DRAFT

Petition No. 1527
The Connecticut Light and Power Company d/b/a Eversource Energy
Stevenson to Pootatuck Rebuild Project
Monroe-Shelton, Connecticut

Staff Report
December 2, 2022

Introduction

On July 7, 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 Stevenson to Pootatuck Rebuild Project (Project) within existing Eversource electric transmission line right-of-way (ROW) in the Town of Monroe and City of Shelton (municipalities).

The Project consists of replacement and reconductoring of electric transmission line structures on the Nos. 1560, 1808 and 1580 115-kilovolt (kV) Lines along approximately 8 miles of existing ROW between Eversource's Stevenson Substation in Monroe and United Illuminating Company's (UI) Pootatuck Substation in Shelton, and related transmission line and substation improvements.

On July 6, 2022, in compliance with Regulations of Connecticut State Agencies (RCSA) §16-50j-40, Eversource provided notice of the proposed Project to the municipalities and abutting property owners.

On July 8, 2022, the Council sent correspondence to the municipalities stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by August 5, 2022. The Shelton Trails Committee (STC) submitted comments to the Council on July 18, 2022 requesting modifications to the Project for restoration of hiking trails that utilize, or are adjacent to, the existing ROW.[1] The Mayor of Shelton submitted comments to the Council on July 26, 2022 requesting consideration of the STC comments.[2] The Shelton Board of Aldermen submitted comments to the Council on July 28, 2022 requesting restoration of trails and open space be part of the Project planning process.[3]

On August 1, 2022, Representative Perillo submitted comments requesting consideration of the proposed Project's proximity to homes in Shelton.[4] On August 2, 2022, the Council on Environmental Quality submitted comments on the Project regarding Eversource's Best Management Practices, the Department of Energy and Environmental Protection (DEEP) Natural Diversity Database (NDDB), water resources, soils, invasive species and inspections associated with the DEEP stormwater permit.[5]

Under CGS §16-50x, the Council retains exclusive jurisdiction over the existing electric transmission line and substation facility sites. Under RCSA §16-50j-2a(29), "site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. The Council

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[1] PE1527_CityofSheltonTrailsCommittee.pdf (ct.gov)
[2] PE1527_CityofShelton.pdf (ct.gov)
[3] pe1527 CityofShelton-board-aldermen.pdf (ct.gov)
[4] https://portal.ct.gov/-/media/CSC/3_Petitions-medialibrary/Petitions_MediaLibrary/MediaPetitionNos1501-1600/PE1527/ProceduralCorrespondence/PE1527_PubformAckLtr_StateRep-JasonPerillo.pdf
[5] PE 1527 CEQ comments ; Under RCSA §16-50j-40, neither Eversource nor the Council is required to provide notice to the state agencies listed in CGS §16-50j(g) when a petition for a declaratory ruling for modifications to an ***existing facility*** is submitted to the Council.

cannot delegate its statutory authority to any other entity and it is not required to abide by comments from state agencies.[6]

The Council submitted interrogatories to Eversource on August 15, September 23, and October 28, 2022. Eversource submitted responses to the interrogatories on September 7, October 13, and November 17, 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 August 18, 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 January 2, 2023, 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 Nos. 1560, 1808 and 1580 Lines by replacing and reconductoring electric transmission line structures that are at the end of their service life and to meet National Electrical Safety Code (NESC) standards, including, but not limited to, conductor clearance requirements. Additionally, the Project entails realignment of the existing structure configuration to maintain consistent electrical clearances, installation of new mid-span structures to reduce span widths and mitigate conductor blowout, and connection of UI conductors at Derby Junction.[7]

Municipal and Abutter Notice

In fall 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. Several abutters contacted Eversource with concerns about visual and property value impacts from the location of the replacement structures and new mid-span structures.[8] During the construction phase of the Project, Eversource would maintain contact with property owners and STC to inform them of construction activities and site restoration. Eversource would also involve STC in restoration efforts related to the trails, install ATV deterrence measures where requested by STC and provide safety measures during Project construction.

On December 1, 2021 and Aril 6, 2022, Eversource met with Shelton officials and STC to discuss the Project. On May 12, 2022 Eversource conducted a field review of the Project with STC. STC requested modifications of the Project to protect trail resources, including but not limited to, shifting Project components into wetlands and habitat areas for species listed on the NDDB. Eversource has committed to working with STC to reduce Project-related impacts to the trails to the extent practicable.

On February 28, 2022 Eversource met with Monroe officials to discuss the Project. Subsequently, Eversource met with the Monroe Parks and Recreation Director at Webb Mountain Park to discuss park access and parking area restoration.

On August 1, 2022, Eversource met with the property owners identified on Map Sheet 3 at LL-200A-316 and LL200A-318 (96 and 100 Thoreau Drive, respectively) to discuss post-construction visual mitigation planting plans comprised of species that are compatible with electric transmission line facilities. A final plan could be developed upon completion of construction and implemented during the restoration phase of the Project.

[6] *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)
[7] Council Docket No. 3B.
[8] The Council's evaluation criteria under CGS §16-50p does not include the consideration of property values nor is the Council otherwise obligated to take into account the status of property values.

Existing Project Area

The existing Project area includes approximately 8 miles of existing Eversource ROW that extends through residential, agricultural, and undeveloped areas between Stevenson Substation in Monroe and Pootatuck Substation in Shelton. The ROW was acquired in 1923 for establishment of the 1580 Line. The 1560/1808 Lines were constructed within the ROW in 1962, but no expansion of the ROW was necessary, at that time.

Eversource's easement for the existing ROW grants Eversource rights to, "*enter upon said land to erect, inspect, operate, replace, repair, and patrol and permanently maintain on said right of way, poles and towers, with necessary conductors, wired, cross arms, guy wired and other usual fixtures and appurtenances used or adapted for the transmission of electric current for light, heat, power or any other purpose and used or adapted for telephone purposes."*

The ROW is generally 110 feet wide, but some segments are up to 200 feet wide. The maintained portion of the ROW is 110 feet, but may vary in width throughout the Project corridor. No expansion of the ROW is proposed.

Proposed Project

The Project is proposed to address identified asset condition deficiencies by replacement of deteriorated structures and conductors on the Nos. 1560, 1808 and 1580 Lines. The existing conductors have exceeded their planned service life and are at risk of failure. The existing structures supporting the conductors require replacement due to degradation, limited structural capacity to support new conductors, and compliance with new conductor clearance requirements.

The Project entails replacement of 112 steel lattice structures and one two-pole steel structure with weathering steel monopoles; two wood H-frame structures with two new weathering steel H-frame structures. In addition to the replacement structures, 33 new weathering steel monopoles, including 21 mid-span structures, would be installed. The number of replacement and new structures would total 148 structures. The mid-span structures are intended to restrain the conductors and fiber optic ground wire (OPGW) from blowout caused by wind conditions. In response to Council interrogatories, Eversource was able to redesign the Project to reduce the number of new weathering steel monopole mid-span structures by two.

The Project requires taller structures to comply with 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.

NESC clearance requirements for conductor sway due to wind (blowout) are based on established horizontal clearance requirements to buildings (9.1 feet of clearance to the ROW edge for 115-kV conductors). Transmission lines are designed with the assumption that a building could be erected at any location along the ROW edge. To provide a buffer for construction tolerance, Eversource typically designs transmission corridors to have 11 feet of clearance to the ROW edge. For this Project, Eversource is replacing the existing conductors with larger capacity conductors mainly to reduce the potential for blowout. Eversource typically replaces conductors in narrow ROW, such as the ROW for this Project, with larger conductors to reduce conductor blowout and meet the NESC clearance standards.

NESC clearance requirements for conductor sag factored into transmission line design include vertical clearance standards to ground, water bodies, road and utility crossings, and objects routinely found in ROWs. Conductor sag can occur as a result of ice loading or maximum operating temperature. Eversource conductor sag clearances are based on NESC criteria, with the application of an additional buffer that is based on clearance to vehicles traveling in a ROW. Eversource proposes to increase the structure heights to account for conductor sag conditions and meet the NESC clearance standards.

In addition to conductor blowout and sag, wind can also cause insulator swing and conductor uplift for which design considerations must be evaluated to meet clearance requirements. The amount of conductor swing on a transmission line depends on conductor tension, temperature, wind velocity, insulator weight, ratio of weight span to wind span, and line angle. Conductor uplift typically occurs in spans where structures are located at different ground levels and the lowest point of the conductor sag may be outside the span. These issues can be mitigated by taller structures in certain locations, such as hilly terrain that occurs along the Project ROW, to increase the load tension of the insulators and the span weight load of the conductors.

Eversource proposes to install new mid-span structures along the Project ROW to reduce conductor span lengths and the effect of wind events, and to maintain required NESC clearances. Typical conductor span lengths on Eversource 115-kV lines are 800 feet or less. Within the Project ROW there are three existing locations with longer span lengths (over 1,000 feet). Mid-span structures are proposed in these areas to reduce the span lengths. In response to Council interrogatories, Eversource re-examined the mid-span structure placements and was able to eliminate two side-by-side mid-span structures located on the Monroe-Shelton municipal boundary.

The number of new mid-span structures cannot be further reduced using anti-galloping devices or other design options given the narrowness of the existing ROW. Eversource plans to install "Stockbridge" dampers on the conductors and spiral vibration dampers on the OPGW to reduce vibration and blowout as much as possible, thereby limiting the number of structures to the extent feasible. To eliminate the mid-span structures entirely, the ROW would have to be expanded by 10 feet along the west side of the Project ROW with an additional expansion of up to 35 feet in other areas to meet blowout clearances due to long conductor span lengths (over 1,300 feet).

In addition, the existing structure placement configuration is staggered in several locations on the ROW. The Project would realign the structure placements to more of a side-by-side configuration to establish consistent clearances along the ROW. Removal of the staggered structure configuration will allow access to structures with a safe clearance from the adjacent energized line.

The majority of the replacement structures on the 1560/1808 Lines would be of double-circuit design. However, in some locations, two single-circuit monopoles would be used to support each line. The single circuit poles would be "dead-end" or "angle" structures that are typically installed at ROW angle points to support the full longitudinal tension of the conductors.

The Project includes replacement of one existing structure (No. 1364) with two new structures (Nos. 19624 and 19624A) at Derby Junction that serve to connect Eversource's Nos. 1560 and 1808 Lines to UI's Nos. 1560-3 and 1808-2 Lines. The rebuilding of the triple circuit interconnection on the 1560 Line includes the 1560-1 and 1560-2 circuits, owned by Eversource, as part of this Project. The third circuit, 1560-3, would be rebuilt as part of UI's Derby Junction to Ansonia 115-kV electric transmission line upgrade project that was approved by the Council on October 27, 2022 in Docket 3B. Due to the planned outage sequence associated with the interconnection, the Eversource tap structure at Derby Junction that is part of this Project is scheduled to be completed prior to UI's commencement of construction on its project. Eversource plans to maintain this schedule to avoid the design, construction and cost of a temporary interconnection.

Besides this interconnection, coordinated with UI, Eversource's proposed modifications would not impact the design of UI's transmission lines beyond Derby Junction and the design of the Project is not dependent upon the design of the UI project. UI is upgrading their transmission system beyond Derby Junction as part of Docket 3B.

The Project is identified in the 2022 Eversource Forecast of Loads and Resources Report and in the June 2022 Independent System Operator – New England (ISO-NE) Regional System Plan Asset Condition List.[9] UI's Docket 3B project is also identified in the June 2022 ISO-NE Regional System Plan Asset Condition List and in the 2022 UI Forecast of Loads and Resources Report.

Structure Replacement and Reconductoring of the 115-kV 1560/1808 Lines

The 1560/1808 Lines consist of 795 aluminum conductor steel reinforced (ACSR) conductors supported by 55 double circuit lattice towers, one wood H-frame, two steel single circuit poles and one wood two-pole structure. The lines were constructed in 1962.

Project work consists of the following:

a) Replace 43 existing double-circuit steel lattice structures with 43 new double-circuit weathering steel monopoles;
b) Replace 12 existing double-circuit steel lattice structures with 24 new single-circuit weathering steel monopoles (two single circuit monopoles per lattice replacement);
c) Replace one existing two-pole steel structure with one new double-circuit weathering steel monopole;
d) Replace one existing single-circuit wood H-Frame structure with one new weathering single-circuit steel H-frame structure;
e) Install 4 new mid-span single-circuit weathering steel monopoles;
f) Install 8 new mid-span double-circuit weathering steel monopoles;
g) Replace existing 795 ACSR with 1590-kcmil aluminum conductor steel-supported (ACSS) conductor; and
h) Replace existing 3/8-inch Copperweld shield wire with OPGW.

Structure Replacement and Reconductoring of the 115-kV 1580 Line

The 1580 Line consists of 4/0 copper conductor supported by 57 double circuit lattice towers and an H-frame. The line was constructed in 1923.

Project work consists of the following:

a) Replace 57 existing double-circuit steel lattice structures with 57 new single-circuit weathering steel monopoles;
b) Install 9 new mid-span single-circuit weathering steel monopoles;
c) Replace one existing double-circuit wood H-Frame structure with one new weathering single-circuit steel H-frame structure;
d) Replace existing 4/0 copper conductor with 1590 kcmil ACSS conductor;
e) Replace existing Copperweld shield wire with OPGW; and
f) Remove decommissioned 1590 Line.

[9] https://portal.ct.gov/CSC/Forecast/Forecast2022

Cost

The total estimated cost of the Project is approximately $87.3M. The entire Project cost would be eligible for regional cost allocation as it is associated with Pool Transmission Facilities.[10] Pending a final determination from ISO-NE, total costs are expected to be allocated[11] as follows:

Eversource Connecticut ratepayers[12]	19.1%	(16.7M)
Other Connecticut ratepayers[13]	5.9%	($5.1M)
Other New England ratepayers[14]	75.0%	($65.5M)
Cost Total	100%	($87.3M)

Project Construction and Work Procedures

Eversource would establish temporary equipment staging areas near the Project site prior to construction. The staging areas would contain Project equipment, vehicles and office trailers.

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 for ROW entry from three state-maintained roadways (Rt. 108, Rt. 110, Rt. 714) and from the Housatonic Railroad.

Construction areas would be isolated by establishing erosion and sedimentation (E&S) controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource's April 2022 Best Management Practices Manual for Massachusetts and Connecticut (BMPs).[15] 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 General Permit. The General Permit requires the designing qualified professional to conduct the SWPCP Implementation Inspection that confirms compliance with the General Permit and the initial implementation of all SWPCP control measures for the initial phase of construction. The SWPCP also 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.

The Project is eligible for certification through the US Army Corps of Engineers/DEEP Self-Verification Notification process in regard to wetland impact. The self-verification notification forms would be submitted to the U.S. Army Corps of Engineers - New England District (USACE) and DEEP at least two-weeks prior to the start of project construction as required by the General Permit.

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[10] ISO-NE defines Pool Transmission Facilities 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.
[11] These allocations are estimates based on 2021 actual loads.
[12] Electrical service customers of Eversource and located within Connecticut.
[13] Electrical service customers located within Connecticut but outside of Eversource's service territory.
[14] Electrical service customers located within New England but outside of Connecticut.
[15] Eversource Best Management Practices MA_CT

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 range from 110 feet by 135 feet and up to 150 feet by 150 feet depending on specific site conditions. In areas with difficult terrain, work pads could be larger, up to 150 feet by 255 feet. For areas where machinery is needed for pulling conductors through an angled structure, 60-foot by 80-foot pull pads would be established. Most of the work pads would be composed of gravel. Temporary work pads would be used in sensitive areas such as wetlands, lawns and agricultural land.

The proposed structures would have either drilled shaft foundations or direct embed foundations. Fifty-six structures would have direct-embed foundations and 92 structures would have drilled shaft 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.

After structure installation is complete, new conductors and OPGW would be installed using 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, except in sensitive environmental areas. 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. Eversource would restore stone walls that were affected by the Project if requested by the landowner.

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.

Environmental Effects and Mitigation Measures

Work would occur within a maintained ROW (110 to 200 feet wide) and thus, no tree clearing will occur for the proposed structure replacements. However, tree trimming, minor vegetation removal and/or mowing within the managed transmission line ROW corridor may be required to improve work site access, and to develop and/or restore off-ROW access roads. Hazard trees located in un-managed areas outside of the ROW would be removed after approval from the affected landowner.

Vegetation removal/tree trimming would be accomplished using mechanical methods using 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 43 wetland areas and 27 watercourses occur along the ROW or in off-ROW areas that would be impacted by the Project (access roads). Eight lattice structures that are within or partially within wetlands would be removed. Seven new monopoles would be installed within wetlands.

The Project would result in 385 square feet of permanent wetland impacts associated with the replacement of 7 structures and the expansion of an existing permanent access road. Temporary wetland impacts related to construction matting for work pads and/or temporary access total approximately 3.5 acres. Per Eversource's BMPs, temporary mats would be cleaned to prevent the introduction of invasive species into wetlands.

Eversource would install permanent vehicle gravel stream crossings (approximately 535 square feet of impact) within two intermittent watercourses. Seven other watercourses would be crossed using temporary construction mats. Construction activities within wetlands and over watercourses would be conducted in accordance with Eversource's BMPs.

Six vernal pools were identified near the Project area. None of the vernal pools would be directly affected by construction activities. Work would occur within the vernal pool envelope (100 feet from the edge of the vernal pool) of five of the vernal pools. Temporary matting would be used to reduce impacts to these areas to the extent possible (one work pad would be composed partly of gravel due to safety concerns). Vernal pool survey results recommended protection measures to reduce the potential for impacts to vernal pool envelopes and vernal pool species using E&S controls, reduced vegetation clearing, matting, and minimization of construction activities during periods of peak vernal pool species migration.

Eversource plans to implement vernal pool avoidance and mitigation measures in accordance with its BMPs. In addition, the DEEP-approved SWPCP contains details regarding the E&S control measures that would be implemented to protect wetlands and vernal pools. A wildlife biologist would train construction personnel regarding species and related protection measures and would be onsite to oversee and review the installation of E&S controls. E&S controls would also be inspected weekly by a qualified inspector, as required by the SWPCP.

The Project ROW extends across a 100-year Federal Emergency Management Agency-designated flood zone associated with the Housatonic River in Monroe and the floodway, 100-year and 500-year flood zones associated with the Farmill River in Shelton. Secured temporary matting for work pads and pull pads would be installed within the Farmill River flood zone. The Project would have no permanent effect on the designated flood zones.

The ROW crosses a DEEP-designated Aquifer Protection Area (APA) near Soundview Lane in Shelton. Eversource would improve an approximate 260-foot segment of an existing access road within the APA. The Project area is not within a public water supply watershed and does not cross any public supply reservoirs or public water supply wells. No impact to drinking water resources would occur.

A portion of the Project is within DEEP NDDB areas. Eversource would implement DEEP recommended species-specific protection measures during construction. Gravel work pads in NDDB areas would be covered with soil and seeded with a native plant seed mix that includes pollinator-friendly native vegetation.

Eversource also consulted with the U.S. Fish & Wildlife Service's (USFWS) 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 no known NLEB hibernaculum is located within the municipalities. Thus, no impacts to the NLEB are expected to result from the Project.

The Project ROW traverses a New England Cottontail (NEC) focus area, established by DEEP, USFWS and other conservation groups to preserve NEC habitat. Gravel work pads located in the NEC focus area would be reduced in size where feasible to minimize potential effects to NEC habitat. Post-construction, gravel pads would be covered with soil and reseeded with a native wildflower mix. Shrubland would be maintained in the ROW to provide habitat for the NEC.

No properties/districts listed on the National Register of Historic Places (NRHP) would be affected by the Project. A Phase 1A Cultural Resources Assessment (Phase 1A) of the Project area determined that 48 work locations possessed a potential for moderate to high archaeological sensitivity. A subsequent Phase 1B Cultural Resources Reconnaissance Survey (Phase 1B Survey) found no archaeological significance at 47 of the locations. A Phase II Survey was conducted on the remaining location determined that it is not eligible for listing on the NRHP and no further action was recommended. 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 and the Mashantucket Pequot Tribal Nation.

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

A portion of the Project ROW traverses or is adjacent to several public recreational resource areas including open space parcels and the Shelton Lakes Greenway in Shelton, and Webb Mountain Park in Monroe. A portion of the ROW is partially used as a route for the Paugussett Trail, a blue-blazed hiking trail maintained by the Connecticut Forest and Parks Association, and several other local trails in Shelton. Eversource would coordinate activities with the municipalities and trail maintainers regarding necessary temporary trail relocations and implement safety measures, such as notification, signage, barriers, and spotters to alert trail users of construction.

Eversource has met with STC to mitigate some of the construction work within the ROW on these trails. Eversource would restore trails across access roads and work areas by adding topsoil or fine processed material to graveled areas, where feasible, and use a native wildflower seed mix to promote pollinator habitat and enhance the aesthetic quality of disturbed areas. Eversource would consult with STC on specific restoration methods. Eversource would also install ATV barriers, such as large rocks or gates, where feasible, to deter ATVs from using ROW access points.

The replacement and reconductoring of the lines would require increases in structure heights 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 one foot to 53 feet. Twelve structures would increase in height by over 40 feet. Six replacement structures would have slightly reduced heights than the existing structures. The new mid span structures would range in heigh from 86 feet to 141 feet, with an average height of approximately 121 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 landscape.

Portions of the existing ROW traverses developed residential areas. Shifting the locations of the proposed structures to along the ROW to reduce visibility would affect structure heights in other areas and shift the visibility from one residential area to another residential area. To mitigate some of the views from residences Eversource would implement a visual mitigation planting plan. Additionally, in the Meadow Street area of Shelton, Eversource would shift the location of two proposed structures 15 feet to the north to move them farther from the road (Structures Nos. 19230 & 19631).

At the request of the Council, Eversource examined the feasibility of relocating three structures (Structure Nos. 19655, 19655A, & 19254) away from two abutters at Thoreau Drive to a location further north, across a wetland at the base of a steep hill. This location is feasible but has challenging terrain which would require an additional 0.76 acres in disturbance, the construction of a tiered work pad, reinforced slope protection, and a more robust steel monopole. The estimated additional cost to the Project for this relocation is approximately $1 million. Eversource also examined a location south of Thoreau Drive, but due to wetland impacts it would require USACE permitting and would result in future maintenance access issues. The estimated additional cost to the Project for this relocation is approximately $424,000.

Also at the request of the Council, Eversource examined the feasibility of relocating two structures (Structure Nos. Structure Nos. 19227 & 19628) away from an abutter on Red Fern Lane. One location, approximately 100 feet further north, would require work in wetlands, resulting in approximately 4,935 square feet of permanent wetland impact (for a permanent work pad) and an additional 6,035 square feet of temporary wetland impact. This amount of work may require a USACE permit. The estimated additional cost to the Project for this relocation is approximately $700,000. A second location approximately 375 feet further north, would be 30 to 40 feet from the edge of Plum Tree Lane and would result in increased visibility to this area (3 nearby residencies) due to its location along the road and a slight increase in tower height (5 feet). The estimated additional cost to the Project for this relocation is approximately $653,000.

Eversource examined other design options that were determined to be either not feasible or if feasible, would displace Project visibility from one area to another. For example, modifying the dead-end two-pole design (Structure Nos. 19655 & 19655A) at Thoreau Drive to a single-pole design would require a dead-end two pole design further south (Structure No. 19654) instead of the single-pole design currently proposed, thus increasing visibility to abutters in a new location.

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 (FAA) would not be required for any of the proposed structures and none of the proposed structures require FAA marking and/or lighting.

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 are presented in the tables below:

Calculated Magnetic Fields (Average Annual Loads)				
Section		Left Edge of ROW	Max in ROW	Right Edge of ROW
Pootatuck S/S-Derby Jct	Existing	13.2	15.5	9.2
	Proposed	6.9	19.2	4.2
Derby Jct-Stevenson S/S	Existing	14.1	22.2	17.2
	Proposed	6.5	19.2	4.4

Calculated Electric Fields				
Section		Left Edge of ROW	Max in ROW	Right Edge of ROW
Pootatuck S/S-Stevenson S/S	Existing	0.46	1.89	0.73
	Proposed	0.26	2.27	0.15

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

Construction Schedule

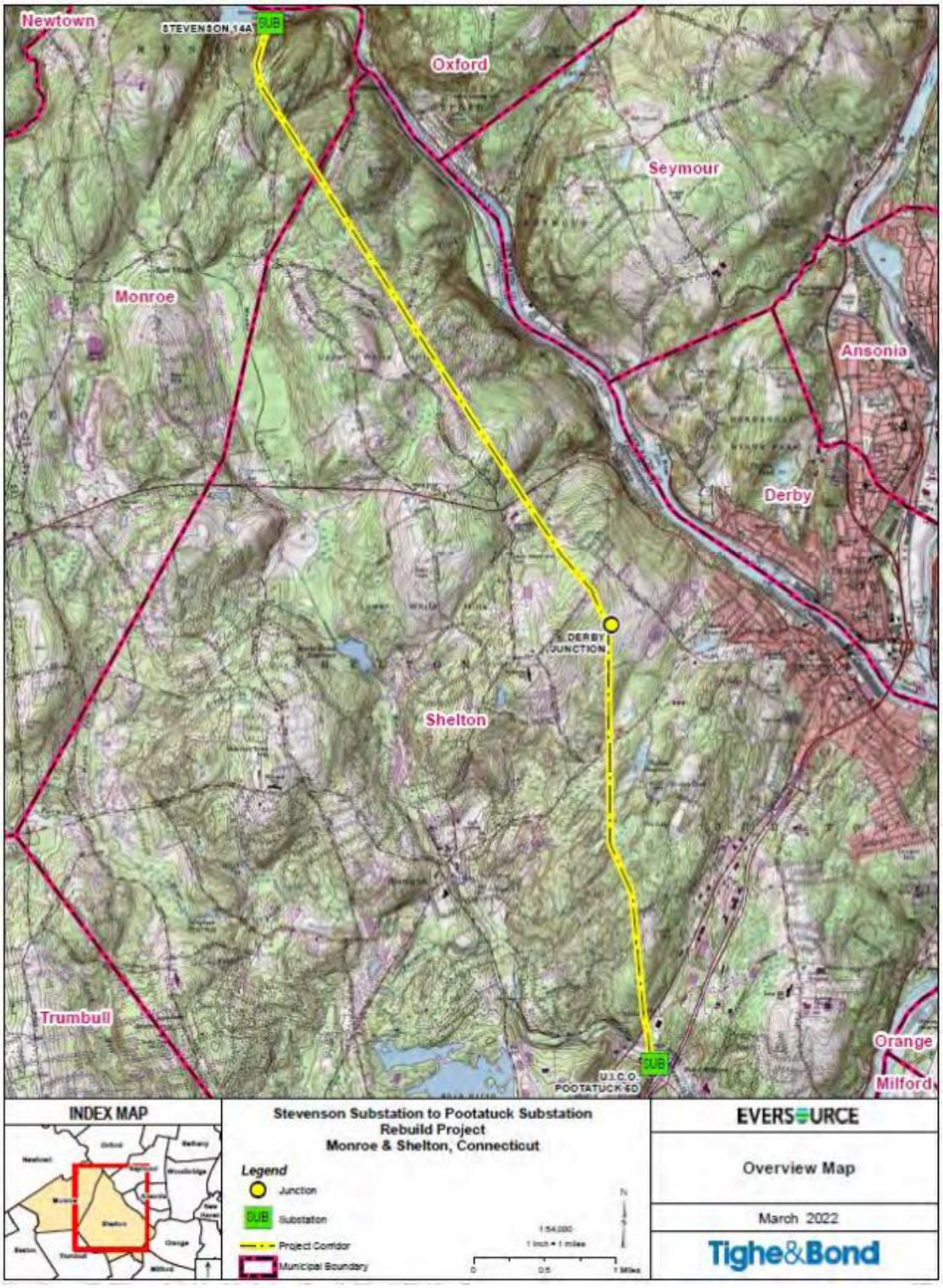
Construction work hours would be Monday through Saturday from 7:00 a.m. to 7:00 p.m. Sunday work hours or evening work (i.e. after 7:00 p.m.) may be necessary due to delays caused by unforeseen circumstances, inclement weather and/or outage constraints; in the event that this is necessary, Eversource would provide notice to the Council and the municipalities.

Conclusion

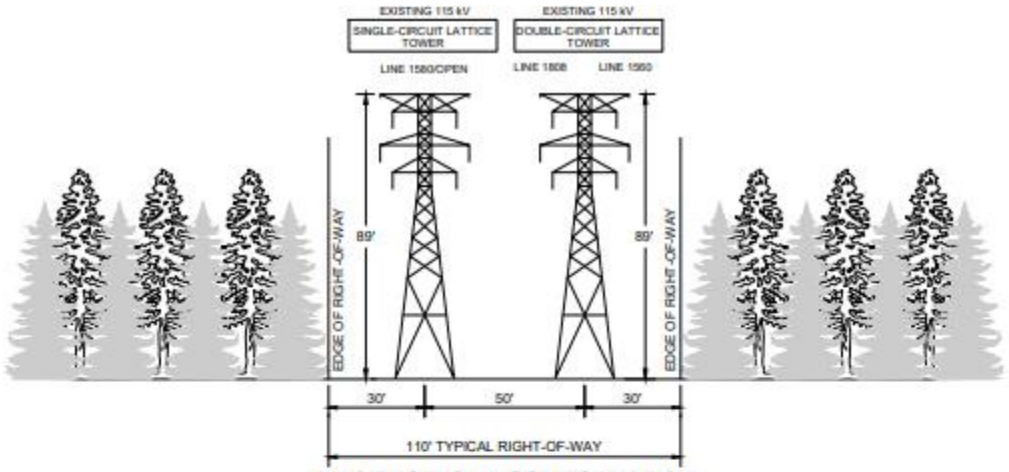
If approved, staff recommends the following conditions:

1) Approval of any project changes be delegated to Council staff;
2) Identification of staging areas and details regarding erosion and sedimentation (E&S) controls at the staging area locations prior to the commencement of construction;
3) Removal of mid-span Structures Nos. 19255 and 19656 located on the Monroe-Shelton municipal boundary;
4) Relocation of Structures Nos. 19230 and 19631 near Meadow Street approximately 15 feet to the north;
5) Incorporation of pollinator habitat in the restoration of disturbed areas consistent with CGS §16-50hh, where feasible;
6) An environmental monitor shall oversee construction activities in sensitive resource areas; and
7) Compliance with the state ban on the use of Class B firefighting foam containing perfluoroalkyl or polyfluroralkyl substances (PFAS) under Public Act 21-191.

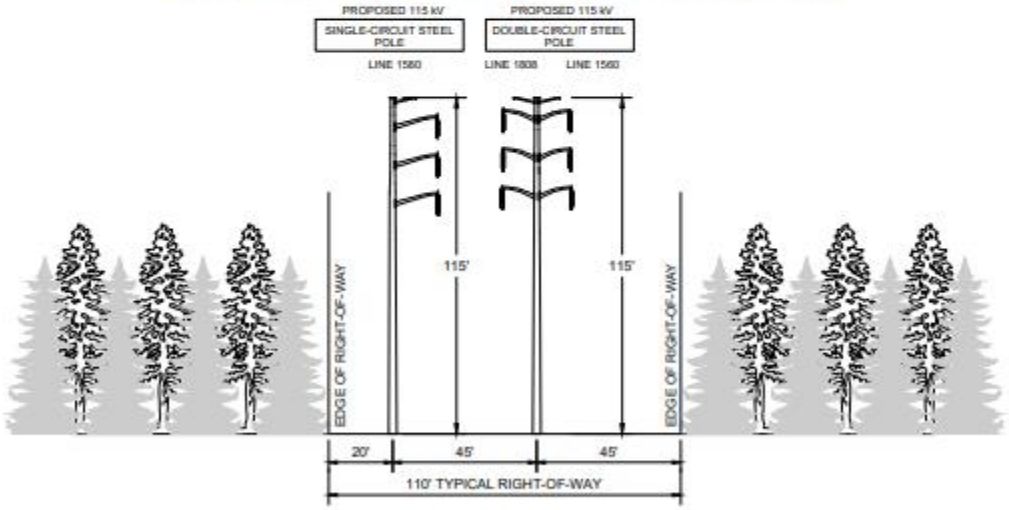
Project Location



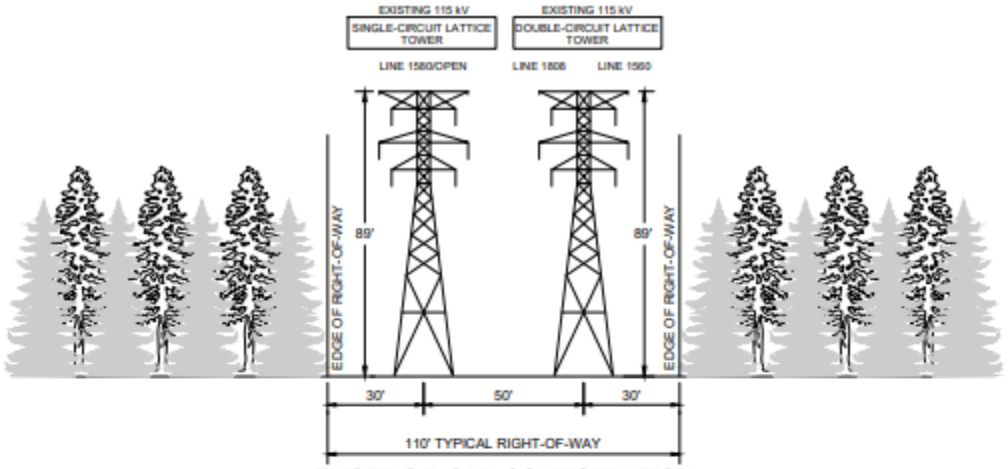
Project ROW Profiles



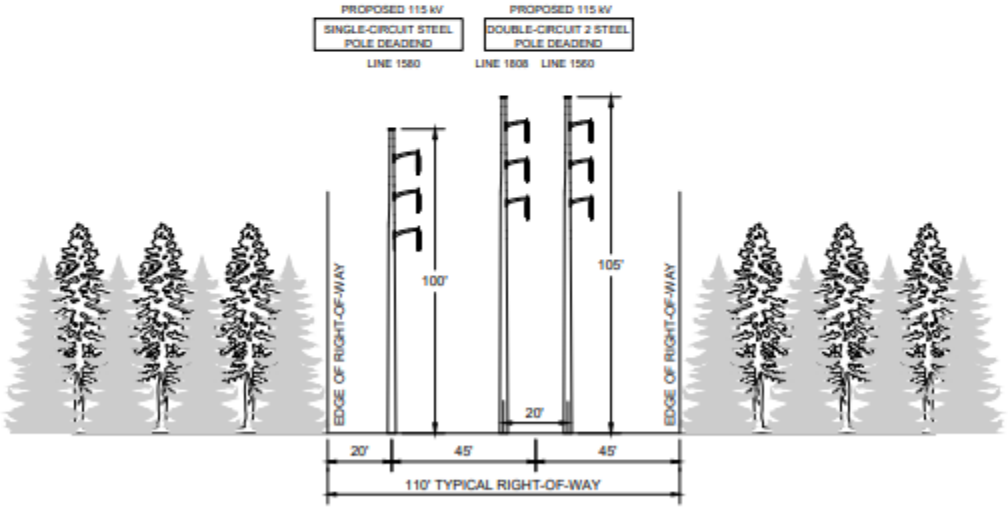
EXISTING R.O.W. CONFIGURATION
DOUBLE-CIRCUIT STEEL LATTICE VERTICAL DESIGN
LOOKING FROM POOTATUCK S/S TO STEVENSON S/S IN THE
TOWNS OF SHELTON AND MONROE, CT
APPROXIMATELY 8.0 MILES BETWEEN STR. #1342 - STR. #1397



EXISTING R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE-CIRCUIT/DOUBLE-CIRCUIT STEEL MONOPOLE VERTICAL DESIGN
LOOKING FROM POOTATUCK S/S TO STEVENSON S/S
IN THE TOWNS OF SHELTON AND MONROE, CT
APPROXIMATELY 8.0 MILES BETWEEN STR. #19601 - STR. #19667



EXISTING R.O.W. CONFIGURATION
DOUBLE-CIRCUIT STEEL LATTICE VERTICAL DESIGN
LOOKING FROM POOTATUCK S/S TO STEVENSON S/S IN THE TOWNS OF SHELTON AND MONROE, CT
APPROXIMATELY 8.0 MILES BETWEEN STR. #1342 - STR. #1397



EXISTING R.O.W. CONFIGURATION
NO ADDITIONAL RIGHT-OF-WAY REQUIRED
SINGLE-CIRCUIT STEEL MONOPOLE VERTICAL DESIGN
LOOKING FROM POOTATUCK S/S TO STEVENSON S/S
IN THE TOWNS OF SHELTON AND MONROE, CT
APPROXIMATELY 8.0 MILES BETWEEN STR. #19601 - STR. #19667