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October 5, 2017

VIA E-MAIL AND HAND DELIVERY

Attorney Melanie Bachman
Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: **DOCKET NO. 461A** - 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.

Dear Attorney Bachman:

In connection with the above-referenced Docket No. 461A, enclosed please find an original plus fifteen (15) copies of the Post-Hearing Brief of The Connecticut Light and Power Company Doing Business as Eversource Energy.

Very truly yours,

Marianne Barbino Dubuque

MBD/mkw
Enclosures

cc: Service List dated July 11, 2017 attached (with enclosure)

{W2935900}

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STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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. 461A October 5, 2017

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

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TABLE OF CONTENTS

INTRODUCTION

Every day, The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") works toward its critical mission of delivering reliable energy to businesses and residences across Connecticut. The First Selectman of the Town of Greenwich (the "Town") recognizes "the importance of reliable energy to Greenwich residents and businesses."[1] To that end, over the years Eversource has focused its attention on constructing incremental improvements to the electric distribution system to enhance service to its customers in Greenwich and also to postpone the need for a major overhaul of the Town's current electric infrastructure. But, as recognized by the Council in Docket 461, that system is now over 50 years old and was designed to serve much lower loads than exist today. *(Council Admin. Notice 43, FOF 49)* Moreover, there are no more effective incremental improvements that Eversource can implement in Greenwich without accompanying system wide improvements. *(Tr. 2, July 25, 2017, p. 99)* Simply stated, the existing system can no longer provide reliable service for Greenwich customers at the level of service provided to Eversource's customers in other towns.

In June of 2015, Eversource proposed a substation and line project in Docket 461 (the "GSLP") that the Council found in May of 2016 to be too large in scope and too expensive. Significantly, however, the Council recognized that "some action would have to be taken to improve the electric network in Greenwich" and that "the proposed GSLP, or some variation thereof, is necessary for the reliability of the electric power supply of the Town of Greenwich." *(Council Admin. Notice 43, Opinion, p. 6)*

Since May of 2016, Eversource has conducted additional analyses and utilized its broad expertise and experience in electric system planning and design, as well as its particular

[1] *Eversource Admin. Notice 2, Annual Report, July 1, 2015 – June 30, 2016, Town of Greenwich, Connecticut, p. 9*

knowledge of and experience with the existing facilities that comprise the electric system serving its Greenwich customers, to address immediate reliability needs in Greenwich, consistent with a prudent long-term plan to provide reliable electric service within the Town. Many elements of that plan concern upgrades to or "hardening" of the electric distribution system (facilities operating at less than 69-kV) and so are subject to the jurisdiction of the Public Utilities Regulatory Authority ("PURA"), rather than the Council. However, a key element of that plan requires 115-kV additions, which are subject to the Council's jurisdiction.

That key to reliable service for Greenwich customers is presented in this Docket 461A. The proposed project is smaller in scope and significantly less costly than the GSLP as originally proposed, and calls for a new bulk substation and an underground transmission line configuration that minimizes environmental effects.

The Greenwich Substation and Line Project now proposed (the "Project") is premised on an irrefutable principle: Eversource's customers in Greenwich deserve the same level of reliable service enjoyed by Eversource's other customers throughout the State. The Council should not overlook reliability deficiencies because they affect only the Town of Greenwich, and do not threaten outages that are likely to cascade into the rest of the State. Improvements that are required for reliable service to the State's constituent parts must be recognized as necessary for the "reliability of the electric power supply of the State," within the meaning of Conn. Gen. Stat. § 16-50p(c)(3). Moreover, it is the Council and PURA, not the administrators of Connecticut's 169 towns and cities, that bear the responsibility of evaluating and approving, denying, or modifying Eversource's plans for discharging its franchise duty of providing reliable service to all of its customers.

Although the Town administration acknowledges the Town's reliability needs, they purport to believe that these needs can be met with unrealistic dreams of large scale, immediately implemented demand side alternatives or unreasonably expensive or impractical distribution alternatives. Although Eversource worked closely with the Town to develop and propose a project that would meet the Town's requirements, to the extent that it could do so consistent with its obligations to its customers and the Council, Eversource evidently failed to "curry favor" with the Town sufficiently to induce it to recognize the Town's true electric infrastructure needs and to support the Project. *(Tr. 3, August 29, 2017, p. 160)*

Nevertheless, Eversource has demonstrated that the Project now proposed would provide needed reliability at a reasonable cost and with minimal adverse environmental effects. Accordingly, the Council should issue a Certificate of Environmental Compatibility and Public Need for the Project as proposed, or as modified by the Council.

SUMMARY

On May 5, 2017, Eversource filed a "Petition for Reconsideration" seeking a re-opening of Docket 461 and reconsideration of the denial of its application dated June 26, 2015 for a Certificate of Environmental Compatibility and Public Need for a proposed substation and transmission line improvements to the electric system in Greenwich. The Council designated this submission with the procedurally correct designation of "Motion to Reopen" ("Motion"). *(Eversource 1)* On May 25, 2017, the Council approved the re-opening of Docket 461 based on changed conditions pursuant to Conn. Gen. Stat. § 4-181a(b), and created Docket 461A for the Project.

The Project Originally Presented in Docket 461A

Eversource originally presented a Proposed Modified Project ("PMP") and an Alternate Modified Project ("AMP") to address existing electric service needs in the Town of Greenwich based on a peak load that had already recently occurred. Eversource's preference, the PMP, fully developed the "hybrid alternative" transmission line that was initially identified by the Council in Docket 461. The AMP was developed in response to the requirements established by the Town. (*Eversource 1, Vol. 1, Petition, pp. 1-2*)

The PMP and the AMP included a new transmission line and a new 115-kV bulk substation, along with the same improvements to Cos Cob Substation as proposed in the original GSLP (except for a different breaker technology), and the same transformer and associated switchgear removals at Prospect Substation. In contrast to the original GSLP, the PMP and the AMP proposed no transformer and associated switchgear removals at Byram Substation. *(Id., pp. 6-7)*

The key differences between the PMP and the AMP were the configuration and the routing of the transmission line and the location and exterior features of the new substation. The PMP included a 2.1-mile double-circuit underground/overhead transmission line, extending between the Cos Cob Substation and new Greenwich Substation, including two underground segments near these substations, and an overhead segment adjacent and parallel to the Metro North Railroad ("MNR") tracks. *(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 9)* The AMP included a 2.3-mile double-circuit transmission line entirely underground, primarily beneath public streets, including streets within Bruce Park, also extending between the Cos Cob and new Greenwich substations. *(Id., p. 19)* Both projects proposed the use of XLPE conductor for the underground segments.

The PMP proposed the new substation as an open air, air-insulated substation enclosed by a 15-foot brick veneer wall, at 290 Railroad Avenue. The AMP included a new substation, with the same equipment as the PMP, but entirely enclosed by a structure resembling a multi-unit residential building, located at 281 Railroad Avenue. (*Id., Petition, p. 6*)

In accordance with the Council's direction, the costs of both the PMP and the AMP would have cost substantially less than the $140 million estimated cost of the original GSLP. Eversource estimated the PMP cost to be approximately $78 million and the AMP cost at approximately $100 million. (*Id., p. 8*)

After the filing of the Motion, the State of Connecticut Department of Transportation ("ConnDOT") notified Eversource of its conclusion that "CL&P's proposal will cause immediate and irreparable harm to NHL [New Haven Line] commuter rail service operation. Therefore, the Department cannot approve CL&P's request to construct and maintain facilities in the NHL right-of-way." *(Eversource 4, Exhibit A)* In response to ConnDOT's objection, on July 10, 2017, Eversource withdrew the transmission line routing proposed as part of the PMP. *(Eversource 5)*

The Project Now Presented in Docket 461A

As a result of Eversource's withdrawal of the PMP transmission line routing, the Project presented by Eversource in Docket 461A, has several variations of the transmission line and new substation for the Council's consideration. Specifically, the Council's choices among alternatives regarding the new substation include:

1. its location at either 290 or 281 Railroad Avenue; and
2. the type of enclosure – a wall or architectural structure creating an "indoor" substation.

With respect to the new XLPE underground transmission line routing through Town roads, including the roads in Bruce Park, the Council's choices among alternatives regarding construction techniques include:

1. crossing of I-95 near Indian Field Road by a bridge attachment or using a trenchless technology known as pipe-jacking; and
2. crossing of Indian Harbor by attachment to a new pedestrian bridge or by an open trench with a cofferdam.

(*Eversource 1, Vol. 1, Pre-Filed Testimony, p. 20*)

A project with any combination of these features is not only feasible but, more importantly, would also provide equivalent reliability benefits. (*Id., Petition, p. 2*) Each of these choices is discussed below.

New Greenwich Substation

A new Greenwich Substation located at either 290 or 281 Railroad Avenue would not pose any adverse environmental or health and safety concerns, as explained in Section II herein. The primary differences concern operational flexibility and cost.

Because of space limitations at 281 Railroad Avenue, the site cannot accommodate a temporary mobile transformer. The ability to place a mobile transformer at 290 Railroad Avenue would allow Eversource to serve the load of the new Greenwich Substation if one transformer is out of service and the remaining transformer is lost. Although this scenario is unlikely, the mobile transformer would enhance reliability under stressed conditions. (*Tr. 2, July 25, 2017,*

pp. 150-151) This ability to accommodate the mobile transformer at 290 Railroad Avenue would likely be unaffected by the type of enclosure.[2]

Costs to build the Greenwich Substation at 290 Railroad Avenue are approximately $0.86 million less than at 281 Railroad Avenue. Particularly, if the Greenwich Substation is located at 290 Railroad Avenue, costs for the proposed distribution feeder relocation would be approximately $1.7 million less than if the new substation is located at 281 Railroad Avenue. However, the transmission line to 290 Railroad Avenue would cost approximately $0.9 million more than the transmission line to 281 Railroad Avenue. (*Eversource 12, Q-CSC-069)*

Due to the proximity of residential properties to 281 Railroad Avenue, additional sound mitigation measures may be necessary if a wall around the perimeter of the substation at this location was to be approved by the Council. Although Eversource's acoustical studies have concluded that all State noise regulations would be met if either an all-indoor design or a wall is approved, with a wall, there may nevertheless be complaints from nearby residential property owners, thereby requiring further evaluation and possibly additional sound mitigation measures. *(Eversource 1, Vol. 1, Exh. A, p. F-2; Eversource 2, Q-CSC-054; Tr. 2, July 25, 2017, pp. 123-125; Eversource 8, p. 3*)

Finally, concerns have been raised in this docket about the proximity of the Airgas site to 290 Railroad Avenue. However, the only evidence in the Record supports Eversource's position that it can safely locate a substation in proximity to the Airgas site. (*Tr. 2, July 25, 2017, pp. 60, 126; Tr. 3, August 29, 2017, pp. 244-245*) Moreover, as Mr. Bowes testified, the proposed 15-foot-tall wall around the entire perimeter of the substation would be constructed with fireproof

[2] Mr. Bowes testified that Eversource could possibly connect a temporary mobile transformer with temporary cabling if an indoor substation were to be constructed at 290 Railroad Avenue. *(Tr. 2, July 25, 2017, pp. 81 – 82)*

qualities and would supplement the three proposed firewalls on the east, south and west sides of each transformer. *(Tr. 4, September 5, 2017, pp. 44-45)*

As to the type of enclosure, the architectural treatment to create an indoor substation would cost approximately $1.4 million more than the wall and would be recovered in rates from all of Eversource's retail customers in Connecticut. *(Eversource 12, Q-CSC-069; PFOF 70)*

Eversource's Preferences for the Substation

Eversource prefers that the new Greenwich Substation be located at 290 Railroad Avenue, enclosed with a wall, as originally proposed. The location preference is based on the commercial nature of the neighborhood, slightly lower costs associated with that location, and the reliability advantage of flexibility to accommodate a mobile transformer afforded by the additional space at the site. *(Tr. 2, July 25, 2017, pp. 85, 123-125; Eversource 2, Q-CSC-045; Eversource 8, p. 3)* As noted above, the wall has a much lower cost.

Crossing of I-95

The Town proposed that the new transmission line cross I-95 by attaching it to the underside of the Indian Field overpass, which requires an encroachment agreement from ConnDOT. Due to ConnDOT's historical reluctance to enter into an encroachment agreement when an alternative is available, Eversource proposed the installation of the cable underground via a trenchless installation, known as pipe-jacking. *(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 20)*

At a March 15, 2017 meeting, ConnDOT Highways stated that it is "heavily opposed" to the Town's suggested crossing of I-95 with the bridge attachment approach. *(Eversource 11, Q-CSC-61-RV01)* ConnDOT's opposition was confirmed in its letter of August 31, 2017, filed with the Council. Thus, ConnDOT supports the more expensive underground trenchless crossing.

Eversource estimated that the cost of the pipe-jacking would be $1.5 million more than the bridge attachment and would be recovered in rates from the wholesale transmission customers of The Connecticut Light and Power Company, Western Massachusetts Electric Company and Public Service Company of New Hampshire. *(Id.; PFOF 69)*

Eversource's I-95 Crossing Preference

Given ConnDOT's objections to the bridge attachment, concerns regarding maintenance and safety issues, and the feasibility of an alternative, Eversource prefers the pipe-jacking methodology, although it is higher in cost. *(Tr. 2, July 25, 2017, p. 43; Eversource 8, p.4: Eversource 11, Q-CSC-061-RV01)*

Crossing of Indian Harbor

The Town proposed that Eversource construct a pedestrian bridge just north of the existing Davis Avenue Bridge to cross Indian Harbor, which runs perpendicular to Davis Avenue. *(Eversource 1, Vol. 1, Exh. B, p. A-11)*. Eversource is concerned that attaching the cables to the pedestrian bridge proposed by the Town would be less secure and less reliable than installing the cable in a trench across the river, i.e. by an "open cut", using a cofferdam. Eversource also has concerns about the ongoing maintenance of the new bridge, and would want the Town to accept ownership if it is constructed. *(Eversource 8, p. 5)*

In addition, the proximity of the cables to the travel surface of the bridge would result in higher magnetic fields ("MF") directly above the bridge surface. The underwater crossing of Indian Harbor would result in low above-ground MF, which is typical of the rest of the Alternate Modified Route (herein the "Proposed Route"). *(Eversource 1, Vol. 1, Exh. B, pp. D-4 & D-5)*

Eversource estimated that the pedestrian bridge would cost approximately $1.8 million more than using an open trench with a cofferdam. *(Eversource 11, Q-CSC-061-RV01)*. The

Town has stipulated its approval of a cofferdam installation, so long as a floating barge system – as opposed to cranes on the shore of Indian Harbor – is utilized for its construction. *(Tr. 3, August 29, 2017, pp. 241-242)*

Eversource's Preference for the Indian Harbor Crossing

Because of the feasibility of the cofferdam's use, the associated cost savings, a more secure and reliable installation, required future maintenance of a pedestrian bridge, and the lower above-ground MF after an underwater crossing, Eversource prefers the use of an open trench with a cofferdam for installation of the cable across Indian Harbor.

Reliability Benefits

With the Project completed and the new facilities in service, reliability of the Greenwich electric supply system would be greatly enhanced. Specifically, at Cos Cob Substation, the proposed improvements would prevent overloading the distribution transformers or feeders in the event one transformer or feeder is forced out of service. The improvements would avoid potential overloads of the existing Prospect Substation transformers that could occur now under high load conditions with all elements in service.

These improvements would allow for the retirement of Prospect Substation, and the operation of the Byram Substation transformers within their normal ratings. By retiring Prospect Substation, Eversource would avoid the costs associated with replacing its aging equipment, as well as the risks from the substation's current location within a flood plain. *(PFOF ¶ 42; Tr. 2, July 25, 2017, p. 148; Tr. 3, August 29, 2017, pp. 26, 96; Eversource 1, Vol. 1, Pre-filed Testimony, p. 7)*

Significantly, the new substation would allow for full redundancy between the new Greenwich Substation and Cos Cob Substation (the most heavily loaded bulk substation in

Connecticut), resulting in the use of the 13.2-kV system as automatic backup. This is consistent with the nature of the distribution system that Eversource operates elsewhere throughout Connecticut. Moreover, the 2X and 3X transformers and 27.6-kV bus at Cos Cob Substation would be reconfigured to eliminate the single point of failure. *(PFOF ¶¶ 128, 135; Eversource 1, Vol. 1, Exh. A, pp. A-7 – A-8)*

Furthermore, the Project would locate a source of electric supply near the load center in Greenwich. By positioning the new substation closer to the customer load, reliability risks that arise from reliance on power supplied by relatively lengthy distribution feeders would be substantially reduced. *(Council Admin. Notice 43, Eversource 1, p. E-9)*

Finally, the Project would complement Eversource's prior distribution system interim measures (that were designed to defer the need for the Project), its current initiatives, including its storm hardening efforts and its on-going distribution component upgrades, as explained below.

Eversource's Initiatives

In addition to the improvements included in the Project, Eversource has implemented – and continues to implement – a number of ongoing initiatives, including some that are subject to oversight of PURA as indicated below. These initiatives are designed to address deficiencies in Eversource's distribution system, which, as the Council is aware, would not be subject to the Council's jurisdiction. Those deficiencies and associated initiatives include:

1. Single contingency at Tomac Substation at 4.8-kV: In April of 2016, Eversource installed step transformers so that it now has the ability to refeed about 50% of the customers served by Tomac Substation at 13.2-kV.

2. Tomac Substation's status as an "islanded" substation (subject to PURA oversight): As part of its system resiliency program, Eversource plans to convert the 4.8-kV system at Tomac Substation in 2018-2019.[3]

3. Obsolete equipment at Byram Substation: Eversource will monitor the equipment, limit load to 12 MVA, and change out transformers when necessary.

4. Greenwich's 13.2-kV circuits among the 100 worst-performing circuits[4] (subject to PURA oversight): Eversource has an action plan for each such circuit, which is filed annually with PURA.

5. Failure of 27.6-kV cables when they are not overloaded: This Project would significantly reduce load and allow Eversource to sustain a second contingency on the cables, which it cannot do today.

6. Storm Hardening (subject to PURA oversight): Eversource routinely conducts storm hardening improvements across the State and will continue to do so in Greenwich, as appropriate.

(Tr.3, August 29, 2017, pp. 74-83, 97-99)

Finally, Eversource has invested significant time, effort and dollars in interim measures to bolster the functioning and capacity of substations and the distribution system in the Greenwich area, until a new bulk substation could be constructed in Greenwich. For example, as presented in Docket 461, from 2010 to 2012, Eversource placed in service nine projects, at a total cost of $36.3 million. *(Council Admin. Notice 43, Application, p. E-16, Table 4)*

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[3] Eversource has a PURA-endorsed plan for all existing "islanded" substations (approximately 44 substations) whereby it addresses conditions at 2-3 such substations per year. Tomac was listed as #15 in priority; however, as an accommodation to the Town, Eversource agreed to move up the priority of Tomac. *(Tr. 3, August 29, 2017, p. 75)*

[4] Eleven circuits emanate in Greenwich and are dedicated to Greenwich customers, and two circuits are Stamford circuits that feed Greenwich customers. *(Eversource 14, Q-TOWN-080)*

As reflected in Docket 461, it remains Eversource's firm conviction that "there are no additional feasible interim measures at the distribution level that could be undertaken to continue to provide reliable service, other than to build a new substation in Greenwich." *(Id., p. E-17)*

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 would 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 Eversource's 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. Stat. § 16-50p(a)(3)(A))

In Docket 461, on May 12, 2016, the Council observed:

> The Council is cognizant that some action would have to be taken to improve the electric network in Greenwich. The record is clear that the proposed GSLP, or some variation thereof, is necessary for the reliability of the electric power supply of the Town of Greenwich. The Council is also well aware of Greenwich's unique location at the edge of Eversource's electrical service area in

> Connecticut and Eversource has demonstrated a potential reliability and demand issue under certain conditions in Greenwich. Quite simply, the existing electric distribution system in this area does not have the capacity to back up customers in the event of outages and capacity issues can arise at Cos Cob Substation during high heat index days.

(Opinion, p.6) Over 17 months have passed since the date of the Council's observations, and the need for a reliability project in Greenwich has not lessened. In fact, more recent data demonstrates that the reliability deficiencies are greater now than in 2016.

The need for the Project is supported by (1) outages in Greenwich that occurred in 2011 (which triggered the need for interim measures as well as a more permanent solution, i.e., a new bulk substation in Greenwich); (2) SWCT reliability concerns; (3) new contingency simulations; (4) more recent cable failures/overloads; and (5) substation design aspects that exacerbate the modeled reliability deficiencies. Each of these topics is discussed in detail below.

1. Local Outages

In the summer of 2011, Eversource experienced a series of outages on the 27.6-kV system, arising from underground feeder faults that caused overloads and subsequent failures of underground circuits from Cos Cob Substation. As a result, Eversource was forced to shed customer load over a series of days, interrupting service to approximately 5,000 customers. *(Council Admin. Notice 43: Eversource 1, pp. E-10, E-11; Tr. 1, p. 56; Tr. 3, pp. 136-137)* Additionally, Eversource requested that Greenwich customers conserve power and use on-site generation, if available. Eversource took additional measures, including load shifting and the mobilization of an emergency bulk transformer to mitigate the risk of additional contingency events. *(Council Admin. Notice 43, Eversource 1, pp. E-10, E-11).* This event demonstrated Eversource's inadequate supply of power during contingency events, the cascading effects from the interruption in service, and the inability to recover from the interruption in a timely manner

(75 minutes to 18 hours). *(Council Admin. Notice 43: FOF 49-50; Eversource 44, Q-LF-024; Tr. 7, pp. 132-133)*

Mr. Bowes explained Eversource's reaction to these outages:

> We did not think that was acceptable. We think the obligation to serve requires us to serve all customers at all times, except under extreme conditions. So we went forward and made a public announcement [at a press conference] around a new substation.

(Council Admin. Notice 43, Tr. 3, p. 137) Mr. Bowes then explained the beginning of a five-year plan to implement a new substation, as well as multiple distribution system improvements at an estimated cost of more than $35 million, which were required in the interim until the new substation could be built. *(Council Admin. Notice 43, Tr. 3, pp. 137-138)* Despite implementing such measures, Mr. Bowes observed:

> 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.

(Council Admin. Notice 43, Tr. 7, p. 133) Thereafter, as the Council recognized in Docket 461, an additional distribution-related reliability event occurred in October 2011 at Cos Cob Substation, when all three 27.6-kV transformers went out of service as a result of animal contact with the 27.6-kV bus. All customers fed by the 27.6-kV transformers were without service for one to two-and-a-half hours, including customers supplied by the North Greenwich, Prospect and Byram Substations. *(Council Admin. Notice 43, Eversource 44, Q-LF-024)* These events triggered a heightened focus on the need for reliable electric service in Greenwich.

In July of 2015, Eversource experienced three contingencies on the 27.6-kV system that placed Eversource "narrowly close to again interrupting customers in the town of Greenwich."

(Council Admin. Notice 43, Tr. 3, pp. 138-139) In July of 2016 and 2017, as explained in subsection 4 below, once again reliability was compromised.

The unique features of Greenwich's electric system also contribute to the need for reliability improvements. As recognized by the Council in Docket 461:

- Greenwich's electric distribution system is over 50 years old, having been designed for much lower load levels;
- Its location is at the farthest end of Eversource's system in Southwest Connecticut ("SWCT");
- It is electrically isolated; and
- It relies heavily on one bulk substation, the Cos Cob Substation.

(Council Admin. Notice 43, FOF 49-50)

Notably, Eversource's announcement of the need for a new substation in Greenwich preceded the peak load experienced in 2013. *(Tr. 2, July 25, 2017, p. 13)* Given Eversource's loads that have occurred over the past few years and the peak load in 2013, there is a potential for load at 130 MVA to occur again in the future. *(Id.)*

The record in Dockets 461 and 461A provide a comprehensive framework for the need for the Project. In particular, the Council's extensive Findings of Fact in Docket 461 demonstrate the Council's recognition of the deficiencies in the electric distribution system in Greenwich. The information provided by Eversource in this Docket further supports the need, as well as the appropriateness of Eversource's proposed solution.

2. SWCT Reliability Concerns

It bears repeating that, as noted by the Council in Docket 461, in 2011, the Independent System Operator – New England ("ISO-NE") began a long-term reliability needs assessment

process for the SWCT area for the year 2018. This assessment identified needs requiring solutions in the Stamford-Greenwich sub-area. The first step in addressing those needs was Eversource's Stamford Reliability Cable Project ("SRCP"), which was placed in service on November 21, 2014. *(Council Admin. Notice 43, FOF 33-36)*

Consistent with ISO-NE's focus on transmission reliability deficiencies in SWCT and the implementation of projects such as the SRCP, Eversource's next step in its long-range plan for reliability, as reported in the SRCP docket *(Council Admin. Notice 43, Eversource Admin. Notice 15, FOF 40)*, was to add a new bulk substation in Greenwich with related transmission connections.

3. Contingency Simulations

Given the Council's concerns in Docket 461 regarding the scope and cost of the proposed project for a 30- to 40-year planning horizon, prior to submitting the Motion in Docket 461A, Eversource assessed the scope of system improvements needed based on the historical actual 2013 peak load of 130.5 MVA (representative of current conditions) on the Greenwich 27.6-kV system served by the Cos Cob Substation. It did so by running contingency simulations which assumed that peak load. Performance of the system under the 2013 peak load was tested first with all elements in service ("N-0" condition), then with each of the system elements of concern out of service ("N-1" conditions).

Eversource's simulations confirmed the same reliability deficiencies noted by the Council in its May 2016 decision: potential overloads of the distribution feeders supplying power to Prospect Substation from Cos Cob Substation at single contingency scenarios (N-1) and potential transformer overloads at Cos Cob and Prospect Substations. *(Eversource 1, Vol. 1, Pre-Filed Testimony, pp. 4-5)*

Overloaded Feeders

The contingency simulations showed potential overloads with one feeder out of service with Cos Cob Substation operating at 130.5 MVA as follows:

Feeders	Load relative to Normal cable ratings			
11R51	O.O.S.	151%	140%	122%
11R52	117%	O.O.S.	109%	95%
11R55	114%	117%	O.O.S.	97%
11R58	73%	73%	69%	O.O.S.

Single Contingency Scenarios (N-1)

(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5) Contingency simulations also showed overloads occurring on one or more of the feeders at 82 MVA, which is much lower than the 2013 peak load of 130.5 MVA. Finally, the remaining feeders were insufficient, even when not overloaded, because of differing impedances of the feeders. *(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5)*

Overloaded Transformers

The contingency simulations also show transformer overloads. At Prospect Substation, the 4X transformer is overloaded under N-0 peak load conditions, and the loss of any of the three remaining transformers at peak load will overload the others. At Cos Cob Substation, the loss of any of the three existing transformers places the remaining transformers into their emergency ratings. *(Eversource 1, Vol. 1, Pre-Filed Testimony, pp. 5-6)*

4. Cable Failures/Overloads

As presented in Docket 461 and noted in the Council's FOF 76, the electric distribution system in Greenwich failed to meet reliability criteria even under loads that occurred in July 2015, which were lower than the 2013 peak. In July of 2016, once again, the Greenwich system

failed to meet reliability criteria due to a series of cable faults and overloads on the 27.6-kV and 13.2-kV systems. *(Id., p. 7)*

Moreover, during a brief heat wave in July 2017 when the load was at approximately 112.5 MVA, Eversource was unable to serve all of its Greenwich customers because of insufficient feeder capacity. At that time, Eversource experienced a cable fault on the 27.6-kV feeder that feeds Byram Substation, which caused an overload for the 2X transformer at Prospect Substation. Load was shed through the outage, and Eversource was unable to serve 477 customers for a period of time. Again, this load was substantially lower than the 2013 peak of 130.5 MVA. Greenwich customers were the only customers in Connecticut during this time whose electric service could not be restored due to insufficient feeder capacity. *(Tr. 2, July 25, 2017, pp. 16-18)*

5. Substation Design Issues

Design issues at Prospect and Cos Cob Substations also contribute to reliability deficiencies in the Greenwich system. At Prospect Substation, the two 12.5-MVA transformers are prone to failure when loaded above nameplate (normal) capacity. In addition, the 13.2-kV switchgear at the substation is over 60 years old and at the end of its useful life. The addition of transformation capacity is not practical because there is no space for additional 27.6-kV feeders. Moreover, the substation is vulnerable to flooding due to its location in a 500-year flood plain. *(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 7)*

Unlike Eversource's other bulk substations, excess load at Cos Cob Substation caused by the loss of a transformer cannot be transferred to another substation, except for 6 MVA of load that can be transferred to Cos Cob's 13.2-kV system. This is a slim reliability margin. That amount could relieve overloads on the remaining transformers if a single transformer failed.

However, if the 6 MVA of load could not be transferred, the remaining transformers could not be brought down to their normal range after 24 hours unless there is a natural decline in load or load-shedding. While a temporary emergency mobile transformer could be installed, the largest mobile transformer would only provide 30 MVA; this is not enough to support the 2X or 3X transformers at 2013 peak loading. If either the 2X or 3X transformer were lost, Eversource would have to manually reconfigure the mobile transformer to cover the load on the 1X transformer (feeding North Greenwich). The 1X transformer would then cover for the out-of-service 2X or 3X transformer. *(Id., pp. 7-8)*

In addition, the 2X and 3X transformers at Cos Cob Substation are connected by a common bus serviced by a single circuit breaker. Therefore, their entire load would be lost if a fault on the bus or on the breaker occurred. *(Id.)*

Eversource has determined that with the Project completed and the new facilities in service the system would function reliably with peak loads of up to 190 MVA because of the ability to transfer load between the Cos Cob Substation and the new Greenwich Substation. The existing slim margin of only 6 MVA would increase to a margin of 60 MVA, thus providing a durable reliability solution. *(Id., p. 9)*

As noted above, the existing reliability issues inherent in the Greenwich electric system arise from the overloading of distribution feeders and insufficient transformation capacity. With the new facilities in service, these issues will be fully addressed as follows:

(a) the two new 115-kV supply lines to the new Greenwich Substation would provide ample feeder capacity; and

(b) the two new transformers at the new Greenwich Substation, together with the existing transformers at Cos Cob, would provide ample transformation capacity.

In this configuration, the four existing Cos Cob Substation 27.6-kV distribution feeders - 11R51, 11R52, 11R55 and 11R58 - would be off-loaded, thereby providing redundancy for the Greenwich secondary network under all load conditions. *(Eversource 1, Vol. 1, Pre-Filed Testimony, pp. 10-11, 19)*

If a single transformer at the new Greenwich Substation failed, then the remaining transformer would be capable of serving the load until the failed transformer was returned to service, even under peak conditions. If a single transformer at Cos Cob Substation failed under peak conditions, load would be automatically transferred to the new Greenwich Substation; the capacity of the remaining transformers at Cos Cob Substation and the transformers at the new Greenwich Substation would be sufficient to serve 100% of the load. Finally, if two transformers were lost at either Cos Cob or Greenwich Substations, approximately 80% of the load would automatically be transferred to other substations, and the remaining 20% of the load could be restored quickly by operator adjustments. *(Id.)*

B. The Project Would Materially Improve Reliability of Service To Electric Customers In Greenwich

As noted in this subsection and in subsection A. above, the Project would achieve significant reliability benefits and enable Eversource to provide the same level of reliable electric service to its Greenwich customers that it provides to its customers throughout Connecticut. In so doing, the Greenwich electric system would be better equipped to reduce the frequency and duration of service interruptions. Currently, the average Connecticut electricity customer experiences a power interruption every 16 months. In contrast, Greenwich customers experience on average a power interruption approximately every 10 months. *(Tr. 2, July 25, 2017, p. 104)*

With the Project, Eversource will have more options to shift the heavy load on the Cos Cob Substation and minimize any shedding of load and loss of life on its feeders.[5] These approaches are required today to prevent more severe outages and damage to the existing electric distribution system in Greenwich. In addition, Eversource has designed the Project, including the underground cable size, to allow it to upgrade the original two 60-MVA transformers to two 80-MVA transformers in the future if needed. If the cables were upgraded and an emergency required the Cos Cob Substation load to be transferred to Greenwich Substation, then the two 80-MVA transformers would be able to serve 120%, or 192 MVA, of their normal rating for up to two hours. *(PFOF ¶ 90; Eversource 9, Q-TOWN-058)*

C. There Are No Alternatives That Would Achieve The Reliability Benefits Of The Project And/Or Do So In A Cost-Effective Manner

The relevant documents in Dockets 461 and 461A demonstrate that the Greenwich electric system is susceptible to overloaded feeders and transformers, thereby compromising the reliability of Eversource's electric service to its customers. Therefore, taking "no action" would not be a prudent course of action and would be inconsistent with Eversource's obligation to provide reliable service to all of its customers.

In Docket 461, the Council found that Eversource considered and rejected transmission alternatives because new or upgraded transmission facilities utilizing the existing substations would not improve reliability of the existing system. *(Council Admin. Notice 43, FOF 132)* No further transmission options have been identified in this proceeding.

The Council also found in Docket 461 that non-transmission alternatives could provide incremental load relief benefits, but could not achieve the enhanced reliability of the distribution

[5] Eversource estimates a 2% loss of life every time a feeder is overloaded, which causes a loss of reliability on the feeder. *(Tr. 4, September 5, 2017, p. 67)*

system near the load center and were not cost-effective. *(Council Admin. Notice 43, FOF 136)* Eversource presented a comprehensive non-transmission alternative analysis (distributed generation, energy storage and demand response) to the Town's representatives on December 12, 2016. This analysis updated Eversource's earlier analysis for the revised project need, and confirmed that non-transmission alternatives are not a feasible or cost-effective solution. *(Eversource 9, Q-STACY-001)*

Similarly, as to distribution alternatives, the Council concluded that such alternatives would only allow for temporary deferral of the need and were costly. *(Council Admin. Notice 43, FOF 138-142).* Furthermore, as evaluated by Mr. Bowes and discussed in Section IV herein, the Town's distribution alternative presented in Docket 461A is not feasible and does not effectively address the reliability needs that are addressed by the Project.

In summary, there are no alternatives to the Project that were presented in Docket 461A that could fulfill the need and achieve the same enhanced reliability for Eversource's electric system near the load center, in a cost-effective manner.

D. Energy Efficiency Cannot Supplant The Need For The Project

Since the decision in Docket 461, Eversource has heeded the Council's call to action "to work together in the short term" and to assist the Town so that the Town could "be more proactive in examining their electric demand needs and working to reduce energy consumption." *(Council Admin. Notice 43, Opinion, p. 8)* Eversource's energy efficiency representatives met with the Town's representatives on five separate occasions. The parties are working on an action plan that involves Town buildings and a business outreach campaign. Although these efforts have the potential to extend the life of the Project, they would not change the need for it. *(Tr. 2,*

July 25, 2017, pp. 92-93) Nor would these efforts produce the reliability enhancements that the Project would provide to address the need.

Energy efficiency measures may, however, mitigate a future need for capacity by providing some margin. *(Tr. 2, July 25, 2017, p. 111)* Such measures may also allow Eversource to retire Byram Substation in the next 3-5 years. *(Tr. 3, August 29, 2017, pp. 80-81)*

E. The Proposed Route (Formerly The "Alternate Modified Route") Is The Appropriate Route That Remains Available

As explained in Dockets 461 and 461A, Eversource evaluated underground, overhead and hybrid routes for the Project. All other routes considered presented significant construction and social challenges, or were much more costly than an underground route.

During the course of its meetings with the Town's representatives, after the Council's decision in Docket 461, Eversource learned that the Town would not support any form of the "hybrid alternative" despite its documented earlier preference. *(Council Admin. Notice 43, FOF 379)* Furthermore, despite its stated opposition to any transmission line option that would include Bruce Park *(Id.)*, the Town informed Eversource that it would support the AMP if Eversource would agree to construct it in strict accordance with the Town's requirements. *(Eversource 1, Vol. 1, Exh. B, p. A-1)* Upon reaching the conclusion that the AMP was feasible, Eversource agreed to present it to the Council as an alternative to the PMP, which was Eversource's then-preferred approach. *(Id.)* However, after the filing of the Motion, Eversource was informed by ConnDOT that it would not grant the necessary rights for the PMP. *(Eversource 4, pp. 1-2; Eversource 5; Tr. 2, July 25, 2017, pp. 100-101)* Consequently, the

Proposed Route is the only route before the Council and essentially represents the Town's preferred routing configuration.[6]

Additionally, the Proposed Route is the most appropriate route because it presents the shortest remaining feasible underground route between a new Greenwich Substation located on Railroad Avenue and Cos Cob Substation; minimizes underground utility disruption; avoids schools and day care facilities; and, significantly, avoids the construction complexities that would be posed by use of the railroad corridor or roads serving residential neighborhoods in Greenwich.

All of these factors compel the conclusion that the Proposed Route is the most appropriate route to address the demonstrated need and to create a more reliable electric transmission system within Greenwich.

F. 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 address the limitations 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, 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. *(Council Admin. Notice 43: Eversource 1, p. E-22; FOF ¶ 35)* 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).

[6] The Proposed Route includes land subject to a restriction for use as park land. See **APPENDIX B** for a discussion of Eversource's rights to construct its facilities within Bruce Park despite the park use restriction.

G. The Project Would Serve The Public Need For Economic Service And Serve The Interests Of System Economy By Providing The Needed Improvements At The Lowest Reasonable Cost (Conn. Gen. Stat. § 16-50p(a)(3)(D))

The proposed Greenwich Substation, the modifications to Cos Cob Substation, and the Proposed 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 relief for the Greenwich distribution system, and determined that the cost of such alternatives would far exceed those associated with the proposed substation. *(Council Admin. Notice 43, Eversource 1, pp. F-1 - F-18; Eversource 1, Vol. 1)* In relation to the transmission portion of the Project, the Proposed Route was developed in an effort to reduce overall costs of the transmission lines as originally proposed. The lowest cost estimate for the Project including the Proposed Route achieves an approximately $40 million savings over the estimated cost of the GSLP as originally proposed in Docket 461.

The Project with the Proposed 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).

II. THE PROJECT WOULD NOT CAUSE ADVERSE ENVIRONMENTAL EFFECTS OR POSE AN UNDUE HAZARD OR POLICY CONFLICT THAT JUSTIFIES 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.

Eversource has provided substantial record 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 ¶¶ 155-228)*, and will be summarized below at a high level. Electric and magnetic fields are discussed in Section III of this Brief. 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, at either 290 Railroad Avenue or 281 Railroad Avenue, 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, Exh. A & B, Sec. C)*

The development of the Greenwich Substation at either location would have negligible, if any, adverse effects on topography, geology, and soil because no substantive changes in site topography are anticipated to prepare either site for construction. The proposed substation would not be located within any wetland or watercourse and thus, poses no long-term adverse effects on the quality of surface water resources. There are also no adverse impacts on groundwater resources. Although a portion of the site of the proposed substation at 290 Railroad Avenue is located within a Coastal Boundary, there would be no adverse impacts to coastal area resources. At 281 Railroad Avenue, the substation would be located entirely outside of the Coastal Boundary. The proposed substation would be subject to soil erosion and sediment controls, and stormwater management policies. *(Id.)*

The proposed substation would pose no negative effects to vegetation or wildlife because no significant areas of vegetation or wildlife habitat exist at either site for the substation. Two species identified as "threatened", the northern long-eared bat ("NLEB") and the red knot (a shore bird species), were identified as potentially occurring within the Project area by the U.S. Fish and Wildlife Service ("USFWS") Information for Planning and Consultation ("IPaC") system.[7] However, the nearest NLEB habitat resource is located approximately 4.3 miles to the north of the Project; and there is no suitable habitat – either for feeding or roosting – for red knot along the Proposed Route. No populations of threatened or endangered species are present; and no fisheries are proximate to the Project area. *(Eversource 1, Vol. 1, Exh. A, pp. B-14-B-15; Exh. B, pp. B-9-B-10, C-9-C-10)*

[7] IPaC is a USFWS project planning tool for information on potential effects on listed species.

Further, no historical or archaeological resources are on or adjacent to either proposed substation site; no recreational or scenic areas or Statutory Facilities are located near either site. *(Eversource 1, Vol. 1, Exh. A, pp. B-16-B-17; Exh. B, pp. B-10-B-12, C-11, C-13)*

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 noise ordinance, as well as State noise regulations. *(Eversource 1, Vol. 1, Exh. B, pp. C-11-C-12)*

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, 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, Vol. 1, Exh. A, p. C-12; Council Admin. Notice 43, FOF 441)*

Finally, the construction work associated with the proposed substation would result in only temporary inconveniences to the public with regard to vehicle and pedestrian traffic.

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, Vol. 1, Exh. A, p. C-9; Council Admin. Notice 43, FOF 368, 369)*

Furthermore, the Greenwich Substation would not pose an undue hazard because it would not cause any significant adverse effects on public health and safety. 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 carefully incorporated various design features into the proposed Greenwich Substation to ensure

that the facility is safe and secure, including a 15-foot high wall around the perimeter of the proposed substation or an enclosure, as the Council determines. Other features would include a gated and locked entrance, appropriate signage, and safety and security lighting. *(Council Admin. Notice 43: Eversource 1, p. L-2; FOF 361, 362)* Any trees with branches that are near the perimeter wall would be trimmed to prevent their use as a means of access into the substation by people or animals. 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 further incorporated fire protection standards into both, the open air and all-indoor, designs for the substation, and would provide safety training to employees and the local fire and police departments. *(Council Admin. Notice 43, FOF 349, 355, 359; Eversource 9, Q-TOWN-035; Tr. 2, July 25, 2017, pp. 50-51; Tr. 4, September 5, 2017, p. 45; Eversource 12, Q-CSC-067)*

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 Connecticut Department of Energy and Environmental Protection ("CT DEEP") and the USFWS regarding the potential routing of the underground transmission lines. As indicated above, Eversource completed consultations with the USFWS through its IPaC system. Although two "threatened species" were identified as potentially occurring within the Project area, neither species – the NLEB or red knot – would be adversely impacted by the Proposed Route. No mapped areas of Critical Habitat are identified

along the Proposed Route by CT DEEP's Natural Diversity Data Base ("NDDB"). *(Eversource 1, Vol. 1, Exh. B, pp. B-9-B-10, C-9-C-10)*

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, Vol. 1, Exh. B, p. C-3)*

In addition to working with Town staff, Eversource would have a project outreach representative to coordinate with all residents and businesses along the Proposed Route affected by trench work. Open trench areas would be covered at nighttime with steel plates to allow road access. If pipe-jacking is utilized to cross I-95, then Eversource would manage its worksite to avoid any traffic shutdowns. *(Tr. 2, July 25, 2017, pp. 46, 75, 139)*

The Proposed Route would traverse underneath portions of Bruce Park; however, Eversource's plans include the following important features to avoid any adverse impacts to the area:

- Use of the roads within Bruce Park;
- Use of XLPE solid dielectric cable (not fluid-filled); and
- Cable installation in PVC ducts encased in concrete.

These safety features would help to ensure that the installation and operation of underground supply lines through Bruce Park will have no permanent adverse environmental effects on the area. *(Eversource 1, Vol. 1, Exh. B, pp. A-8, A-12-A-13, C-2)*

Four statutory facilities are located proximate to the Proposed Route, including a day care facility, Bruce Park, Cos Cob Park and Roger Sherman Baldwin Park. However, because of their distance from the Proposed Route and/or the proposed underground construction of the

transmission cable system, no permanent adverse effects are anticipated at any of these facilities. *(Eversource 1, Vol. 1, Exh. B, pp. B-12, C-13)*

Placement of transmission circuits underground would be consistent with the United States Department of Energy, Federal Energy Regulatory Commission, Guidelines for the Protection of Natural, Historic, 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, Vol. 1, Exh. B, p. C-10)*

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. 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, Vol. 1, Exh. B, p. C-1)*

C. Modifications To Cos Cob Substation Would Not Have Any Significant Adverse Environmental Effects Or Pose An Undue Hazard

In Docket 461, Eversource demonstrated that the proposed modifications[8] to Cos Cob Substation would not have significant permanent adverse effects or pose an undue hazard on the

[8] In Docket 461A, the modifications to Cos Cob Substation are exactly the same as in Docket 461, except for different breaker technology. In Docket 461A, the expansion area at the substation was reduced by .035 acre as compared to that proposed in Docket 461 by pulling the perimeter fence in by 3 feet from the Town's Park fence. *(Eversource 2, Q-CSC-030)*

existing environment, or on the scenic, historic, or recreational values of the surrounding area. *(Eversource 1, Vol. 1, Exh. A, p. B-1; Council Admin. Notice 43, Opinion p. 2, FOF 374, 383)*

Cos Cob Substation provides minimal wildlife habitat, except for birds such as ospreys that perch or nest on its taller structures. Although CT DEEP's NDDB mapping depicts areas of known habitat for species listed as endangered or threatened on the Cos Cob Substation property, the agency determined that no such resources would be impacted by the proposed modifications at the substation. *(Eversource 1, Vol. 1, Exh. A, p. B-14)*

As with the proposed Greenwich Substation and transmission lines, 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.

Lastly, the proposed modifications to the Cos Cob Substation would not cause any significant adverse effects on public health and safety. 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. Cos Cob Substation presently has safety and security features, including a 7-foot high chain link fence topped with 3 strands of barbed wire to discourage unauthorized entry and vandalism, a gated and locked entrance, appropriate signage, and lighting to facilitate work during inclement weather or at night. Two new 65-foot-tall lightning masts would be installed. *(Council Admin. Notice 43, Eversource 1, Section L, p. L-2, Eversource 1, Vol. 1, Exh. A, p. A-7)*

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. Prior to commencing any construction for the Project, Eversource would prepare a Development & Management ("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 also expects that the D&M Plan will include further details on construction aspects of the Project such as vault locations and the crossings of I-95 and Indian Harbor, as well as customary construction logistics, such as traffic management and work hours. *(Eversource 1, Vol. 1, Exh. B, pp. A-12, C-1; Tr. 3, August 29, 2017, pp. 109-110)*

Eversource would be willing to provide a draft copy of the D&M Plan to the Town representatives prior to its filing with the Council so that the Town would have the opportunity to provide informed comments on the D&M Plan, once it is filed with the Council. However, Eversource respectfully requests that the Council follow its customary approach of being the final arbiter of the D&M Plan; in other words, the Council should not require the Town's approval for the D&M Plan. Eversource is concerned that the Town's position that Eversource needed to "curry favor" with the Town, regardless of the cost and feasibility of the Town's solutions, could result in a severe roadblock to the implementation of a Council-approved project, to the detriment of Eversource, its Greenwich customers and its Connecticut ratepayers. *(Tr. 3, August 29, 2017, p. 160)*

Furthermore, Eversource has stated its intention to attempt to develop a memorandum of understanding with the Town representatives, which would likely cover Town interests, such as the repaving of roads disturbed during construction for those roads repaved by the Town within the last five years. *(Eversource 8, p. 2)* While a memorandum of understanding, if agreed, would inform a proposed D&M Plan submission, the Council should not require it as a condition to submission of the D&M.

All of the Project construction activities would be in compliance with the D&M Plan. Eversource would effectively monitor compliance with the D&M Plan, other regulatory requirements, the Council's Certificate, and Eversource standards.

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. 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. 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. 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, Vol. 1, Exh. B, pp. C-1, C-3, C-13)*

III. UNDERGROUND CONSTRUCTION OF THE 115-kV CIRCUIT IS CONSISTENT WITH THE COUNCIL'S EMF BEST MANAGEMENT PRACTICES

The Project fully complies with the provisions of the Council's EMF Best Management Practices ("EMF BMP") that relate to underground electric transmission lines.

A. The Council's EMF BMP

In December of 2007, after a careful study of scientific consensus on potential health risks of exposure to transmission line electric fields ("EF") and magnetic fields ("MF"), the Council revised its EMF BMP. The EMF BMP was further revised on February 20, 2014. The EMF BMP state:

> As the weight of scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects, and as safety concerns for electric fields are sufficiently addressed by adherence to the National Electrical Safety Code, as amended, health concerns regarding EMF focus on MF rather than EF.

(Council Admin. Notice 27, p. 1)

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 2006 review which the Council commissioned as to the weight of scientific evidence regarding possible links between power-line MF and adverse health effects. [footnote omitted] 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 27, p. 4)

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

1. Health Research Update

The Council's EMF BMP 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 27, p. 5)* Recently, in Docket 474, Eversource provided a research update from Exponent Inc. ("Exponent") on extremely low frequency electric and magnetic fields and health. *(Eversource Admin. Notice 1, Eversource 1, Vol. 1, Sec. 7 & Vol. 2, Exh. 2.C.2)* Most importantly, Exponent concluded that "no recent studies provide evidence to alter the conclusion that the scientific evidence does not confirm that ELF EMF exposure is the cause of cancer or any other disease process at the levels we encounter in our everyday environment." *(Id., Vol. 2, Exh. 2.C.2, p. 58)*

2. MF Measurements And Calculations

The Council's EMF BMP require measurements of existing EF and MF at the boundaries of certain facilities, with calculations of potential levels from the proposed project. *(Council Admin. Notice 27, pp. 6-7)* Eversource provided MF measurements and MF calculations, as well as the context for the same. Eversource noted that there are no external EF produced from underground cables. *(Eversource 1, Vol. 1, Exh. B, p. D-1)* Thus, only MF calculations and measurements have been provided.

Eversource provided information about MF and presented project-specific projections for future MF levels associated with the Proposed Route. *(Eversource 1, Vol. 1, Exh. B, Sec. D & Vol. 2, App. 8)*

Table D-1, Magnetic Field Calculation Summary

Calculated Magnetic Field Levels (mG;AAL)		
Section	Edge of Road	Max in Road
Underground Duct Bank	0.6	6.7
Underground near Splice Vault	8.1	28.7

(Eversource 1, Vol. 1, Exh. B, p. D-1; PFOF ¶ 211)

The MF measurements and calculations demonstrate the following:

- Projected MF levels for the Project are well below the guideline levels of the International Commission on Non-Ionizing Radiation Protection (2010) and the International Committee on Electromagnetic Safety (2002).

- For the underground duct bank, the fields would be highest within the roadways and lower at the edges of the roadways. The fields would continue to diminish beyond the edges of the roadways.

- For the underground cable near the splice vaults, MF levels would be higher than for the underground duct bank and higher in the roadways than at the edges of the roadways.

(PFOF ¶¶ 211, 213; Eversource 1, Vol. 1, Exh. B, Sec. D)

Furthermore, note that in Docket 461, Eversource presented MF measurements at 290 Railroad Avenue and Cos Cob Substation, and testimony concerning 281 Railroad Avenue.

(Council Admin. Notice 43: Eversource 1, Section M; Eversource 22, Q-Chiro-006; Tr. 7, pp. 143-144) The Council concluded in its findings:

> Transformers and other equipment at the Cos Cob Substation and proposed Greenwich Substation are potential EMF sources. These sources, however, would be expected to cause little or no exposure to the general public because the strength of fields from typical substation equipment decreases rapidly with distance and reaches very low levels at relatively short distances beyond the substation perimeter. The exception to the normally low levels of EMF associated with substations is where transmission and distribution lines enter the substation.

(Council Admin. Notice 43, FOF 456) Thus, improvements at Cos Cob Substation and the new Greenwich Substation at either location on Railroad Avenue would cause only a negligible increase in the existing MF in the vicinity. *(Eversource 1, Vol. 1, Exh. A, p. D-18)*

In Docket 461, Eversource also presented MF measurements for Arch Street, which is a part of the AMP. The Council recognizes that the use of underground cable designs already reduces MF to the greatest extent practicable.

3. Field Management Design Plan

The Council's EMF BMP also require the submittal of a Field Management Design Plan ("FMDP") that considers no-cost and low-cost MF mitigation measures "specifically where portions of the project are adjacent to residential areas, public or private schools, licensed child day-care facilities, licensed youth camps or public playgrounds." *(Council Admin. Notice 27, p. 4)* In Docket 461, the Council found that no FMDP should be prepared for the underground segment of the hybrid route because there were no "special circumstances" that would require one. *(Council Admin. Notice 43, FOF 462)* Similarly, for the Proposed Route, there are no "special circumstances" that would require submission of a FMDP. *(PFOF ¶ 215)*

However, if the Council were to require Eversource to use a pedestrian bridge, in lieu of an underwater crossing, to cross Indian Harbor, the proximity of the cables to the travel surface of the bridge would result in higher fields directly above the bridge surface, as follows:

Summary of Calculated Magnetic Fields for the Pedestrian Bridge

Calculated Magnetic Field Levels (mG; AAL) – Revised 7/24/2017		
Section	Edge of Bridge	Max on Bridge
Pedestrian Bridge	27.8	49.4

(Eversource 10a, p. D-4) Conversely, in the absence of the pedestrian bridge, the cables would not be proximate to pedestrians because the cables would be beneath the waters of Indian Harbor. The underwater crossing of Indian Harbor would result in low above-ground MF, as is the case for the remaining portions of the Proposed Route. *(Eversource 1, Vol. 1, Exh. B, pp. D-4, D-5; Eversource 10a, p. D-5)*

As part of its D&M Plan, Eversource would evaluate low-cost engineering controls for MF for the pedestrian bridge if it were to be approved by the Council. Reduction of MF immediately above the bridge could be achieved by the addition of ground continuity conductors, installation of a conducting plate such as aluminum or copper, or installation of a steel plate. An underwater crossing of Indian Harbor would avoid the need for any such measures. *(Id.)*

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

A. Town of Greenwich

As discussed above, Eversource demonstrated the need for the Project based on outages originally occurring in 2011 (before the 2013 peak load at Cos Cob Substation), new system planning, contingency simulations, system experience both before and after the occurrence of the 2013 peak load used as the design load for the Project, more recent cable failures/overloads, and substation design aspects. Despite this demonstrated need, the Town's representatives assert that they do not believe that the Project, as proposed, is needed for Greenwich, with Mr. Spaman, Superintendent, Parks and Trees Division, Greenwich Department of Parks and Recreation, stating that he was not convinced. *(Tr.3, August 29, 2017, pp.278-279)* The Town's distribution-only solution would not meet the need or provide the important reliability benefits

that the Project provides. The Town's distribution-only solution also does not have the benefit of having been designed by professionals with expertise in electric system planning or design or operations, thereby creating greater risks for Eversource's customers and its equipment, all to the ultimate detriment of Eversource's Connecticut ratepayers.

Eversource evaluated all options suggested by the Town during the course of its meetings with the Town's representatives in 2016-2017. The kickoff meeting was held on June 28, 2016, which was followed by approximately monthly project work sessions, as well as conference calls and correspondence. Eversource made numerous presentations and answered many pointed questions concerning such subjects as the deficiencies of the Greenwich electric supply system; distribution and transmission reliability criteria; the comparative reliability of overhead and underground lines; the pros and cons of the two sites under consideration for the new Greenwich Substation; and many potential solutions that Eversource studied on its own initiative or at the request of the Town. During this time, Eversource evaluated at least eight potential distribution solutions with variations, all of which Eversource found to be impractical, ineffective, or unreasonably expensive. *(Eversource 1, Vol. 1, Pre-Filed Testimony, pp. 16-17)*

At the eleventh hour, the Town raised a new distribution-only option in its Pre-Filed Testimony dated July 18, 2017. That option included 4 components. *(Town 1)*

In response to questions posed by the Council's staff, Eversource's highly-qualified lead witness, Mr. Kenneth Bowes, reviewed and assessed each component of the Town's newly minted distribution-only option, as follows:

1. Construct a new indoor substation at 281 Railroad Avenue: Mr. Bowes agreed with the concept that a new substation is prudent. (Eversource's preference for 290 Railroad Avenue is discussed herein in the Summary)

2. Reconductor and reconfigure all four Cos Cob Substation feeders: Eversource consulted with the only two manufacturers of this type of cable – Okonite and Kerite – to confirm that the only reduced diameter cables that would be suitable for operation at 27.6 kV would be too large to pull into Eversource's existing four-inch diameter ducts. Therefore, the Town's option would involve providing an alternate path and new duct system. Mr. Bowes explained that this option, although technically possible, is inferior because it does not solve Cos Cob Substation as a single point of failure and is more expensive – $122 million (distribution-only cost) – resulting in more cost to the average customer in Connecticut. Further, because the current cables have different lengths, and different impedances, the loss of any one of the cables causes overloads on the remaining cables. Because of this structural problem, even new cables could fail. *(Eversource 1, Vol. 1, Pre-Filed Testimony, p. 5; Eversource 2, Q-CSC-026)*

3. Feed the new substation with at least two re-conductored 27.6-kV feeders, not via a 115-kV transmission line: Mr. Bowes testified that there is no slightly larger cable as a standard size, though it possibly could be specially ordered. However, the special ordered cable might affect the construction and warranty of the system, and would still not solve the problems at Cos Cob Substation.

4. Rebuild the Tomac Substation: Mr. Bowes acknowledged that Docket 461A does not solve any of the problems at Tomac Substation. However, he referred to efforts underway to convert the 4.8-kV system and provide redundancy and backup at 13.2 kV, including replacement of the transformer and the rebuild of about 105 Frontier poles, as well as equipment removal. The timeline would be

2018-2019. Eversource also plans to upgrade the single transmission tap at Tomac, based on a priority list by number of customers/costs. The three-terminal line is also to be removed and two two-terminal lines would be constructed to alleviate the loss of one line, likely within the next 10-year window, after planning studies and work by ISO-NE.

(Tr. 4, September 5, 2017, pp. 33 - 39)

The Town has repeatedly expressed doubt regarding the need for this Project, and has proposed that many of the issues with its current electrical system could be addressed through the adoption of energy efficiency and distribution alternative measures. *(Town 3, pp. 3 – 5; Tr. 3, August 29, 2017, pp. 193 – 195, 197)* However, it has failed to provide the Council with information regarding the total effective capacity of its solarized program, which it highly touts. The Town has not provided any cost estimates for these Project alternatives, nor has it calculated the level of load reduction that would be required to displace the need for a new substation. *(Tr. 3, August 29, 2017, pp. 200-201, 253)*

Moreover, the Record is clear that no amount of energy efficiency on the part of the Town would negate today's need for this Project. Unlike the proposed Project in Docket 461, Eversource's current Project addresses present need and reliability issues; it does not address future growth in the Town's electrical consumption. Eversource has stated its reliance upon the Town's purported focus on improved energy efficiency measures to extend the life of this Project and allow for the retirement of obsolete equipment at Byram Substation. *(Tr. 2, July 25, 2017, pp. 93-94, 111, 147)* Moreover, Eversource fully supports the Town's efforts to pursue energy efficiency measures, and is actively working with the Town. *(Tr. 2, July 25, 2017, pp. 163-164)*

Finally, energy efficiency alone cannot provide the reliability benefits that the Project provides. The evidence in the Record demonstrates that the concerns about Greenwich's electric system require a much more comprehensive strategy than energy efficiency, primarily because of the reliance on a single substation. With the full redundancy that the new Greenwich Substation would provide, combined with Eversource's storm hardening initiatives and distribution component upgrades, the reliability of Greenwich's electric system would be greatly enhanced, thereby enhancing the reliability of the electric power supply of the State as well.

B. Intervenors

1. Parker Stacy

In his pre-filed documents in Docket 461A dated September 21, 2015 [sic], Mr. Stacy advocated a "green approach" in lieu of Eversource's proposed transmission solution, which he characterized as "potentially inefficient, soon-to-be obsolete and very expensive technology to solve a problem that is not imminent." Mr. Stacy also cited the approach taken by Tesla as an example of one of the "new ways of approaching the issue of capacity which have the potential for significant savings." *(Stacy 1)* Mr. Stacy referred specifically to Tesla's Powerpack battery units and Powerwall battery packs, and urged Eversource to contact Tesla to learn about Tesla's battery storage system products. As noted in its August 14, 2017 response to Mr. Stacy's interrogatory, Eversource issued a Request for Information and contacted 19 vendors, including Tesla, in response to a CT DEEP docket requesting demonstration projects for grid side system enhancements to integrate distributed energy resources. Eversource also reached out to two Tesla employees, and a request was sent directly to the Powerwall email mailbox. Despite these three attempted contacts, Tesla did not respond to Eversource. *(Eversource 13, Q-STACY-001)*

Moreover, as Eversource further explained in its interrogatory responses, Mr. Stacy's

reference to "massive savings" is without merit. Eversource calculated that 5 MW of energy storage would require the installation of 2,667 units in Greenwich, with an estimated cost of $18-$22 million; this would not include the replacement of the batteries at the end of their useful life (requiring a similar investment every 10 years) and installation of infrastructure to ensure correct operation of the batteries. Additionally, installation of the Powerwall system would not eliminate the need to install the additional $184 million investment for the remaining 25 MW needed (solar PV, fuel cells, demand response). *(Eversource 9, Q-STACY-001; Eversource 13, Q-STACY-002)*

2. Cecilia Morgan

In her May 16, 2017 comments that are relevant to the Project as currently proposed, Ms. Morgan stated three points:

(a) She was "unconvinced of the need for any project put forth by Eversource at this time, with the exception of minor updates to the system."

(b) She noted her support for the underground route through Bruce Park.

(c) She raised safety concerns with locating the new Greenwich Substation at 290 Railroad Avenue in proximity to Airgas.

As to (a) above, the Record in Dockets 461 and 461A establishes the need for a more substantial approach to the deficiencies in the existing Greenwich electric system, which certainly requires more than "minor" upgrades.

As to (c) above, Eversource has proven that it can build the new Greenwich Substation at 290 Railroad Avenue safely in proximity to Airgas. Further, as Mr. Bowes explained, there is no

applicable code or standard that would preclude the siting of a substation at this location. *(Tr. 2, July 25, 2017, p. 60; Tr. 3, August 29, 2017, pp. 244-245)*

CONCLUSION

The overriding purpose of PUESA is to balance the need for the adequacy and reliability of public utility company services, including electric transmission, with the protection of environmental resources. The proposed Project achieves this purpose. The proposed underground transmission circuit would continue the long-range plan to increase the reliability of electric service in Southwest Connecticut – an area that substantially drives the economy of Connecticut.

The Record reflects Eversource's careful design process. The construction of the new substation on Railroad Avenue and the improvements to Cos Cob Substation would not have significant permanent adverse environmental effects. Moreover, the construction of the entire 115-kV cable system underground, primarily within the roads including those in Bruce Park, would avoid permanent environmental effects. Localized, short-term environmental effects during construction can and would be mitigated.

Further, the Project would provide much-needed reliability for the customers in Greenwich at the lowest cost. As recognized by the Council, Greenwich is "at the farthest extent of Eversource's electric network in southwest Connecticut ... electrically isolated and relies heavily on one bulk substation, the Cos Cob Substation." *(Council Admin. Notice 43, FOF 50)* Customers in Greenwich deserve the same reliable electric service that Eversource provides to its other customers across Connecticut. Without the Project, Eversource cannot provide such reliable electric service without compromising the integrity of its equipment or shedding load.

Eversource has demonstrated that the Project complies with all governing statutes and regulations, as well as the requirements and standards of the Council. In addition, Eversource's submittals in Docket 461A show Eversource's efforts to fully address the concerns that the Council enumerated in its Opinion and Decision and Order in Docket 461 including as to the cost and scope of the Project at that time. In Docket 461A, Eversource has provided a further evaluation of the need to address deficiencies in the Greenwich electric system and how the Project would fulfill that need. Eversource has developed a robust and cost effective solution that meets today's pressing needs for reliability improvements in Greenwich. It also would provide room for some load growth and is flexible enough to accommodate changes in the future should additional loads materialize.

Accordingly, Eversource respectfully requests that the Council grant Eversource a Certificate of Environmental Compatibility and Public Need for the Project, based on the placement of the new Greenwich Substation at 290 Railroad Avenue enclosed with a wall, and the route for the 115-kV cable system originally designated as the Alternate Modified Route, as well as the associated modifications for the Cos Cob Substation. If the Council prefers that the new Greenwich Substation be built at 281 Railroad Avenue, then Eversource is prepared to accept the Council's decision.

Eversource requests that the Council order an underground crossing of I-95 using a pipe-jacking technique, and the crossing of Indian Harbor with a trench using a cofferdam. Finally, Eversource asks that the Council incorporate the statutory findings listed in APPENDIX A, attached hereto, in its decision documents.

Respectfully submitted,

THE CONNECTICUT LIGHT AND
POWER COMPANY DOING BUSINESS AS
EVERSOURCE ENERGY

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NOTICE OF SERVICE

I hereby affirm that a copy of this Post-Hearing Brief of The Connecticut Light and Power Company doing business as Eversource Energy with APPENDIX A and APPENDIX B was sent to each Party on the service list dated July 11, 2017, with method of service to each party listed via e-mail on October 5, 2017.

Dated: October 5, 2017

_____
Marianne Barbino Dubuque, Esq.

APPENDIX A

Statutory Findings

There is a public need for the Greenwich Substation and Line Project (See Eversource's Proposed Findings of Fact PFOF ¶¶ 32-62, 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 ¶¶ 155-221, 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 ¶¶ 155-228, 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 ¶¶ 155-221, and provisions of the Record cited by those Findings.)

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 Admin. Notice 43, FOF ¶¶ 29, 33-36, and provisions of the Record cited by those Findings.) Conn. Gen. Stats. § 16-50p(a)(3)(D)(ii)

The underground circuits 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 comply with the provisions of Conn. Gen. Stats. § 16-50p. (See PFOF ¶¶ 63-68, 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 ¶ 221, and provisions of the Record cited by those Findings.) (Eversource 1, Exh. B, Section D) 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 ¶¶ 76-82, 92-99, 136-153, and provisions of the Record cited by those Findings; see also Opinion, Decision and Order.) Conn. Gen. Stats. § 16-50p(a)(3)(E)

APPENDIX B

Eversource's Authority to Use Roads in Bruce Park for Underground Transmission Cables

In Docket 461, the Town introduced copies of deeds from (a) Robert M. Bruce and (b) Sarah E. Bruce to the Town of Greenwich, for the land comprising Bruce Park, dated August 4, 1908 and October 19, 1909, respectively, and recorded in Volume 123, Pages 162 and 165, respectively, of the Greenwich Land Records. The deeds contain the following restriction, requiring that certain tracts "shall be forever used for the purposes of a public park, to be known as the 'BRUCE MEMORIAL PARK', and shall be devoted to no other use or purpose". *(Council Admin. Notice 43, Town 4, p. 18 and attachment)*

Based on the powers granted by the Connecticut legislature to Eversource's predecessor companies, now vested in Eversource, and the absence of an inconsistency with the existing public use as a park, Eversource has the right to use the roads within Bruce Park for subsurface facilities. The legislative charters or "franchises" of Eversource vest the company with the authority to deliver electricity:

> by wires, cables, conduits, conductors, and pipes, or any other apparatus necessary for the purpose, either overhead or underground, over or under streams, and **through public streets and ways and public grounds**, with power to change, relocate, and alter the same whenever necessary. (*Emphasis added.*)

See, An Act Amending the Charter of The Rocky River Power Company, 1909 Special Acts, Vol. XV, pp. 1093, 1094.

Because of the restriction in the deeds, the Statute of Charitable Uses, Conn. Gen. Stat. § 47-2, would apply to the land within Bruce Park. Section 47-2 provides that "all estates granted...for any... public and charitable use, shall forever remain to the uses to which they were

granted, according to the true intent and meaning of the grantor, and to no other use, whatever." However, under the prior public use doctrine, the appropriation of property devoted to a public use for another public use is not precluded unless the intended new use is so inconsistent with the pre-existing public use as to be "tantamount to [its] destruction." *Hiland v. Ives*, 154 Conn. 683, 689 (1967). Although there is no Connecticut case that is factually similar to this one, one of the leading cases that is widely cited to illustrate this principle is very close on its facts. In *Lake County Parks and Recreation Board v. Indiana-American Water Co.*, 812 N.E.2d 118 (Ct. App. Ind. 2004), the court held that the inconsistent prior public use doctrine did not preclude the acquisition by eminent domain by a water utility of an easement through a park for a water pipeline, because the two uses were fundamentally compatible, notwithstanding that the installation of the pipeline would temporarily disrupt the park use. Accordingly, if Eversource's eminent domain rights to use the park roads for subsurface facilities would not be inconsistent with the park use, then the exercise of its franchise rights for the same purpose would similarly not be inconsistent with the park use.

Notwithstanding Eversource's franchise rights, Eversource's eminent domain rights are also available to acquire necessary easement rights in Bruce Park, including within the roads. Conn. Gen. Stat. § 7-131j, entitled "Taking of land by state or public service company" provides, in pertinent part:

> If the state or any public service company, as defined in section 16-1, takes any land, for highway or other purposes, which is restricted to conservation or recreation use in accordance with an established open space program, whether or not a state grant was awarded under section 7-131d to 7-131k, inclusive, to the municipality in which the land is located, the state or such company shall provide comparable land to be included in such program or shall grant or pay to the municipality sufficient funds to be used for such purpose...

In *Hiland v. Ives*, supra, 154 Conn. at 693, the court held that this statute applies to "all...municipally owned public parks within the state." Accordingly, § 7-131j provides the power of public service companies to condemn parkland, regardless of whether the power company use is inconsistent, so long as the prescribed compensation is paid.

In summarizing the prior public use doctrine, the *Hiland* court also said:

> The manner in which the [park] property was originally acquired, whether by purchase, by eminent domain, or otherwise, has no bearing upon the operation of the general rule.

Id., 154 Conn. at 689. Thus, Eversource's eminent domain power to acquire an easement in the Bruce Park roads is available because:

- As recognized by the prior public use doctrine, the installation of the subsurface cables would not conflict with, and therefore would not change, the park use; and
- In any case, Conn. Gen. Stat. § 7-131(j) provides a specific recognition of Eversource's right to condemn parkland, which trumps the more general application of the Statute of Charitable Uses, Conn. Gen. Stat. § 47-2.

In summary, there are multiple potential authorizations for Eversource to install subsurface transmission lines within the Bruce Park roads. Either it has a franchise right from the Connecticut legislature to use the roads, or it has a statutory eminent domain right to install the facilities in Bruce Park generally, including within the roads.