STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

DOCKET NO. 468 - The Connecticut Light & Power Company d/b/a Eversource Energy application for a Certificate of Environmental Compatibility and Public Need for the Southwest Connecticut Reliability Project that traverses the municipalities of Bethel, Danbury, and Brookfield, which consists of (a) construction, maintenance and operation of a new 115-kV overhead electric transmission line entirely within existing Eversource right-of-way and associated facilities extending approximately 3.4 miles between Eversource's existing Plumtree Substation in the Town of Bethel to its existing Brookfield Junction in the Town of Brookfield; (b) reconfiguration of two existing 115-kV double-circuit electric transmission lines at Eversource's existing Stony Hill Substation in the Town of Brookfield; and (c) related substation modifications	**DOCKET NO. 468** **October 24, 2016**

POST-HEARING BRIEF OF EVERSOURCE ENERGY

INTRODUCTION AND SUMMARY

The Southwest Connecticut Reliability Project (the "Project") is the product of extensive planning studies. The Independent System Operator, New England ("ISO-NE") issued a technical approval of the improvements proposed in this Project as part of a greater study conducted a Working Group led by ISO-NE that examined reliability issues in the Housatonic Valley-Norwalk-Plumtree sub-area ("Housatonic Valley sub-area") where the Project is located, along with issues in four other contiguous electrical sub-areas in Southwest Connecticut. The planning studies demonstrated that a new source into the Housatonic Valley sub-area was needed. The Project, which includes the construction of a new, approximately 3.4-mile 115-kilovolt ("kV") overhead electric transmission line between Plumtree Substation in Bethel and Brookfield Junction in Brookfield, the reconfiguration of certain existing 115-kV interconnections at Stony Hill Substation in Brookfield, and minor modifications at Plumtree and Stony Hill substations, would bring a new source into the Housatonic Valley sub-area. The Project, combined with other system improvements in the sub-area that will be completed before or contemporaneous with the Project's completion, will bring the electric supply system in the Housatonic Valley sub-area into compliance with applicable regional and national reliability standards and criteria by eliminating potential thermal overloads and voltage violations identified in the planning studies.

No one has questioned the need for this Project, the Proposed Route, or the reasonableness of the estimated cost; in fact, there were no parties or intervenors in this proceeding other than The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource" or the "Applicant"). Moreover, there is no practical

and feasible alternative that would address the reliability problems that this Project resolves, and extensive analysis has shown that the proposed Project is the most cost-effective solution.

The new overhead 115-kV line would be constructed entirely within the existing 175-to-225-foot-wide right-of-way ("ROW") or on Eversource-owned property. Moreover, both the existing ROW and the substation sites have been devoted to utility use for decades. The Proposed Route traverses or borders a variety of land uses. The new 115-kV line would be constructed alongside two existing overhead transmission lines that are constructed on taller structures than the proposed new structures, so that the incremental visual impact of the Project will be relatively minimal. No new substations will be required; all of the necessary terminal improvements would be made at existing substations. Eversource has taken and would continue to take care to minimize effects on the identified water resources along the route, including but not limited to the significant wetlands complex in the vicinity of Plumtree Substation. Clearing and vegetation maintenance along the ROW for the new line would increase scrub/shrub "open field" habitat, which has been diminishing in the region, with significant beneficial effects for wildlife diversity.

Because Eversource has taken full advantage of available "no-cost" EMF reduction strategies, magnetic field levels at the edges of the existing ROW would not substantially increase, and would decrease in some locations, compared to existing conditions.

The new 115-kV line and the modifications to the 115-kV interconnections at Stony Hill Substation would be constructed entirely overhead, which is the most cost-

effective, environmentally compatible configuration, and is consistent with all of the standards that this Council must apply in ruling on transmission line applications.

The following sections of this brief discuss the foregoing points in more detail.

STATEMENT OF THIS PROCEEDING

Eversource has applied to the Connecticut Siting Council ("Council") for a Certificate of Environmental Compatibility and Public Need for the Project. As proposed, the Project would consist of a new, approximately 3.4-mile 115-kilovolt (kV) overhead electric transmission line from Eversource's existing Plumtree Substation in the Town of Bethel, through the eastern portion of the City of Danbury, to Brookfield Junction in the Town of Brookfield. The new 115-kV line will be connected to Plumtree Substation within the existing substation fenceline, and minor modifications will be made at that substation. Eversource also proposes to reconfigure existing 115-kV line connections to its existing Stony Hill Substation, also located in the Town of Brookfield, and to make further modifications at the substation.

Use of Eversource's existing ROWs and fee-owned properties, where linear utility uses are already established, is consistent with the Federal Energy Regulatory Commission's ("FERC") "Guidelines for the Protection of Natural, Historic, Scenic, and Recreational Values in the Design and Location of Rights-of-Way and Transmission Facilities," as required by Conn. Gen. Stat. § 16-50p(a)(3)(D). *(Council Admin. Notice Item 7)*

The Project also calls for reconfiguration of the existing three-terminal 1770 Line that extends into Plumtree Substation from Bates Rock Substation (in the Town of Southbury) into separate two-terminal lines, one between Plumtree and Stony Hill substations and the other between Stony Hill and Bates Rock substations. After this

reconfiguration, the 1770 Line would be re-numbered (although no physical changes would be made to the line other than at Stony Hill Substation). In addition, Eversource would reconfigure the existing 1887 Line into a three-terminal line between Plumtree, West Brookfield, and Shepaug substations. The existing 1887 Line connection to Stony Hill Substation would be eliminated. Thus, after the proposed reconfiguration, the 1887 Line would bypass Stony Hill Substation. (Eversource 1, Vol. 1, pp. 2-16 – 2-19)

Plumtree Substation occupies approximately 4.6 acres of a 13.8-acre Eversource property that is otherwise characterized as predominantly forested. Five 115-kV and two 345-kV transmission lines presently connect to the substation. At Plumtree Substation, the proposed 115-kV transmission line would connect to a spare position, which currently includes equipment and structures to accommodate the new line. The new 115-kV line would be terminated on an existing steel A-frame structure and would tie into the substation between two existing 115-kV circuit breakers. Terminal equipment, including the line disconnect switch and wave trap, would be upgraded to meet the new 115-kV line capacity requirements. In addition, new protection, control, and indication equipment would be installed.

Stony Hill Substation is situated adjacent to the existing 115-kV 1770 / 1887 line ROW, approximately 0.8 mile east of Brookfield Junction. The existing, fenced substation occupies approximately 1.7 acres of an 18.8-acre Eversource property that is otherwise characterized as predominantly forested. At Stony Hill, in addition to the modifications to the interconnections to the 1770 Line and the 1887 Line described above, an existing 115-kV capacitor bank within the substation would be connected to a different bus.

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); and
- Overhead construction of the new 115-kV transmission line from Plumtree Substation to Brookfield Junction is consistent with the Council's EMF Best Management Practices and with statutory requirements (Section III).

Appendix A to this Brief lists conclusory findings that the Council is directed to make by its enabling legislation in order to issue a certificate, and provides citations to the relevant paragraphs of Eversource's Proposed Findings of Fact that support those findings.

I. THERE IS A PUBLIC NEED FOR THE PROJECT FOR REGIONAL RELIABILITY

A. The Project Is Needed To Ensure Reliable Electric Service To The Housatonic Valley Sub-area (Conn. Gen. Stat. § 16-50p(a)(3)(A))

1. An ISO-NE Working Group Determined That The Electric System for the Housatonic Valley Sub-area Is in Violation of Mandatory Reliability Standards, and the Project Would Address These Criteria Violations

The Housatonic Valley sub-area extends from Carmel Hill Substation in the Town of Woodbury west to Bulls Bridge Substation in the Town of New Milford, and south to Plumtree Substation in the Town of Bethel and Norwalk Substation in the City of Norwalk. This Project is the product of extensive, multi-year planning studies that examined reliability issues in the Housatonic Valley sub-area, as well as adjoining portions of Southwest Connecticut (SWCT).

In 2012, ISO-NE formed a Working Group consisting of transmission planners from ISO-NE, Northeast Utilities Service Company (now Eversource Energy Service Company), and The United Illuminating Company to prepare a "10-year look ahead"

evaluating the reliability of the transmission system serving the SWCT area for the projected system conditions in 2022. For purposes of the study, the Working Group divided SWCT into five contiguous sub-areas (Housatonic Valley; Frost Bridge-Naugatuck Valley; Bridgeport; New Haven-Southington; and Glenbrook-Stamford), extending from Southington, Connecticut south to Long Island Sound and west to the New York state border. ISO-NE published the results of these studies in the *SWCT Connecticut Area Transmission 2022 Needs Assessment (SWCT Needs Report)* and the *SWCT Connecticut Area Transmission 2022 Solutions Study Report (SWCT Solutions Report). (Eversource 1, Vol. 1, pp. 2-9 – 2-10; PFOF ¶¶ 28 – 29, 31)*

The planning studies conducted by the Working Group showed that there were violations of both thermal and voltage criteria on the 115-kV system in the Housatonic Valley sub-area. Specifically, the studies demonstrated that the electric system in the Housatonic Valley sub-area load pocket is subject to overloads when the system attempts to serve peak load under contingent conditions. All of the criteria violations for the Housatonic Valley sub-area were related to serving load *within* the pocket, as opposed to power transferring through the sub-area to serve another part of the system. The Working Group determined that, when contingencies removed one or more transmission supplies to this load pocket, the remaining transmission connections and local generation in the Housatonic Valley sub-area were insufficient to serve the load, resulting in thermal overloads and severe low voltage conditions.[1] *(Eversource 1, Vol. 1, p. 2-12; PFOF ¶¶ 35 – 36)*

[1] This was not the first time that transmission system planners had identified a need for improvements to the 115-kV system in this region. More than a decade ago, planning studies that led to the construction of the 345-kV loop into SWCT had identified thermal overloads on the 115-kV system that would remain after the loop was completed. In fact, the Siting Council's findings for the Middletown-Norwalk 345-kV Project in 2005 specifically noted that overloads on the 115-kV system identified in planning studies would continue to exist after construction of that project, and would have to be addressed locally through

As identified in the planning studies, the Housatonic Valley sub-area had three transmission elements with N-1 thermal violations and six 115-kV Pool Transmission Facility ("PTF") buses with N-1 low-voltage violations, as well as two non-PTF buses with N-1 low-voltage violations. Under N-1-1 conditions, there were eight elements with thermal violations, twelve 115-kV PTF buses with low-voltage violations, and four non-PTF buses with low-voltage violations. The contingencies that lead to the criteria violations are typically loss of import paths into the sub-area; the worst case violations, under various dispatches, arise after the loss of the transmission path that connects Plumtree Substation to Stony Hill Substation. *(Eversource 1, Vol. 1, p. 2-14; PFOF ¶¶ 37 – 38)*

Although the study year modelled in the *SWCT Needs Report* was 2022, the study showed that the improvements required to meet the identified needs should be constructed as soon as possible. ISO-NE calculates a "year of need" for system improvements by estimating when the "critical load level" ("CLL") for which improvements are needed will be reached. The CLL is the demand level at which criteria violations are anticipated to occur. Above this load level, the system needs to be expanded to continue to reliably support the demand. The *SWCT Needs Report* found that the year of need for the Housatonic Valley improvements was 2013, because the Connecticut net load forecast for 2013 was 7,776 MW (actual 2013 Connecticut peak load was 7,128 MW), whereas thermal violations began to occur at a 4,163 MW net load and low voltage violations began to occur at a 5,218 MW net load. *(Eversource 1, Vol. 1, p. 2-15; PFOF ¶¶ 39 – 40)*

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substation or transmission line upgrades to be constructed in the future. *(Eversource Admin. Notice Item 22,* Findings of Fact in Docket No. 272, Finding #65, pp. 7-8; *Eversource 1, Vol. 1, p. 2-8)*

To address the thermal and voltage violations that occurred following the loss of one or more transmission sources that supply the Housatonic Valley sub-area load pocket, the Working Group determined that a new supply source into the sub-area was needed. The proposed 115-kV line would bring in a new transmission source to serve the Housatonic Valley sub-area. The new 115-kV line would be an extension of the 1887 Line, so that when this Project is completed, the 1887 Line will be a three-terminal line connecting Plumtree Substation, West Brookfield Substation, and Shepaug Substation. This new 115-kV line, which would be available to serve the reliability needs of all customers in the load pocket, including those in municipalities of Bethel, Danbury, and Brookfield, would provide: (1) an additional system element to share the load that is automatically redistributed upon the failure of other system elements; and (2) a source to help maintain continuity of supply to the load from external sources in such an event. (*Eversource 1, Vol. 1, p. 2-16; PFOF ¶ 43*)

The Project also includes the reconfiguration of 115-kV connections at Stony Hill Substation. The reconfiguration of these connections at Stony Hill Substation is part of a cost effective reliability solution in that this work would eliminate the need to perform other system upgrades that would otherwise be necessary. Specifically, the reconfiguration work will avoid the need to reconductor other existing 115-kV transmission lines and install additional reactive compensation in the local area. (*Eversource 2, Q-CSC-007; Eversource 4, p. 10; PFOF ¶ 44*) The work proposed at Stony Hill Substation to reconfigure one of the capacitor banks is needed to improve post-contingency voltage in the area. (*Eversource 1, Vol. 1, pp. 2-20; PFOF ¶ 46)*

There are other system improvements in the Housatonic Valley sub-area referenced in the *SWCT Solutions Report* that are being implemented separately from the

Project. All of these other improvements would be completed prior to or contemporaneous with the in-service date of the Project, and they are the subject of separate filings with the Siting Council in the form of petitions for declaratory rulings or notices of exempt modifications that are either currently pending before the Council or will be filed in the near future. The Southwest Connecticut Reliability Project – i.e., the subject of this Application - provides a reliability benefit that is independent from the benefits of the other components of the Housatonic Valley improvements in the *ISO-NE Solutions Report*, and therefore this Project would proceed even without the benefit of these other projects. (*Eversource 4, p. 16; Transcript 1, September 22, 2016, 3:00 p.m., pp. 37-38; PFOF ¶ 45)*

2. There Has Been No Opposition to the Need for This Project

There are no other parties or intervenors in this proceeding, and there is simply no challenge to the demonstrated need for the Project. (*Record*)

3. There Are No Practical System Alternatives That Would Properly Resolve the Reliability Problems Addressed By The Project

a. No Action

Taking no action would fail to eliminate violations of national and regional liability standards and criteria, and would be inconsistent with Eversource's obligation to provide reliable electric service. (*Eversource 1, Vol. 1, p. 10-1; PFOF ¶ 52)*

b. Transmission Alternatives

Although transmission alternatives were considered as part of the Working Group's studies, those alternatives were eliminated in favor of the solution components that make up this Project (and the other components of the Housatonic Valley sub-area

projects identified in the *ISO-NE Solutions* Report) after a comparison of costs and environmental and social effects.

The Working Group considered three other transmission alternatives: (1) a "local" alternative that – like the proposed Project – involved only upgrades in the Housatonic Valley sub-area; and (2) two "global" alternatives that addressed the reliability issues in both the Housatonic Valley sub-area and the Frost Bridge-Naugatuck sub-area through combined solutions. The Working Group compared the Project and these three alternatives based on system performance, estimated cost, and other key factors such as ease of permitting, constructability, and expandability. The proposed Project (and the related solution components in the Housatonic Valley sub-area described in the *ISO-NE Solutions Report*) was chosen as the preferred solution for the Housatonic Valley sub-area because it:

(1) Resolves all thermal and voltage criteria violations in the 10-year planning horizon;

(2) Provides the least-cost alternative to resolve the criteria violations in the sub-area; and

(3) Minimizes environmental and social impacts by focusing the 115-kV transmission upgrades within existing ROWs and on or in the vicinity of existing substations.

(Eversource 1, Vol. 1, pp. 10-1 – 10-9; Eversource 4, p. 23; PFOF ¶¶ 53 – 54, 59)

c. Non-Transmission System Alternatives

There are no practical non-transmission alternatives to the Project. In some cases, electric reliability needs can be met by means other than improvements to the transmission system. For instance, where the reliability problem is simply a lack of sufficient generation resources to reliably serve the load in a defined area, it may be possible to meet the reliability need through building new generation in the area, reducing demand in the area, or through some combination of these strategies.

In other cases, the only practical means of resolving transmission reliability criteria violations is through improvements to those transmission systems. This is such a case, as established by an expert report prepared by Julia Frayer of London Economics International, LLC (LEI).

LEI's detailed analysis, presented in its March 2016 report *(See Eversource 1, Vol. 4, Ex. 4)* strongly supports the conclusion that there is no practical and cost-effective non-transmission alternative to the Project. LEI carefully evaluated energy injections through supply-side solutions, load reductions and combinations of the two, but was unable to find a technically feasible, economically practical non-transmission alternative that solved the thermal and voltage violations identified by ISO-NE in the Housatonic Valley sub-area. Although LEI was able to identify a potential technically feasible non-transmission alternative, the cost for implementing the alternative would be approximately 25 times greater than the Project. Challenges regarding implementation of the non-transmission alternative were also identified in the report, including acquisition of sufficient land for construction, timing and expense of the siting process, and construction of the requisite fuel supply infrastructure. These challenges are not present with the transmission solution that the Project would provide. *(Eversource 1, Vol. 4, Ex. 4; PFOF ¶¶ 61, 63 – 65, 68 – 71)*

In summary, there are no non-transmission alternatives, either singularly or in the aggregate, that would meet the identified needs at a reasonable cost.

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

In order to grant a certificate for an electric transmission line, the Council must find that "the facility 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. Stats. § 16-50p(a)(3)(D)*) It is clear that the Project satisfies this requirement.

The proposed Project is an outgrowth of the planning studies that led to the completion of the major projects considered by the Council in its Docket 217 (Bethel - Norwalk 345-kV line); Docket 272 (Middletown - Norwalk 345-kV line); and Docket 292 (Glenbrook - Norwalk 115-kV cables). The studies identified – and the Council, in its approval of these dockets, specifically noted – the existence of local reliability issues that would remain even after the completion of a 345-kV loop serving SWCT. Ultimately, the load serving needs of all five of the sub-areas of SWCT (Housatonic Valley; Frost Bridge-Naugatuck Valley; Bridgeport; New Haven-Southington; and Glenbrook-Stamford) were examined together in the *SWCT Needs Report.* The grouping of these needs into a single study was to ensure that coordinated and cost-efficient solutions to the identified needs in SWCT would be developed. In parallel, ISO-NE also examined transmission needs in the Greater Hartford Central Connecticut area remaining after the completion of the NEEWS projects considered by the Council in its Docket No. 370 (GSRP) and Docket No. 424 (Interstate). The SWCT and Greater Hartford studies were coordinated so as to avoid redundant solutions. Together, the SWCT and Greater Hartford Central Connecticut studies identify coordinated solutions for Connecticut's transmission system that will comply with applicable reliability requirements through 2022, and that form a part of the ISO-NE Regional System Plan for all of New England. (*Eversource 1, Vol. 1, pp. 2-20 – 2-21; Applicant Admin. Notice 21, 22, 23; PFOF ¶¶ 25 – 27, 47*)

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

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

In designing a solution for the Housatonic Valley sub-area, the Working Group identified the electrical solution option that offered the most system benefit at the lowest cost, and with the fewest adverse environmental effects. *(Eversource 1, Vol. 4, Ex. 2)* These studies leave no doubt that a new 115-kV transmission line from Plumtree Substation to Brookfield Junction, with the attendant modifications at Stony Hill and Plumtree substations outlined in this Application, is the preferred electrical solution. The Proposed Route for the new 115-kV line, which is located entirely within an existing Eversource ROW, and the planned transmission line configuration, which will be entirely overhead, is clearly the most cost-effective, least environmentally damaging practical alternative. *(See generally, Eversource 1, Vol. 1; PFOF ¶¶ 76, 89)*

Because the Project has been designed cost effectively in accordance with good engineering practice, and will yield regional benefit, it is expected that the costs of the Project will be regionalized. The total estimated cost of the Project is $24.4 million. Assuming all costs are so regionalized, Connecticut's electricity customers would pay approximately 25% of the Project's costs. (Eversource 4, pp. 16-17; PFOF *¶¶ 48 – 49*)

2. The Overhead Portions of the Project Are Cost-Effective And the Most Appropriate Alternative Based on a Life-Cycle Cost Analysis of the Facility and Underground Alternatives

Section 16-50p(a)(3)(D) of the General Statutes requires that when the Council grants a certificate, it specify "what part, if any, of the facility shall be located overhead… and… that the overhead portions, if any, of the facility are cost-effective and

the most appropriate alternative based on a life-cycle cost analysis of the facility and underground alternatives to such facility...." Accordingly, a transmission line applicant and the Council must assess the practicality and life-cycle cost of an all-underground alternative to a proposed overhead transmission line. The development of the new 115-kV line in an all-underground or hybrid variation of an underground line configuration between Plumtree Substation and Brookfield Junction would not be cost-effective or preferable to the proposed, all-overhead line configuration.

Eversource identified and evaluated several potential underground 115-kV cable - system alignments using a combination of existing road and railroad ROWs between Plumtree Substation and Brookfield Junction, including an all-underground alternative. Eversource concluded that each of these alignments would be (i) significantly more costly, (ii) longer; (iii) would include the need to acquire new ROWs; and (iv) would provide no significant advantages over the Proposed Route in terms of cost, constructability, or social/environmental impacts, with the exception of the all-underground route which would avoid impacts to the water resource impacts near Plumtree Substation (but at a substantial cost). *(Eversource 1, Vol. 1, pp. 11-19 – 11-32; PFOF ¶¶ 77 – 78)*

The all-underground route alternative would pose significant challenges with constructability issues, related to the route's alignment along narrow and winding local roads. In addition, the cable would have to be installed beneath I-84 using horizontal directional drilling, which would be costly and require staging areas of several acres on either side of the crossing. (Eversource 1, Vol. 1, pp. 11-29 – 11-30)

The estimated capital cost of the Project is approximately $24.4 million ($18.9 million for the new line and $5.5 million for substation modifications). For the 3.46-mile

all-underground alternative, the initial capital cost of the 115-kV underground line (excluding substation modifications) is estimated to be approximately $51.8 million for 115-kV high-pressure fluid-filled ("HPFF") cable and approximately $76.0 million for 115-kV cross-linked polyethylene ("XLPE") cable[2], as compared to $18.9 million for the new 115-kV overhead line. The differences in life-cycle costs are even greater. The life-cycle cost for the proposed overhead 115-kV line is approximately $32.3 million, while life cycle costs for the all-underground 115-kV alternative is estimated to be approximately $88.0 million for 115-kV HPFF cable and approximately $110.1 million for 115-kV XLPE cable.[3] *(Eversource 1, Vol. 1, p. 3-17; PFOF ¶¶ 79 – 80)*

These cost differentials between the Project and the all-underground alternative become much greater when the cost to Connecticut ratepayers is considered, because the excess cost of underground line construction would likely be "localized", rather than shared by the entire New England region. The term "localized" means that Connecticut ratepayers would pay 100% of those incremental costs. Only costs determined by ISO-NE to be eligible for regionalization according to specific tariff provisions will be included in regional rates, and there is a significant likelihood that the incremental costs associated with underground construction would be deemed ineligible for regionalization. *(Eversource Admin. Notice 12)*

The vast cost differences preclude a finding that a predominantly all-underground line would be more cost-effective, on a life-cycle cost basis, than a predominantly all-overhead line, or that it would be a more appropriate alternative than an overhead line.

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[2] These estimates are based on the cost/mile figures presented in Table 2-5 of the Council's 2012 *Investigation into the Life-Cycle Costs of Electric Transmission Lines. (Admin. Notice 20, p. 2-6)*

[3] These estimates are based on the life cycle cost/mile figures presented in Table 9-2 of the Council's 2012 *Investigation into the Life-Cycle Costs of Electric Transmission Lines. (Admin. Notice 20, p. 9-4)*

II. THE LOCALIZED AND SHORT-TERM ADVERSE ENVIRONMENTAL EFFECTS AND POLICY CONFLICTS OF THE PROPOSED OVERHEAD TRANSMISSION LINE DO NOT JUSTIFY DENIAL OF THE APPLICATION OR AN ORDER THAT THE LINE BE INSTALLED UNDERGROUND (Conn. Gen. Stat. § 16-50p(a)(3)(B)&(C))

Section 16-50p(a)(3)(B) of the General Statutes requires the Council to find, 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." Electric and magnetic fields, and the visual or scenic implications of structure designs that reduce them, will be discussed in following sections of this Brief. With respect to the other listed environmental concerns, Eversource has provided extensive evidence to demonstrate that the Project's adverse effects on environmental resources will be, for the most part, short term and localized; that Eversource will exercise great care to mitigate those effects; and that the Project would have significant long-term beneficial environmental effects. This evidence is summarized in detail in Eversource's Proposed Findings of Fact, *PFOF ¶¶ 141 – 219,* and will be summarized at a high level here.

A. Substation Modifications at Plumtree and Stony Hill Substations & Reconfiguration of 115-kV Connections at Stony Hill Substation

The proposed modifications to Plumtree Substation, as required to interconnect the new 115-kV transmission line, would be accomplished entirely within Eversource's existing, developed, substation yard and, thus, would have no significant adverse effects

on environmental resources or scenic, historic, or recreational values. Similarly, the modifications to Stony Hill Substation and associated 115-kV line reconfigurations would be performed in upland areas either within the substation yard or along Eversource's existing ROW situated directly adjacent to the substation. These modifications would not affect any water, cultural, or recreational resources and, with the exception of less than 0.02 acre of trees that would have to be removed to accommodate the construction of the 115-kV line reconfigurations, would not affect vegetation or wildlife. Overall, the Project modifications would result in only minor changes in the appearance of the substations. *(Eversource 1, Vol. 1, pp. 6-36 – 6-38; Eversource 6, pp. 37 – 39; PFOF ¶¶ 146, 149, 200)*

B. Construction and Operation of the New 115-kV Line

The new 3.4-mile 115-kV transmission line would be aligned entirely within a long-established Eversource ROW in the municipalities of Bethel, Danbury, and Brookfield. Approximately 26% of the ROW traverses Eversource fee-owned property. *(Eversource 1, Vol. 1, p. 1-1; Eversource 6, p. 14)*

The ROW is presently occupied by Eversource's overhead 321/1770 lines, supported together on monopole structures that are typically 150 feet in height. After traversing a large wetland complex near Plumtree Substation, the ROW extends through predominantly urban and suburban areas. *(Eversource 1, Vol. 1, pp. ES-5, ES-11; Eversource 6, p. 15)*

Eversource has designed the Project to avoid, minimize, or mitigate adverse effects to environmental resources. For example, the new 115-kV line would be supported on monopoles that would be approximately 15-55 feet shorter than the existing

321/1770 line structures, thus resulting in a minor effect on the visual environment. *(Eversource 6, p. 22)*

The construction and operation of the transmission line will have negligible effects on topography and geology, and only minor, short-term, and highly localized impacts on soils. These effects would primarily occur in the vicinity of work sites along the ROW or where earth-moving activities, if any, are required for off-ROW Project support areas, such as off-ROW access roads and staging areas. To avoid or minimize the potential for erosion and sedimentation as a result of construction activities, Eversource would perform activities involving soil disturbance in accordance with Company standards and best management practices, and state requirements, and would develop and implement a stormwater pollution control plan pursuant to the Connecticut Department of Energy and Environmental Protection (CT DEEP's) *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. (Eversource 1, Vol. 1, pp. 6-2 – 6-5; Eversource 6, pp. 24 – 25; PFOF ¶ 148)*

The construction and operation of the new 115-kV transmission line would have minimal effects on water resources. The new line would span seven watercourses and an un-named pond, all of which are presently spanned by the 321/1770 lines. To construct the new line, temporary (timber mat, or equivalent) access would be required only across two of the seven watercourses: East Swamp Brook and a stormwater channel, both in Bethel. Eversource would implement mitigation measures to minimize the potential effects of construction activities in or near watercourses. *(Eversource 1, Vol. 1, pp. 6-8 – 6-9; Eversource 6, p. 27; PFOF ¶¶ 151, 155)*

In addition, the ROW crosses the extensive 100-year floodplain and floodway, as designated by the Federal Emergency Management Agency (FEMA), associated with

East Swamp and Limekiln brooks. Twelve new 115-kV transmission line structures would be located within this 100-year floodplain; five of these structures would be within the FEMA-designated floodway. Based on the results of hydrologic/hydraulic modeling analyses, the proposed new structures would have only minimal adverse effects on flood storage capacity within the floodplain and floodway, causing a maximum increase in the flood elevation of 0.002 feet. Eversource would coordinate with CT DEEP to identify floodplain / floodway mitigation / compensation measures, as appropriate. *(Eversource 1, Vol. 1, pp. 6-14 – 6-15; Eversource 6, pp. 27 – 28; PFOF ¶¶ 166 – 169)*

No vernal pools would be affected by the transmission line construction or operation. Of the six wetlands within the ROW, one is a large wetland complex associated with East Swamp and Limekiln brooks that surrounds the southernmost 1.3 miles of the ROW and thus cannot be avoided. Eleven new transmission line structures would be placed in this wetland, resulting in a minor amount of permanent fill (approximately 0.03 acre) that would not affect the principal functions and values of the wetland. Other minor impacts to wetlands would result from the placement of timber mats to create temporary construction access roads and work pads (affecting about 4.5 acres) and the conversion of forested wetland to scrub-shrub or emergent marsh vegetation (approximately 2.6 acres). To avoid or minimize adverse effects to wetlands, Eversource would require construction activities to conform to the Council's certificate and federal and state permits and to the various mitigation measures identified by the Company. *(Eversource 1, Vol. 1, pp. 4-25, 6-9 – 6-12; Eversource 6, pp. 25 – 26, 30; PFOF ¶¶ 159 – 164)*

Within the ROW, approximately 8.4 acres of forested vegetation (5.8 acres of upland and 2.6 acres of wetland) would be removed for the construction of the new 115-

kV transmission line and thereafter converted to shrubland or other low-growth habitat, consistent with utility industry standards. For the Project, vegetation clearing would be in accordance with Eversource's standards, which are based on the North American Electric Reliability Corporation ("NERC") requirements and the National Electrical Safety Code, as enhanced in response to FERC and NERC recommendations subsequent to the vegetation-related transmission line outages that occurred as a result of the October 2011 snow storm. *(Eversource 1, Vol. 1, pp. 6-16 – 6-19; Eversource 2, Q-CSC-004; Eversource 6, pp. 28 – 29; PFOF ¶¶ 172, 210 – 213)*

Accordingly, for the construction and operation of the proposed 115-kV transmission line, an additional 25 feet of vegetation (located along the eastern or southern portions of the ROW, outside of the portions of the ROW that Eversource presently manages[4]) would be cleared and subsequently maintained in low-growth species consistent with overhead transmission line clearance requirements. Thus, vegetation would be removed and managed to the full width of the southern edge of the typical 175-foot-wide ROW, in conformance with the NERC and FERC recommendations. Where Eversource owns property in fee that encompasses more than this standard 175-foot-width, Eversource proposes to remove vegetation only in accordance with this standard width, and not to the full edge of fee-owned property. Thus, any forested vegetation buffer would remain within Eversource property in these areas. *(Eversource 1, Vol. 1, p. 4-8 – 4-9; Eversource 2, Q-CSC-004; Eversource 1, Vol. 5, Appendix 2B, Mapsheets 1-8; PFOF ¶¶ 214, 217)*

[4] To accommodate the construction of the new 115-kV line, vegetation (mostly shrub-scrub) also would have to be removed along portions of the ROW where Eversource presently manages vegetation consistent with the operation of the 321/1770 lines. (Eversource 1, Vol., 1, p. 4-9, Table 4-1 note)

Eversource would continue to manage the ROW in accordance with its well-established vegetation management program. The Project would benefit wildlife species that use shrubland habitats, and would have no adverse effects on fisheries since no permanent access would be required across Limekiln or East Swamp brooks (the only watercourses along the ROW that support fisheries). Eversource would continue to coordinate with CT DEEP regarding appropriate protocols for avoiding, protecting, or otherwise minimizing potential effects on state-listed species known to occur along the ROW. *(Eversource 1 Vol. 1, pp. 6-18 – 6-21; Eversource 6, p. 29, 37 – 38; PFOF ¶¶ 173, 175, 186 – 187)*

The new 115-kV transmission line would be aligned within Eversource's ROW across and adjacent to undeveloped portions of six designated recreational / open space areas and one hiking trail in Bethel. However, the new 115-kV transmission line would be consistent with the existing utility use of the ROW that already extends across these areas, and would not result in significant adverse effects on the public use of such areas. Eversource would coordinate with the owners or managers of the recreational / open space areas to develop measures to maintain public safety during construction. *(Eversource 1, Vol. 1, pp. 6-27 – 6-28; Eversource 6, pp. 21, 32; PFOF ¶¶ 194 – 195)*

If the Council issues a certificate for the Project, Eversource would prepare two Development and Management (D&M) Plans – one for the transmission line and one for the substation modifications – that would incorporate detailed construction plans, as well as environmental mitigation measures. The D&M Plans would be submitted to the Council for approval. Eversource representatives would monitor the conformance of construction activities to the D&M Plans, the Council's certificate, other regulatory

requirements, and Eversource standards. *(Eversource 1, Vol. 1, p. 4-21; Eversource 6, p. 35; PFOF ¶¶ 218 – 219)*

The environmental effects of the Project do not conflict with the State of Connecticut's environmental policies or land-use plans. Furthermore, the Project is consistent with FERC's *Guidelines for the Protection of Natural Historic Scenic and Recreational Values in the Design and Location of Rights-of-way and Transmission Facilities*. (*Admin. Notice 7*) Accordingly, the adverse environmental effects of the Project would be for the most part minor, localized, and short-term. Given the importance to society of maintaining reliable electric service, such adverse impacts as the Project may have provide no reason to deny a certificate. *(Eversource 6, p. 30)*

III. OVERHEAD CONSTRUCTION OF THE 115-kV TRANSMISSION LINE FROM PLUMTREE SUBSTATION TO BROOKFIELD JUNCTION IS CONSISTENT WITH THE COUNCIL'S EMF BEST MANAGEMENT PRACTICES AND STATUTORY REQUIREMENTS

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

In December 2007, pursuant to Conn. Gen. Stat. § 16-50t(c) the Council adopted revised EMF Best Management Practices ("EMF BMP"), following a two-year proceeding in which it considered, among other things, a comprehensive review of the scientific consensus concerning the potential health effects of transmission line electric and magnetic fields. The EMF BMP was further revised in February 2014. *(Council Admin. Notice Item 17, Electric and Magnetic Fields Best Management Practices for the Construction of Electric Transmission Lines in Connecticut, December 14, 2007, revised February 20, 2014. Website Link: http://www.ct.gov/csc/emf-bmp)* A copy of the EMF BMP is provided in Volume I of the Application, at p. 7A-1 *et seq.* The revised EMF

BMP, like its predecessor, applies to all transmission lines that require a certificate from the Council.

On the ROW from the Plumtree Substation to Brookfield Junction, the proposed new line would be adjacent to the existing 345-kV 321 Line, a heavily-loaded circuit that is now, and would remain, the dominant magnetic field source on the ROW. In addition, the new line would also be adjacent to the existing 115-kV 1770 Line, and would share with that line the load transmitted between Plumtree Substation and Brookfield Junction. As a result, the addition of the proposed new 115-kV line to the Plumtree Substation to Brookfield Junction ROW would have very little effect on the pre-existing edge of ROW magnetic fields. *(Eversource 1, Vol. 1, p. 7-6; PFOF ¶ 230)*

The Council requires an applicant proposing to build an overhead electric transmission line to develop and present a Field Management Design Plan ("FMDP") that identifies design features to mitigate magnetic fields ("MF") that would otherwise occur along an electric transmission ROW. Further, the EMF BMP requires transmission line applicants to adopt "no cost" line designs for lowering magnetic fields from new or reconstructed lines, and to identify "low cost" opportunities for making further reductions. Four percent of Project cost is the benchmark for "low cost" mitigation measures; and such measures should aim to achieve at least a 15% reduction at the edge of the utility ROW. However, the four percent guideline is not "absolute" but may be varied as appropriate to the circumstances of particular applications particularly where, as in this case, "no cost" field reduction strategies are shown to be effective. The Council's EMF BMP also prescribes areas of focus for mitigation efforts in an applicant's FMDP for any adjacent "residential areas, public or private schools, licensed child day-care

facilities, licensed youth camps or public playgrounds". *(EMF BMP, Eversource 1, Vol. 1, Appendix 7A; PFOF ¶¶ 227, 233)*

1. Eversource's EMF calculations along the Proposed Route and in designated focus areas show that additional mitigation measures are not required.

Eversource has submitted a FMDP for the Project, which reflects that the proposed new transmission line between Plumtree Substation and Brookfield Junction has been designed so that it will have very little effect on magnetic field levels within and along the ROW. The Project's base overhead design incorporates "no cost" magnetic field measures, specifically, the arrangement of the phases of the new 115-kV line to achieve better cancellation with the magnetic field from the existing transmission lines on the ROW. *(Eversource 1, Vol. 1, p. 7B-4; Eversource 4, pp. 32-33; PFOF ¶ 243)*

In preparing its FMDP, Eversource first worked on locating focus areas along the proposed route, per the Council's BMP. After a comprehensive search of available resources to locate these sites along the Proposed Route, Eversource determined that there are no public or private schools, licensed child day-care facilities, licensed youth camps or public playgrounds adjacent to the ROW. However, there are two groups of homes that might be considered to be residential areas (i.e., developed neighborhoods) adjacent to the ROW; therefore, Eversource evaluated the feasibility of low cost field mitigation designs at these locations. The two focus areas are the Lexington Meadows condominium complex near the Danbury/Bethel line and a group of homes on Hearthstone Drive and Chimney Drive in Bethel that are along the ROW. Eversource specifically focused on these two areas in its FMDP when evaluating the need for and effectiveness of low-cost mitigation measures. *(Eversource 1, Vol. 1, pp. 7-7 – 7--9; 7B-7 – 7B-10; Eversource 4, pp. 2-3, 26-34; PFOF ¶¶ 233 – 234)*

The table below summarizes the "low cost" design options that Eversource considered. (Note that "negative" numbers in the "% Reduction" column mean that magnetic fields increased under that design.)

Design Option	West/North ROW Edge		East/South ROW Edge	
	MF (mG)	% Reduction	MF (mG)	% Reduction
Pre-Project	9.9	--	12.2	--
Proposed	12.9	--	14.0	--
New Line UG	13.4	-4.2%	16.7	-18.9%
Proposed +10 feet	12.9	-0.1%	14.6	-4.4%
Proposed +20 feet	12.9	-0.3%	15.2	-8.3%
"Split Phase"	7.8	39.8%	12.7	9.6%
Far Side	11.2	13.0%	16.2	-15.8%

Because of the dominance of the existing transmission lines on the ROW as a source of EMF, most of the "low cost" measures would not even meet the target of 15% reduction set forth in the EMF BMP. As shown in the table above, the only mitigation measure that did meet the 15% target (but only on one side of the ROW) was a split-phase design.[5] Eversource's evaluation of the use of a split-phase design at each of the focus areas is discussed below. *(Eversource 1, Vol. 1, p. 7B-5; PFOF ¶ 240)*

Lexington Meadows Focus Area (Bethel/Danbury line)

The Lexington Meadows condominium complex is situated parallel to the Eversource ROW in which the proposed new 115-kV transmission line would be located. In particular, 24 residences within this condominium complex are located within 300 feet of the Proposed Route, along an approximately 1,000-foot segment of the ROW. Applying the split-phase design option in Lexington Meadows Focus Area would require the addition of several structures, and conversion of one of the proposed single circuit

[5] The split-phase design involved moving the existing 115-kV 1770 line onto the new structures to be built for the new 115-kV line. The existing 345-kV 321 line would then be bundled across the existing double circuit steel pole to create a split-phase design reducing the magnetic fields. *(Eversource 1, Vol. 1, p. 7B-4)*

steel poles to a double circuit steel pole and adding a foundation. This would also require approximately 1,900 circuit-feet of conductor for the relocated 1770 circuit. Introduction of a double-circuit contingency would eliminate one of the primary reliability benefits of this Project. Further, the estimated additional cost to implement this option is $3.22 million, which would be significantly beyond the 4% guideline for "low-cost" designs (approximately $1 million for this Project). *(Eversource 1, Vol. 1, p. 7B-4 – 7B-8; PFOF ¶¶ 236, 241)*

Hearthstone Drive/Chimney Drive Focus Area

Hearthstone Drive and Chimney Drive in Bethel run along the ROW corridor in which the proposed transmission line would be located. There are 29 residences along a section of approximately 3,000 feet of the ROW along the Preferred Route. Eversource determined this area to be a focus area and decided to examine EMF mitigation options. Applying the split-phase design option for this focus area would require the addition of several structures, and conversion of three of the proposed single circuit steel poles to a double circuit steel pole and adding three foundations. This would also require approximately 4,000 circuit-feet of conductor for the relocated 1770 circuit. Aside from the reliability issues that would be introduced by the double-circuit contingency, the estimated additional cost to implement this option is $3.92 million, which would be beyond the guideline for "low-cost" designs. *(Eversource 1, Vol. 1, pp. 7B-4, 7B-8 – 7B-10; PFOF ¶¶ 235, 241)*

Focus Area Summary

Additional magnetic field mitigation measures at either of the two focus areas are not necessary in order to comply with the Council's EMF BMP. Most of the "low cost" measures would not meet the target of 15% reduction set forth in the EMF BMP.

Moreover, the only mitigation measure that would achieve a 15% reduction on one side of the ROW at the focus areas – a split-phase design – could not be implemented within the Council's 4% of project cost guideline and would introduce reliability issues. Therefore, mitigation measures in addition to the "no cost" optimum phasing already incorporated in the baseline design are not appropriate for either of the focus areas. *(Eversource 1, Vol. 1, p. 7B-10; PFOF ¶¶ 232, 242)*

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

Whether or not MF reduction strategies over and above the "no cost" strategies embedded in the base-line designs are adopted, the existing ROW will provide an adequate buffer zone for the new line. The ROW between the Plumtree Substation and Brookfield Junction ranges from 175 to 225 feet wide. The line will be constructed in full compliance with the National Electrical Safety Code, published by the Institute of Electrical and Electronic Engineers. With respect to magnetic field levels, in evaluating whether an existing ROW provides an adequate buffer, the Council will consider, in addition to its own BMP, guidelines or benchmarks used by other states, such as the 85 mG Massachusetts benchmark for comparing different design alternatives. The edge-of-ROW magnetic field levels, regardless whether they are estimated with average or peak loads, will be comfortably within these guidelines. *(See e.g., Eversource 1, Vol. 1, pp. 7-10 – 7-13, 7C-3, Table 7C-1; Eversource 4, Attachment 1)* The edge-of-ROW magnetic fields, estimated on an annual average load basis, will be toward the lower end of the range typically encountered in the vicinity of electric transmission lines. They will also be lower than those commonly encountered by the U.S. population near many electric distribution lines, and in everyday settings.

Accordingly, the Council has a clear basis for a finding that the new lines will be contained within a "buffer zone that protects the public health and safety," consisting of the existing ROW, which will provide an adequate buffer zone between the new transmission line and any adjacent residential areas, public or private schools, licensed child day care facilities, licensed youth camps or public playgrounds. *(Conn. Gen. Stat. § 16-50p(a)(3)(D)(iii); Council Admin. Notice Item 17)*

IV. DISCUSSION OF CERTAIN ISSUES RAISED DURING THE HEARING & RELATED MATTERS

A. Notice Requirements

As set forth in detail in the Formal Requirements section of the Application, Eversource has complied with all notice requirements for an Application under Conn. Gen. Stat. § 16-50*l*(b) and the Council's *Application Guide for Electric and Fuel Transmission Line Facilities.* The notices of the Application provided by Eversource include the following:

- Notice to owners of property abutting Plumtree Substation and Stony Hill Substation was provided via certified mail, return receipt requested;
- Notice was provided to each Eversource customer located within the municipalities of the Proposed Route (i.e., Bethel, Danbury, and Brookfield) - including all of the customers who own property abutting the Project ROW - on a separate enclosure with each customer's monthly bill within 60 days prior to the filing of this Application with the Council;
- Public notice of this Application (including a summary of the Application) was published twice prior to the filing of the Application in the Danbury News-Times;
- Notice of the Application was provided by letter to water companies and community groups in the Project area, including Chambers of Commerce, land trusts, environmental groups, trail organizations, historic preservation groups, advocacy groups for the protection of Long Island Sound, and river protection organizations within the watershed.

(Eversource 1, Vol. 1, pp. FR-11 – FR-12)

In addition, pursuant to Conn. Gen. Stat. § 16-50*l*(b), copies of the Application were served on:

- The chief elected official, the zoning commission, planning commission, the planning and zoning commissions, and the conservation and wetlands commissions of the site municipality and any adjoining municipality having a boundary not more than 2,500 feet from the facility;
- The regional planning agency that encompasses the route municipalities;
- The State Attorney General;
- Each member of the Legislature in whose district the facility is proposed;
- Any federal agency which has jurisdiction over the proposed facility;
- The State Department of Energy and Environmental Protection, Public Health, Economic and Community Development, Agriculture and Transportation; the Council on Environmental Quality; and the Office of Policy and Management.
- Other state and municipal bodies as designated by the Council, including the State Historic Preservation Officer of the Commission on Culture and Tourism and the Department of Emergency Management and Homeland Security.

(Eversource 1, Vol. 1, pp. FR-10 – FR-11)

During the hearing, Eversource representatives were asked whether Eversource had notified all property owners abutting the ROW regarding the Project. *(Transcript 1, pp. 65, 71)* Conn. Gen. Stat. § 16-50*l*(b) requires notification by letter to owners of property abutting substation sites, and Eversource provided such notice. *(Eversource 1, Vol. 1, p. FR-12)* The statutes also require that Eversource provide notice to all Eversource customers in Bethel, Danbury, and Brookfield via bill inserts, as well as notice to the general public via publication in a local newspaper. Conn. Gen. Stat. § 16-50*l*(b) Eversource provided such notification as well, so all property owners abutting the ROW would have received notice of the Project via the bill insert. Although neither the governing statutes nor the Council's Application Guide require notification by letter to property owners abutting a ROW for a proposed project, Eversource sent letters to property owners abutting the ROW regarding the open house and a description of the

Project. *(Eversource 1, Vol. 1, p. 9-4)* Eversource conducted an open house on May 14, 2016 in the Town of Bethel, and reached out to individual property owners who were identified as having potential impacts from the proposed construction or who raised concerns to Eversource. *(Eversource 1, Vol. 1, p. 9-4; Transcript 1, pp. 65-72)*

B. Start of Construction Condition in Decision and Order.

The Council's Decision and Orders approving new transmission lines typically include a condition that the Certificate Holder obtain necessary permits from the United States Army Corps of Engineers ("USACE") and CT DEEP. In Docket No. 370A, The Greater Springfield Reliability Project, the relevant condition provided that these permits be obtained "prior to the commencement of construction." (Docket No. 370A, *Decision and Order, Cond. 7*). In order to meet in-service requirements, the Certificate Holder was required to petition the Council for relief from that condition, to allow construction to begin in areas for which approvals from CT DEEP and the USACE were not required. (*See, Id.,* Notice of Permission to Start Work, d. June 3. 2011). To avoid a recurrence of this necessity, in both Docket No. 424 (the Interstate Reliability Project) and Docket No. 466 (the Frost Bridge to Campville Project), the Council carefully tailored this condition to provide:

> The Certificate Holder shall obtain necessary permits from the United States Army Corps of Engineers and the Connecticut Department of Energy and Environmental Protection prior to the commencement of construction *in areas where said permits are required.* (emphasis added)

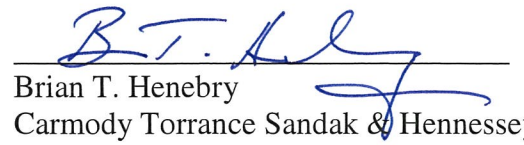
By allowing construction to start in upland areas where permits from the USACE and CT DEEP were not required, this condition avoided unnecessary constraints on construction. The Applicant respectfully requests that the permitting condition in this Docket follow the same format as that in Docket 424 and Docket 466.

CONCLUSION

Based upon the information set forth in its application, the Proposed Findings of Fact, and this brief, Eversource respectfully requests that the Council issue a certificate of environmental compatibility and public need for the Project. Eversource further asks the Council to include in its Opinion the statutory findings that the Council is directed to make in order to support the issuance of the certificate. These conclusory findings are listed in Appendix A to this brief.

Respectfully submitted,

THE CONNECTICUT LIGHT AND POWER COMPANY d/b/a EVERSOURCE ENERGY

By: 

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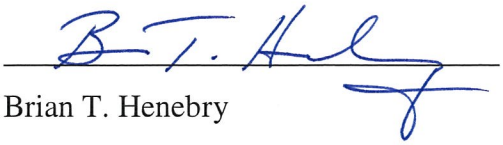
NOTICE OF SERVICE

I hereby affirm that a copy of this Post-Hearing Brief was sent to each Party and Intervenor on the service list dated August 1, 2016, with method of service to each party and intervenor listed via e-mail on October 24, 2016.

Dated: October 24, 2016



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APPENDIX A

Statutory Findings

There is a public need for the Southwest Connecticut Reliability Project. (See Eversource's Proposed Findings of Fact [PFOF] ¶¶ 25 – 47, and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(A)

The nature of the probable environmental impact, including EMF, of the facility alone and cumulatively with other existing facilities has been reviewed by this Council in approving this facility. (See PFOF ¶¶ 141 – 217, 220 – 245, and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 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. Stat. § 16-50p(a)(3)(B) and Conn. Gen. Stat. § 16-50p(a)(3)(C). (See PFOF ¶¶ 141 – 217, and provisions of the Record cited by those Findings)

The environmental effects that are the subject of Conn. Gen. Stat. § 16-50p(a)(3)(B) can be sufficiently mitigated and do not overcome the public need for the facility approved by the Council in its Opinion, Decision and Order. (See PFOF ¶¶ 141 – 217, 220 – 245, and provisions of the Record cited by those Findings)

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

The facility approved by the Council in the Opinion, Decision and Order conforms to a long-range plan for expansion of the electric power grid of the electric systems serving the State of Connecticut and its people and interconnected utility systems and will serve the interests of electric system economy and reliability. (See PFOF ¶¶ 20 – 47 and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(D)(ii)

The overhead portions of the facility approved by this Council in its Opinion, Decision and Order are cost effective and the most appropriate based on a life-cycle cost analysis of the facility and underground alternatives to the facility and comply with the provisions of Conn. Gen. Stat. § 16-50p. (See PFOF ¶¶ 72 – 88, and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(D)(iii)

The overhead portions of the facility approved by this Council in its Opinion, Decision and Order are consistent with the purposes of Chapter 227a of the General Statutes of Connecticut, and with Council regulations and standards adopted pursuant to Conn. Gen. Stat. §16-50t, including the Council's BMPs and with the Federal Energy Regulatory Commission's "Guidelines for the Protection of Natural Historic Scenic and Recreational

Values in the Design and Location of Rights-of-Way and Transmission Facilities." (See Eversource 4, pp. 21, 27; PFOF ¶¶ 72 – 88, 141 – 217, 220 – 245, and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(D)(iii)

The overhead portions of the facility approved by this Council are contained within a buffer zone, no less in area than the existing right-of-way that provides a buffer zone that protects the public health and safety. In establishing this buffer zone, the Council took into consideration, among other things, residential areas, private or public schools, licensed child day care facilities, licensed youth camps or public playgrounds adjacent to the proposed overhead route of the overhead portions and the level of voltage of the overhead portions and any existing overhead transmission lines on the approved routes. (See PFOF ¶¶ 220 – 245 and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(D)(iii)

Eversource has designed the Project in compliance with the Council's BMPs. (See PFOF ¶¶ 243 – 245, and provisions of the Record cited by those Findings; Eversource 1, Vol. 1, Section 7) Conn. Gen. Stat. § 16-50p(a)(3)(D)(iii)

In compliance with the BMPs, Eversource furnished a Field Management Design Plan for the Project. (PFOF ¶¶ 243 – 245; Council Admin. Notice Item 17, pp. 4-5, Eversource 1, Vol. 1, Appendix 7B)

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 ¶¶ 141 – 217, 220 – 245, and provisions of the Record cited by those Findings) Conn. Gen. Stat. § 16-50p(a)(3)(E)