STATE OF 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 Transmission Circuits Extending
Between The Proposed Substation and The Existing Cos Cob
Substation, Greenwich, Connecticut, and Related Substation
Improvements

DOCKET NO. 461A

May 5, 2017

PETITION OF EVERSOURCE ENERGY FOR RECONSIDERATION OF THE DENIAL OF A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR

THE GREENWICH SUBSTATION AND LINE PROJECT

VOLUME 1

PETITION FOR RECONSIDERATION
PRE-FILED TESTIMONY
EXHIBIT A PROPOSED MODIFIED PROJECT
EXHIBIT B ALTERNATE MODIFIED PROJECT
GLOSSARY OF TERMS

Submitted by:

The Connecticut Light and Power Company doing business as **Eversource Energy**

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Petition for Reconsideration

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I. Petition:

Pursuant to Section 4-181a(b) of the Connecticut General Statutes, the Applicant in the above proceeding, The Connecticut Light and Power Company dba Eversource Energy (Eversource), petitions the Connecticut Siting Council (Council) to reconsider its denial "without prejudice" of a certificate of environmental compatibility and public need (Certificate) for the Greenwich Substation and Line Project (GSLP), and to issue a Certificate for a smaller, significantly less costly modification of that project (Proposed Modified Project) described in *Exhibit A* hereto or, in the alternative, for the Alternate Modified Project described in *Exhibit B* hereto. In contrast to the GSLP as originally presented, the Proposed Modified Project and the Alternate Modified Project are designed to address existing electric service needs in the Town of Greenwich based on a peak load that has already occurred rather than to provide improvements that will be adequate for a thirty to forty-year planning horizon. (See, Docket 461 Ex. 1, Application, pp. ES-2, E-6, E-20, E-22, F-10; Finding of Fact No. 125; Decision and Order, p.3)¹

The Proposed Modified Project fully develops and characterizes the Hybrid Alternative transmission line that was initially identified by the Council in Docket 461.

¹ Because transmission improvements are "lumpy," the resulting design will nevertheless provide some margin for growth beyond current levels; and the capacity of the Proposed Modified Project is expected to be further extended by energy efficiency and conservation measures developed co-operatively by the Town and Eversource.

The Alternate Modified Project was developed in response to requirements established by the Town of Greenwich. The Town's representatives advised Eversource that the Town would support a project that met these requirements, but would adamantly oppose any project that did not.

The Proposed Modified Project and the Alternate Modified Project provide equivalent reliability improvements.

Both the Proposed Modified Project and the Alternate Modified Project are significantly less costly than the GSLP that the Council found to be "too high for Connecticut ratepayers to bear for a localized issue." (Docket 461, Opinion, p. 7) The cost of the Proposed Modified Project is estimated to be approximately \$78 million, and that of the Alternate Modified Project is estimated to be approximately \$100 million, as compared to the \$140 million estimated cost of the GSLP that the Council rejected in its previous decision.

In light of the foregoing changes of circumstance, the Council should approve the Proposed Modified Project or, in the alternative, the Alternate Modified Project.

II. Facts:

On June 26, 2015, Eversource applied to the Council for a Certificate for the GSLP. After extensive, nearly year-long proceedings including multiple evidentiary hearings, on May 12, 2016, the Council, by a 4-2 vote, denied the application "without prejudice." The Council's Finding of Facts, Opinion, and Decision and Order denying the application for the GSLP without prejudice were mailed to the service list on May 13, 2016.

The Council majority concluded that "the current electric system serving Greenwich is antiquated and was designed to serve much lower load demands than exist today" (Opinion, p. 4) and that "the proposed GSLP, or some variation thereof, is necessary for the reliability of the electric power supply of the Town of Greenwich." (Opinion, p. 6). However, the Council declined to issue a Certificate for the GSLP "as presented" because it found the record insufficient as to both the proposed new substation and the proposed transmission lines that would feed the new substation.

The Council's main objection to the GSLP as presented was to its estimated cost of \$140 million, which the Council found had not been justified by the local need to be addressed, which was limited to the Town of Greenwich. (Opinion, p.7). This \$140 million estimated cost consisted of three principal components: the proposed new transmission circuits; modifications and upgrades to the existing Cos Cob Substation; and the proposed new Greenwich Substation. (FOF No. 465). The Council did not comment specifically on the scope and estimated cost of the Cos Cob improvements, but found that the estimated costs of the other two principal components were unjustified. In particular, the Council concluded that the \$52 million estimated cost of the new Greenwich Substation as proposed was excessive because:

- a need for a third potential transmission line position that would enable the substation to meet the load anticipated during a 30- to 40-year planning horizon was not justified (Opinion, p.3); and
- the need for a costly GIS (Gas Insulated Substation) design was not justified. (FOF No. 465) Furthermore, the Council considered that the \$71 million to \$87 million estimated costs of the two proposed relatively short transmission circuits and the alternate transmission solutions identified by the applicant were unjustified. (FOF No. 465; Opinion, pp. 3, 7, 8).

The Council also found the environmental effects of the proposed transmission line route to be greater than justified by the need. (Opinion, pp. 6, 7, 8).

At the same time, the Council found that all of the potential alternative solutions to addressing the clear reliability need in Greenwich had been shown to be "infeasible" (Opinion, p. 6), with the exception of a variation of the GSLP. This variation would include:

- A new, less costly, substation at the applicant's preferred Railroad Avenue location (which the Council found "more suitable" than the alternate site because of its larger parcel size and distance from adjacent residential areas) (Opinion, p 2); and
- The "Hybrid Alternative" transmission line configuration identified by the Council. (Opinion, pp. 6, 7, 8).

Since such a modification of the GSLP as proposed was not "explored and fully vetted" prior to the close of the record, a majority of the Council denied the application "without prejudice." (Opinion pp. 6, 8). As is customary in the case of such denials, the Council's Opinion provided a roadmap for the potential modifications that should be made, and, as set forth in the table below, Eversource has significantly modified its proposal to respond to the Council's concerns.

In addition to the cost and environmental effects of the GSLP as proposed, the Council expressed concern about the failure of the Town of Greenwich and Eversource to work together to find a mutually acceptable solution, particularly one that would not impose an unreasonable economic burden on Connecticut ratepayers as a whole. (Opinion, pp. 3, 7, 8). The Council suggested that the imposition of such a ratepayer burden would be particularly inequitable since the electric consumption of Greenwich customers is disproportionately high, and their participation in energy efficiency programs disproportionately low, as compared to the rest of the state. (*Id.*, p.5). Accordingly, the Council "implore[d] both Eversource and the Town [to] work together to develop a reasonable solution that is acceptable to both parties as well as cost effective for the ratepayers of Connecticut" (*Id.*, p.7); and to do so "in the short term rather than embark on a 'wait and see approach." (*Id.*, p. 9). As summarized in the accompanying testimony of Kenneth Bowes, Eversource heeded this exhortation and engaged in extensive outreach efforts to the Town of Greenwich and has made extensive efforts to accommodate the Town's preferences.

The following table summarizes the concerns that the Council expressed in denying a certificate for the GSLP as originally proposed, and identifies the portion(s) of this Petition and its supporting testimony that addresses each such concern:

Table 1, Council's Concerns Addressed in this Petition

Concern	Reference (Opinion p.)	Information Provided
Demonstrate thorough evaluation of all opportunities to reduce cost based on project scope changes available with	3,4,5,7,8	Ex. A, Sec. A
reduced demand growth.		Pre-filed Testimony of Kenneth Bowes (PFT) dated May 5, 2017
Consider reduction of substation cost by reducing capacity and not using GIS technology.	3	Ex. A, Sec. A
not using dis technology.		PFT response to question on Line 323
Develop and design configuration & route of Hybrid Alternative	6,8	Ex. A, Sec. A, Appendices 4,7
		PFT response to question on Line 263
Provide thorough cost estimate of Hybrid Alternative	7	Ex. A, Sec. A
		PFT response to question on Lines 316,323
Provide analysis of Hybrid Alternative environmental effects, including visual impact of OH structures from adjacent	7,8	Ex. A, Sec. B, C, Appendices 2-3, 5
residential areas, Bruce Park & main arterial roads		PFT response to question on Lines 376, 401, 406
Provide full EMF characterization and Council BMP analysis of Hybrid Alternative	7	Ex. A, Sec. D
Trysha / memative		PFT response to question on Lines 422, 426
Notify residents abutting OH segment of Hybrid Alternative	8	PFT response to question on Line 712, 787
Avoid route through Bruce Park	7,8	Ex. B, Sec. A
		PFT response to question on Lines 441, 518, 592, 602, 616, 787
Work with Town to develop mutually acceptable solution to need	3,7,8	Ex. B
		PFT response to question on Lines 495, 508, 518, 592, 690, 787
Plan to reduce load growth in Greenwich through conservation and load management	8	PFT response to question on Line 690

Exhibit A also provides information concerning two potentially viable route variations to the Proposed Modified Project, as follows:

DOT Variation

This variation would extend the underground portion of the transmission line by approximately 700 feet, to avoid an overhead crossing of Route 95. The extended segment of the line would be installed adjacent to Sound Shore Drive as that street passes underneath the I-95 overpass. This variation was developed at the request of the Connecticut Department of Transportation (ConnDOT).

Force Main Variation

In Finding of Fact No. 301 in Docket 461, the Council found:

The Town maintains a sewer force main located along a portion of the Hybrid Alternative route where it extends south of the MNR (Metro-North Railroad) tracks. The Town is currently under a federal consent decree requiring it to replace and upgrade the force main. If the Hybrid Alternative is approved, the overhead portion to the south of the MNR tracks would require Eversource to construct the line in a way that would allow the Town to replace and upgrade its force main in accordance with the federal consent decree. Eversource would ensure that the Town would be able to access the force main to perform maintenance work.

A section of the existing force main approximately 1,500 feet long, consisting of 24-inch cast iron pipe installed in 1963, would conflict with the proposed overhead transmission line. The Town plans to build a new replacement force main in a location that would not conflict with the line. However, the Town has informed Eversource that it must maintain the discontinued force main as a back-up system. If this is the case, Eversource would consider relocating the conflicting section of the old force main to another position within the MNR right-of-way that would avoid the conflict, which would require the cooperation of ConnDOT and MNR. Eversource has not yet been able to obtain information from the Town that would enable it to confirm that such relocation is technically feasible. Accordingly, to provide for the potential of an irreconcilable conflict between the existing force main and the proposed line, Eversource has designed the Force Main Variation. This variation would entail spanning both the area of conflict and the harbor crossing with an approximately 1,850-foot span. This would eliminate four of the proposed structures, but the two support structures necessary for this span would become approximately 195 feet tall. Because of the height of these structures, lighting may be required by the Federal Aviation Administration. The combination of the increased height and lighting add an incremental visual impact throughout the project area. However, the removal of four proposed structures along the MNR ROW would eliminate creating direct views of those additional structures from several of the residential properties on Circle Drive. Petition Exhibit B provides information with respect to the Alternate Modified Project that is equivalent to the information provided for the Proposed Modified Project, so that the Council will have a full opportunity to evaluate both projects.

The essential characteristics of the Proposed Modified Project and the Alternate Modified Project, as compared to the GSLP as originally proposed, are summarized in *Table P-2*. *Figure P-1* depicts the Original GSLP Preferred Route, the Proposed Modified Project Route and Alternate Modified Project Route.

Table 2, Comparison of Three Project Designs

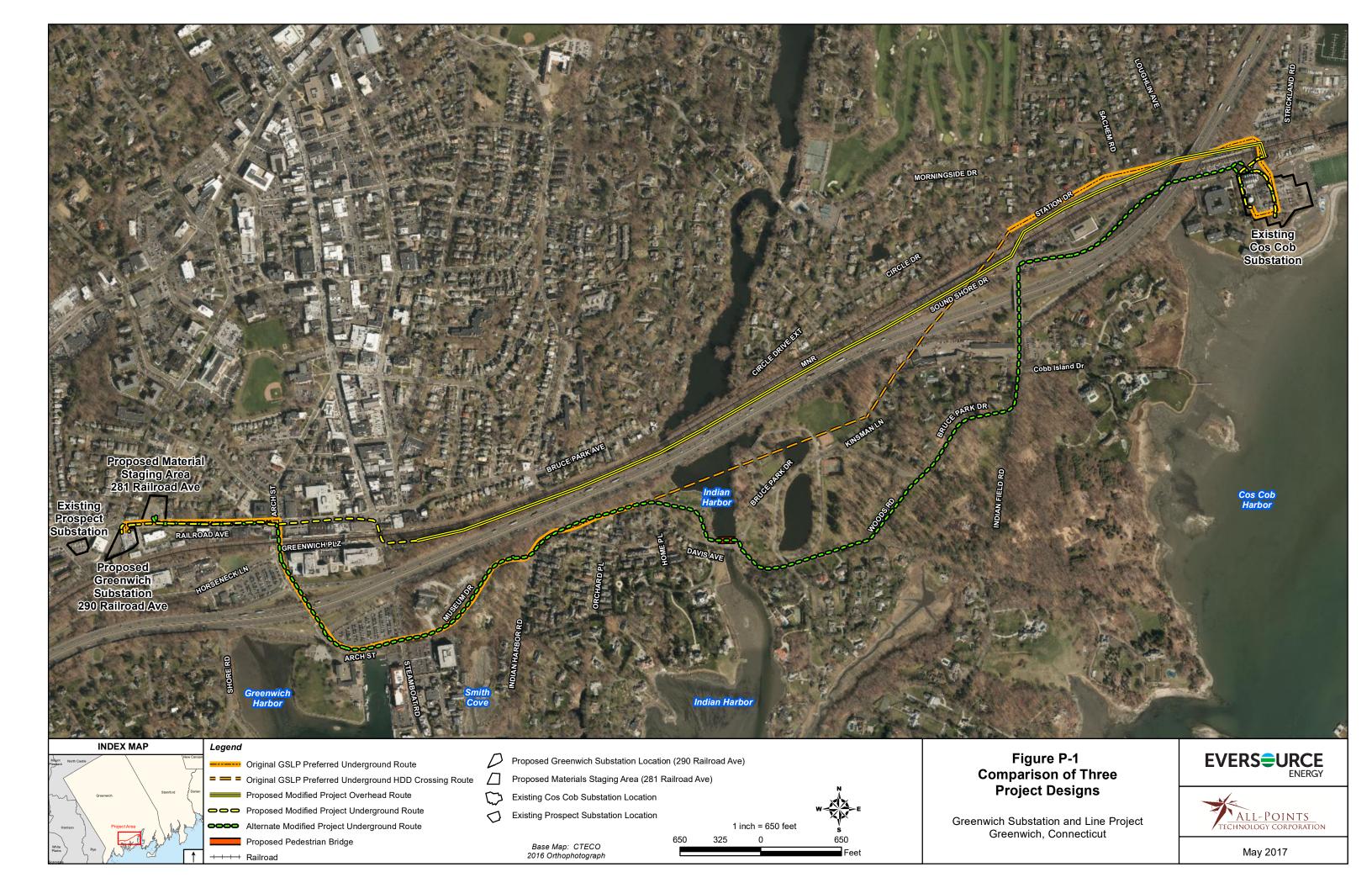
	Original GSLP	Proposed Modified Project	Alternate Modified Project
Summary Description of Project	2.3-mile double-circuit underground transmission line extending between Cos Cob Substation and a new Greenwich Substation at 290 Railroad Avenue (RR Ave)	2.1-mile double-circuit underground/overhead transmission line extending between Cos Cob Substation and a new Greenwich Substation at 290 RR Ave	2.3-mile double-circuit underground transmission line extending between Cos Cob Substation and a new Greenwich Substation at 281 RR Ave
Substations			
Cos Cob	Extend existing 115-kV ring bus with the installation of 2 115-kV circuit breakers, two new underground line terminals, one overhead line terminal and replace one wood monopole line structure with a steel monopole, remove a lattice structure	Same as Original, except for different breaker technology	Same as Proposed
New Greenwich	Gas-Insulated Substation (GIS) at 290 RR Ave housed in a brick veneer building containing 6 115- kV circuit breakers and 3 60-MVA transformers	Air Insulated Substation (AIS) at 290 RR Ave entirely enclosed by a 15-ft. brick veneer wall containing 1 115-kV circuit breaker and 2-60-MVA transformers	Substation equipment same as Proposed but located at 281 RR Ave and entirely enclosed by a structure resembling a multi-unit residential building
Byram	Removal of 2 27.6/13.2-kV transformers and associated 13.2-kV switchgear	Existing equipment to remain	Existing equipment to remain

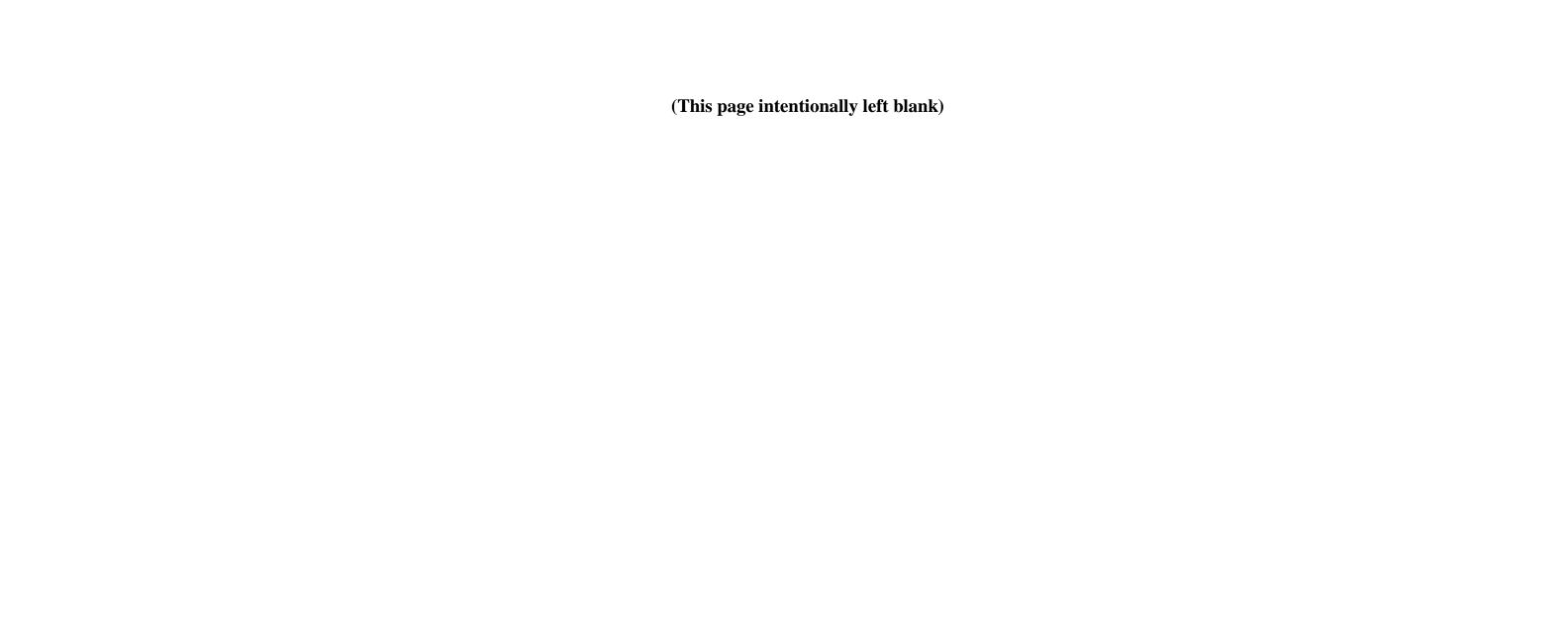
	Original GSLP	Proposed Modified Project	Alternate Modified Project
Prospect	Removal of 4 27.6/13.2-kV transformers and associated 13.2-kV switchgear	Same as Original	Same as Original and Proposed
Transmission Line			
Total Route Length (miles)	2.3	2.1	2.3
Underground			
Length (miles)	2.3	0.6	2.3
Cable Type/Size	3500-kcmil High Pressure Fluid Filled (HPFF) cable. All 3 conductor phases would be contained in 1 8"-pipe	3500-kcmil Cross-linked Polyethylene (XLPE) cable. Each cable (1 conductor phase) would be contained in 8" Polyvinyl chloride (PVC) pipe	Same as Proposed
Number of Vaults	7	None	16 ¹
Number of Trenchless Crossings	2	0	0 ²
Principal Locations & Type of Construction	Beneath public streets (open trench), Bruce Park (Horizontal Directional Drilling-HDD) and Indian Harbor (HDD)	Beneath public streets utilizing open trench construction	Beneath public streets, including streets in Bruce Park utilizing open trench construction
Wetlands	No temporary or permanent effects (wetlands avoided with HDDs)	No temporary or permanent effects	No temporary or permanent effects
Increase of EMF levels near Council BMP identified facilities ³	Negligible	Negligible	Negligible
Overhead			
Length (miles)	0	1.5	0
Conductor Type/Size	N/A	556.5-kcmil Aluminum Conductor Steel Support conductor	N/A
Number of Structures	N/A	22	N/A
Average Structure Height (ft.)	N/A	110	N/A
Principal Locations	N/A	In Railroad corridor	N/A
Wetlands	N/A	Approximately 1,077 ft ² temporary effects No permanent effects	N/A
Vegetation Clearing	Clearing in Bruce Park	Clearing along southern MNR and ConnDOT Highway ROW	No clearing

	Original GSLP	Proposed Modified Project	Alternate Modified Project
Visibility	N/A	Visibility from some residences north of MNR and Bruce Park as depicted in Volume 2, Appendix 5	N/A
Increase of EMF levels near Council BMP identified facilities ³	N/A	Negligible	N/A
Total Estimated Cost	~\$140M	~\$78M	~\$100M

Notes:

- 1. There would be 16 individual vaults, but 8 vault locations along the Alternate Modified Route
- 2. To cross I-95, the transmission line would be attached to the Indian Field Road overpass. In addition, a pedestrian bridge supporting the transmission line would be constructed to cross Indian Harbor.
- 3. The precautionary guidelines of the Council's *EMF Best Management Practices* focus on "residential areas, public or private schools, licensed child day-care facilities, licensed youth camps, or public playgrounds."





III. Legal Authority for Reconsideration:

In relatively rare instances, the Council may determine that an application has not identified the optimum solution to a need, and that the time requirements of the application proceeding will not allow sufficient time for such a solution to be fully developed and considered by the Council. In such a case, the Council may deny the application "without prejudice" – that is without prejudice to the Council's later consideration of a modification of the project that provides additional information sought by the Council or cures deficiencies identified by the Council in the initial proceeding. See, e.g. Docket No. 208, Cross-Sound Cable Company, LLC, (Jan. 3, 2002), (Council initially denied without prejudice application for a Certificate for an undersea HVDC cable connecting Connecticut and Long Island, principally because of the anticipated impacts of crossing shellfish beds, and thereafter approved a Proposed Modified Project that located the cable in and beneath the federal navigation channel, where shellfish cultivation was not allowed); Docket No. 217, CL&P Plumtree to Norwalk 345-kV Line, (July 14, 2003), (Council initially declined to approve a compromise configuration of the line agreed to by Eversource with several municipal parties because it did not have sufficient information before it; on reconsideration, after the information it required was presented, the Council approved that compromise configuration, conditioned on an additional modification specified by the Council); Docket No. 370 MR, Manchester to Meekville Jct. Circuit Separation Project (July 20, 2010) (In proceeding in which Eversource proposed a circuit separation that would have resulted in a 3-terminal 115-kV line, Council identified a potentially superior alternative that would result in a two-terminal 345-kV line and a two-terminal 115-kV line. The Council denied the application without prejudice and then, on reconsideration, approved the alternate configuration after evaluating additional evidence with respect to its design, reliability, cost, and EMF characteristics.)

The jurisdictional authority for reconsideration in this instance is provided by Conn. Gen. Stats. Sec. 4-181a(b):

On a showing of changed conditions, the agency may reverse or modify the final decision, at any time, at the request of any person or on the agency's own motion...

As set forth in the preceding paragraphs, numerous conditions have been changed since the Council's denial without prejudice, including the capacity, design, and cost of the proposed project. Significantly, all of these conditions have been changed in compliance with direction from the Council in its initial Opinion of denial without prejudice.

Proceeding by a reopening of the Docket for reconsideration of additional evidence in light of changed conditions is an efficient procedure that eliminates the duplication and delay that would be required for a wholly new application. On reconsideration, the Council can "pick up where it left off" and

use all of the Findings of Fact and conclusions embodied in its Opinion that do not require updating in response to the new information.

IV. Relief Requested:

Eversource respectfully requests that the Council: (1) open Docket 461 for the limited purpose of reconsidering Eversource's application for a Certificate of Environmental Compatibility and Public Need; (2) promptly consider the new information presented in this petition and any other additional information that the Council may deem relevant and appropriate; and (3) issue a Certificate for the Proposed Modified Project or, in the alternative, the Alternate Modified Project, whichever the Council determines to strike the better balance between reliability, cost, and environmental effects, and thus to be more consistent with the requirements of the Public Utility Environmental Standards Act, Conn. Gen. Stats. Sec. 16-50g, et seq.

Respectfully submitted,

THE CONNECTICUT LIGHT AND POWER COMPANY dba EVERSOURCE ENERGY

Bv:

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Certification

This is to certify that a paper copy and a digital copy on compact disc of the foregoing Petition for Reconsideration, together with the attached supporting testimony and exhibits, has been served on this 5th day of May 2017 by Federal Express upon all parties and intervenors as referenced in the Connecticut Siting Council's Service List dated February 1, 2016, as stated below. Because of the size of this document, service by e-mail was not attempted.

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