



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

**VIA ELECTRONIC AND CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

May 13, 2022

Kathleen M. Shanley
Manager-Transmission Siting
Eversource Energy
P.O. Box 270
Hartford, CT 06104-0270
Kathleen.shanley@eversource.com

RE: **PETITION NO. 1486** – The Connecticut Light and Power Company d/b/a Eversource Energy petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed 400/500 Lines Rebuild Project consisting of the upgrade of the existing No. 400 69-kilovolt (kV) electric transmission line to 115-kV and the replacement and reconductoring of electric transmission line structures along 8.6 miles of the existing No. 400 electric transmission line within existing Eversource electric transmission line right-of-way between Ledyard Junction in Ledyard and Tunnel Substation in Preston; and the replacement and reconductoring of electric transmission line structures along approximately 4.9 miles of the existing No. 500 69-kV electric transmission line within existing Eversource electric transmission line right-of-way between Hallville Junction in Ledyard and Tunnel Substation in Preston Connecticut, and related electric transmission line and substation improvements.

Dear Attorney Shanley:

At a public meeting held on May 12, 2022, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of the results of the Visual Impact Assessment prior to commencement of construction;
3. Submit a copy of the Water Quality Certificate prior to commencement of construction;
4. An environmental monitor oversee construction in sensitive resource areas and submit reports to the Council when any deviations from compliance with Eversource's 2016 *Construction and Maintenance Environmental Requirements, Best Management Practices Manual for Massachusetts and Connecticut* (BMPs) occur, including, but not limited to, where BMPs are not installed, where BMPs are installed but incomplete, or where BMPs are installed but failed;
5. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;
6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void,

and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

7. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Towns of Preston and Ledyard;
8. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
9. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
10. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferee is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
11. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated February 8, 2022, and additional information dated March 30, 2022 and April 26, 2022.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,



Melanie A. Bachman
Executive Director

MAB/RDM/laf

Enclosure: Staff Report dated May 12, 2022

c: The Honorable Sandra L. Allyn-Gauthier, First Selectwoman, Town of Preston (allyngauthier@preston-ct.org)
The Honorable Fred Allyn III, Mayor, Town of Ledyard (mayor@ledyardct.org)



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

Petition No. 1486
The Connecticut Light and Power Company d/b/a Eversource Energy
400/500 Lines Rebuild Project
Preston and Ledyard

Staff Report
May 12, 2022

Introduction

On February 8, 2022, the Connecticut Siting Council (Council) received a petition (Petition) from The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the proposed 400 Line and 500 Line Upgrade Project (Project) within existing Eversource electric transmission line right-of-way (ROW) between Ledyard Junction and Tunnel Substation on Eversource-owned property in the Towns of Preston and Ledyard (Towns).

The Project consists of replacement and reconductoring of electric transmission line structures along the ROW between Ledyard Junction in Ledyard and Tunnel Substation in Preston, and other improvements.

On February 3, 2022, in compliance with Regulations of Connecticut State Agencies (RCSA) §16-50j-40, Eversource provided notice of the proposed project to the Towns and abutting property owners. No comments from the Town or abutters were received.

On February 10, 2022, the Council sent correspondence to the Towns stating that the Council has received the Petition and invited the Towns to contact the Council with any questions or comments by March 10, 2022. No comments were received.

The Council submitted interrogatories to Eversource on March 9 and April 12, 2022. Eversource submitted responses to the interrogatories on March 30 and April 26, 2022, respectively.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. On April 7, 2022, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than August 7, 2022, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

The purpose of the proposed project is to improve system reliability on the 400 and 500 Lines by replacing and/or reconductoring electric transmission line structures, converting the 400 Line from 69-kV operation to 115-kV operation, re-building the 69-kV 500 Line so that it is capable of operating at 115-kV, and modifications to the Tunnel Substation.

Municipal and Abutter Notice

During October 2021, Eversource consulted with representatives of the Towns to brief them on the proposed Project. Representatives from the Town of Preston expressed concerns regarding impacts to Preston Community Park. Upon discussion with the Town of Preston, Eversource agreed to begin work in the park area in September.

Also during October 2021, Eversource initiated outreach to property owners along the project route. All abutting property owners were notified of the project and provided information on how to obtain additional information, as well as how to submit comments to the Council. Three abutters contacted Eversource regarding impacts to cow pasture, environmental concerns and access gates to prevent dirt bike access.

During the construction phase of the project, Eversource would maintain contact with property owners to inform them of construction activities and site restoration.

Existing Project Area

The existing Project area includes approximately 8.6 miles of existing Eversource ROW that extends through residential, agricultural, and undeveloped areas between Ledyard Junction and Tunnel Substation. The ROW is generally 160 feet wide, but some segments are up to 200 feet wide. The maintained portion of the ROW varies in width throughout the Project corridor.

Proposed Project

The Project is being proposed to implement part of a solution determined by ISO New England, Inc. (ISO-NE) to address voltage criteria violations and thermal overloads identified by the 2027 Eastern Connecticut (ECT) Reliability Needs Assessment in the Montville to Card Substation and Montville to Killingly transmission line corridors, and the Mystic to Kent County, Rhode Island transmission line corridor. As part of the ISO-NE 2029 ECT Solutions Study, Eversource would convert the 400 Line from 69-kV to 115-kV to mitigate the identified contingencies.

In addition to the work related to the ECT Solutions Study, Eversource would rebuild the 500 Line, a 69-kV line which occupies the same ROW as the 400 Line between Hallville Junction in Ledyard and Tunnel Substation in Preston, so that it would be capable of operating at 115-kV. Completion of this Project will constitute the final component of the ECT Solution and would allow the conversion of the 100 Line and 400 Line from 69-kV operation to 115-kV operation¹. Once work related to the ECT Solutions Study is completed, the lines would be energized at 115-kV.

The Project would require taller transmission line structures to meet National Electrical Safety Code (NESC) standards, including, but not limited to, conductor clearance requirements. The NESC is the authoritative code for ensuring the continued practical safeguarding of persons and utility facilities during the installation, operation and maintenance of electric power and communications utility systems, including substations, overhead lines and underground lines.

The Project is identified in the March 1, 2022 Eversource Ten-Year Forecast of Electric Loads and Resources and in the March 2022 ISO-NE Regional System Plan Project List.

Convert 400 Line to 115-kV from Ledyard Junction to Tunnel Substation

The 400 Line is a 69-kV Line that was constructed in 1942 on wood H-frame structures that extends from Gales Ferry Substation to Ledyard Junction, and then extends north to Tunnel Substation and south to Buddington Substation in Groton. The segment from Ledyard Junction to Buddington Substation does not require upgrades at this time and is not part of this Project.

Project work consists of reconductoring/reconstruction an 8.6-mile section of the line between Ledyard Junction and Tunnel Substation. Specifically, the work includes the following:

- a) Replace 85 existing wood pole structures with a horizontal conductor configuration with 85 weathering steel monopoles with a vertical conductor configuration;

¹ [PE1475-20211228-ECT---Montville-Junction-to-Ledyard-Junction---Combined-Petition.pdf](#)

- b) Replace existing 2/0 and 4/0 copper conductors with 1272 kcmil aluminum conductor steel supported conductors;
- c) Replace existing Copperweld shield wire with OPGW;
- d) Replace all associated hardware and insulators and install all required structure grounding and counterpoise; and
- e) Widen the maintained portion of the ROW to meet the required conductor clearances.

Modifications to Tunnel Substation

Modifications would be performed at Tunnel Substation to facilitate the operation of the 400 Line at 115- kV. Project work would occur within the substation footprint and includes the following;

- a) Install a new 115-kV, 40-kiloampere circuit breaker;
- b) Re-terminate the new 400 Line conductors to the new 115-kV bus position;
- c) Install three 115-kV cable potheads and new line terminal equipment (i.e., motor-operated disconnect switch, capacitor coupled voltage transformers and lightning arresters);
- d) Install new bus, cable and connectors as necessary;
- e) Install approximately 250 feet of 3500-kcmil 115-kV underground cable per phase within the substation yard to connect the reconducted 400 Line to the 115- kV bus position;
- f) Install necessary grounding connections and ground grid repairs in disturbed areas; and
- g) Complete above- and below-grade civil work required to support the modifications.

Reconstruction of the 500 Line

The 500 Line would be reconstructed within a 4.9 mile section of ROW between Hallville Junction and Tunnel Substation. The line is supported on wood H-frame structures that were constructed in 1952 with 2/0 and 4/0 copper conductor and two Copperweld shield wires. From Ledyard Junction to Hallville Junction, the ROW contains an abandoned segment of the 500 Line and the Project includes the removal of the abandoned structures in this ROW segment.

Specifically, the work includes the following:

- a) Replace all 50 single circuit wood H-frame structures with single-circuit weathering steel monopole structures in a vertical configuration;
- b) Replace existing 2/0 and 4/0 copper conductors with 1272 kcmil aluminum conductor steel supported conductors;
- c) Install lightning arrestors on approximately every 5th structure;
- d) Replace existing Copperweld shield wire with OPGW; and
- e) Remove 13 abandoned structures between Ledyard Junction and Hallville Junction.

Cost

The total estimated cost of the project is approximately \$75.7M. Of this total, approximately \$50.3M is associated with Pool Transmission Facilities (PTFs)² and approximately \$25.4M is associated with Non-PTFs. Costs associated with PTFs are eligible for regionalization. Pending a final determination from ISO-NE, total costs are expected to be allocated³ as follows:

Eversource Connecticut ratepayers ⁴	45.0%	(\$34.1M)
Other Connecticut ratepayers ⁵	5.1%	(\$3.8M)
<u>Other New England ratepayers⁶</u>	<u>49.9%</u>	<u>(\$37.8M)</u>
Cost Total	100%	(\$75.7M)

Project Construction and Work Procedures

Eversource would utilize an existing leased area at 82 Depot Road in Montville for a staging/laydown area. This area is also utilized as a staging/laydown area for the Montville to Horton Cove Rebuild Project that was approved by the Council in Petition No. 1468 on January 31, 2022. It is approximately three acres in size and would be used for storage of construction materials, equipment, tools and supplies. A second staging area, approximately 6.8 acres in size, would be established at 54 Military Highway (Route 12) in Preston. Office trailers and storage containers may be located at the staging areas. Appropriate erosion and sedimentation (E&S) controls would be installed and maintained around the staging areas until completion of construction in accordance with Project permitting and Eversource Best Management Practices (BMPs).

Eversource would utilize existing ROW access roads to the extent possible during construction. Where existing access roads are not present, new permanent gravel roads would be established. Multiple access roads are required so that equipment can access various construction zones along the ROW without relying on one point of access for long ROW segments. Construction matting would be utilized to install temporary access roads to protect sensitive areas (e.g. wetlands, lawn, meadow) to reach certain structure locations.

Eversource would obtain a Department of Transportation Encroachment Permit to cross four state routes (Rt.165, Rt. 2, Rt. 117, Rt. 214) within the Project area.

Construction areas would be isolated by establishing E&S controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource BMPs. Typical E&S control measures include, but are not limited to, straw blankets, hay bales, silt fencing, gravel anti-tracking pads, soil and slope protection, water bars, check dams, berms, swales, plunge pools, and sediment basins.

A project-specific Stormwater Pollution Control Plan (SWPCP) would be developed for registration under a DEEP Stormwater Permit. The Stormwater Permit requires a qualified inspector to inspect the work areas at least once per week and within 24-hours after a rain event that meets certain permit criteria. Eversource would also have an Environmental Inspector on-site at a minimum of one day per week to address compliance with all environmental permit conditions, including DEEP Natural Diversity Database (NDDDB) requirements.

² ISO-NE defines PTFs as facilities rated 69-kV or above owned by the participating transmission owners over which ISO-NE has operating authority in accordance with the terms set forth in the Transmission Operating Agreements.

³ These allocations are estimates based on 2021 actual loads.

⁴ Electrical service customers of Eversource and located within Connecticut.

⁵ Electrical service customers located within Connecticut but outside of Eversource's service territory.

⁶ Electrical service customers located within New England but outside of Connecticut.

At each transmission line structure location, a work pad would be constructed to stage material for final on-site assembly and/or removal of structures, to pull conductors and to provide a safe, level work base for construction equipment. Work pads for the project would typically be 100 feet by 100 feet but could be slightly larger, up to 150 feet by 200 feet, depending on terrain and specific site conditions. For areas where machinery is needed for pulling conductors through an angled structure, work pads of approximately 100 feet by 150 feet would be required. Most work pads would be composed of gravel, though some would consist of temporary matting to protect sensitive areas such as wetlands and agricultural areas.

The proposed structures would have either drilled (caisson) foundations or direct embed foundations. Foundation installation work would require the use of equipment such as drill rigs, pneumatic hammers, augers, dump trucks, concrete trucks, grapple trucks, and light duty trucks. If groundwater is encountered, pumping trucks or other equipment would be utilized. The water would then be discharged in accordance with local, state and federal requirements.

New structure sections, components and hardware would be delivered by flatbed truck to the structure locations for assembly by crane and bucket trucks. After assembly, the area around the direct embed foundations would be backfilled with processed gravel.

New conductors and OPGW would be installed after the structures are installed. The required equipment would include cable reels, pulling and tensioning rigs, and bucket trucks. The removal of the existing conductor and static wire would take place during the active installation of the new conductor and OPGW because the existing conductor and shield wire would be used as pulling lines, if possible. Conductor dead-ending and splicing would be accomplished with pressed hardware. The existing structures would be removed after the new conductor and OPGW are installed.

After the new structures/conductors/OPGW are installed, the lines are re-energized and the existing structures are removed, ROW restoration activities would commence. Restoration work would include the removal of construction debris, signage, flagging, temporary fencing, and construction mats and work pads that are designated for removal. Affected areas would be re-graded as practical and stabilized via revegetation or other measures before removing temporary E&S controls. ROW restoration would be performed in accordance with Eversource BMPs and in consultation with affected property owners.

Upon completion of the project, access roads and work pads located in uplands would be left in place to facilitate future transmission line maintenance. If a property owner requests their removal, Eversource would work with such property owner regarding mitigation options which could include adding topsoil and seeding or removing all or part of the gravel work pad depending on specific site conditions.

Except for concrete trucks, no construction equipment or vehicle washing would be allowed in the ROW. Concrete truck wash-out would occur only in upland areas of the ROW to avoid or minimize the potential for impacts to water resources. All wash-out areas would include measures to control and contain wash-water and collect the cement wash-off for off-site disposal.

Project-related traffic would be expected to be temporary and highly localized in the vicinity of ROW access points along public roads and at the staging area. Due to the phasing of construction work, project-related traffic is not expected to significantly affect transportation patterns or levels of service on public roads. Traffic management procedures would be developed, if necessary.

To conduct the work, the 400 Line would be removed from service. A mobile transformer with a tap from the 1410 Line to the Gales Ferry Substation would maintain power to the substation and customers supplied by the substation. Upon completion of the Gales Ferry Substation modifications and improvements to the Tunnel Substation⁷, the newly reconducted 400 Line would be energized at 115-kV and redesignated as the 1911 Line.

Environmental Effects and Mitigation Measures

Work would include the removal of trees within the ROW that are within 35 feet of the relocated conductors. In general, the maintained portion of the ROW would be expanded by an additional 13 to 25 feet depending on the specific section of the ROW. In addition, tree trimming and vegetation removal would be required to improve work site access and install work pads, develop and/or restore off-ROW access roads and to meet NESC and Eversource conductor clearance standards. The Project would result in a conversion of 18.6 acres of upland forest habitat to scrub-shrub or herbaceous habitat areas that are beneficial to species that are in decline in Connecticut.

Eversource elected to install the new 400 Line near the edge of the ROW rather than in its current alignment in the center of the ROW in order to provide enough space for the potential installation of an additional transmission line in the future. Although the proposed 400 Line alignment would require expansion of the maintained portion of the ROW up to the ROW edge to comply with current clearance standards, the proposed alignment would offer Eversource various transmission structure design options for a future 115-kV line and would provide sufficient space for a 345-kV line. Installation of the 400 Line near or in its current alignment would not provide enough space for a future 345-kV Line and would restrict future 115-kV transmission structure designs to a vertical configuration.

Vegetation removal/tree trimming would be accomplished using mechanical methods. This would typically involve the use of flat-bed trucks, brush hogs or other types of mowing equipment, skidders, forwarders, bucket trucks for canopy trimming, and chippers. Vegetation removal activities would be performed in accordance with Eversource BMPs.

A total of 41 wetland areas and 9 watercourses/waterbodies occur along the ROW or in off-ROW areas that would be impacted by the Project (access roads). The Project would result in 1,120 square feet of permanent wetland impacts associated with the replacement of 14 structures. Of these structures, four structures associated with the 400 Line are currently located in upland areas and would be relocated to wetland areas due to the realignment of line closer to the ROW edge. Realignment of the transmission line to avoid new structures in wetlands is not possible due to plans to reserve space in the ROW to accommodate a future transmission line. In addition, three structures along the 400 Line that are currently in wetlands would be relocated to upland areas.

Temporary wetland impacts related to project construction matting would total approximately 10.1 acres. In addition, approximately 3.4 acres of forested wetlands, including an Atlantic White Cedar swamp near Route 117 in Ledyard, would be converted to scrub-shrub habitat through the installation of temporary matting to create work pads/access roads for construction and to facilitate tree clearing to expand the edge of the maintained ROW.

A total of 13 watercourse crossings using temporary wood construction mats or rail car frames would be required for work pads and access roads. Construction activities within wetlands and over watercourses would be conducted in accordance with Eversource's BMPs.

⁷ [PE1484 \(ct.gov\)](#)

A total of 13 vernal pools (VP) were identified in the Project area. No temporary construction matting would be placed within any VP. Temporary matting would be installed within the vernal pool envelope (VPE-100 feet from the edge of the VP) of 8 VPs, temporarily impacting 1.67 acres of VPEs. In addition, 1.28 acres of gravel roads would be installed within upland VPE areas associated with 5 vernal pools for structure work pads and access roads. Temporary matting cannot be used in these VPE upland areas due to topographic conditions that preclude the safe use of temporary matting.

Approximately 0.2 acres of forested VP and 2.13 acres of VPE habitat would be cleared for the Project. Clearing would be accomplished by hand to prevent vehicle impacts to the VPs and VPEs.

Eversource would conduct work in this area in accordance with Eversource's BMPs as well as Project specific VP protective measures, which include, but are not limited to, avoidance and minimization of construction activities, restricting tree clearing, avoid removing shrub vegetation within 25 feet of a VP, use of air bridge temporary matting to allow vernal pool species to access surrounding habitat, and the installation of E&S control measures to prevent migration of VP species into the work area and to allow access away from work areas in select locations.

Work within the VPs/VPEs would require approval from DEEP and the US Army Corps of Engineers (ACOE). Eversource would adopt recommended protection measures as required by these agencies. As part of the ACOE Self-Verification filing, Eversource would be required to obtain a DEEP Water Quality Certificate for tree removal work within a "special wetland".

Specific alterations to work areas or work area access to reduce impacts to wetlands, VP/VPE and watercourses beyond the proposed design are not possible due to required clearing for conductor clearance, vehicle access and to support multiple access points to the ROW to facilitate construction. Eversource has conducted field investigations of environmentally sensitive areas to design the project with the least impact as possible.

The Project ROW extends across a 100-year Federal Emergency Management Agency-designated flood zone associated with the three watercourses within the Project area (Billings Avery Brook and Joe Clark Brook in Ledyard and Poquetanuck Brook in Preston). One structure would be installed within the flood zone of Joe Clark Brook while temporary work pads for four other structures would be installed within designated flood zones. The Project would have no permanent effect on the designated flood zones.

There are no DEEP-designated Aquifer Protection Areas within the Project ROW. The Project ROW is partially located within the Groton Reservoir System Public Water Supply Watershed operated by Groton Utilities. Eversource would conduct work in accordance with its BMPs as well as practices recommended by Groton Utilities. Provisions are included for the proper storage, secondary containment, and handling of diesel fuel, motor oil, grease and other lubricants, to protect water quality.

A portion of the Project is within DEEP NDDB areas. Eversource would implement DEEP recommended species-specific protection measures during construction. Some of the measures for rare plants include transplanting individual plants away from construction areas to nearby suitable habitat, followed by monitoring of the transplant area and removal of invasive species, if necessary.

Eversource also consulted with the U.S. Fish & Wildlife Service's Information, Planning and Consultation (IPaC) service regarding federally-listed species that may be present within the project area. The IPaC report identified the northern long-eared bat (NLEB), a federally-listed Threatened Species, and state-listed Endangered Species occurring in Connecticut. There are no known NLEB maternity roost trees within 150 feet of the Project area, and the nearest NLEB hibernaculum is located approximately 45 miles away in the Town of North Branford. Thus, no impacts to the NLEB are expected to result from the Project.

A Phase 1A Cultural Resources Assessment (Phase 1A) of the Project area determined that seven previously identified archaeological sites and three properties/districts listed on the National Register of Historic Places are located within 500 feet of the Project Area. One section of the existing ROW directly southwest of State Route 2A between Structure Nos. 1068 to 1071 passes through the Hallville Mill Historic District in Preston. The State Historic Preservation Office (SHPO) indicated the Project may have viewshed impacts to two properties within historic districts along the line. Eversource conducted a Visual Impact Assessment that determined 8 of 38 structures in proximity to historic districts had potential visibility. Of the 8 identified structures, visibility at 2 structures would be reduced and visibility at 3 structures would be seasonal.

A Phase 1B Cultural Resources Reconnaissance Survey (Phase 1B Survey) was conducted and identified 9 work locations as possessing a potential for moderate to high archaeological sensitivity. As a result of this survey a Phase II survey was conducted to determine the archaeological significance of these locations. In one location, a Phase III was performed to recover subsurface artifacts. To protect identified subsurface archeological deposits found during the Phase III survey, Eversource would use temporary matting and exclusionary fencing, and on-site monitoring to protect subsurface resources.

The cultural resources survey reports have been provided to SHPO and the Tribal Historic Preservation Offices of the Mohegan Tribe of Native Americans of Connecticut the Mashantucket Pequot Tribal Nation, and the Wampanoag Tribe of Gay Head-Aquinnah, for review and comment. Eversource would implement recommended protection measures during construction.

The Project ROW does not cross any designated local or state-designated scenic roads.

A portion of the Project ROW traverses or is adjacent to several public recreational resource areas including Glacier Park in Ledyard, Preston Community Park and the Tri-Town Trail, the DEEP-owned Rose Hill Wildlife Area in Ledyard and Preston, and the Pequot Trail, a blue-blazed trail maintained by the Connecticut Forest and Parks Association. Eversource would consult with representatives of these resources to coordinate construction activities and implement measures to maintain public safety and access during Project construction.

The reconstruction of the 400 Line and 500 Line would require an increase in structure height due to the change in structure design from a horizontal to a vertical conductor configuration to meet NESC clearance requirements within the existing ROW. Existing structures on the lines range from 38 to 80 feet above ground level. The replacement structures on the lines would range from 85 feet to 125 feet above ground level, with increases in height ranging from 15 feet to 68 feet and an average increase of 45 feet.

Due to the increase in structure heights to comply with NESC clearance criteria, there would be indirect visual impacts to the surrounding area. The use of weathering steel replacement structures would resemble the appearance of existing wood structures within the ROW and would match the surrounding wooded landscape.

Public Safety

There would be no permanent changes to existing ROW sounds levels after completion of the Project. Noise associated with construction activities is exempt from DEEP Noise Control Regulations. Notwithstanding, any construction-related noise would be short-term and localized in the vicinity of work sites.

Notice to the Federal Aviation Administration would not be required for any of the proposed structures.

Electric fields (EF) are produced whenever voltage is applied to electrical conductors and equipment. Electric fields are typically measured in units of kilovolts/meter (kV/m). As the weight of scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects, and as safety concerns for electric fields are sufficiently addressed by adherence to the NESC, as amended, health concerns regarding Electric and Magnetic Fields (EMF) focus on MF rather than EF. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has established a guideline of 4.2 kV/m.

The Project route contains an existing transmission line that emits magnetic fields (MF). In the United States, no state or federal exposure standards for 60-Hertz MF based on demonstrated health effects have been established, nor are there any such standards established worldwide. However, the ICNIRP has established a level of 2,000 milliGauss (mG), based on extrapolation from scientific experimentation, and the International Committee on Electromagnetic Safety (ICES) has calculated a guideline of 9,040 mG for exposure to workers and the general public, and recognized in the Council’s *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut*.

Eversource reviewed EMF levels associated with the Project. Pre- and post-construction EMF levels (based on average annual loads for MF) are presented in the table below:

Ledyard Junction - Hallville Junction (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	4.1	36.1	4.1
	Proposed	24.4	49.2	3.8
Electric Fields (kV/m)	Existing	0.06	0.47	0.06
	Proposed	0.16	1.20	0.06

Structure 7079 - Structure 7111 (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	5.1	35.6	4.3
	Proposed	5.2	49.0	14.4
Electric Fields (kV/m)	Existing	0.29	0.57	0.08
	Proposed	0.07	1.21	0.06

Hallville Junction - Structure 7079 (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	5.1	35.6	4.3
	Proposed	5.2	49.0	14.4
Electric Fields (kV/m)	Existing	0.30	0.54	0.08
	Proposed	0.07	1.21	0.06

Structure 7111 - Tunnel Substation (Annual Average Loads)		West ROW Edge	Max in ROW	East ROW Edge
Magnetic Fields (mG)	Existing	5.1	35.6	4.3
	Proposed	5.2	49.0	14.4
Electric Fields (kV/m)	Existing	0.30	0.55	0.08
	Proposed	0.07	1.21	0.06

All EF and MF values would be below the ICNIRP exposure guidelines of 4.2 kV/m and 2,000 mG, respectively.

Construction Schedule

Construction is expected begin in May 2022 with an anticipated completion by July 2023. Normal work hours would be Monday through Saturday from 7:00 a.m. to 7:00 p.m. Sunday work hours or evening work (i.e. after 7:00 p.m.) may be necessary due to delays caused by unforeseen circumstances, inclement weather and/or outage constraints; in the event that this is necessary, Eversource would provide notice to the Council and the Towns.

Conclusion

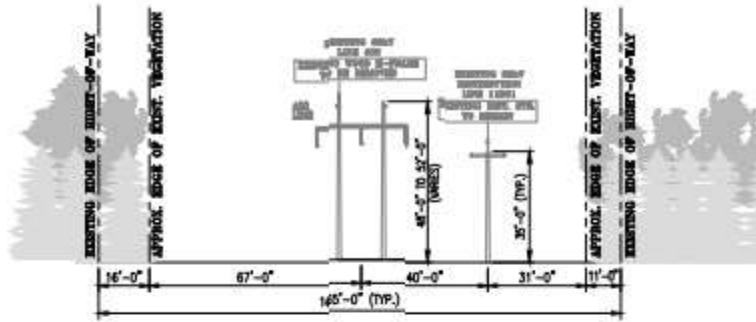
If approved, staff recommends the following condition:

- 1) Approval of any project changes be delegated to Council staff.

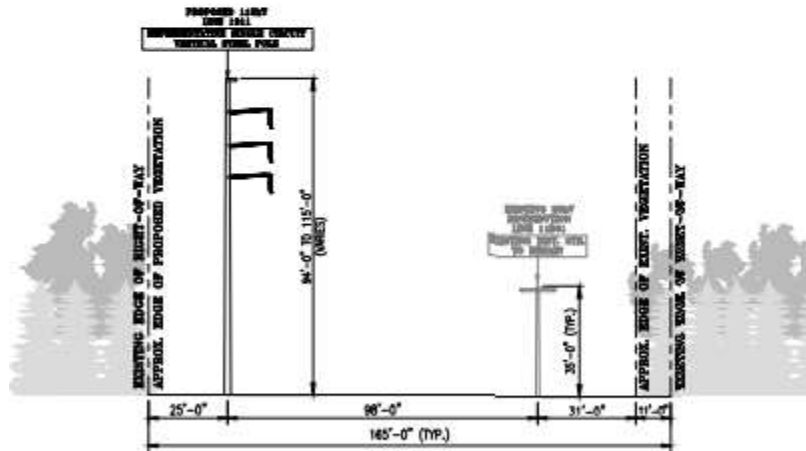
Project Location



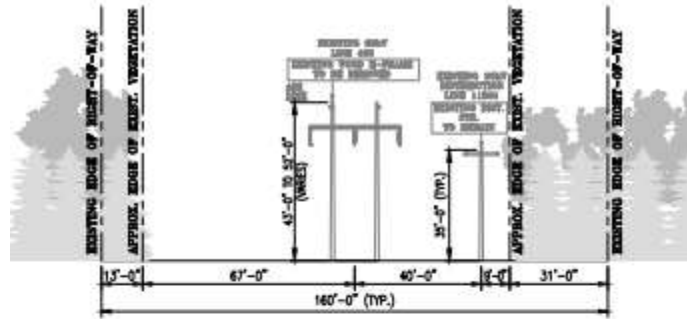
Project ROW Profiles



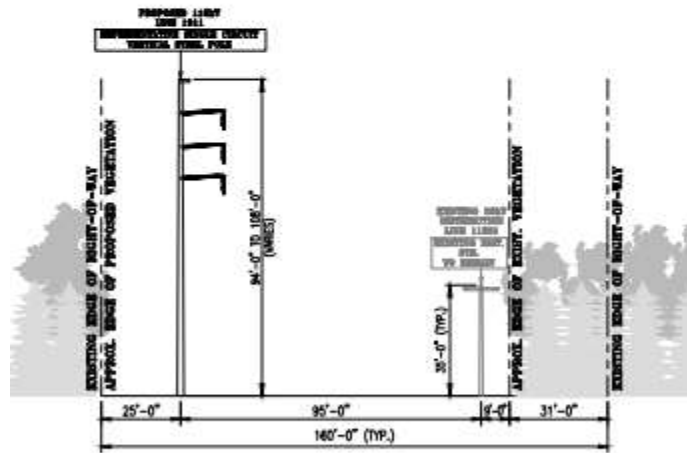
**EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
0.29 MILES, STR. #7037 - STR. #7039**



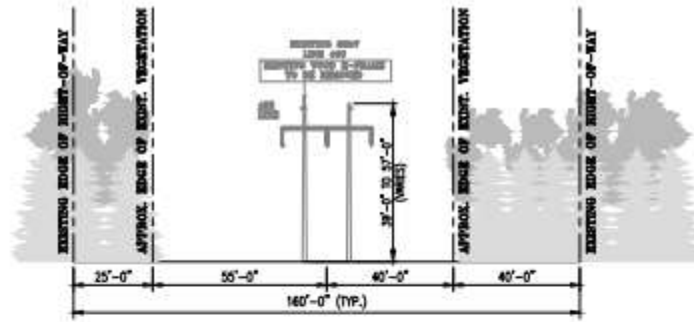
**PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
0.29 MILES, STR. #7037 - STR. #7039**



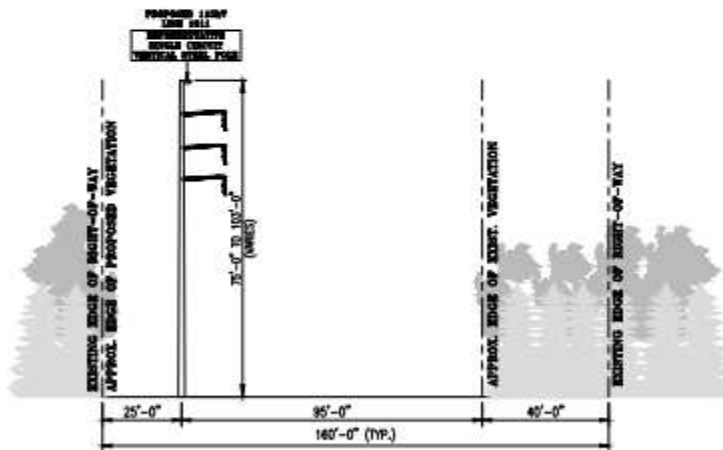
**EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
0.33 MILES, STR. #7040 - STR. #7042**



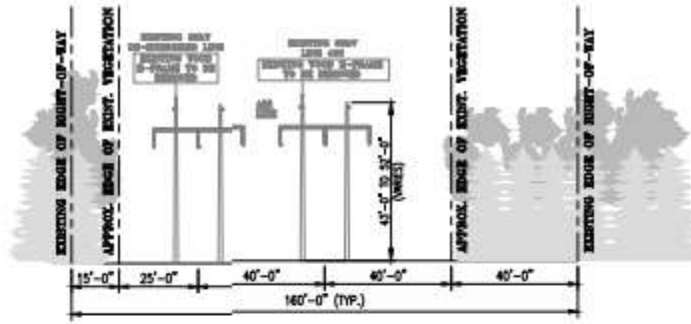
**PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
0.33 MILES, STR. #7040 - STR. #7042**



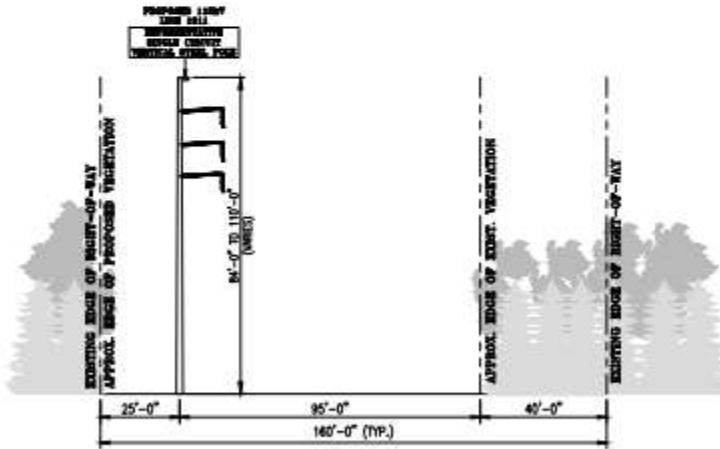
**EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
1.05 MILES, STR. #7043 - STR. #7053**



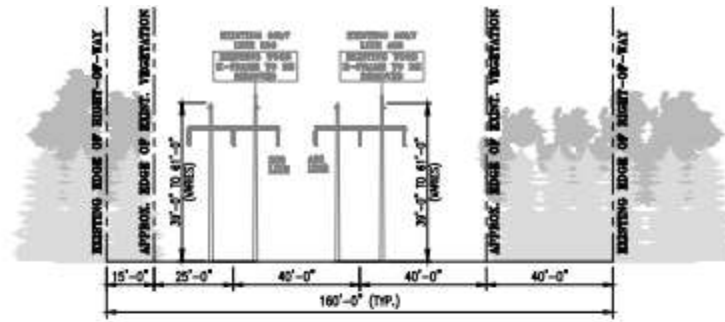
**PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF LEDYARD, CT
1.05 MILES, STR. #7043 - STR. #7053**



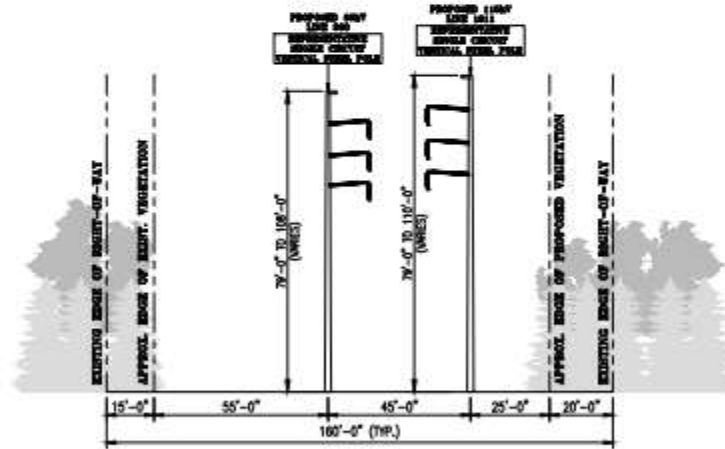
**EXISTING R.O.W. CONFIGURATION
 SINGLE CIRCUIT HORIZONTAL DESIGN
 LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
 IN THE TOWN OF LEDYARD, CT
 1.81 MILES, STR. #7054 - STR. #7070**



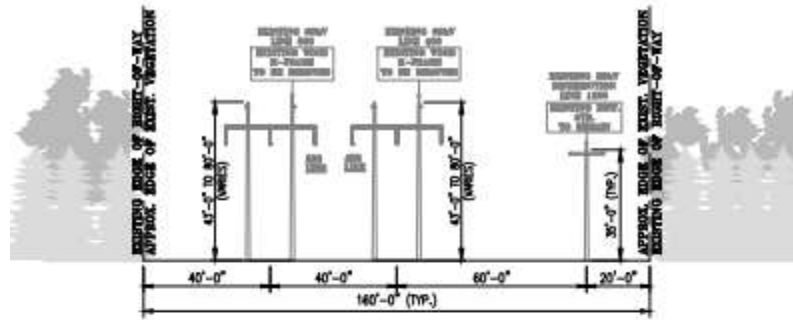
**PROPOSED R.O.W. CONFIGURATION
 NO ADDITIONAL RIGHT-OF-WAY REQUIRED
 SINGLE CIRCUIT VERTICAL DESIGN
 LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
 IN THE TOWN OF LEDYARD, CT
 1.81 MILES, STR. #7054 - STR. #7070**



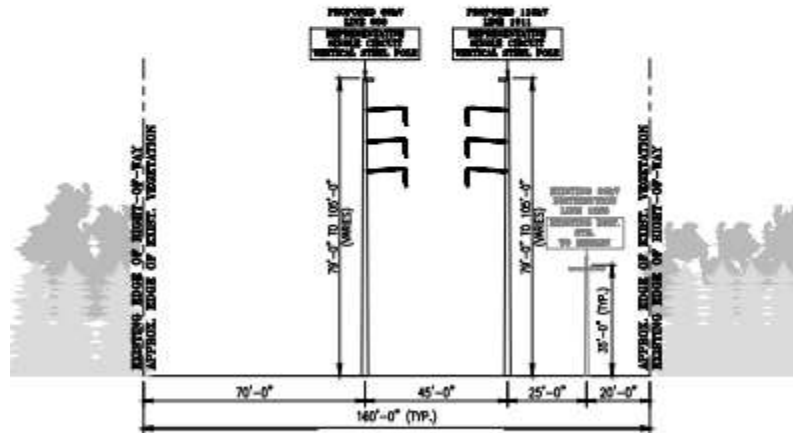
**EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF PRESTON, CT
3.57 MILES, STR. #7071 - STR. #7105**



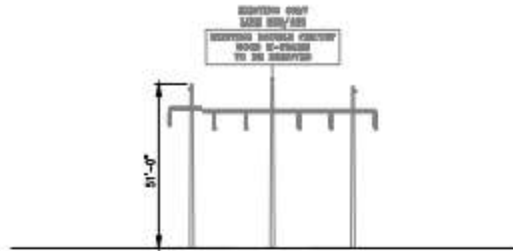
**PROPOSED R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF PRESTON, CT
3.57 MILES, STR. #7071 - STR. #7105**



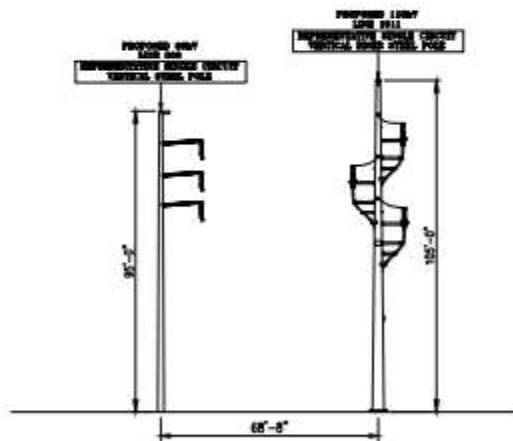
**EXISTING R.O.W. CONFIGURATION
 SINGLE CIRCUIT HORIZONTAL DESIGN
 LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
 IN THE TOWN OF PRESTON, CT
 1.33 MILES, STR. #7106 - STR. #7119**



**PROPOSED R.O.W. CONFIGURATION
 NO ADDITIONAL RIGHT-OF-WAY REQUIRED
 SINGLE CIRCUIT VERTICAL DESIGN
 LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
 IN THE TOWN OF PRESTON, CT
 1.33 MILES, STR. #7106 - STR. #7119**



EXISTING CONFIGURATION
DOUBLE CIRCUIT HORIZONTAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF PRESTON, CT
STR. #7119.5



PROPOSED CONFIGURATION
SINGLE CIRCUIT VERTICAL DESIGN
LOOKING FROM LEDYARD JUNCTION TO TUNNEL SUBSTATION
IN THE TOWN OF PRESTON, CT
STR. #7119.5 & STR. #7119.5A

STATE OF CONNECTICUT)

: ss. Southington, Connecticut May 13, 2022

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Decision and Staff Report in Petition No. 1486 issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Melanie A. Bachman
Executive Director
Connecticut Siting Council

STATE OF CONNECTICUT)

: ss. New Britain, Connecticut May 13, 2022

COUNTY OF HARTFORD)

I certify that a copy of the Connecticut Siting Council Decision and Staff Report in Petition No. 1486 has been forwarded by Certified First Class Return Receipt Requested mail, on May 13, 2022, to all parties and intervenors of record as listed on the attached service list, dated February 9, 2022.

ATTEST:

/s/ Lisa A. Fontaine

Lisa A. Fontaine
Fiscal Administrative Officer
Connecticut Siting Council

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Petitioner	<input checked="" type="checkbox"/> E-mail	The Connecticut Light and Power Company d/b/a Eversource Energy	Kathleen M. Shanley Manager-Transmission Siting Eversource Energy P.O. Box 270 Hartford, CT 06104-0270 Phone: (860) 728-4527 Kathleen.shanley@eversource.com