimated cost of the transmission lines as originally proposed in the Application. (Eversource 34, Q-LF-003; PFOF ¶ 294)

The Project with the Hybrid Route is cost-effective and, thus, serves the public need for reliable and economic service while also best serving the interests of system economy. Conn. Gen. Stat. § 16-50p(a)(3)(D).

2. The Overhead Portions of the Project Are The Most Cost-Effective Route And The Most Appropriate Alternative

Conn. Gen. Stat. § 16-50p(a)(3)(D) requires that when the Council grants a Certificate, it specify "what part, if any, of the facility shall be located overhead . . . and . . .that the overhead portions, if any, of the facility are cost-effective and the most appropriate alternative based on a life-cycle cost analysis of the facility and underground alternatives to such facility. . . ."

Accordingly, a transmission line applicant and the Council must assess the practicality and life-cycle cost of an all-underground alternative to a proposed overhead transmission line.

In the Application, the preferred transmission option for the Project involved an underground route. (Eversource 1, pp. G-15 – G-21) Eversource originally estimated that the transmission lines as proposed in the Application would initially cost $72 million. (Eversource 1, p. G-23; PFOF ¶ 389) Subsequent to filing the Application, Eversource investigated and analyzed the costs associated with the Hybrid Route option, and determined that the cost of a predominantly overhead transmission line configuration, with short underground getaway routes into the Cos Cob Substation and proposed Greenwich Substation, would be $49.2 million, or $22.8 million less than the fully underground option presented in the Application. (Eversource 34, Q-LF-003; PFOF ¶ 399) Of all the transmission scenarios analyzed, this Hybrid Route represents the most cost-effective and appropriate alternative, as required by Conn. Gen. Stat. § 16-50p(a)(3)(D). Moreover, the Hybrid Route would satisfy many of the stakeholder concerns that have been discussed during the Council's proceedings for this Project. It addresses some of the cost issues that the Council, the Town of Greenwich and OCC have raised, and has received support, if the Project is to be approved, as a preferable routing, from the Town of Greenwich because it avoids Bruce Park. CTDOT and MNRR have also expressed support for this route. (Transcript 7, p. 42; PFOF ¶¶ 134, 304)

II. THE PROJECT WOULD NOT CAUSE ADVERSE ENVIRONMENTAL EFFECTS OR POSE AN UNDUE HAZARD OR POLICY CONFLICTS THAT JUSTIFY DENIAL OF THE APPLICATION (Conn. Gen. Stat. § 16-50p(a)(3)(B), (C) & (E)

Section 16-50p(a)(3)(B) of the General Statutes requires the Council to determine, when it issues a Certificate, "[t]he nature of the probable environmental impact of the facility alone and cumulatively with other existing facilities, including a specification of every significant adverse

effect, including, but not limited to, electromagnetic fields that, whether alone or cumulatively with other effects, impact on, and conflict with the policies of the state concerning the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, forests and parks, air and water purity and fish, aquaculture and wildlife;" and § 16-50p(a)(3)(C) requires the Council to find why these effects do not provide "sufficient reason to deny the application." Further, § 16-50p(a)(3)(E) requires that in the case of a transmission line, the Council must find and determine that the location of the line would not pose an undue hazard to persons or property along the area traversed by the line.

Electric and magnetic fields will be discussed in Section III of this Brief. With respect to the other listed environmental and hazard concerns, Eversource has provided extensive evidence to demonstrate that the Project would not have significant adverse effects on environmental resources, conflict with State or local environmental policies or land use plans, or pose an undue hazard, and that Eversource would exercise great care to mitigate any environmental effects. This evidence is summarized in detail in Eversource's Proposed Findings of Fact, (PFOF ¶¶ 329-360), and will be summarized below at a high level. In sum, the Record plainly demonstrates that the environmental effects of the Project, are certainly not of sufficient magnitude to warrant a denial of the Application.

A. Construction And Operation Of The New Greenwich Substation Would Not Have Any Significant Adverse Environmental Effects Or Pose An Undue Hazard

Eversource's analysis indicates that the proposed design, construction and operation of the new Greenwich Substation would not have significant permanent adverse effects or pose an undue hazard on the existing environment, or on the scenic, historic, or recreational values of the surrounding area. (Eversource 1, p. J-1)

The development of the Greenwich Substation would have negligible, if any, adverse effects on topography, geology, and soil because no substantive changes in site topography are anticipated to prepare the site for construction. (Eversource 1, p. J-2) The proposed substation is not located within any wetland or watercourse and thus, poses no long-term adverse effects on the quality of surface water resources. (Eversource 1, p. J-3) There are also no adverse impacts on groundwater resources. (Eversource 1, p. J-4) Although a portion of the fence of the proposed substation would be placed within a Coastal Boundary, there would be no adverse impacts to coastal area resources because the fence would not alter or degrade the quality or patterns of coastal waters. The proposed substation would be subject to soil erosion and sediment controls, and stormwater management policies. (Eversource 1, pp. J-5 – J-7; PFOF ¶ ¶ 339, 342)

The proposed substation would pose no negative effects to vegetation or wildlife because no significant areas of vegetation or wildlife habitat exist at the Proposed Site for the substation. (Eversource 1, p. J-8) No populations of threatened or endangered species are present at the Proposed Site; no fisheries are proximate to the site; no historical or archaeological resources are on or adjacent to the site; and no recreational or scenic areas or Statutory Facilities are near the site. (Eversource 1, pp. J-10, J-11, J-15) Although construction noise may increase localized ambient sound levels, such noise would be temporary and is exempted from State regulations; otherwise, noise from the new substation facility would be in compliance with the Town's restrictive noise ordinance, as well as state noise regulations. (Eversource 1, pp. J-12 – J-13)

Only short-term, highly localized air quality effects would occur during construction, which would be mitigated by minimizing the extent of exposed and disturbed areas on the site, installing temporary gravel tracking pads at points of vehicle ingress and egress, and using water

to wet down disturbed work areas as needed. (Eversource 1, p. J-14; PFOF ¶ 353) Finally, the construction work associated with the proposed substation would only result in temporary inconveniences to the public with regard to vehicle and pedestrian traffic. (Eversource 1, p. J-16)

The proposed Greenwich Substation is fully consistent with the goals and objectives of all relevant local, state, and federal land use plans. The Project would strengthen electric system reliability and utility infrastructure and facilitate land use and development objectives. (Eversource 1, pp. J-10 – J-11; PFOF ¶¶ 344 - 345) Significantly, the Town's representative testified that one of the important responsibilities of the Greenwich Planning and Zoning Commission is to prepare a long-range plan for future development and that reliable electric service is essential for future development. (Transcript 6, p. 103)

Furthermore, the Greenwich Substation would not pose an undue hazard because it would not cause any significant adverse effects on public health and safety. (Eversource 1, p. J-17) The Project would be designed, constructed and maintained in compliance with national and industry electrical safety codes, standards, and guidance, and in accordance with sound engineering practices. (Eversource 1, p. J-17) Eversource carefully incorporated various design features into the proposed Greenwich Substation to ensure that the facility is safe and secure. These features include an eight-foot high fence around the perimeter of the proposed substation, a gated and locked entrance, appropriate signage, and safety and security lighting. (Eversource 1, p. J-17) By utilizing good utility practices and equipping the substation with redundancies and protective equipment, the public would be protected. Continued, reliable electric service would be assured in the event of component failures. (Eversource 1, pp. J-17 – J-18) Eversource further incorporated fire protection standards into the design of the substation, and would provide safety training to employees and the local fire and police departments. (Eversource 1, p. J-18)

B. Construction And Operation Of The New 115-kV Transmission Lines Would Not Have Any Significant Adverse Environmental Effects Or Pose An Undue Hazard

The proposed transmission lines would not have significant permanent adverse effects or pose an undue hazard on the existing environment, or on the scenic, historic, or recreational values of the surrounding area. Eversource consulted with CT DEEP and the U.S. Fish and Wildlife Service regarding the potential routing of the underground transmission lines. It determined that no areas traversed by the potential routing of the underground lines, including the Preferred Route, were areas of known habitat for state-listed endangered or threatened species. (Eversource 1, p. I-28) Although installation of the underground transmission lines would require substantial earthwork, all disruption to existing soils would be temporary, and all excavations would be backfilled upon completion of equipment installations. (Eversource 1, p. J-2)

Although the Preferred Route would traverse underneath a portion of Bruce Park, Eversource recognizes that this area is a valued recreational asset to the Town of Greenwich; accordingly, Eversource's plans include the following important features to avoid any adverse impacts to the area:

- A cable insulating fluid that is not a hazardous substance;
- Contiguous steel pipe sections welded and tested for voids;
- Low strength thermal concrete filled around the pipes within the trench;
- High strength thermal concrete cap; and
- 24/7 continuous monitoring of the cables, including fluid level alarms.

(Eversource 32, pp. 5-6; PFOF ¶ 338)

These safety features will help to ensure that, in the event the Preferred Route is selected by the Council, the installation and operation of underground supply lines through Bruce Park will have no permanent adverse environmental effects on the area.

Moreover, the Hybrid Route would avoid any disturbance of Bruce Park, and would have no impact on the recreational areas of Cos Cob Park. (Transcript 7, pp. 118-119, 122; PFOF ¶¶ 359-360) The new transmission lines would extend principally overhead adjacent to Interstate 95 and MNRR. This option largely avoids developed, residential areas, and would have minimal visual impacts because of the existing industrial nature of the Hybrid Route path.

Construction of the overhead lines would have only negligible or short-term highly localized effects on topography, geology, and soils; such impacts would only be in the vicinity of the sites of the circuit line support structures, and in areas where lines transition underground to "getaway" from the proposed Greenwich Substation and existing Cos Cob Substation. Any such impacts would be minimized because Eversource would implement a soil erosion and sediment control plan. The Hybrid Route path is along a railroad corridor that includes tracks and catenaries. Placement of overhead structures within 15 feet of catenaries would be consistent with the United States Department of Energy, Federal Energy Regulatory Commission, Guidelines for the Protection of Natural, Scenic and Recreational Values in the Design and Location of Rights-of-Way and Transmission Facilities, November 27, 1970. (Council Admin. Notice 9)

As with the proposed Greenwich Substation, the proposed transmission lines are fully consistent with the goals and objectives of all relevant local, state, and federal land use plans, because the Project would strengthen electric system reliability and utility infrastructure and help support land use and development objectives. (Eversource 1, pp. J-10 to J-11)

Moreover, the proposed transmission lines would not pose an undue hazard because they would not cause any significant adverse effects on public health and safety. (Eversource 1, pp. J-17, J-18) As with other portions of the Project, the new transmission lines would be designed, constructed and maintained in compliance with national and industry electrical safety codes, standards, and guidance, and in accordance with sound engineering practices. (Eversource 1, p. J-17; PFOF ¶ 409)

C. Modifications To Cos Cob Substation Would Have No Permanent Environmental Effects

Eversource has demonstrated that the proposed modifications to Cos Cob Substation would not have significant permanent adverse effects or pose an undue hazard on the existing environment, or on the scenic, historic, or recreational values of the surrounding area. (Eversource 1, p. J-1)

Although the modifications to the Cos Cob Substation would require earthwork activities, impacts to topography, geology, and soils would be minimal because any disturbed areas would be restored appropriately; all such activities would be subject to soil erosion and sediment control measures. (Eversource 1, pp. J-1, J-3) The substation modifications would not cause any long-term adverse impacts to surface water because the presence of mineral oil in the new transformers would be subject to stormwater management controls. No adverse impacts to groundwater are anticipated; the modifications do not include any equipment with fluids or materials that would harm the groundwater. (Eversource 1, pp. J-4, J-5) The modifications would also pose no impacts to coastal resources, because they would not result in substantial changes to the natural and physical characteristics of the property. (Eversource 1, p. J-8; PFOF ¶ 339)

No significant areas of vegetation or wildlife habitat exist at the Cos Cob Substation. (Eversource 1, p. J-8) No populations of threatened or endangered species are present at the site, and no fisheries are located in the proximate area. No inventoried historical or archaeological resources are identified at the Cos Cob Substation. (Eversource 1, pp. J-10, J-12) Although Cos Cob Substation is located adjacent to a recreational area - Cos Cob Park - the relatively modest proposed substation expansion would not create a substantial visual impact over existing conditions, which are already industrial in nature and home to existing utility structures. (Eversource 1, p. J-16)

The proposed modifications would have no effect on noise impact because the equipment would not increase existing noise levels at the Cos Cob Substation. (Eversource 1, p. J-14) As with the Greenwich Substation, only short-term, highly localized air quality effects would occur during construction activities associated with the modifications to the Cos Cob Substation, and any such impacts would be similarly mitigated. (Eversource 1, p. J-15; PFOF ¶ 352) The construction work associated with the proposed modifications to the Cos Cob Substation would only result in temporary inconveniences to the public as to vehicle and pedestrian traffic. (Eversource 1, p. J-16)

The proposed modifications to the Cos Cob Substation are fully consistent with the goals and objectives of all relevant local, state, and federal land use plans. The Project would strengthen electric system reliability and utility infrastructure, and support land use and development objectives. (Eversource 1, pp. J-10 – J-11)

Lastly, the proposed modifications to the Cos Cob Substation would not cause any significant adverse effects on public health and safety. (Eversource 1, pp. J-18 – J-19) As with other portions of the Project, the modifications to Cos Cob Substation would be designed,

constructed and maintained in compliance with national and industry electrical safety codes, standards, and guidance, and in accordance with sound engineering practices. (Eversource 1, p. J-17) The proposed changes to the design of the Cos Cob Substation would continue to include safety and security features, including a fence to discourage unauthorized entry and vandalism, a gated and locked entrance, appropriate signage, and lighting to facilitate work during inclement weather or at night. (Eversource 1, pp J-18 – J-19; PFOF ¶ 414)

D. Eversource's Proposed Mitigation Measures Would Effectively Protect The Environment

Eversource has incorporated, and would continue to incorporate, environmental protection measures into all phases of development and implementation of the Project, which would minimize and mitigate any potential adverse effects. (Eversource 1, p. J-1) Prior to commencing any construction for the Project, Eversource would prepare a D&M Plan, which would incorporate best management practices and guidance relating to minimizing or eliminating potential adverse environmental effects that may result from construction activities. This includes specific methods or procedures for erosion control, construction site dewatering, spill prevention and control, and restoration. (Eversource 1, pp. J-1, J-6) All of the Project construction activities would be in compliance with the D&M Plan, which would be prepared in consultation with Town representatives and Council staff, and subject to Council approval. Eversource would effectively monitor compliance with the D&M Plan, other regulatory requirements, the Council's Certificate, and Eversource standards. (Eversource 1, pp. J-1, K-1)

Eversource is committed to installing erosion and sediment controls in accordance with approved plans and guidance, and such controls would be inspected and maintained throughout the course of the Project. (Eversource 1, pp. J-1, J-6) A comprehensive stormwater management system would be designed in accordance with State guidance, to adequately treat stormwater

generated during the Project's construction activities and during operation of the facilities. (Eversource 1, pp. J-4, J-6) Further, as discussed above, Eversource would minimize the extent of air quality impacts associated with construction activities for the Project by implementing various mitigation measures. (Eversource 1, pp. J-14 – J-15) Finally, Eversource's Project design, construction, and maintenance – in strict compliance with national and industry codes and standards – would ensure that no undue hazards are posed, and that the public and the environment are protected. (Eversource 1, pp. J-17, J-18, L-1)

III. THE PROPOSED PROJECT MAY BE MODIFIED TO INCLUDE OVERHEAD SEGMENTS CONSISTENT WITH THE COUNCIL'S EMF BEST MANAGEMENT PRACTICES AND STATUTORY REQUIREMENTS

The Record of this proceeding demonstrates that the Project as proposed and as it may be modified by the Council complies with best management practices established for electric transmission lines; the potential EMF impacts of the Project do not pose an undue hazard or conflict with policies of the State, and do not constitute a basis for denying the Application. Conn. Gen. Stats. § 16-50p(a)(B), (C), (E).

A. The Statutory and Regulatory Framework for Analyzing Construction of Electric Transmission Lines (Conn. Gen. Stats. § 16-50p(a)(3)(D), (E); § 16-50t(c); Best Management Practices)

In December 2007, pursuant to Conn. Gen. Stats. § 16-50t(c), the Council adopted revised EMF Best Management Practices, following a two-year proceeding in which it considered, among other things, a comprehensive review of the scientific consensus concerning the potential health effects of transmission line electric fields ("EF") and magnetic fields ("MF"). (Council Admin. Notice Item 15) The EMF Best Management Practices were again revised in February 2014. These revised EMF Best Management Practices ("EMF BMPs"), like their predecessor, apply to all transmission lines that require a Certificate from the Council.

The Council has also recognized that established safety regulations provide ample protection from transmission line EF, so that the EMF BMPs concentrate on the reduction of MF. (Council Admin. Notice 15) As to MF, the Council further recognizes that:

> A causal link between power-line MF exposure and demonstrated health effects has not been established, even after much scientific investigation in the U.S. and abroad. Furthermore, the Council recognizes that timely additional research is unlikely to prove the safety of power-line MF to the satisfaction of all. Therefore, the Council will continue its cautious approach to transmission line siting that has guided its Best Management Practices since 1993. This continuing policy is based on the Council's recognition of and agreement with conclusions shared by a wide range of public health consensus groups, and also, in part, on a review which the Council commissioned as to the weight of scientific evidence regarding possible links between power-line MF and adverse health effects. Under this policy, the Council will continue to advocate the use of effective no-cost and low-cost technologies and management techniques on a project-specific basis to reduce MF exposure to the public while allowing for the development of efficient and cost-effective electrical transmission projects.

(Council Admin. Notice 15)

B. Eversource Has Fully Complied With The Council's EMF BMPs

The Project fully complies with the provisions of the Council's EMF BMPs that relate to overhead electric transmission lines.

1. Health Research Update

The EMF BMPs note that the Council "will consider and review evidence of any new developments in scientific research addressing MF and public health effects or changes in scientific consensus group positions regarding MF." (Council Admin. Notice 15) To that end, Eversource provided a research update from Exponent Inc. ("Exponent") on extremely low frequency ("ELF") EMF, and their attendant effects on health. (Eversource 1, p. M-15; Appendix G.3) Exponent concluded that recent studies do not provide sufficient evidence to

alter the basic conclusion of the World Health Organization and other health and scientific agencies that the research suggests that EMF exposure is not the cause of cancer or any other disease process at the levels we encounter in our everyday environment. (Eversource 1, p. M-15; Appendix G.3)

Moreover, Dr. Gabor Mezei of Exponent, who is a well-qualified expert on such matters, provided his expert opinion in pre-filed testimony as to the absence of an MF health risk. He explained that the National Institute of Environmental Health Sciences ("NIEHS") has found that "'[t]he scientific evidence suggesting the ELF-EMF exposure pose any health risk is weak,' and . . . insufficient to warrant aggressive regulatory concern," and that "[t]he most recent comprehensive evaluation of the relevant scientific literature" conducted in 2015 "did not conclude that the scientific evidence confirms any adverse health effects." (Eversource 26, pp. 7-9)

Dr. Mezei further provided his opinion as to the absence of an MF health risk resulting from the Project, testifying that "[t]he ELF magnetic field associated with the operation of the proposed substations" for the Project, "at the boundaries of the substations is expected to be within the range commonly encountered from other sources, and below applicable limits in guidelines designed to protect public health." (Eversource 26, pp. 9-10) Dr. Mezei concluded that,

> [n]either Exponent's review of the relevant scientific literature nor the health risk assessments and evaluations conducted by expert panels on behalf of scientific and health agencies confirmed the existence of any adverse effects at exposure levels that are expected to be associated with the Greenwich Substation and Line Project and that would predict any likely adverse impact on public health.

(Eversource 26, p. 10)

2. EMF Measurements And Calculations

The Council's EMF BMPs require measurements of existing EF and MF at the boundaries of certain facilities, with calculations of potential levels from the proposed Project. The sources of EMF associated with the Project are the transmission lines and nearby distribution lines, and the transformers and equipment within the Cos Cob and proposed Greenwich Substations. (Eversource 1, p. M-7).

With respect to sources of EMF from the Cos Cob and proposed Greenwich Substations, such sources would cause little or no exposure to the general public, as the strength of the fields from equipment inside a typical substation attenuate rapidly with distance, reaching very low levels beyond substation perimeter fences, if at all. An exception to this is where the transmission and distribution lines enter the substation. (Eversource 1, p. M-7; PFOF ¶ 317) Eversource measured and assessed potential EMF exposures in relation to the substations, and determined that projected MF levels from these substations are well below the guideline levels of the International Commission on Non-Ionizing Radiation Protection (1998) ("ICNIRP") and the International Committee on Electromagnetic Safety (2002) ("ICES"). (Council Admin. Notice 15, p. 3; Appendix G)

For the overhead lines constituting the Hybrid Route, Mr. Bowes testified as to Eversource's calculations for MF on March 10, 2016. At the fence line of the proposed substation, the MF would be less than one milliGauss ("mG"). Ten feet from the center of the underground line, it will be one mG or less. For the overhead portions of the Hybrid Route, the maximum mG under the line will be 6.5 mG. The MF at the edge of the ROW for the overhead line that is nearest residents, based on annual average load, would be less than 1 mG. (Transcript 7, pp. 143-144). This level is lower than the background levels typically found in homes.

(Eversource 1, Appendix G.3, p. 6) These MF levels are far below ICNIRP's 2,000 mG guideline and ICES' 9,040 mG guideline. (Transcript 7, pp. 143-144; Eversource 1, Appendix G.1, p. 3)

3. No Field Management Design Plan is Required

The EMF BMPs generally require an applicant proposing to build an overhead electric transmission line to develop and present a Field Management Design Plan ("FMDP") that identifies design features to mitigate MF that would otherwise occur along an electric transmission ROW. Such a plan is required for proposed underground lines only in "special circumstances." (Eversource 1, Appendix G.1, pp. 4-5) Accordingly, Eversource did not include an FMDP in its Application. There is, of course, no requirement that an applicant anticipate overhead modifications to its proposal that the Council may make during the docket proceedings and provide an FMDP for them. It is clear, however, that even if Eversource had proposed any of the overhead segments that were identified for the Council during the proceedings, the BMPs would not require an FMDP for them.

The EMF BMPs require transmission line applicants to adopt "no cost" line designs for lowering magnetic fields from new or reconstructed lines, and to identify "low cost" opportunities for making further reductions. However, the requirement for "low cost" measures calculated at four percent of the initial FMDP is not "absolute" but may be varied as appropriate to the circumstances of particular applications. (Eversource 1, Appendix G.1, pp. 4-5) In this case, "no cost" design features that are incorporated in new overhead transmission lines have produced edge of ROW levels lower than typical background levels in homes. Moreover, the location of the potential overhead segments, generally between a railroad corridor and INTERSTATE 95, is itself a significant "no cost" measure mitigating public exposure to

magnetic fields by placing the fields away from areas where the public spends time. Eversource 1, Appendix G.1, p. 8) The EMF BMPs also prescribe areas of focus for mitigation efforts in an applicant's FMDP where lines are "adjacent to" areas "where children congregate," including "residential areas, public or private schools, licensed child day-care facilities, licensed youth camps or public playgrounds." Eversource 1, Appendix G.1, p. 4) In this case, there are no areas where children congregate "adjacent to" any of the overhead line segments under consideration because the line would be separated from such areas either by the railroad, or by INTERSTATE 95.

Accordingly, there is no reason to require an FDMP, whether for the proposed underground project or for a modification of that project by the Council to include overhead segments in a hybrid line.

4. The Existing ROW Will Provide an Adequate Buffer Zone for the New Overhead 115-kV Lines (Conn. Gen. Stats. § 16-50p(a)(3)(D)(iii))

Should the Council modify Eversource's proposal to include overhead segments within the railroad corridor, the existing ROW will provide an adequate buffer zone for the new line. The line will be constructed in full compliance with the National Electrical Safety Code, published by the Institute of Electrical and Electronic Engineers. With respect to magnetic field levels, in evaluating whether an existing ROW provides an adequate buffer, the Council will consider, in addition to its own EMF BMPs, guidelines or benchmarks used by other states. (Eversource 1, Appendix G.1, p. 7). The edge-of-ROW magnetic field levels will be comfortably within these guidelines. Indeed, the edge-of-ROW magnetic fields, estimated on an annual average load basis, will be toward the lower end of the range typically encountered in the vicinity of electric transmission lines. They will also be lower than those commonly encountered

by the U.S. population near many electric distribution lines, and in everyday settings. (Eversource 1, Appendix G.3, pp. 5-8)

Accordingly, the Council has a clear basis for a finding that the new lines will be contained within a "buffer zone that protects the public health and safety," consisting of the existing ROW, which will provide an adequate buffer zone between the new transmission line and any adjacent residential areas, public or private schools, licensed child day care facilities, licensed youth camps or public playgrounds. (*Conn. Gen. Stats. § 16-50p(a)(3)(D)(iii);* Eversource 1, Appendix G.1, pp. 7-10)

IV. THERE HAS BEEN NO EFFECTIVE OPPOSITION BY THE PARTIES OR INTERVENORS TO THE NEED FOR THIS PROJECT OR ANY FEASIBLE, COST-EFFECTIVE ALTERNATIVES THAT ACHIEVE THE PROJECT'S BENEFITS

Various Parties and Intervenors in this proceeding have questioned the need for the Project. However, this questioning is unsupported by the evidence in the Record and entirely without merit.

A. Office of Consumer Counsel

The OCC is a party in this proceeding. Throughout the course of the six evidentiary hearings, the OCC, in its words, gathered information and declined the opportunity to state a position, indicating instead its preference to wait until filing its brief. (Transcript 7, pp. 13-14) Significantly, the OCC did not present any pre-filed testimony or offer a witness qualified to discuss matters requiring expertise, such as electrical engineering, electric transmission and distribution system planning, load forecasting, operations, maintenance, or reliability of the current electric system serving Eversource's customers in Greenwich. Without such expert testimony, Eversource and the other participants in this proceeding were denied a meaningful

opportunity to cross-examine the OCC about the foundation for any position it ultimately chooses to take.

Based on the OCC's questions and its rather limited Exhibits, the OCC appears to have questions or concerns about the following topics: general Project need, load forecasting and "excess" capacity, and a potential alternative approach with nontraditional solutions based on the New York Public Service Commission's ("NYPSC") 2014 demand management program decision involving Consolidated Edison Company of New York, Inc. ("ConEd"). These possible concerns are discussed more fully below. Eversource's responses to the questions raised by the OCC were addressed in the Application and supporting information (45 Exhibits), including responses to six sets of the OCC's interrogatories (total of 83 interrogatories), as well as during its cross-examination at several of the evidentiary hearings.

Despite the extensive information and testimony presented by Eversource, the absence of any expert testimony challenging Eversource's evidence in the Record, and a failure to state its position in this matter, the OCC supported the Town's Motion for Additional Analyses and Hearings. It did so by filing a Response to the Town's Motion at the eleventh hour – the morning of the previously-announced last hearing. (Transcript 7, p. 17) It is Eversource's position that no additional hearings or analyses were necessary, given that credible and comprehensive evidence was furnished by Eversource in full compliance with PUESA and the Council's governing Application Guides.

In particular, Eversource fully addressed the OCC's questions/concerns, as follows:

1. Evidence of Need for the Project

Eversource's evidence in the Record speaks for itself. Eversource has a duty to provide reliable electric service to all of its customers, including its Greenwich customers. Greenwich is

unique in that it is electrically isolated and heavily dependent on only one bulk substation -- namely Cos Cob Substation. The feeders between Cos Cob Substation and Prospect Substation (an aging substation) have been subject to overloads, which in turn have caused customer outages.

Eversource announced the need for a new substation in Greenwich in 2011, after serious customer outages. The Town of Greenwich acknowledged that need as a priority in its Annual Report of July 1, 2013 – June 30, 2014 as follows: "The major areas on which the First Selectman focused during the past year were: .... 7. Working with Connecticut Light and Power to reinforce the importance of reliable energy to Greenwich residents and businesses and encouraging the implementation of an aggressive five year CL&P capital improvement plan **as well as a new substation for the Town**." (Emphasis added) (Eversource Admin. Notice 34, p. 14)

Eversource's filings with the Council and CT DEEP since 2012 clearly identified the plan for a new substation in Greenwich. Significantly, in Docket 435, in which the OCC participated as a party, Eversource clearly stated its intention to site a new substation in Greenwich as the next step after the Stamford Reliability Cable Project ("SRCP"), as part of Eversource's obligation under § 16-50p(a)(3)(D) of PUESA to demonstrate that SRCP conformed to a long-range plan for the Connecticut electric system. In its Application dated January 18, 2013, Eversource noted that "[t]he Project [SRCP] .... [i]mplements an important project in a long-range plan for the Stamford-Greenwich Sub-Area. The long-range plan currently contemplates a new substation in Greenwich and additional transmission connections to the new substation." (Docket 435, Application p. A-1) Therefore, the need for the proposed substation should not be viewed as a recent discovery, but rather as a result of careful, long-term planning by Eversource.

2. *Eversource's Forecasting Methodology*

Eversource's forecasting methodology is consistent with its customary electric distribution planning activities. Eversource begins with the peak load for the highest year in the latest 5-year period; in this case, the peak load year was 2013. At the time that the data for the Application was initially formulated in 2013, it was the most recent data available. The load for 2014 and 2015 – which were still only future predictions – was based on a 1% load growth factor per year. Eversource examined the load growth for bulk substations in southern Connecticut and found that average load growth was 1.0120. (Eversource 35, Q-OCC-030) As a check against its estimate, Eversource also analyzed ISO-NE's load forecast of 1.2% (weather-normalized). In the end, Eversource settled on a conservative 1% load growth factor. Finally, it is important to note that between 2014 and 2015, the customer-metered data for Greenwich shows 1.5% growth. (Transcript 7, pp. 140-141; PFOF ¶ 39)

In contrast with Eversource's load forecasting methodology, the OCC attempted to cast doubt on Eversource's conclusion as to the need for the Project by introducing inaccurate and irrelevant information. At the hearing on February 23, 2016, the OCC introduced what was described as merely "a compilation" of Eversource's data on actual loads on the Cos Cob transformers. The Chair continued the hearing again in order to allow the OCC to properly file such information with the Council, with notice to the Service List. The Chair also issued the following instructions: "We're not permitting new information. This is just a compilation of existing information. Is that clear?" (Transcript 6, p. 189) On March 1, 2016, the OCC filed a slightly different version of its "compilation", and included new information; namely, 3-5-10 year averages, calculated by the OCC. These documents should be disregarded because there is no evidence in the Record to support that an average in this manner is a valid forecasting

methodology, nor is there any justification for choosing to average over 3-, 5- and 10-year periods. The Council's rules for a fair and orderly Docket process should apply to the OCC, as well as to all of the other Parties and Intervenors.

The planning and design of a new substation takes considerable time. Based on its 2011 announced decision to proceed with a new substation in Greenwich, Eversource began its substation development process in earnest, which included site selection and preliminary design. Eversource's planning process was methodical; it should not be penalized for not waiting for its electrical system in Greenwich to collapse, outages to occur, and/or equipment to fail before it can look ahead. As articulated by Ms. Katie DeLuca, Greenwich's Director of Planning and Zoning, if the electric system in Greenwich were to fail, the risk is not on anyone except Eversource. (Transcript 6, pp. 47-48) Accordingly, those who seek to delay necessary electrical infrastructure or who seek to have necessary infrastructure placed elsewhere appear not to have any responsibility for the consequences that a utility company (loss of life of equipment or failure to meet the obligation to serve) or customers (outages) may suffer. Since that time, Eversource has done everything in its power to provide reliable electric service; however, there are no more interim fixes. Simply stated, a new substation located in Greenwich near the load center is the only prudent and cost-effective long-term solution.

This long-term solution is even more compelling when considered in the context of the studies that show that temperatures are warming and that the climate in Connecticut will continue to change. (Transcript 3, p. 187; PFOF ¶ 73). Mr. Bowes' testimony succinctly stated Eversource's position on this point: "In every projection we [Eversource] have of across, you know, certainly the country, the region and possibly more globally, is that the summer heating will increase over time. And the climate is changing to be both hotter in the northeast and bring

more severe weather into the northeast. And Connecticut has recognized that, and now we have to accommodate climate change in our infrastructure improvements." (Transcript 4, p. 67; PFOF ¶ 74)

3. Substation Capacity

The OCC, despite its lack of expertise in load-forecasting or experience in the day-to-day practices of providing dependable electric service to the Town of Greenwich, seems to have concluded, by adding and subtracting numbers only, that the Project would result in a great deal of excess capacity. However, this approach oversimplifies the operational issues that Eversource faces on a daily basis. As was demonstrated by Mr. Bowes, who is intimately familiar with the challenges of keeping the lights on in Greenwich, the planning process is not simply adding and subtracting numbers. It involves planning for contingencies and using capacity when the system is most constrained to prevent overloads on equipment and resulting loss of life, as well as service interruptions to customers.

Mr. Bowes testified that OCC's calculation of excess capacity was erroneous because it did not properly reflect the decrease of 80 MVA from the retirement of the transformers at the aging Prospect Substation and at the Byram Substation. He also noted that OCC's calculation did not reflect contingency conditions, in which case the "overcapacity", in Mr. Bowes' expert opinion, "could be much less if a contingency were to occur or a very hot summer were to occur." (Transcript 7, p. 99; PFOF ¶ 141)

4. NYPSC Nontraditional Solutions

On September 18, 2015, the OCC requested that the Council take administrative notice of the decision of the NYPSC in Case 14E-0302, Petition of ConEd for Approval of the Brooklyn Queens Demand Management Program. That request was granted by the Council. While, in

theory, the approach followed in New York may provide an avenue for evaluation of future non-transmission alternatives in Connecticut, the need for the Project is now and New York's approach has not yet yielded a successful outcome. Furthermore, it is substantially more expensive per megawatt than the Project. The ConEd proposals for electrical upgrades in Brooklyn reflect that 41 megawatts of customer-side nontraditional solutions would be approximately $150 million, or approximately $3.7 million per megawatt. The 11 megawatts of utility-side nontraditional solutions are estimated at $50 million, or approximately $4.5 million per megawatt. Moreover, the ConEd project only defers the need for a new substation by five years, at a total cost of $200 million, using these nontraditional solutions. These costly nontraditional solutions only buy time, with the result that the customer pays now and pays later for the long-term solution of a new substation.

In contrast, using the Project cost with underground routing as a yardstick, the Project proposed by Eversource is just over $1 million per megawatt. (Transcript 3, pp. 179-180; PFOF ¶ 178) Accordingly, the per-megawatt cost for the Project, a long-term solution, is roughly one-quarter per megawatt of ConEd's short-term nontraditional solutions. Therefore, the NYPSC approach would be inconsistent with the Council's obligations under PUESA; namely, ". . . to provide for the balancing of the need for adequate and reliable public utility services at the lowest reasonable cost to consumers ...." Conn. Gen. Stat. § 16-50. Further, the NYPSC approach would be inconsistent with the OCC's statutory obligation ". . . to act as the advocate for consumer interests in all matters which may affect Connecticut consumers with respect to public service companies ..., including, but not limited to rates ...." Conn. Gen. Stat. § 16-2a(a).

Eversource's customers in Greenwich deserve no less reliability than customers in other parts of Connecticut. That level of reliability cannot be achieved, given Greenwich's unique

electric system challenges, without a new bulk substation near the area of highest demand in Greenwich.

5. Project Benefits

The Project achieves a number of important benefits. Because its focus has been primarily on the issue of capacity, OCC has failed to recognize the following important reliability benefits that the Project provides:

- Avoidance of overloads on the distribution feeders running from Prospect Substation to Cos Cob Substation;
- Avoidance of overloads on the transformers at Prospect Substation;
- Creation of a second bulk power source to share the load with Cos Cob Substation and reduce customer outages in the event of contingencies; and
- Inclusion of resiliency improvements, such as additional reclosers and more effective circuit sectionalizing [customarily part of Eversource's storm hardening measures but included in the Project.]

In addition, the Project avoids switchgear upgrades (at a cost of approximately $11 million to $14 million) to the aging Prospect Substation, which upgrades would be required in the absence of this Project. (Eversource 33, Q-LF-001)

Eversource's core business hinges on its ability to operate its system reliably, e. g. assuring an adequate supply on the coldest winter night and the hottest summer day. The 2011 events, when Eversource was not able to provide uninterrupted service or to recover in a timely manner was a red flag that a more robust system was essential in Greenwich. These events occurred before the peak load in 2013. Thus, any attempt to focus attention merely on the actual loads in 2014 or 2015 by OCC (or the Town or any of the Intervenors) is entirely misplaced,

especially considering that Eversource's equipment is now 5 years older. (Transcript 7, pp. 132-133, 135-136)

Eversource would have greater tools to restore service to approximately 85-percent of Greenwich customers, automatically and instantaneously, in the event of a Cos Cob Substation outage. If the new Greenwich Substation was out of service, then 65-percent of the customers could be restored in the same way. Most importantly, depending on the time of year, 100% of customers in Greenwich could be backed up by either Cos Cob or Greenwich Substations. This would be a dramatic improvement in reliability. Finally, the Project would also give Eversource the opportunity to provide additional transmission connections to the Greenwich Substation in the future. (Transcript 7, pp. 43-44)

OCC is statutorily obligated "to act as the advocate for consumer interests in all matters which may affect Connecticut consumers with respect to public service companies, **...including...matters concerning the reliability, maintenance, operations, infrastructure and quality of service of such companies...**" (Emphasis added) Conn. Gen. Stat. § 16-2a(a). The reliability benefits that the Project seeks to achieve are perfectly aligned with this statutory obligation of the OCC.

Finally, Mr. Bowes' comments at the March 10, 2016 hearing summarize, in a most compelling way, the history of the need for the new Greenwich Substation and the critical benefits that the Project would provide:

> [W]e announced this substation with the Town of Greenwich two years before that peak load number was realized in 2013. The basis of that, we were coming off a very difficult week for the company where we had shed load for the first time in many years to that extent over that number of days. So the decision was made prior to us hitting a number in some year. It was really around our ability to operate the system reliably.

> And I look at reliability in three parts: One is assuring the adequate supply. And I've said the statement before, you have the coldest winter night, the hottest summer day. That's core to our business of being able to assure an adequate supply to our customers. The second is the frequency of interruptions they see. And we also saw in that event in 2011 a frequency of interruptions and a cascading of outages that we did not think was acceptable. And the third item that we look at for reliability is the duration of events. We were unable to recover in a timely manner, and that led to some of the cascading of the interruptions in Greenwich.
>
> So this project solves all three of those needs. It's not based on a number in one year. It's based on the company's obligation to serve and our failure to do that in 2011. So those three factors are what drove the idea of finally putting the Greenwich Substation in place, something we had planned for decades before.
> But we made a series of incremental improvements, added a temporary substation at Tomac. It's still there today. Adding $36 million of improvements in the distribution system since the time in 2011. But we still don't have a system that is the same as the rest of Connecticut. We want a system that is robust enough that we can operate it on any day, we can have reliable service to our customers, and we can minimize the impacts of storms. The proposal in front of you does all three of those things.

(Transcript 7, pp. 132-133)

B. Town of Greenwich

1. Participation

The Town of Greenwich (the "Town") is a party in this proceeding. As the Record demonstrates, the Town first became aware of Eversource's plan to accelerate the development of a new substation in Greenwich in the aftermath of storm events in 2011. Mr. Bowes, the lead witness for Eversource, announced such a plan. In fact, as noted earlier, the Town cited the new substation as one of the priorities for the First Selectman in fiscal year 2013/2014. (Eversource Admin. Notice 34, p. 14)

The Record also demonstrates extensive outreach to Town representatives up until the filing of the Application in June of 2015. (E-1, pp. N-1 – N-2) That outreach included the

municipal consultation process. At the conclusion of that process, by letter of April 6, 2015 addressed to the Council, and Ms. Gardell and Mr. Morissette of Eversource, the Planning and Zoning Commission provided comments. Those comments principally focused on the architecture of the new substation, pre- and post-construction considerations of transmission lines, and avoidance of intrusion on Cos Cob Park. Eversource responded to the specific substation design recommendations in its pre-filed testimony. (Eversource 9, pp. 15-16)

As to the transmission line construction issues, the Town's recommendations included a number of references to the Town's internal policies and procedures for construction. Eversource's Application makes clear that the Project facilities would be constructed in accordance with established electric utility practices, industry best management practices, final engineering plans, Eversource's specifications, and the conditions specified in the Certificate and permits obtained for the Project. (Eversource 1, p. ES-9; PFOF ¶ 307)

Finally, Eversource revised the plan for the Cos Cob Substation modifications such that Cos Cob Park would not be affected, other than the driveway, if Segment 1A is approved as part of the Hybrid Solution.

In addition, the Planning and Zoning Commission requested additional information in the form of questions. Eversource's Application and supporting information (a total of 45 exhibits) sufficiently addresses the questions raised by the Town.

On September 1, 2015, at the public hearing, Ms. DeLuca read a statement into the Record (the "Statement"). (Transcript 2, pp. 10-23; Town 2) The Statement reiterated some of the Town's concerns and requested very specific details. However, the Town's request ignored the time and expense associated with providing detailed information on every single substation site and transmission line route that Eversource considered during its analysis and identification

of the most prudent and cost-effective solution to meet the Project need. The Town's request also overlooked the important role of the Siting Council's evidentiary hearings and the D&M Plan in the Council's process.

The Statement included suggested conditions that the Council should consider attaching to any approval of the Project. Eversource responded to these suggestions in its pre-filed testimony of September 29, 2015. (Eversource 25, pp. 9-14)

On November 23, 2015, by letter addressed to the Council, with copies to Ms. Gardell and Mr. Morissette, the Town raised four primary points about the Project: (1) existence of viable options to Bruce Park, (2) challenge to Eversource's year of need, (3) "overcapacity" of the proposed Greenwich Substation, and (4) environmental concerns regarding the planned use of HPFF cables, which are addressed below. (Town 3)

2. *Bruce Park*

Until the November 23, 2015 letter, the Town had not expressed any opposition to the routing of underground cables beneath Bruce Park. Because Eversource was fully aware that Bruce Park is a cherished recreational area in Greenwich, Eversource carefully designed the transmission lines such that there would be no long-term adverse environmental effects to Bruce Park; any short-term effects would be properly mitigated.

The Town recently provided information to the Council about the features and habitat in Bruce Park to support its position of the Park's value to the community. Yet at the same time, the Town admitted that it is currently in the process of installing sewers beneath a portion of Bruce Park. (Transcript 6, pp. 55-56) In any event, during the proceeding, Eversource presented the Hybrid Route, at the Council's request, which would avoid the placement of transmission lines in Bruce Park.

3. *Challenge to Eversource's Year of Need and the Capacity of the Proposed Greenwich Substation*

The Town's next two points were addressed in the Docket and have already been addressed in this Brief. The Town's position on the absence of need was based on its relatively stable population over the years, and the purported absence of significant development opportunities within Greenwich.

These bases are inconsistent with evidence in the Record. Although the Town saw a population increase of only slightly more than 3,000 between 1990 and 2010, its electrical demand increased during the same period by 45 percent. In fact, the Town of Greenwich has a per capita ranking as the highest user of electric service among the 149 municipalities served by Eversource. It has the third highest usage overall, behind the cities of Hartford and Stamford, which have substantially larger populations. (PFOF ¶ 159)

The Town's 2013/2014 Annual Report lists a total of 2,286 building permits, which was an 8-percent increase over the prior fiscal year. The reported construction value (approximately $409 million) represented a 49-percent increase over the prior fiscal year. The Report also lists a 63% increase in new residential permits over the previous fiscal year, which exceeded 100 for the first time since 2007/2008. During the same time period, the Town witnessed a 47% increase in demolition permits over the prior fiscal year. Nearly one-half of all issued permits (1,191) were residential add and alter permits. (PFOF ¶ ¶ 155-158)

Finally, at only 5.80%, Greenwich's Residential Program Energy Efficiency participation rates are the lowest of the 12 targeted towns listed by Eversource. It also has comparably low Residential Rebate participation, and Business and Municipal Program Energy Efficiency participation. (PFOF ¶ 185) Given the steady increase in electric usage and continued infrastructure growth within Greenwich, it is inappropriate for the Town to base its position on

energy need simply on a lack of significant population growth or development opportunities. The statistics illustrate the inaccuracy of such a correlation.

4. Environmental Concerns Regarding the Cable Fluid

The fluid in the HPFF cables is polybutene. In Docket 272, an expert testified at length about HPFF, a synthetic polymer that is odorless, colorless and tasteless. That testimony included information that the same component contained in the cable fluid is used in many personal and hygiene products, such as lipstick and mascara and is also used in chewing gum. (Eversource, Admin. Notice 11, Testimony of Ms. Benkinney and Mr. Kegerise, pp. 24-31) Mr. Bowes referred to those conclusions in his testimony at the March 10, 2016 hearing. (Transcript 7, pp. 42, 48) Thus, the concerns of the Town about HPFF are without merit. Nevertheless, the Hybrid Route eliminates any concerns about HPFF.

5. Upsizing/Replacing of Cos Cob Transformers

The Town of Greenwich, later joined by other Intervenors, asserted that larger transformers could fit inside Cos Cob Substation. (Town 3, p. 11) The Town's assertion was effectively addressed by Eversource's witness, Mr. Bowes, whose qualifications are impeccable and were unchallenged in this proceeding. (Eversource 39, p. 3; Transcript 5, pp. 66-69)

Curiously, the Town's assertion was not based on any engineering qualifications, knowledge of transformers or any personal inspection of the inside of Cos Cob Substation. Rather, it was based on e-mails to transformer manufacturers. And, two of the transformer manufacturers purportedly contacted by Ms. DeLuca, the Town's lead witness ("Town's Lead Witness") were identified by OCC in its Motion requesting that the Council require Eversource to contact manufacturers, which Motion was denied by the Council.

Moreover, the Town's Lead Witness admitted that she did not:

- provide Mr. Bowes' testimony to the manufacturers she solicited via e-mail;
- ask such manufacturers to include a load tap changer, which Mr. Bowes testified is required to control voltage and would increase overall dimensions for a transformer;
- ask such manufacturers for permission to copy their drawings;
- inform such manufacturers that she was submitting their drawings to the Council to support the Town's viewpoint that larger transformers could fit at Cos Cob Substation; and
- know the identity of the authors of such drawings.

The Town's Lead Witness also stated that she did not take into consideration existing equipment that might be underground or additional equipment or changes that might be necessary inside the substation to hook up the new equipment (Transcript 6, pp. 18-21; 106-110; Transcript 7, p. 130)

Given such admissions and the expert opinion of Mr. Bowes, the Town's assertion regarding an ability to fit larger transformers at Cos Cob Substation is fundamentally flawed and should be disregarded. Also, because neither the OCC nor any of the Intervenors provided evidence on this subject, any claims on their part as to the ability to use larger transformers at Cos Cob Substation should be similarly disregarded.

Assuming, *arguendo*, that the Cos Cob Substation could be outfitted with larger transformers, other important aspects of the Project would not be addressed. Larger transformers at Cos Cob Substation would not avoid overloads on the Prospect Substation transformers, or on feeders from Cos Cob Substation to Prospect Substation. Most importantly, they would not strengthen the reliability of Greenwich's electric system, which is currently entirely dependent on only one bulk substation – Cos Cob Substation.

6. Expert Testimony and Analysis

The November 23rd letter submitted by the Town of Greenwich included an attachment labeled "Report Prepared by the Town of Greenwich, CT For the Connecticut Siting Council Recording Docket #461". This "Report" is not a report at all; it is a series of comments, many of which are based on hearsay and should not be considered in this Docket.

Significantly, the Town's comments state:

> Town Staff is trying to understand this proposal and has obtained input from industry professionals who have considerable knowledge and experience in the design, construction, and maintenance of overhead and underground transmission facilities, throughout the Northeast, along with transmission voltage substations. They are equally familiar with pipe type cable feeders and solid dielectric circuits. They are thoroughly conversant in construction costs and methodologies, and industry practices relative to both design and implementation. They have done extensive work throughout the Northeast.

(Town 3, p. 25)

The Town failed to identify all of these industry professionals or their qualifications, and did not present any of them as part of its witness panel. By failing to do so, the Town denied Eversource, the OCC and the Intervenors an opportunity to cross-examine such "professionals" to determine which comments were contributed by them or examine the basis for such comments. The orderly conduct and fairness of the Council's proceedings demand that the Town be subjected to the same rules as other participants in this proceeding.

On January 11, 2016, after the conclusion of three evidentiary hearings, the Town filed a Motion to become a Party. The Town's Motion was granted on January 12, 2016. However, at the fourth evidentiary hearing on that date, the Town did not appear or present any witnesses. Ms. DeLuca (who was in attendance) indicated that since the Town had become a party to the proceedings, she did not speak for the Town. (Transcript 5, pp. 40-41)

On February 23, 2016, during the fifth evidentiary hearing, the Town presented its witness panel. However, none of the Town's witnesses had any education or experience in matters requiring technical expertise, including electrical engineering, planning, load forecasting, operations, construction, maintenance, or system reliability.

In addition, upon Eversource's counsel's objection to the admission of the Town's November 23, 2015 comments, Attorney Kohler stated on behalf of the Town "that the Town does not claim to be an expert .... The Town has made it very clear that it is not an expert .... [T]he Town is not an engineering expert." (Transcript 6, pp. 13-14) Additionally, the Town's Lead Witness stated at the February 23, 2016 hearing that she has not worked for an electric utility company in a planning or forecasting role, and has not held a position in an organization responsible for providing reliable electric service. (Transcript 6, pp. 85-86)

Based on Eversource's Objections, the Town's materials were admitted "for what they are worth." In this case, where the central issues require technical expertise and where the Town's materials are based on hearsay, the Town's materials should not be afforded any evidentiary weight. As the Connecticut Appellate Court has noted, the true test of admissibility of expert testimony is whether the witness offered as an expert has "peculiar knowledge or experience," uncommon to the world, which renders his or her opinion founded on such knowledge or experience an aid to the tribunal in determining the questions at issue. It is not whether the subject matter itself is common or uncommon, or whether many people have some knowledge of the general matter. Czajkowski v. YMCA of Metropolitan Hartford, Inc., 149 Conn. App. 436 (2014).

On the afternoon before the sixth - and final - evidentiary hearing, the Town filed a Motion for Additional Analyses and Hearings. This was despite the Town's knowledge of

Eversource's plans for a new substation in 2011; its 2014 acknowledgment of the new substation as a priority; and the extensive outreach by the Eversource Project team. Eversource objected to the Town's Motion, which the Council denied.

As noted herein, there is no evidence from any qualified witnesses in the Record to challenge Eversource's technical analyses. There is no evidence that any additional analyses or hearings would uncover any further options. Eversource's witnesses provided extensive information in this Docket, and were cross-examined thoroughly. Connecticut courts have recognized that a commission may not disregard such an expert's testimony where the issue is "technically sophisticated and complex," going beyond "ordinary knowledge and experience." Feinson v. Conservation Commission, 180 Conn. 421 (1980).

The Application and evidence submitted by Eversource demonstrate that all statutory obligations under PUESA were fully satisfied. The six evidentiary hearings and various deadlines to file pre-filed testimony provided ample opportunities for full participation by the Town in the Council's process.

7. D&M Plan

The Council is well aware of the important role that the D&M Plan plays in the Council's exercise of its authority under PUESA. In an effort to continue the dialogue Eversource began in 2011 with Town officials concerning its plans for a new substation in Greenwich and its attempts to satisfy concerns of Town officials and the public, in accordance with sound engineering principles, feasibility and cost constraints, Eversource committed to working cooperatively with Town officials on the following matters, which Eversource would address in the D&M Plan:

- Relocation of Transition Structure near Steamboat Road (about 100 feet);
- Pole Locations;

- Pole Heights;
- Pole Design (visual feature);
- Substation Façade (similar to Mr. Granoff's design);
- Fencing (similar to 330 Railroad Avenue);
- Transformer Walls (facing matching the substation building); and
- Vegetative Screening/Planters (around the outside of the substation building).

(Transcript 7, pp. 110-114; 124-127)

C. Intervenors

Sec. 16-50j-15 of the Regulations for Connecticut State Agencies provides the framework for individuals who wish to participate as intervenors in the Council's process. The grounds for intervening are predicated on the petitioner's participation for the purpose of furnishing assistance to the Council concerning the issues in the docket, in the interests of justice and in such a way as to not impair the orderly conduct of the proceedings. Within that framework, the Council granted all requests for intervenor status in this Docket.

However, the Intervenors in this Docket did not present any credible pre-filed testimony or offer expert testimony on issues requiring expertise, such as electrical engineering, planning, load forecasting, operations, maintenance or reliability of the electric system serving Eversource's customers in Greenwich. Without any such evidence, the Intervenors' claims should be disregarded as unsupported.

Based on the tenor of the participation of the Intervenors in this Docket, their opposition can be viewed in the context of the following requests communicated to the Council:

1. Denial of Eversource's Application or Relocation of the Proposed Substation

FPET was the first prospective intervenor to file its request, wherein it expressly stated its intention in this Docket as seeking "to have this Application denied or that the site be relocated to a more suitable area." (FPET 1) That theme was repeated by Ms. Christine Edwards. (Edwards 1) Language that was identical to FPET's was submitted by Bella Nonna Restaurant and Pizzeria, Greenwich Chiropractic & Nutrition, Joel Paul Berger and Meg Glass – none of whom submitted any facts or technical information to support their positions or to furnish assistance to the Council. Similarly, Mr. Richard Granoff's ("Granoff") request to intervene states that the Proposed Site is "not the right part of Town for Eversource to build another substation." (Granoff 1)

The Intervenors' position that the Application should be denied is not supported at all by evidence in the Record. In contrast to Eversource's extensive Exhibits (45 in all) and testimony furnished at six evidentiary hearings, there is no sworn testimony that properly challenges Eversource's filings in this Docket. Not one of these Intervenors demonstrated any expertise in the fundamental aspects of Eversource's proposed Project. Therefore, any comments or statements of position made by the Intervenors should be viewed in the context of their overriding goal: denial of the Application, without regard for the consequences that a denial would cause to Eversource's customers in Greenwich or its investment in a reliable electric infrastructure.

Furthermore, the secondary goal of these Intervenors is stated as moving the substation elsewhere. This is a rather curious position given that the subject property is located in a commercial area; it is an area in which the uses in the immediate vicinity include warehouses, an electric substation (Eversource's Prospect Substation), a utility storage yard and an active rail

line. (Eversource 1, p. G-1; PFOF ¶ 229) It is hard to fathom "a more suitable area" for a new substation than in a commercial area where another substation is already located. It is clear that the substation itself is not the issue; the Intervenors simply request that the Council put the substation somewhere else – anywhere else.

2. *Avoidance of Bruce Park and Kinsman Lane*

Mr. Parker Stacy and Ms. Cecilia Morgan expressed concerns about the use of Bruce Park for the underground transmission cables and the routing through Kinsman Lane, where each of them resides. (Stacy 1, Morgan 1) The evidence in the Record, including the expert testimony of Mr. Michael Libertine, a highly qualified environmental land use professional, supports Eversource's position that the underground transmission cables are properly engineered and designed. Any environmental effects would be short-term and properly mitigated by Eversource. (Eversource 11, pp. 14-15; Eversource 11) None of Eversource's evidence was challenged by qualified experts.

Moreover, the Preferred Route was modified between the MCF and the submission of the Application to address concerns of both town officials and Ms. Morgan. Specifically, Eversource developed the Green Variation, Blue Variation and the Orange Variation to move the Preferred Route farther away from Kinsman Lane. (Eversource 1, pp. G-15, G-18; PFOF ¶¶ 285-286)

Nevertheless, with the development of the Hybrid Route, the concerns of Mr. Stacy and Ms. Morgan would be addressed. As noted herein, Eversource supports the Hybrid Route, which appears to be the most satisfactory routing for the transmission lines from the perspective of the majority of the stakeholders in this Docket.

3. Delay of the Proceedings

In its request to intervene, Pet Pantry stated that "[i]t intends to … introduce and present evidence." (Pet Pantry 1) No actual evidence was introduced or presented by Pet Pantry. Only lawyers participated in this Docket on behalf of Pet Pantry. There is no evidence in the Record that either of Pet Pantry's lawyers have any expertise in electrical engineering, planning, load forecasting, operations, maintenance or reliability of the electric system serving Eversource's customers in Greenwich.

Based on Pet Pantry's lawyers' repetitive questioning on issues that had been previously asked and answered at length by Eversource, the participation of Pet Pantry appears to have been merely to delay the proceedings. (Transcript 3, pp. 237, *et seq.*; Transcript 4, p. 36) Such an approach is certainly inconsistent with the framework for an intervenor role; namely, to provide the Council assistance in the interests of justice, without impairing the Council's orderly process. This approach should also be viewed through the lens that delay allows Pet Pantry more time to remain on site.

The Application contains evidence, sworn to by the Eversource witness panel, of Eversource's rights with respect to the Proposed Site and the termination of Pet Pantry's rights effective October 8, 2015 and Eversource's right to purchase the Property. There is no evidence in the Record furnished by Pet Pantry to challenge any of the information submitted by Eversource on this subject. Nowhere in the Record is there concern on the part of Pet Pantry that if the Project is delayed, the customers in Greenwich are at risk of electric service interruptions; nor is there any indication that Pet Pantry has any regard for potential distribution feeder failures, equipment damage or loss of life of equipment. Accordingly, Pet Pantry's opposition to the

Project should be disregarded as parochial, without foundation and ultimately detrimental to the critical need for reliable electric service in Greenwich, which the Project would satisfy.

In summary, Eversource has conducted a comprehensive evaluation of options, and the Record in this Docket conclusively establishes:

- Eversource's forecasting methodology was based on load forecasting policies that project load growth based on the highest peak;
- Eversource reasonably forecasted that under certain conditions, the transformers operating within the cornerstone of its electric system in Greenwich (Cos Cob Substation) could overload in 2018, and that the transformers operating within Prospect Substation are at risk of overloads, as are the distribution feeders running between the two substations;
- A new bulk substation in Greenwich closer to the center of the load, which was originally identified as necessary in 2011, is needed now;
- All prudent distribution system improvements have been exhausted;
- A feasible distribution alternative is cost-prohibitive;
- There are no non-transmission alternatives available now that could alone or in combination, displace the need for the Project and achieve the same benefits, including reliability;
- Usage in Greenwich is very high on a per capita basis and has grown at a 1.5% rate;
- Energy efficiency is very limited in Greenwich in comparison with other towns and could not defer the need for the Project; and

- Nearly all of Greenwich is at risk for service interruptions and loss of life on equipment if Cos Cob Substation is out of service.

It is evident from the participation of many of the Parties and Intervenors that the problem is not the construction of new facilities to service Greenwich electric customers; rather, the problem is the location of such facilities in Greenwich. The tenor of the interrogatories from some of the Parties and Intervenors underscore a common view that Stamford, Rye or Port Chester, New York would be a preferable location for a new substation that serves Greenwich's electric energy needs. A parochial concern is also evident that if new facilities were to be built in Greenwich, such facilities should not be used to serve other Eversource customers, including those in Stamford, although substations in Stamford currently serve customers in Greenwich.

Eversource has an obligation to provide reliable service to all of its customers in Greenwich. Mindful of this obligation, Eversource has proposed the Project facilities precisely where they are needed. It cannot risk interruptions in service to its customers and loss of life of its equipment because opponents would prefer that such facilities be located elsewhere.

CONCLUSION

Eversource has demonstrated that the Project complies with all governing statutes and regulations, as well as the requirements and standards of the Council. The extensive Record for this proceeding supports Eversource's compliance, which has not been successfully refuted by any other Party or Intervenor in this matter. Therefore, Eversource respectfully requests that the Council approve Eversource's Application by granting a Certificate of Environmental Compatibility and Public Need ("Certificate") for a new Greenwich Substation to be located at 290 Railroad Avenue. In the alternative, if the Council concludes that the Alternate Site at 280 Railroad Avenue is more suitable, then Eversource requests a Certificate for that site. Eversource also respectfully requests a Certificate for two new transmission lines. As noted herein, Eversource supports the Hybrid Route, along Segments 1A, 2B, 3B and 4B, which is the most cost-effective of the feasible transmission routes.

Because Segment 1B provides a feasible alternative that would avoid an area used for access to Cos Cob Park, Eversource also requests approval of Segment 1B. Eversource expects its investigation of Segments 1A and 1B to be completed by the filing of its D&M Plan and would address which segment is more prudent at that time.

The Hybrid Route also represents the routing that satisfies the needs of many of the stakeholders in this Docket; it avoids Bruce Park, is the Town's preferred route if the Council recognizes the need for the new substation, is acceptable to CTDOT and MNRR, and addresses cost issues raised by Council members and the OCC. If the Council finds that underground cables along the Preferred Route are more consistent with the PUESA, then Eversource requests a Certificate for such transmission line routing. Finally, Eversource requests that the Council approve the proposed modifications to the Cos Cob Substation as set forth in the Application.

Eversource further asks the Council to include in its decision documents the statutory findings that the Council is directed to make in order to support the issuance of the Certificate, which are listed in Appendix A to this Brief.

Respectfully submitted,

THE CONNECTICUT LIGHT AND POWER DOING BUSINESS AS EVERSOURCE ENERGY

By: _____

Marianne Barbino Dubuque, Esq.
of Carmody Torrance Sandak & Hennessey LLP
50 Leavenworth Street
Waterbury, CT 06702
203-578-4218

By: _____

Jeffery D. Cochran, Esq.
Senior Counsel
Eversource Energy
107 Selden Street
Berlin, CT 06037
(860) 665-3548

NOTICE OF SERVICE

I hereby affirm that a copy of this Post-Hearing Brief was sent to each Party and Intervenor on the service list dated February 1, 2016, with method of service to each party and intervenor listed via e-mail and U.S. mail on April 11, 2016.

Dated: April 11, 2016

Marianne Barbino Dubuque

Jacqueline Gardell
Project Manager
Eversource Energy
56 Prospect Street
Hartford, CT 06103
Jacqueline.gardell@eversource.com

John Morissette
Project Manager-Transmission Siting-CT
Eversource Energy
56 Prospect Street
Hartford, CT 06103
john.morissette@eversource.com

Jeffery Cochran, Esq.
Senior Counsel, Legal Department
Eversource Energy
107 Selden Street
Berlin, CT 06037
Jeffery.cochran@eversource.com

Marianne Barbino Dubuque, Esq.
Carmody Torrance Sandak & Hennessey LLP
50 Leavenworth Street
Waterbury, CT 06702
mdubuque@carmodylaw.com

Lauren Henault Bidra, Esq.
Staff Attorney
Office of Consumer Counsel
Ten Franklin Square
New Britain, CT 06051
Lauren.bidra@ct.gov

Joseph A. Rosenthal, Esq.
Principal Attorney
Office of Consumer Counsel
Ten Franklin Square
New Britain, CT 06051
Joseph.rosenthal@ct.gov

Margaret Bain
Associate Rate Specialist
Office of Consumer Counsel
Ten Franklin Square
New Britain, CT 06051
Margaret.bain@ct.gov

Parker Stacy
1 Kinsman Lane
Greenwich, CT 06830
pstacy@optonline.net

Mark L. Bergamo, Esq.
Edward L. Marcus, Esq.
The Marcus Law Firm
275 Branford Road
North Branford, CT 06471
mbergamo@marcuslawfirm.com
emarcus@marcuslawfirm.com

Carissa Depetris
Dwight Ueda
Field Point Estate Townhouses
172 Field Point Road, #10
Greenwich, CT 06830
Carissa.depetris@gmail.com
D_ueda@yahoo.com

Christine Edwards
111 BibleStreet
Cos cob, CT 06807
SeeEdwards@aol.com

Richard Granoff, AIA, LEED AP
Granoff Architects
30 West Putnam Avenue
Greenwich, CT 06830
rg@granoffarchitects.com

Anthony Crudele
Bella Nonna Restaurant & Pizzeria
280 Railroad Avenue
Greenwich, CT 06830
bellanonnagreenwich@gmail.com

Cecilia H. Morgan
3 Kinsman Lane
Greenwich, CT 06830
cecimorgan@aol.com

Dr. Danielle Luzzo
Greenwich Chiropractic & Nutrition
282 Railroad Avenue
Greenwich, CT 06830
drdanielleluzzo@gmail.com

Joel Paul Berger
4208 Belle Boulevard
Flushing, NY 11361
communityrealty@msn.com

Meg Glass
9 Bolling Place
Greenwich, CT 06830
Glass50@hotmail.com

The Honorable Peter J. Tesei
First Selectman
Town of Greenwich
101 Field Point Road
Greenwich, CT 06830
ptesei@greenwichct.org

Julie D. Kohler, Esq.
David A. Ball, Esq.
Cohen and Wolf, P.C.
P.O. Box 1821
Bridgeport, CT 06601
jkohler@cohenandwolf.com
dball@cohenandwolf.com

APPENDIX A

Statutory Findings

There is a public need for the Greenwich Substation and Line Project (See Eversource's Proposed Findings of Fact [PFOF] ¶¶ 29-42, and provisions of the Record cited by those Findings.) Conn. Gen. Stats. § 16-50p(a)(3)(A)

The nature of the probable environmental impact, including EMF, of the facilities alone and cumulatively with other existing facilities has been reviewed by this Council in approving this facility. (See PFOF ¶¶ 329-388, and provisions of the Record cited by those Findings.) Conn. Gen. Stats. § 16-50p(a)(3)(B)

The Council has examined the policies of the State concerning the natural environment, ecological balance, public health and safety, air and water purity, and fish, aquaculture and wildlife, together with all other environmental concerns, and balanced the interests in accordance with Conn. Gen. Stats. § 16-50p(a)(3)(B) and Conn. Gen. Stats. § 16-50p(a)(3)(C). (See PFOF ¶¶ 329-360, and provisions of the Record cited by those Findings)

The environmental effects that are the subject of Conn. Gen. Stats. § 16-50p(a)(3)(B) can be sufficiently mitigated and do not overcome the public need for the facility approved by the Council in the Opinion, Decision and Order. (See PFOF ¶¶ 329-388, and provisions of the Record cited by those Findings.)

Conn. Gen. Stats. § 16-50p(a)(3)(D)(i) requires that the Council specify what part, if any, of the facility approved shall be located overhead. That is designated in the Opinion, Decision and Order.

The facility approved by the Council in the Opinion, Decision and Order conforms to a long-range plan for expansion of the electric power grid of the electric systems serving the State of Connecticut and its people and interconnected utility systems and will serve the interests of electric system economy and reliability. (See PFOF ¶¶ 43-56, and provisions of the Record cited by those Findings.) Conn. Gen. Stats. § 16-50p(a)(3)(D)(ii)

The overhead portions of the facility approved by this Council in its Opinion, Decision and Order are cost effective and the most appropriate based on a life-cycle cost analysis of the facility and underground alternatives to the facility and comply with the provisions of Conn. Gen. Stats. § 16-50p. (See PFOF ¶¶ 289-306, and provisions of the Record cited by those Findings; see also Opinion, Decision and Order.) Conn. Gen. Stats. § 16-50p(a)(3)(D)(iii)

Eversource has designed the Project in compliance with the Council's BMPs. (See PFOF ¶¶ 361-388, and provisions of the Record cited by those Findings.) (Eversource 1, Section M) Conn. Gen. Stats. § 16-50p(a)(3)(D)(iii)

The location of the facility approved by this Council in its Opinion, Decision and Order will not pose an undue hazard to persons or property along the area traversed by those lines. (See PFOF ¶¶ 329-388, and provisions of the Record cited by those Findings; see also Opinion, Decision and Order.) Conn. Gen. Stats. § 16-50p(a)(3)(E)