

STATE OF CONNECTICUT

SITING COUNCIL

<p>DOCKET NO. 474 - The Connecticut Light & Power Company d/b/a Eversource Energy application for a Certificate of Environmental Compatibility and Public Need for the Greater Hartford-Central Connecticut Reliability Project that traverses the municipalities of Hartford, West Hartford, and Newington, which consists of (a) construction, maintenance and operation of a new 115-kilovolt (kV) electric transmission line within existing Eversource, Amtrak and public road rights-of-way and associated facilities extending overhead approximately 2.4 miles and underground approximately 1.3 miles between Eversource's existing Newington Substation in the Town of Newington and existing Southwest Hartford Substation in the City of Hartford; (b) modifications to a .01 mile section within existing Eversource right-of-way of the existing overhead 115-kV electric transmission line connection to the Newington Substation (Newington Tap); and (c) related modifications to Newington Substation and Southwest Hartford Substation.</p>	<p>DOCKET NO. 474</p> <p>August 15, 2017</p>
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DIRECT TESTIMONY OF

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**ON BEHALF OF THE CONNECTICUT LIGHT AND POWER COMPANY DOING
BUSINESS AS EVERSOURCE ENERGY**

**CONCERNING ENVIRONMENTAL FEATURES, IMPACTS, AND
MITIGATION MEASURES**

TABLE OF CONTENTS

Page No.

1.	<u>INTRODUCTION AND PURPOSE</u>	1
2.	<u>ENVIRONMENTAL DATA COLLECTION APPROACH</u>	4
3.	<u>ENVIRONMENTAL FEATURES ALONG AND IN THE VICINITY OF THE PROPOSED PROJECT</u>	10
4.	<u>POTENTIAL ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES</u>	16
5.	<u>ROLE OF THE D&M PLAN IN MITIGATING ENVIRONMENTAL EFFECTS</u>	28
6.	<u>CONCLUSIONS</u>	30

1 **1. INTRODUCTION AND PURPOSE**

2 **Q. Please identify yourself and summarize your background regarding**
3 **environmental matters associated with the Greater Hartford-Connecticut**
4 **Reliability Project (the “Project”).**

5 A. **Louise Mango.** I am Louise Mango, an environmental consultant from
6 Phenix Environmental, Inc. As a consultant to The Connecticut Light and Power
7 Company doing business as Eversource Energy (“Eversource” or the “Company”), I have
8 been part of the Project team for more than two years, focusing primarily on
9 environmental matters, as well as the analysis of alternative routes and line
10 configurations for the new 115-kilovolt (“kV”) transmission line. I worked with others
11 on the Project team to prepare both the Municipal Consultation Filing (“MCF”) for the
12 Project, which in December 2015 was submitted to the Chief Elected Officials of each of
13 the three municipalities traversed by the Project, and the June 2017 Application to the
14 Connecticut Siting Council (“Council”) for a Certificate of Environmental Compatibility
15 and Public Need (“Application”) that is the subject of this Docket 474.

16 With me today is Christopher Newhall, a Senior Environmental Scientist with
17 AECOM, a consultant to Eversource. Mr. Newhall may be called upon to respond to
18 questions concerning wetlands and water resources and cultural resource studies. Copies
19 of our resumes are provided in the separate volume of resumes submitted by Eversource.

20 **Q. Ms. Mango, have you served in a similar capacity on other Eversource**
21 **projects?**

22 A. Yes. I performed similar functions during the planning, siting, and
23 permitting phases for the Frost Bridge to Campville Project (“Frost Bridge”), Interstate

1 Reliability Project (“Interstate”), Greater Springfield Reliability Project (“GSRP”),
2 Manchester-Meekville Junction Project (“MMP”), Middletown-to-Norwalk (“MN”)
3 Project, and Glenbrook Cables (“Glenbrook”) Project. For all of those projects, I also
4 had a role in preparing Development and Management (“D&M”) Plans, and then in
5 performing environmental management and/or compliance monitoring during
6 construction. For example, during the construction of the Interstate project, I served as
7 environmental compliance manager. For the Frost Bridge, Interstate, GSRP, and MMP
8 projects, I helped design and implement environmental training and compliance programs
9 for project construction, and for construction of both the MN and Glenbrook projects, I
10 served as an independent third-party inspector. Most recently, I assisted Eversource and
11 Burns & McDonnell in the Southwest Connecticut Reliability Project (“SWCT”),
12 working on the MCF, Application to the Council, and D&M Plans, and serving as an
13 expert witness during the Council’s hearings on the project.

14 **Q. Are there any other personnel who may respond to cross examination**
15 **regarding environmental matters for the Project?**

16 A. Yes. The compilation and analysis of environmental information for the
17 Application involved several other specialized engineering and environmental
18 consultants, any of whom may be called upon to support this testimony by providing
19 responses to specific inquiries about particular environmental or environmental resource-
20 related topics. For example, Burns and McDonnell conducted construction engineering
21 studies and field constructability reviews that affect environmental planning, alternatives
22 design, line configurations, and the Project construction “footprint” (e.g., limits of

1 vegetation clearing, access roads, work space for underground cable segments, work pads
2 for overhead transmission line construction).

3 In addition, Heritage Consultants, LLC (“Heritage”) completed cultural resource
4 analyses for the Project. Such studies included baseline research, archaeological surveys,
5 and visual analyses of the potential effects of the Project on National Register of Historic
6 Places (“NRHP”) districts located along or near the Proposed Route.

7 Finally, Eversource personnel will be available to testify regarding coordination
8 with the Connecticut Department of Transportation (“ConnDOT”) and Amtrak¹ regarding
9 the portions of the Proposed Route planned for location along or over state highways and
10 the Amtrak ROW. Eversource personnel also will be available to testify concerning the
11 Company’s environmental policies, permitting, and ROW vegetation management.

12 **Q. What is the purpose of your testimony and how is it organized?**

13 A. The purpose of this testimony is to summarize the environmental and
14 social/cultural factors that were considered during Project planning in order to avoid,
15 minimize, or mitigate adverse effects on environmental and cultural resources and to
16 describe how such environmental considerations will continue to be important during the
17 final design, certification, permitting, and construction phases of the Project. The
18 testimony is organized by the following primary topics:

- 19
20 • Approach used to compile baseline environmental and social/cultural data
21 for the Project, including field investigations.
22

¹ Amtrak is the commonly used name of the National Railroad Passenger Corporation. Amtrak is in the process of upgrading its rail lines between New Haven, Connecticut, Hartford, Connecticut, and Springfield, Massachusetts, including the portion of the ROW along which the Project’s 115-kV line would be located. ConnDOT commenced service on the CTfastrak, which occupies the western portion of the Amtrak ROW, in March 2015.

- 1 • Review of environmental and cultural resources along the 3.7-mile
- 2 Proposed Route for the new 115-kV transmission line between Newington
- 3 and Southwest Hartford Substations, as well as at the two substations and
- 4 the Newington Tap.
- 5 • Summary of the Project’s potential environmental and social/cultural
- 6 effects and the measures identified to avoid or mitigate such impacts.
- 7 • The role of D&M Plans in environmental impact mitigation.
- 8 • Conclusions.
- 9

10 **2. ENVIRONMENTAL DATA COLLECTION APPROACH**

11 **Q. What approach was used to characterize existing environmental**

12 **conditions for the Project?**

13 A. Existing environmental resources, cultural resources, and land use features

14 in the Project area² were compiled and characterized in accordance with the Council’s

15 *Application Guide for Electric Transmission and Fuel Transmission Line Facility*

16 *(February 2016)*. These existing conditions were characterized using a combination of

17 baseline research, field investigations, aerial photo-interpretation, and consultations with

18 representatives of federal, state, and local agencies. Primary published sources consulted

19 were the Geographic Information System (“GIS”) database maintained by the CT DEEP,

20 Connecticut Environmental Conditions Online viewers, soil surveys, U.S. Geological

21 Survey (“USGS”) topographic maps, Federal Emergency Management Agency

22 (“FEMA”) maps, National Wetland Inventory (“NWI”) maps published by the USFWS,

23 and municipal land use and recreation plans. In addition, data were reviewed regarding

24 the ConnDOT’s *CTfastrak* busway and the Amtrak railroad right-of-way (“ROW”),

25 along which approximately 2.4 miles of the Proposed Route would be aligned overhead.

² For the purposes of this testimony, the Project area refers to the Proposed Route, Newington Substation, Newington Tap, Southwest Hartford Substation, as well as the route alternatives and route variations identified in the Application.

1 **Q. Please summarize the field investigations that were performed of the**
2 **Project area to characterize the existing environmental and cultural conditions, and**
3 **indicate whether the results of these studies are reflected in the Application to the**
4 **Council.**

5 A. Eversource commissioned water resource and cultural resource field
6 investigations of the Proposed Route, route variations, its substation properties, and the
7 Newington Tap. In addition, environmental personnel conducted constructability reviews
8 of the Project, in coordination with personnel from Burns and McDonnell and
9 Eversource. These surveys, the results of which are reflected in the Application, are
10 summarized below. They will be supplemented by surveys of the Amtrak ROW that
11 have had to await the issuance of the Amtrak license to commence.

12 **Wetlands and Watercourse Delineations.** Wetlands and watercourse field
13 investigations were performed in May 2015, January and August 2016, and March-May
14 2017. These field investigations were performed by personnel from AECOM in
15 accordance with federal and state water resource delineation criteria. Volume 2 of the
16 Application includes the *Wetlands and Watercourses Report*. The 2015 surveys focused
17 on Eversource's substation properties and the all-underground route that was initially
18 investigated for the new 115-kV line; subsequent surveys focused on the Proposed
19 Route.³

20 **Investigations for Vernal Pools.** Potential locations of vernal pools were
21 identified during the wetland surveys. Given the urban/suburban character of the Project
22 area, no potential vernal pool locations were found in areas other than along the portion

³ The 2.4-mile segment of the Amtrak ROW was researched and reconnaissance was performed from publicly-accessible locations. Biological field surveys of the Amtrak ROW segment are pending and will be performed in the upcoming months.

1 of the Proposed Route within Eversource’s distribution line ROW in the Town of
2 Newington.

3 In the spring of 2017, vernal pool surveys were performed of the previously-
4 identified potential vernal pool locations along these portions of the Proposed Route. The
5 surveys were performed in accordance with methods described in the *Vernal Pool*
6 *Assessment*, presented in Volume 2 of the Application. No vernal pools were identified
7 in the Project area.

8 **Cultural Resource Studies.** Heritage performed cultural resource research and
9 field reviews of the Project area in 2015 and 2016. Initially (2015), Heritage researched
10 known archaeological and historic resources, including NRHP-designated sites, in the
11 Project area and evaluated the need for completing additional cultural resource
12 investigations. When Heritage prepared the 2015 Cultural Resources Review,
13 Eversource anticipated that the proposed 115-kV line would have to be aligned, in an
14 underground configuration, along existing road ROWs. At that time, the viability of
15 collocating the proposed line along other ROWs (e.g., Eversource’s ROW, Amtrak
16 ROW) was in the process of being evaluated. Accordingly, the 2015 review concluded
17 that the alignment of the new 115-kV transmission line within existing roadways would
18 have little, if any, potential to yield intact cultural deposits. As such, Heritage concluded
19 that the “*paved portions of the GHCCRP have been assessed as no/low sensitivity areas,*
20 *and no archaeological testing of these areas is recommended prior to construction of the*
21 *GHCCRP*”.

22 After Eversource subsequently determined that the proposed 115-kV transmission
23 line could be collocated along its existing ROW in Newington and, in an overhead

1 configuration, along the Amtrak ROW in 2016, Heritage conducted additional cultural
2 resource investigations of those areas and consulted with the Connecticut State Historic
3 Preservation Officer (“SHPO”) to identify measures to avoid or minimize potential
4 impacts to historic resources, including the Newington Junction North Historic District,
5 which the existing Eversource distribution line ROW traverses. At the request of the
6 SHPO, Heritage performed visual simulation tests to assess whether views of the
7 proposed overhead transmission line structures along the Amtrak ROW would adversely
8 affect the visual context of nearby NRHP districts. For these tests, large red weather
9 balloons (4 feet in diameter) were floated at select locations and heights of proposed
10 overhead structures along the Amtrak ROW; Heritage personnel then observed and
11 photographed the balloons from various vantage points in and near the historic districts.

12 **Constructability Reviews.** Eversource also commissioned a constructability
13 review of the Proposed Route. The purpose of the review was to assess the proposed
14 locations and dimensions of the areas required for Project construction, including
15 construction access roads, work space along the underground route segments, and work
16 pads and access along the Amtrak ROW.

17 During the constructability review, the proposed alignment of the underground
18 segment of the 115-kV line within the Eversource ROW was investigated and shifted to
19 minimize impacts to forested vegetation, residential areas, and wetlands. As described in
20 the Application, detailed consultations were held with Amtrak regarding the alignment of
21 the overhead transmission line segment within the railroad ROW; such consultations
22 included the submission of detailed engineering design information concerning the 115-

1 kV line. The constructability review also served to define construction assumptions for
2 use in estimating temporary, permanent, and secondary water resource impacts.

3 **Q. In identifying and evaluating environmental resources in the Project**
4 **area, did Eversource consult with the public or representatives of the municipalities**
5 **in which the Project would be located?**

6 A. Yes. Eversource solicited public and agency input prior to, during, and
7 after the MCF process. Environmental resource issues identified through such venues
8 were taken into consideration in the environmental impact and mitigation analyses
9 included in the Application (Volume 1, Section 6).

10 **Q. Are there any clarifications or additions that you wish to provide**
11 **regarding the environmental information presented in the Application concerning**
12 **environmental data collection for the Project?**

13 A. Yes. The following additional information pertains to two areas: (1) the
14 performance of biological surveys within the Amtrak ROW; and (2) the results of further
15 consultations about the Project with regulatory agencies.

16 **Amtrak ROW Surveys.** AECOM could not conduct field investigations of the
17 overhead transmission line segment along the Amtrak ROW until Eversource's license
18 agreement with Amtrak was in the process of being finalized. Accordingly, AECOM is
19 now coordinating with Amtrak to secure permission to enter the railroad ROW and
20 perform biological field investigations. AECOM anticipates obtaining access to perform
21 these surveys within the Amtrak ROW by late summer-early fall 2017. Based on the
22 results of visual observations of the ROW (e.g., from public roads, CTfastrak) and
23 desktop research, AECOM anticipates that the Amtrak ROW will be characterized

1 primarily by upland areas that have been devoted to railroad use for many years, with
2 limited areas of upland vegetation. Apart from the Trout Brook crossing, which will be
3 spanned, the ROW is expected to encompass only a few small drainages and isolated
4 areas that may potentially qualify as jurisdictional wetlands. However, the results of the
5 field investigations will be incorporated, as appropriate, into the Project's final design
6 and reflected in the Project D&M Plan and other regulatory submissions.

7 **Additional Agency Consultations.** On July 20, 2017, Eversource held a pre-
8 application meeting with representatives of the USACE and the CT DEEP. The purpose
9 of the meeting was to discuss the environmental permitting requirements for the Project.
10 Preliminary agency reviews of the proposed Project construction plans, which would
11 result in minimal impacts to wetlands and watercourses, confirmed that the Project would
12 be eligible for coverage under the USACE's Connecticut General Permit ("GP") Pre-
13 Construction Notification or Self-Verification procedures for activities subject to USACE
14 jurisdiction and causing no more than minimal individual and cumulative adverse
15 environmental impacts in waters of the U.S. Project permitting is ongoing.

16 In addition, as part of coordination regarding its application for a CT DEEP
17 General Permit for the Discharge of Stormwater and Dewatering Wastewaters from
18 Construction Activities, on August 1, 2017, Eversource received correspondence from
19 the CT DEEP Natural Diversity Data Base ("NDDB") in response to its inquiry
20 concerning the location of the southwestern portion of the Project near, but not within, a
21 mapped listed species habitat polygon. Whereas the research performed for the
22 Application (refer to Volume 1, Section 5.1.3.5) revealed no known species of concern,
23 the NDDB has now determined that populations of two state-listed species of special

1 concern may occur in the southwestern Project area. The NDDDB has identified best
2 management practices for protecting these species during construction. (Refer also to
3 Eversource's response to Council Interrogatory Q-CSC-033).

4 Finally, on July 31, 2017, Eversource received correspondence from the U.S. Fish
5 and Wildlife Service (USFWS) concerning that agency's review of threatened or
6 endangered species that might occur in the Project area. Information concerning this
7 correspondence is provided in response to the Council's Interrogatory Q-CSC-032.

8 **3. ENVIRONMENTAL FEATURES ALONG AND IN THE VICINITY OF**
9 **THE PROPOSED PROJECT**

10 **Q. What information does the Application provide about the principal**
11 **types of environmental and land use resources in the Project area?**

12 A. The Project is located in a suburban/urban area that is characterized
13 predominantly by a mix of residential, commercial, industrial, and transportation uses.
14 Existing environmental characteristics of the Project area, which are discussed in Volume
15 1, Section 5 of the Application and illustrated on the maps in Volume 3 of the
16 Application, are:

- 17 • Locations of existing Eversource facilities, ROWs, and fee-owned properties;
- 18 • Topography;
- 19 • Residential, commercial, and industrial uses;
- 20 • Municipal boundaries, property boundaries, and zoning classifications;
- 21 • Wetlands, watercourses, floodplains, and floodways;
- 22 • Public recreational and open space areas, including public trails;
- 23 • Schools and community facilities; and
- 24 • Existing infrastructure facilities, including the Amtrak ROW, CTfastrak,
25 Interstate 84, State Route 173, and other local and state roads.
- 26

1 The Project is not located near any Connecticut Heritage Areas, national scenic or
2 historic trails, state- or federally-designated scenic highways, CT DEEP wildlife
3 management areas, state parks, state forests, or ConnDOT scenic land strips.

4 **Q. What types of vegetation characterize the Proposed Route and**
5 **substation sites?**

6 A. Vegetation in the vicinity of most of the Proposed Route, including the
7 segments where the new 115-kV line would be aligned underground along road ROWs or
8 overhead within the Amtrak ROW, is characteristic of urban/suburban environments in
9 the Northeast U.S. containing lawns and landscaping, as well as maintained
10 transportation and utility corridors. However, on the undeveloped portions of the
11 Newington and Southwest Hartford substation parcels, as well as along Eversource's
12 existing transmission and distribution line ROWs that connect to Newington Substation,
13 vegetation is characterized by a mix of vegetative associations and cover types, providing
14 a variety of wildlife habitats (e.g., old field/shrub land, upland forest, wetlands).

15 **Q. Are there surface water resources located along the Proposed**
16 **Route and at Newington Substation/Newington Tap and Southwest Hartford**
17 **Substation?**

18 A. Yes.

19 **Proposed Route.** Water resources along the Proposed Route include four inland
20 wetlands, which meet the criteria as federal and state jurisdictional wetlands, and three
21 watercourses. The watercourses include two perennial streams: Trout Brook, which
22 would be spanned by the new 115-kV line along the overhead segment in the Town of
23 West Hartford, and an un-named tributary to Piper Brook which is located in the Town of
24 Newington adjacent to Shepard Drive and would be crossed along the underground

1 segment of the Proposed Route. In addition, one intermittent un-named tributary to Piper
2 Brook is located within a wetland along the Eversource ROW in the Town of Newington.

3 Three of the wetlands along the Proposed Route are located within Eversource's
4 existing ROW between Newington Substation and Willard Avenue (State Route 173).
5 The fourth wetland identified along the Proposed Route is a fringing wetland located
6 south of Shepard Drive and adjacent to the banks of the unnamed tributary to Piper
7 Brook. Descriptions of all water resources along the ROW are included in the *Wetlands
8 and Watercourses Report* (Volume 2 of the Application).

9 **Newington Substation/Newington Tap.** The existing Newington Substation
10 occupies 1.7 acres of Eversource's 11.4-acre parcel. Two wetlands are located south and
11 west of the substation; these wetlands are situated outside of the proposed substation
12 expansion area, but would be temporarily affected by access required for the Newington
13 Tap modifications. One small intermittent stream, which would not have to be crossed to
14 perform the Project modifications, extends across the western portion of the substation
15 parcel and traverses the Newington Tap ROW.

16 **Southwest Hartford Substation.** Southwest Hartford Substation currently
17 occupies 2.1 acres of a 7.1-acre Eversource property, which is located directly north of I-
18 84. One wetland is located on the northern portion of Eversource's property. In addition,
19 an unnamed tributary to the South Branch of the Park River, an approximately 25-foot-
20 wide perennial stream, is located on the northern portion of the substation property.
21 Neither the stream nor the wetland would be affected by the substation expansion
22 proposed as part of the Project.

1 **Q. Why were federal jurisdictional wetlands delineated?**

2 A. The boundaries of federal jurisdictional wetlands (the criteria for which
3 are slightly less stringent than the criteria for Connecticut jurisdictional wetlands) were
4 delineated as required for Eversource’s Section 404 application to the USACE, New
5 England District. The USACE’s General Permits (“GPs”) for the State of Connecticut
6 (issued on August 19, 2016 for activities subject to USACE jurisdiction in waters of the
7 United States), authorize activity-specific categories of work that are similar in nature
8 and cause no more than minimal individual and cumulative adverse environmental
9 impacts. The Project appears to qualify for Pre-Construction Notification under GP 6
10 (Utility Line Activities) and GP 21 (Temporary Fill Not Associated with Any Other GP
11 Activities). Assuming wetland impacts are minimized (to less than 5,000 square feet per
12 wetland) and other General Permit criteria are met, the Project may qualify for Self-
13 Verification notification under GP 6 and GP 21. Eversource anticipates that permit
14 applications/documentation will be submitted to the USACE and CT DEEP in the fall of
15 2017. The Project appears to quality for coverage under the CT DEEP blanket Section
16 401 Water Quality Certification for activities eligible for authorization under the
17 USACE’s GPs for the State of Connecticut.

18 **Q. Would any Project facilities be located in any FEMA-designated**
19 **floodplains or floodways?**

20 A. No project facilities would be located within any FEMA 100-year
21 floodplains or in FEMA floodways.

22 Depending upon final Project design, which will be confirmed during the D&M
23 Plan process, temporary access may be required through limited FEMA 500-year

1 floodplain areas near the Amtrak ROW in the Town of West Hartford. These 500-year
2 floodplains are located near Structures 29 to 34 in proximity to New Park Avenue, New
3 Britain Avenue and Trout Brook. This area is a developed industrial and commercial
4 section of West Hartford.

5 No permanent Project structures are proposed within any FEMA-designated
6 floodplains or floodways.

7 **Q. Would the Project facilities traverse any designated public**
8 **recreational use areas?**

9 A. No.

10 **Q. Please summarize the cultural resources in the immediate vicinity of**
11 **the proposed Project facilities.**

12 A. As described in the Application (Volume 1, Sections 5 and 6; Volume 2)
13 and summarized earlier in this testimony, Heritage conducted analyses of both
14 archaeological and historic resources in the Project vicinity.

15 Heritage's assessment determined that a majority of the proposed Project
16 facilities (i.e., portions of 115-kV line route within road ROWs and the Amtrak ROW,
17 substations, Newington Tap) would be located in areas where, due to previous land use
18 activities, there is little, if any, potential for yielding intact archaeological sites. Only
19 the 0.8-mile segment of the Proposed Route along the Eversource ROW was determined
20 to warrant archaeological field testing; such testing resulted in the identification of only
21 one archaeological site, located on Eversource property near Newington Substation.
22 Heritage's analyses determined that this site is not significant (i.e., would not be eligible
23 for listing on the NRHP).

1 In the vicinity of the Project facilities, Heritage also investigated historic
2 resources, which include the Newington Junction NRHP Districts in Newington and the
3 Parkville NRHP District, the former Royal Typewriter Company Building (now
4 demolished), and St. Paul’s Methodist Episcopal Church in Hartford. Except for the
5 Newington Junction North Historic District, these NRHP are all located at least 300 feet
6 from the Project facilities. Heritage’s balloon test study determined that the proposed
7 Project, in particular the overhead transmission line segment and the modifications to
8 Southwest Hartford Substation, would not affect the visual integrity/context of the
9 standing historic structures, given the urbanized nature of the Project area in general and
10 the presence of intervening vegetation, buildings, and infrastructure (e.g., I-84). Heritage
11 concluded that no significant visual effects were anticipated to historic property
12 viewsheds as a result of the transmission line structures.

13 The underground segment of the new 115-kV transmission line would extend for
14 a total of about 1,000 feet through the Newington Junction North Historic District,
15 which borders Willard Avenue (State Route 173). Specifically, through this District, the
16 Proposed Route would be aligned within Eversource’s ROW for approximately 650 feet
17 and then would be located within the District along Willard Avenue for an additional
18 350 feet. During a field review of the Proposed Route in May 2016, the SHPO
19 indicated that the alignment of the underground 115-kV cable through this District
20 would not have an adverse effect.

21 **Q. Has Eversource received correspondence from the SHPO or from any**
22 **Tribal Historic Preservation Offices regarding the Project’s cultural resource**
23 **reports?**

1 A. To date, no written response has been received from the SHPO regarding
2 the results of the Project’s cultural resource investigations. Consultation requests were
3 submitted on December 7, 2016 to the Tribal Historic Preservation Office (“THPO”)
4 representatives at the Mashpee Wampanoag Tribe, the Mohegan Tribe and the
5 Mashantucket Pequot Tribe⁴. The Mashpee Wampanoag THPO requested a copy of the
6 archaeological field investigations results report and subsequently concurred with the
7 results and recommendations of the report on July 26, 2017. No response has been
8 received to date on the consultation requests to the Mohegan Tribe and the
9 Mashantucket Pequot Tribe. The Heritage studies are included in Volume 2 of the
10 Application.

11 **4. POTENTIAL ENVIRONMENTAL EFFECTS AND MITIGATION**
12 **MEASURES**

13 **Q. Please describe how the potential environmental effects of the Project**
14 **were identified and evaluated.**

15 A. Overall, Eversource designed the Project to avoid or minimize adverse
16 environmental, cultural, and visual resource impacts to the extent practicable by:

- 17 • Using a hybrid underground/overhead configuration for the new 115-kV
18 transmission line, aligning the line underground within Eversource’s existing
19 electric distribution line ROW and along public road ROWs through residential
20 and densely developed commercial areas and locating the line overhead within the
21 long-established Amtrak ROW adjacent to industrial/commercial areas; and
- 22 • Confining the proposed substation and Newington Tap modifications to
23 Eversource property that is already designated for utility use.

⁴ Eversource consulted with the Mashpee Wampanoag Tribe although outreach is only required, per the USACE GP, to the Mohegan and Mashantucket Pequot tribes.

1 Most Project impacts would be short-term, lasting only during construction, and would be
2 mitigated to the extent practical.

3 The anticipated impacts and proposed mitigation measures for this Project are
4 based on Eversource's historical experience in the construction, operation, and
5 maintenance of similar transmission line systems and substations in New England, and in
6 Connecticut in particular, as well as the results of Project-specific engineering analyses,
7 constructability reviews, environmental and cultural field investigations, and agency
8 consultations. Additional measures to avoid or minimize adverse effects on the
9 environment and to the public may be identified during the Council's review of this
10 Application or through the process of acquiring Project-specific permits and approvals
11 from other state and federal agencies, including the CT DEEP and the USACE. In
12 addition, Eversource would minimize impacts to public transportation (including Amtrak
13 rail service, *CTfastrak* busway operations, and vehicular movements on state/local roads)
14 by continuing to coordinate with Amtrak, ConnDOT, and municipal transportation
15 authorities.

16 Potential Project impacts on environmental resources were estimated by applying
17 constructability assumptions regarding vegetation clearing requirements, access roads,
18 work areas, and anticipated work pad locations and dimensions. These assumptions were
19 developed based on Amtrak's requirements and Eversource's specifications (for the
20 overhead route segment); Eversource's experience in constructing other 115-kV cable
21 systems (for the underground route segments in general); and Eversource's consideration
22 of the proximity of the new 115-kV line to Eversource's five distribution circuits and

1 bordering residential areas (for the underground cable segment within the Eversource
2 ROW).

3 **Q. What potential effects would the Project have on topography, geology,**
4 **and soil resources?**

5 A. The new 115-kV transmission line would have negligible effects on
6 topography and geology. Minimal to no grading would be required to install the 115-kV
7 cable underground within the Eversource's ROW, road ROWs, or other paved surfaces.
8 The installation of the overhead transmission line within the Amtrak ROW is not
9 anticipated to result in grade changes. Localized impacts to soils would occur as a result
10 of activities such as excavating the cable trench and splice vault sites, and excavating
11 overhead structure foundations. In addition, impacts to soils could potentially occur at
12 contractor yards and material staging sites, if they are not located on paved areas.
13 However, these impacts would be short-term and limited to the construction phase.

14 After the installation of the cable system duct bank and splice vaults, any
15 disturbed areas would be restored to grade (as required) and repaved or otherwise
16 stabilized. Work areas along the Amtrak ROW affected by the overhead transmission
17 structure installation would be similarly restored and stabilized.

18 The proposed Project modifications to Newington Substation and Southwest
19 Hartford Substation would require localized topographic changes (grading and filling), as
20 well as soil disturbance. The Newington Tap modifications would not require permanent
21 grading and filling; however, temporary work pads would be used to remove four
22 existing 115-kV poles and to install the new overhead Tap structure.

1 At Newington Substation, an approximately 0.3-acre area located immediately
2 south and west of the existing station fence would be graded and filled to create a level
3 surface for the new substation facilities. As part of the substation modifications, a
4 retaining wall would be installed at the southern and western edge of the proposed
5 substation expansion area. The proposed retaining wall, which is depicted on Mapsheet I
6 of the 100-scale figures included in Volume 3, would face maintained portions of
7 Eversource’s existing 1783/1785 line ROW.

8 The proposed modifications to Southwest Hartford Substation would include an
9 approximately 0.3-acre expansion to the east of the existing substation fenced area,
10 within an area that is characterized by level, upland terrain. As a result, only minimal
11 grading would be required. However, any existing soils that are an unsuitable base for
12 the substation facilities would be removed and replaced with appropriate bedding
13 material to support the substation equipment and operational needs. As part of the
14 Southwest Hartford Substation modifications, the substation access road (from New Park
15 Avenue) also would be re-configured, which will involve grading.

16 To minimize the potential impacts, all activities involving soil disturbance would
17 be performed in accordance with the Eversource and state requirements, including
18 Eversource’s *Best Management Practices Manual for Massachusetts and Connecticut*
19 *(Construction & Maintenance Environmental Requirements) September 2016* (“BMP
20 Manual”),⁵ and the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*
21 *(revised 2007)*, as well as the CT DEEP’s *General Permit for the Discharge of*

⁵ The BMP Manual was filed as part of the D&M Plan in Docket 468 (*See D&M Plan, Volume 3, Attachment E*). Eversource has filed a request for administrative notice that includes all documents in the Record in Docket 468 (*See Application, p. FR-5*).

1 *Stormwater and Dewatering Wastewaters from Construction Activities*. Eversource will
2 prepare a Project-specific *Stormwater Pollution Control Plan* (“SWPCP”) that would
3 incorporate these requirements, including specifications for the deployment and
4 maintenance of temporary erosion and sedimentation control measures during
5 construction and for long-term stabilization of the Project areas affected by construction.
6 The types of erosion and sedimentation controls used for the Project would be
7 appropriate to urban/suburban areas and the environmental resources found along the
8 Proposed Route and at the substations.

9 **Q. What potential effects would the Project have on water resources?**

10 A. The Project would have minor, short-term impacts on water resources.
11 The modifications to Southwest Hartford Substation would not affect any water
12 resources, whereas the Newington Substation and Newington Tap modifications and the
13 construction of the new 115-kV line would result in only temporary impacts to wetlands
14 and streams. The wetlands and streams that would be temporarily affected are all located
15 along the underground segment of the Proposed Route in Newington, and are found
16 either within Eversource’s ROWs or adjacent to Shepard Drive.

17 Based on current Project information (as described in the Application), the
18 construction of the 115-kV transmission line is anticipated to result in approximately 0.03
19 acre of temporary impacts to watercourses, 1.55 acres of temporary impacts to wetlands,
20 and 0.24 acre of conversion of forested wetlands to shrub-scrub or emergent wetland
21 cover type. The construction of the Newington Tap modifications would temporarily
22 affect approximately 0.51 acre of wetlands. If the width of the trench required to install
23 the cable duct bank across wetlands along the Eversource distribution line ROW can be

1 reduced to less than 10 feet⁶, as Eversource anticipates, then effects to wetlands will be
2 reduced correspondingly.

3 Eversource would construct the Project in accordance with approvals received
4 from the Council, CT DEEP, and the USACE, as well as pursuant to its BMP Manual and
5 the Project-specific SWPCP. In addition to these Project-specific regulatory conditions,
6 Eversource would require its contractors to implement the mitigation measures that have
7 been identified thus far to avoid or minimize adverse effects on water resources (refer to
8 Volume 1, Sections 4 and 6 of the Application).

9 **Q. What effects would the Project have on vegetation?**

10 A. The Project would have minor, but localized effects on vegetation. At
11 both Newington and Southwest Hartford Substations, the proposed 0.3-acre substation
12 expansions would result in the permanent conversion of existing shrub habitat
13 (Newington Substation) or maintained lawn and scattered tree species (Southwest
14 Hartford Substation) to utility uses. The proposed expansion at the Southwest Hartford
15 Substation parcel would result in the conversion of approximately 0.3 acre of maintained
16 lawn and up to six trees (deciduous and coniferous) to utility uses. This conversion of a
17 total of 0.6 acre of habitat would be mitigated by the availability of similar shrub-type
18 habitat within Eversource's existing ROWs near the Newington Substation and the
19 presence of forested areas within other portions of the Southwest Hartford Substation
20 parcel.

21 Along the Proposed Route of the 115-kV line, most of the vegetation that would
22 be affected by the Project is within portions of Eversource's ROW that are already

⁶ Estimates of the temporary work space and trench width for the installation of the 115-kV duct bank in wetlands are described in the Application, Volume 1, Section 6.1.2.2, p. 6-7.

1 managed for low-growing trees, shrubs, or herbaceous species. Approximately 1.9 acres
2 of forest vegetation (including approximately 0.2 acre of forested wetlands) would be
3 removed within the Eversource ROW for the installation of the underground cable
4 segment between Newington Substation and Willard Avenue (State Route 173). Trees
5 also would have to be cleared within the work area for the installation of the underground
6 cable beneath the unnamed tributary to Piper Brook (near the Shepard Drive crossing of
7 the brook in Newington).

8 Because appropriate clearance from vegetation is required for large construction
9 equipment, such as excavators and cranes, to work safely, trees with limbs that overhang
10 roads intersecting with, or along, which the cable segments would be installed may have
11 to be pruned or removed. In addition, depending on the locations of existing buried
12 utilities in roads, portions of the duct bank or the third splice vault (planned for location
13 along Shepard Drive) could potentially have to be located in lawn or other vegetated
14 areas adjacent to a road ROW. Further, along the Amtrak ROW, some trees and
15 vegetation will have to be trimmed or removed to facilitate the construction of the
16 overhead portion of the new 115-kV line.

17 For the Newington Tap modifications, vegetation removal will typically be
18 limited to the construction work space within Eversource's managed transmission line
19 ROW. However, some trees located along the 1783 Line ROW would have to be
20 removed or trimmed for the Tap reconfiguration, in order to achieve required clearances
21 between vegetation and the relocated overhead line.

22 **Q. How would the conversion of forested areas to shrub land or other**
23 **low-growing vegetation affect vegetation and wildlife resources?**

1 A. The Project would result in the conversion of 1.9 acres of existing forest
2 lands to predominantly shrub land habitat, and the loss of approximately 0.3 acre of shrub
3 land as a result of the Newington Substation expansion. The 0.3 acre expansion of the
4 Southwest Hartford Substation will primarily occur within existing maintained lawn and
5 gravel driveway areas, though six individual trees will need to be removed to
6 accommodate the expansion.

7 The effect on wildlife would vary depending on a particular species' habitat
8 preferences. However as described in the Application (Volume 1, Section 6.1.3.2), the
9 creation of 1.9 acres of additional shrub habitat would represent a long-term benefit to
10 species that depend on such habitat types. Statewide, transmission corridors provide
11 critical habitat for shrub land and other early-successional birds. Vegetation management
12 of transmission line corridors is recommended as part of the regional and national
13 conservation strategy to reverse declines of priority shrub land birds in the eastern region.
14 In the Connecticut Audubon Society's 2009 *State of the Birds* report (p. 44), it was noted
15 that "...*shrubs land birds are benefitting from maintenance of powerline corridors by*
16 *utility companies which remove tall-growing trees from the vicinity of wires, creating a*
17 *habitat dominated by shrubs, grass and herbs.*"

18 **Q. Please explain the procedures that Eversource will use during**
19 **construction to protect the two state-listed species identified by CT DEEP NDDB.**

20 A. Eversource expects to consult further with CT DEEP and to implement the
21 best management practices recommended by CT DEEP in its August 1, 2017
22 correspondence concerning the state-listed species. The protection measures to be
23 implemented will vary depending on whether Project construction occurs during the

1 species' inactive period (October 1 through March 30) or active period (April 1 through
2 September 30). Exact procedures will be specified in the Project D&M Plan(s).

3 **Q. In your opinion, does the probable environmental impact of the**
4 **Project facilities conflict with the policies of the state concerning the natural**
5 **environment, ecological balance, public health and safety, scenic, historic and**
6 **recreational values, forests and parks, air and water purity and fish, aquaculture**
7 **and wildlife?**

8 A. No, for the reasons discussed in this testimony and in the Application.

9 **Q. Would the proposed Project be consistent with land use plans and**
10 **policies?**

11 A. Yes.

12 **Q. Have you reviewed the consistency of the Project with the Federal**
13 **Power Commission's (now the Federal Energy Regulatory Commission's)**
14 **"Guidelines for the Protection of Natural Historic Scenic and Recreational Values in**
15 **the Design and Location of Rights-of-way and Transmission Facilities"?**

16 A. Yes. The Guidelines advocate the collocation of new transmission lines
17 on existing ROWs; the avoidance or minimization of environmental impacts where
18 practical; and the use of good utility practice in the design and construction of overhead
19 transmission lines. The proposed Project is consistent with these guidelines, which are
20 incorporated into the Council's regulations and standards adopted pursuant to
21 Connecticut General Statutes Section 16-50t.

22 **Q. What effect would the construction and operation of the Project have**
23 **on transportation and traffic patterns?**

1 A. The construction of the Project would result in short-term and localized
2 effects on transportation patterns (e.g., delays, detours, disruptions to local travel
3 patterns) associated with the movement of construction equipment, materials, and
4 vehicles to and from work sites, as well as due to temporary lane closures associated with
5 the installation of the underground cable segments in road ROWs. The operation of the
6 Project would have no effect on transportation patterns or traffic.

7 Eversource would employ personnel to direct traffic at construction work sites
8 along public roads, as needed, and would erect appropriate traffic signs to indicate the
9 presence of construction work zones. For work along the Amtrak ROW, Eversource
10 would coordinate with Amtrak to refine procedures for construction activities within the
11 railroad ROW (e.g., the use, as appropriate, of flaggers trained in rail operations). In
12 addition, Project construction activities within the Amtrak ROW would be performed to
13 avoid conflicts with Amtrak's rail schedule, and would likely involve work during non-
14 standard work hours (e.g., night-time).

15 Overall, the installation of the underground transmission line segments along
16 public road ROWs would have the greatest potential to cause traffic disruptions.
17 Eversource would plan and schedule underground transmission line construction to
18 minimize adverse effects on transportation patterns to the extent practicable.
19 Construction work would be accomplished in several stages, and each stage may require
20 activities that temporarily affect vehicle and pedestrian traffic patterns and land uses in
21 the immediate vicinity. During construction, steel plates would be used to cover open
22 excavations during non-work periods and thereby to minimize disruption to access across
23 affected roads.

1 However, because approximately 3.2 miles of the 3.7-mile Proposed Route would
2 be located within the Eversource and Amtrak ROWs, disturbance to vehicular travel is
3 anticipated to relatively localized and minor.

4 To define appropriate measures to minimize potential disruption to private and
5 public transportation during construction, Eversource would consult with state and local
6 transportation officials. In addition, Eversource would inform businesses, landowners,
7 and residents along the transmission line route of the construction schedule.
8 Consideration would be given to minimize the impact of construction activity on
9 vehicular traffic and pedestrians in the vicinity of the Project.

10 Eversource would seek Encroachment Permits from ConnDOT in connection with
11 the installation of the approximately 0.14-mile cable segment along Willard Road (State
12 Route 173) and for the overhead crossings of the CTfastrak in both Newington and
13 Hartford. ConnDOT permits also may be required for the overhead crossing of State
14 Route 529 (New Britain Avenue) and the underground alignment within New Park
15 Avenue beneath Interstate 84.

16 **Q. How would Eversource minimize impacts to cultural resources if**
17 **archaeological materials are unearthed during construction?**

18 A. Although no cultural sites were found during surveys of the Project area,
19 Eversource would include in the D&M Plans for the Project protocols for its contractors
20 to follow in the event of the unanticipated discovery of cultural materials during Project
21 construction.

1 **Q. Please summarize how potential noise effects would be minimized**
2 **during the construction and operation of the Project.**

3 A. The construction of the Project would result in short-term and highly
4 localized increases in sound levels associated primarily with the operation of construction
5 equipment, truck movements, earth-moving activities, cable duct bank and splice vault
6 excavation, structure foundation excavation, structure installation, and work associated
7 with the modifications to the Newington Substation, Newington Tap, and Southwest
8 Hartford Substation. Such construction-generated noise would be localized to the
9 vicinity of construction work sites.

10 In the general vicinity of residential areas, construction activities would typically
11 occur during the daytime Monday through Saturday (between 7:00 AM to 7:00 PM).
12 Along the underground cable segments in the vicinity of commercial/industrial areas
13 along Shepard Drive in Newington and in Hartford, work may be performed during the
14 standard daytime hours (i.e., Monday through Saturday between 7:00 AM and 7:00 PM),
15 but also could be conducted during the night-time to minimize both potential
16 inconvenience to businesses and traffic disruption.

17 The schedule for the installation of the overhead line segment along the railroad
18 ROW would be coordinated with Amtrak and ConnDOT and would be designed to
19 minimize impacts to both passenger and freight rail operations. Based on the
20 consultations to date with these agencies, Eversource anticipates that some construction
21 would need to occur during night-time hours.

1 During the preparation of the D&M Plan, Eversource would coordinate with
2 Amtrak, ConnDOT, and the affected municipalities regarding proposed work hours.
3 Construction work hours would be further defined in the Project D&M Plan.

4 **5. ROLE OF THE D&M PLAN IN MITIGATING ENVIRONMENTAL EFFECTS**

5 **Q. How would the impact mitigation measures identified in Section 6 of**
6 **the Application be incorporated into the construction plans for the Project?**

7 A. The Council requires the preparation of a D&M Plan as a condition of its
8 certification process. Accordingly, after certification of the Project, Eversource would
9 prepare a Project-specific D&M Plan, consistent with the Council’s requirements.
10 Eversource may prepare separate D&M Plans for the new 115-kV transmission line and
11 for the modifications to the substations/Newington Tap. Separate D&M Plans may be
12 warranted to facilitate focus on the different environmental features and construction
13 measures that would be required for the new 115-kV transmission line vs. the substation
14 and Tap modifications.

15 The D&M Plan(s) would include details regarding environmental mitigation
16 measures and would reflect the incorporation of conditions of the Council’s approval of
17 the Project. Each D&M Plan would be submitted to the Council for review and approval
18 prior to the commencement of construction.

19 **Q. What other information would be included in the D&M Plans?**

20 A. Each D&M Plan would conform to the Council’s D&M Plan requirements
21 and would reflect the Council’s Decision and Order for the Project. Typically, each
22 D&M Plan would include information concerning the Project facilities and land
23 requirements; construction procedures; land uses and environmentally-sensitive resource

1 areas (e.g., locations of wetlands and watercourses); procedures for access road / work
2 pad development and water resource crossings; general construction procedures;
3 construction scheduling; work site and public safety during construction; traffic control;
4 requirements for erosion and sedimentation controls; requirements for excavation
5 dewatering; and procedures for excess spoil disposition, among other topics.

6 The D&M Plans may be prepared in advance of the receipt of Project-specific
7 permits and approvals from other state and federal agencies, such as the CT DEEP and
8 USACE. However, approvals from these and other agencies (as applicable) would be
9 part of construction contracts for the Project.

10 **Q. How would environmental compliance with the D&M Plans be**
11 **monitored?**

12 A. Eversource representatives would be assigned to monitor the conformance
13 of Project construction activities to the D&M Plans and other state and federal regulatory
14 requirements. Eversource also would expect to coordinate with construction contractors
15 to pro-actively plan construction tasks to avoid or minimize potential environmental and
16 land use impacts based on site-specific conditions and to address issues as they may arise.
17 In addition, Eversource would expect to use an approach to environmental compliance
18 that would incorporate methods such as:

- 19 • Using signs, flagging, temporary erosion controls, etc. to clearly demarcate the
20 boundaries of environmental features (e.g., wetlands, streams) and limits of work
21 (e.g., edge of vegetation clearing).
- 22
- 23 • Conducting basic environmental training to inform construction managers of
24 Project-specific environmental and land use features and regulatory requirements,
25 including the D&M Plans.
- 26
- 27 • Providing copies of regulatory requirements, including D&M Plans (text and
28 maps), to construction contractors and key Project personnel.

1 Eversource also would be willing to hire, if directed by the Council, an independent
2 environmental inspector to conduct periodic (typically weekly) inspections of
3 environmental aspects of Project construction, as detailed in the D&M Plans.

4 **6. CONCLUSIONS**

5 **Q. Based on your past experience with transmission line construction**
6 **projects and knowledge of the Project, what are your conclusions regarding the**
7 **potential environmental effects of the Project as proposed by Eversource?**

8 A. As proposed, the Project would maximize the use of existing Eversource
9 properties and ROWs, as well as road and railroad corridors, and thus would be
10 consistent with policies advocating the colocation of linear facilities to the extent
11 practicable. Further, the hybrid design of the new 115-kV transmission line minimizes or
12 avoids adverse effects not only to environmental and cultural resources, but also to
13 residents and businesses.

14 Thus, Project would not result in any impacts to vernal pools, floodplains,
15 floodways, recreational/open space areas, or cultural resources. Impacts to water
16 resources have been avoided or minimized to the extent possible. Similarly, forest
17 vegetation removal has been minimized. In addition, during Project construction,
18 Eversource will implement appropriate measures to protect the species of special concern
19 identified by CT DEEP.

20 Overall, during Project construction, Eversource would minimize impacts to
21 environmental resources by adherence to its BMP Manual, the SWPCP, and the
22 conditions of approvals from the Council and other regulatory agencies. Potential
23 impacts to residential, commercial, and industrial uses and to transportation would be

1 mitigated by adhering to the work hours and conditions specified by Amtrak, ConnDOT,
2 and the Council and by coordinating with the affected municipalities and property
3 owners.

4 **Q. Does this conclude your testimony?**

5 **A. Yes.**