

DRAFT

Petition No. 1613
The Connecticut Light and Power Company d/b/a Eversource Energy
East Haddam Junction to Hunts Brook Junction Reliability Project
East Haddam, Lyme, East Lyme, and Montville

Staff Report
June 14, 2024

Notice

On February 9, 2024, the Connecticut Siting Council (Council) received a 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 East Haddam Junction to Hunts Brook Junction Reliability Project (Petition or Project) within existing Eversource electric transmission line right-of-way (ROW) in the Towns of East Haddam, Lyme, East Lyme, and Montville (municipalities).

The Project consists of the replacement of electric transmission line structures, and the replacement of shield wire with optical ground wire (OPGW)¹ on the 348 and 364 Lines along approximately 16.1 miles of existing ROW between East Haddam Junction in East Haddam and Hunts Brook Junction in Montville, traversing the Towns of Lyme and East Lyme; and related electric transmission line and substation improvements.

On February 9, 2024, 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 February 13, 2024, 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 March 10, 2024. No comments were received from any of the municipalities.

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. On February 29, 2024, the Council on Environmental Quality submitted comments on the Project.²

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 cannot delegate its statutory authority to any other entity and it is not required to abide by comments from state agencies.³

The Council issued interrogatories to Eversource on May 8, 2024. Eversource submitted responses to the interrogatories on May 29, 2024.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition for a declaratory ruling within 60 days of receipt. During a regular meeting held on March 28, 2024, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision

¹ OPGW contains a conductor for lightning protection and fiber optics for communications between substations. It would be installed overhead.

² https://portal.ct.gov/-/media/CSC/3_Petitions-medialibrary/Petitions_MediaLibrary/MediaPetitionNos1601-1700/PE1613/StateAgencyComments/PE1613_CEQCommentsRecd_a.pdf

³ *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

on the Petition as no later than August 7, 2024, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

Community Outreach

Eversource initiated outreach to the municipalities in September 2023. Eversource did not receive comments from the municipalities.

Eversource initiated outreach to property owners along the Project route in September 2023. 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. Eversource did not receive comments from any abutting property owners. During the construction phase of the Project, Eversource would maintain contact with the municipalities and abutting property owners to inform them of construction activities.

Existing Facility Site

The existing facility site includes approximately 16.1 miles of existing Eversource ROW that extends through undeveloped forest and residential areas. It also crosses Routes 85 and 156.

The ROW was established in approximately 1970. Eversource's easements for the existing ROW grant Eversource rights to enter upon the right of way and to erect, construct, repair, relocate, replace, maintain, inspect, operate, and remove upon, infrastructure related to the conduction of electricity. The easements also grant rights to trim, cut, and remove vegetation within the ROW.

The Project ROW is approximately 325 feet wide. It is managed to its full width.⁴ No expansion of the ROW is proposed.

Vegetation management was last performed in the Project ROW in 2022.

Project Development

The purpose of the proposed Project is to improve system reliability on the 348 and 364 Lines by replacing shield wire with OPGW to facilitate Eversource's long term build out of its fiber optic network and replacing electric transmission line structures due to structural loading issues resulting from the upgrade to OPGW and to meet National Electrical Safety Code (NESC) clearance standards.

From East Haddam Junction to Hunts Brook Junction, the 348 and 364 Lines are supported on a total of 232 and 199 structures, respectively.

Prior to submitting this Petition, Eversource replaced 11 structures on the 348 Line via Sub-Petition 1293-EHLMW-01; approximately 50 structures on the 348 Line via Sub-Petition 1293-HEHLELMW-01 and subsequent amendment; and approximately 35 structures on the 364 Line via Sub-Petition 1293-HEHLELMW-01.

Once the Project is complete, 9 additional structures would have been replaced: 3 structures on the 348 Line and 6 structures on the 364 Line.

⁴ According to the Federal Energy Regulatory Commission, "full right-of-way" means the portion of land for which a utility has documented legal rights to build and maintain transmission facilities. Managing a narrower maintained right-of-way, rather than the full right-of-way, is a relatively common industry practice, though not a best practice.

The Project is identified in the 2024 Eversource Forecast of Loads and Resources Report and in the October 2023 Independent System Operator New England, Inc. (ISO-NE) Regional System Plan Asset Condition List.⁵ There are no generation facilities listed on the ISO-NE interconnection queue associated with the proposed Project.

Cost

The total estimated cost of the Project is approximately \$20.1M. All of the total Project cost would be eligible for regional cost allocation as it is associated with Pool Transmission Facilities.⁶ Pending a final determination from ISO-NE, total costs are expected to be allocated⁷ as follows:

Eversource Connecticut ratepayers ⁸	19.2%	(\$3.9M)
Other Connecticut ratepayers ⁹	6.0%	(\$1.2M)
<u>Other New England ratepayers¹⁰</u>	<u>74.8%</u>	<u>(\$15.0M)</u>
Cost Total	100%	(\$20.1M)

Proposed Project

The Project is proposed to address identified asset condition deficiencies by replacing shield wire with OPGW and replacing transmission structures to structurally support the OPGW installation and meet NESC standards. It includes the replacement of two 3-pole wood structures with two 3-pole weathering steel angle structures; and replacement of seven wood H-frame structures with seven weathering steel H-frame structures. Existing conductor for this route would be reused because it has an estimated 6 to 20 years of useful life remaining for the 348 and 364 Lines.

The Project requires taller structures to meet 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 during specific wind events to buildings (13.7 feet of clearance to the ROW edge for 345-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 16 feet of clearance to the ROW edge during specific wind events.

NESC clearance requirements for conductor uplift and insulator swing were factored into the transmission line design. Conductor uplift is a condition where wire on a structure pulls up on the hardware instead of hanging down vertically. It typically occurs in spans where structures are located at different ground levels or have different heights. The amount of insulator swing on a transmission line depends on conductor tension, temperature, wind velocity, insulator weight, ratio of weight span to wind span, and line angle. These issues can be mitigated by taller structures in certain locations to increase the load tension of the insulators and the span weight load of the conductors.

⁵ Entries #413 and #414.

⁶ 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.

⁷ These allocations are estimates based on 2022 actual loads.

⁸ Electrical service customers of Eversource and located within Connecticut.

⁹ Electrical service customers located within Connecticut but outside of Eversource's service territory.

¹⁰ Electrical service customers located within New England but outside of Connecticut.

348 and 364 Lines – East Haddam Junction to Hunts Brook Junction

The 348 Line is 345-kV and supported by mostly wood pole structures installed in 1974. The 364 Line is 345-kV and supported by mostly wood poles installed in 1970. The 348 and 364 Lines consist of 954 kcmil aluminum conductor steel reinforced (ACSR) conductors between East Haddam Junction and Hunts Brook Junction.

Project work consists of the following:

- a) Replace one 3-pole wood structure with one 3-pole weathering steel angle structures on the 348 Line;
- b) Replace one 3-pole wood structures with one 3-pole weathering steel angle structures on the 364 Line;
- c) Replace two wood H-frame structures with two weathering steel H-frame structures on the 348 Line;
- d) Replace five wood H-frame structures with five weathering steel H-frame structures on the 364 Line;
- e) Replace existing 7/8 alumoweld static shield wire with 0.646-inch diameter 96F OPGW and associated hardware; and
- f) Transfer existing ACSR conductor from existing structures to replacement structures.

In addition to the structure replacements and OPGW installation, Project work includes installation of counterpoise¹¹ and transfer of the existing lightning arrestors to the new structures, as needed.

Project Construction

Eversource would establish a temporary staging/laydown area for the Project at 2175 South Main Street in Middletown. This staging/laydown area is approximately 3.5 acres and would contain Project equipment, an office trailer, and vehicles. It would not be located within the existing ROW.

Eversource would utilize existing ROW access roads to the extent possible during construction. Where existing access roads are not present, new 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) to reach certain structure locations.

Eversource would install a permanent off-site gravel access off of Mill Road in East Haddam to proposed replacement Structure 5464 subject to securing off-ROW access rights. Alternatively, Eversource would utilize temporary matting access off of Florida Road to reach this structure location.

Construction areas would be isolated by establishing erosion and sedimentation (E&S) controls in accordance with the March 2024 *Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource's April 2022 Best Management Practices Manual for Massachusetts and Connecticut (BMPs).¹² Typical E&S control measures include, but are not limited to, biodegradable blankets, silt fencing, gravel anti-tracking pads, soil and slope protection, water bars, check dams, berms, swales, and plunge pools. Eversource BMPs prohibit the use of non-biodegradable plastic netting in E&S controls, and Eversource could utilize net-less E&S controls.

The Project limit of disturbance is more than 1 acre and would require a DEEP Stormwater Permit.

The Project is eligible for certification through the U.S. Army Corps of Engineers (USACE) Self-Verification Notification process in regard to wetland impact. The self-verification notification forms would be submitted to the USACE - New England District prior to the start of Project construction.

¹¹ Counterpoise is typically installed at structure locations under the outside phase conductors at a minimum depth of 18 inches.

¹² [2022 Eversource Best Management Practices MA_CT](#)

At each transmission line structure location, a work pad would be constructed, if necessary, to stage material for final on-site assembly and/or removal of structures, and to provide a safe, level work base for construction equipment. Work pads for structure replacements would typically be approximately 100 feet by 100 feet. Work pad dimensions would vary based on site specific conditions such as terrain, proximity to the existing and replacement structures, and the type of construction activities. Temporary work pads would be used in sensitive areas such as wetlands.

The proposed structure foundations would be either drilled caisson foundations or direct-embed foundations. Foundation installation work would require the use of equipment such as drill rigs, pneumatic hammers, augers, and dump trucks. If groundwater is encountered, pumping trucks or other equipment would be utilized. The water would be managed in accordance with Eversource BMPs.

New structure sections, components and hardware would be delivered by flatbed truck to the structure locations for assembly using a crane and bucket trucks. After assembly, the existing conductor would be transferred to the replacement structures. The removal of the existing shield wire and installation of OPGW would also be performed after the replacement structures are installed. Helicopters may be used for the replacement of shield wire with OPGW. In the event that helicopters are utilized, Eversource would provide advance notification to the affected municipality and the property owners.

After the new structures and OPGW are installed 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 or mitigation. 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 applicable permitting.

Except for concrete trucks, no construction equipment or vehicle washing would be allowed in the ROW. In accordance with Eversource's BMPs, concrete truck wash-out would occur only in upland areas of the ROW (a minimum of 50 feet from wetlands) 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 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. Construction warning signs along public roads would be installed near work sites and flaggers or police personnel would be used to direct traffic, if necessary.

Environmental Effects and Mitigation Measures

Some limited tree removal and vegetation management would be required in select areas to allow for construction vehicles and equipment and to accommodate new off ROW access.

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, and chippers. Vegetation removal activities would be performed in accordance with Eversource BMPs.

A total of 26 wetland areas and 5 watercourses are located along the ROW or in adjacent off-ROW areas. No permanent or temporary impacts to watercourses would result from the Project. The Project would result in approximately 80 square feet of permanent wetland impacts associated with the installation of replacement Structure 9660 where wetlands cannot be reasonably avoided. At the crossing of Wetland 21, a stone ford crossing would be installed to access Structure 5555 and would result in approximately 246 square feet of permanent wetland impacts. An existing hard bottom crossing may require improvements for the second crossing of Wetland 21, but it is not expected to impact Wetland 21.

Temporary wetland impacts related to Project construction matting would total approximately 0.41 acre. Construction activities within wetlands and across watercourses would be conducted in accordance with Eversource BMPs.

A total of 9 vernal pools (VP) were identified proximate to the structure replacement work. Three potential vernal pools (PVPs) were identified, but the PVPs were located outside of the work area and not assessed due to their locations. Replacement Structure 9660 would have one pole of the three-pole H-frame located within the VP envelope (100 feet from the VP edge) of VP8. Expansion of the existing gravel work pad within this VP envelope is also necessary to provide a safe, level workspace given the steep terrain.

Eversource would conduct work in this area in accordance with Eversource's BMPs and Project specific VP protective measures, which include, but are not limited to, establishing of E&S controls; avoiding civil work near VPs to the extent feasible during high sensitivity periods; avoiding permanent habitat alteration to the extent feasible; and protecting compatible vegetation within 25 feet of a VP.

The Project would comply with the USACE self-verification procedures and Eversource's BMPs. In addition, the qualified inspector would be on-site to monitor environmental resource protections as established in Eversource's BMP's and within the Final DEEP Natural Diversity Database (NDDDB) Determination letter. An Environmental Monitor would conduct weekly inspections of resource areas for the duration of Project construction.

Invasive species mitigation measures would be conducted in accordance with Eversource's BMPs. Measures include the cleaning of temporary mats to prevent the introduction of invasive species into wetlands, the cleaning of vehicles, equipment, materials, gear, footwear or clothing of all visible soil and plant material on site known to contain invasives or as near as practical to the invasive area, prior to leaving the Project site.

The Project ROW extends across a 100-year Federal Emergency Management Agency-designated flood zone associated with Roaring Brook in East Haddam.¹³ No proposed structures or equipment would be located within the 100-year flood zone.

There are no DEEP-designated Aquifer Protection Areas within the Project ROW. The Project is located proximate to the Lake Konomoc Reservoir System, Great Swamp Diversion water supply watershed. To protect subsurface water quality, Eversource would conduct work in accordance with its BMPs which include provisions for the proper storage, secondary containment, and handling of diesel fuel, motor oil, grease, and other lubricants.

As of May 29, 2024, Eversource had not yet received its DEEP Natural Diversity Database determination letter. Notwithstanding, Eversource would comply with recommended species-specific protection measures during construction such as time of year best management practices.

¹³ There are no 500-year flood zones at the site.

The northern long-eared bat (NLEB), a federally-listed and state-listed Endangered Species, occurs in Connecticut. There are no known NLEB maternity roost trees within 150 feet of the Project area, and the nearest known NLEB hibernaculum is located approximately 17 miles to the southwest in North Branford. In July 2023, the USFWS issued a determination that the Project would have no effect on the NLEB.

Portions of the Project ROW traverse New England Cottontail (NEC) focus areas, established by DEEP, USFWS and other conservation groups to preserve NEC habitat. Within the NEC focus areas, a total of three existing gravel work pads would be expanded, and one new gravel work pad would be installed. Eversource would implement its NEC BMPs to manage and enhance NEC habitat. Post-construction, gravel pads would be covered with soil or processed stone and reseeded with a native seed mix. Inspections of the restored areas would be conducted to ensure the seeded areas have been established.

One property/district, the Working Girls Vacation Society Historic District (WGVSHD), was identified on the National Register of Historic Places within 500 feet of the site. A Phase 1A Cultural Resources Assessment (Phase 1A) of the Project notes that the proposed structure replacement near WGVSHD would not directly or indirectly impact WGVSHD. Additionally, the Phase 1A did not indicate any identified archaeological sites within 500 feet of the site; thus, no further archaeological investigation of the site is warranted. The State Historic Preservation Office (SHPO) reviewed the results and concurred that no historic properties would be affected by the Project.

The Project ROW crosses the Roaring Brook Preserve in East Haddam, a publicly-accessible recreational resource. While some of the proposed work may temporarily affect public use of this resource, it would not prevent access. Eversource would coordinate with the Town of East Haddam to develop and implement measures to maintain public safety during Project construction and to avoid or minimize short-term impacts on users and/or patrons. Once construction is complete, Eversource would perform ROW restoration as necessary in accordance with Eversource BMPs.

Disturbed areas would be stabilized using temporary E&S controls such as straw mulch, compost filters, and biodegradable erosion control blankets until final stabilization has been achieved.

The Project would require increasing the height of most of the replacement structures to meet NESC clearance requirements within the existing ROW. Existing structures to be replaced on the lines range from 52 to 92.5 feet above ground level. The replacement structures on the lines would range from 62 feet to 97 feet above ground level, with an average height increase of 4.4 feet to meet NESC clearance requirements. One replacement structure would increase in height by 10 feet or more. This structure is adjacent to Petticoat Lane, East Haddam (increase of 18 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 weathering steel replacement structures would blend in with the surrounding wooded landscape.

Public Safety

There would be no permanent changes to existing ROW sound 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.

Eversource received a No Hazard Determination from the Federal Aviation Administration (FAA) for the replacement structures, and no marking or lighting would be required.

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 magnetic fields (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 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*.

The Project would not alter the configuration of the conductors, and thus, as a result, EMF would change slightly underneath the existing and replacement structures. At and beyond the edges of the ROW, any changes to MF would be negligible.

Construction Schedule

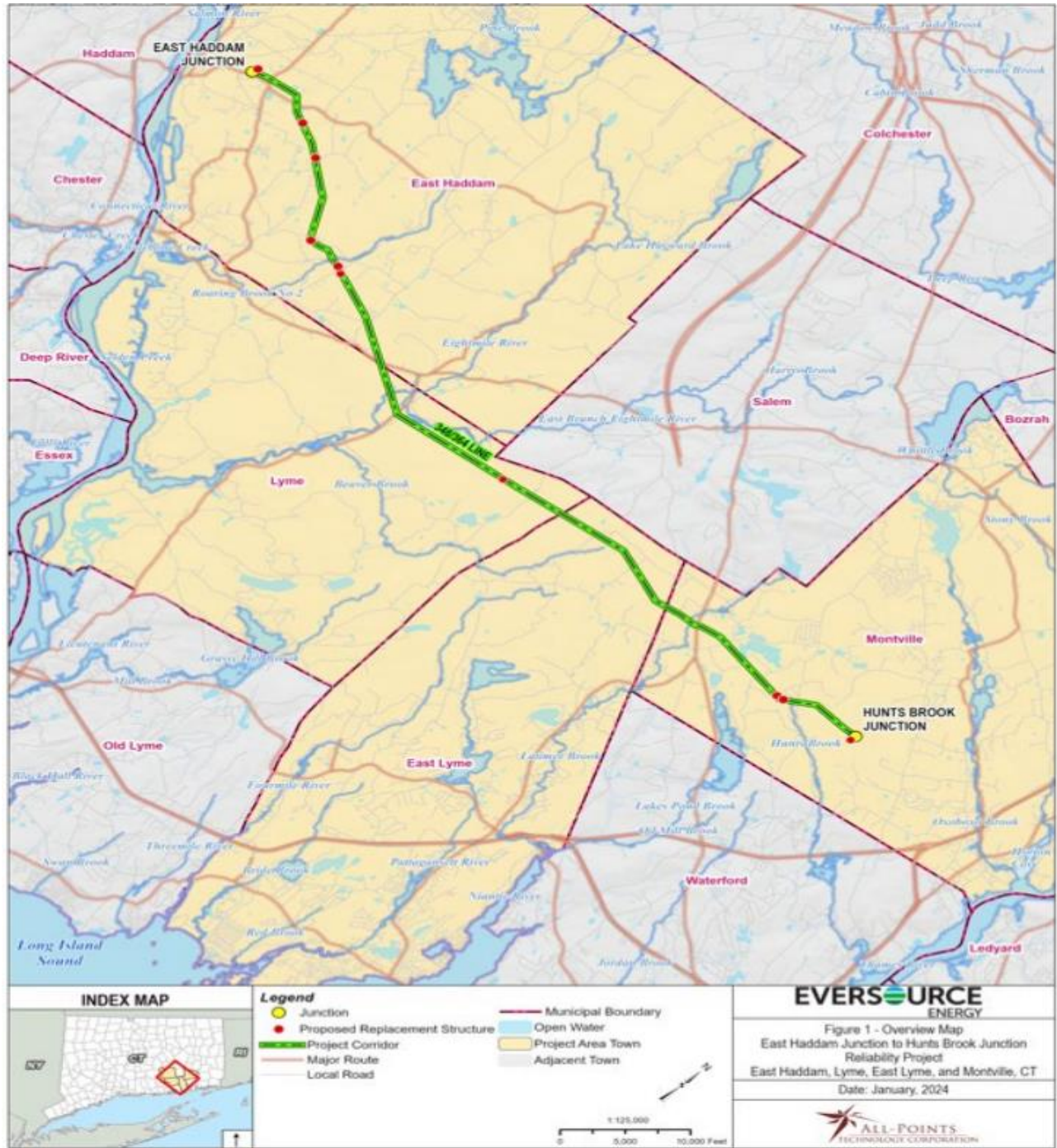
Construction is expected to begin in mid-2024 with anticipated completion in December 2025. Normal work hours would be Monday through Saturday from 7:00 a.m. to 7:00 p.m. Sunday work hours or evening work (i.e. after 7:00 p.m.) may be necessary due to unforeseen circumstances, delays caused by inclement weather, outage constraints, and/or environmental permit inspection requirements.

Conclusion

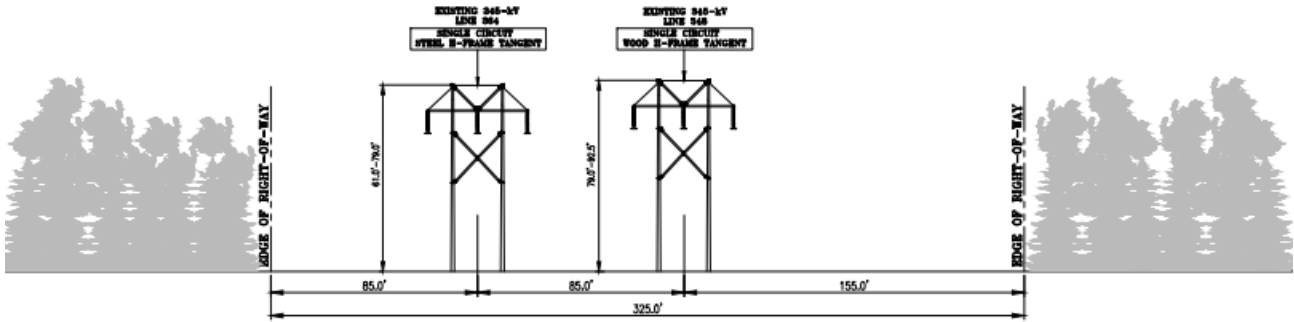
If approved, staff recommends the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit and Final DEEP NDDDB determination prior to commencement of construction;
3. Incorporate pollinator habitat in the restoration of disturbed areas consistent with CGS §16-50hh, where feasible;
4. Use net-less E&S controls to prevent wildlife entanglement; and
5. An environmental monitor shall oversee construction activities in sensitive resource areas.

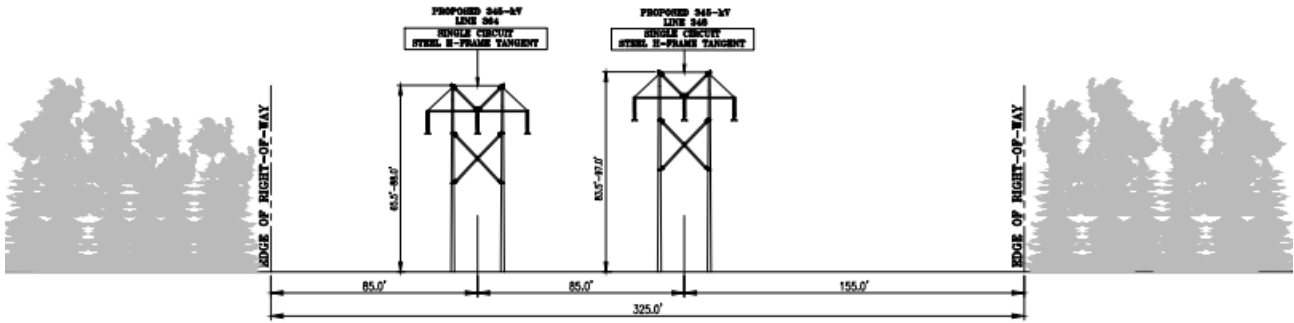
Project Location



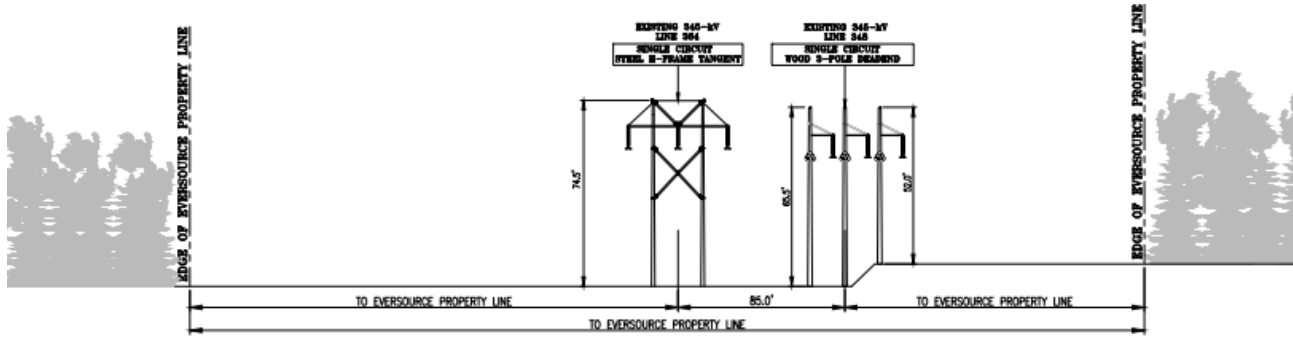
Project ROW Profiles



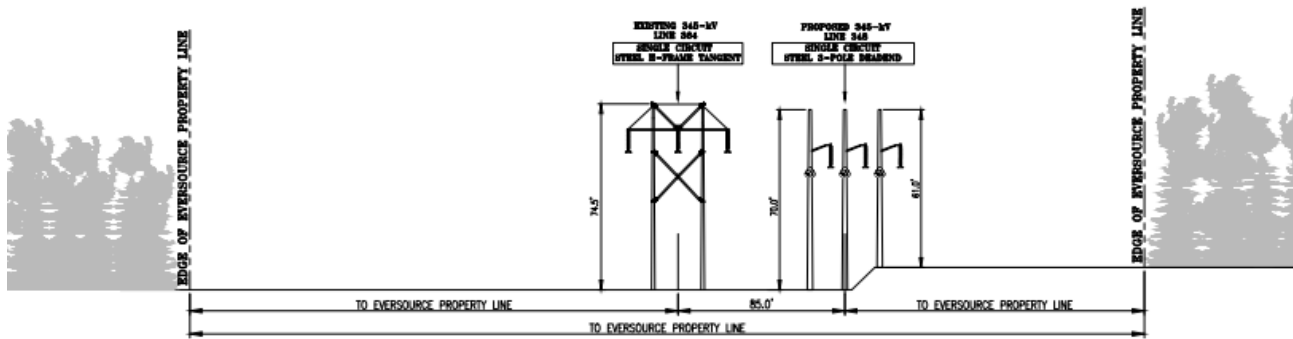
EXISTING R.O.W. CONFIGURATION
LOOKING FROM EAST HADDAM JCT TOWARD HUNTS BROOK JCT
IN THE TOWNS OF EAST HADDAM, LYME, EAST LYME & MONTVILLE, CT
LINE 364 STRS #5438, #5444, #5464, #5555, #5557, LINE 348 STRS #9721, #9764



PROPOSED R.O.W. CONFIGURATION
LOOKING FROM EAST HADDAM JCT TOWARD HUNTS BROOK JCT
IN THE TOWNS OF EAST HADDAM, LYME, EAST LYME & MONTVILLE, CT
LINE 364 STRS #5438, #5444, #5464, #5555, #5557, LINE 348 STRS #9721, #9764



EXISTING R.O.W. CONFIGURATION
LOOKING FROM EAST HADDAM JCT TOWARD HUNTS BROOK JCT
IN THE TOWNS OF EAST HADDAM, LYME, EAST LYME & MONTVILLE, CT
LINE 364 STR #5458, LINE 348 STR #9660



PROPOSED R.O.W. CONFIGURATION
LOOKING FROM EAST HADDAM JCT TOWARD HUNTS BROOK JCT
IN THE TOWNS OF EAST HADDAM, LYME, EAST LYME & MONTVILLE, CT
LINE 364 STR #5458, LINE 348 STR #9660