56 Prospect Street
P.O. Box 270
Hartford, CT 06103

Deborah Denfeld
Team Lead – Transmission Siting
Tel: (860) 728-4564

May 24, 2023

Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Middletown Substation to Oxbow Junction Upgrade Project

Dear Ms. Bachman:

The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") is requesting a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to an existing 115-kilovolt transmission line, the Middletown Substation to Oxbow Junction Upgrade Project ("Project") in the City of Middletown and the Town of Haddam, Connecticut ("Petition").

Prior to submitting this Petition, representatives from Eversource briefed Middletown and Haddam municipal officials about the Project. Eversource provided written notice of the proposed work to all abutters and of the filing of this Petition with the Connecticut Siting Council ("Council"). Maps and line lists identifying the abutting property owners who were notified of the Project are provided in the Petition as Attachment A: Middletown Substation to Oxbow Junction Upgrade Project – Aerial Maps.

Eversource is submitting this filing electronically and will deliver an original and fifteen (15) copies along with a check in the amount of $625 for the required filing fee to the Council.

Sincerely,

Deborah Denfeld

Deborah Denfeld
Team Lead, Siting Transmission

Enclosure

cc: Honorable Benjamin Florsheim, Jr., Mayor, City of Middletown
Honorable Robert McGarry, First Selectman, Town Haddam

THE CONNECTICUT LIGHT AND POWER COMPANY

doing business as

EVERSOURCE ENERGY

PETITION TO THE CONNECTICUT SITING COUNCIL
FOR A DECLARATORY RULING OF
NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT
FOR THE PROPOSED MODIFICATIONS TO THE EXISTING
1620 LINE IN THE CITY OF MIDDLETOWN, AND TOWN OF HADDAM, CONNECTICUT

1. Introduction

The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource" or the "Company") hereby petitions the Connecticut Siting Council ("Council") for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required pursuant to Section 16-50g et seq. of the Connecticut General Statutes for the modifications to the 1620 transmission line, a 115-kilovolt ("kV") line located within an existing transmission line right-of-way ("ROW") in the City of Middletown and the Town of Haddam, Connecticut, known as the Middletown Substation to Oxbow Junction Upgrade Project ("Project"). Eversource submits that a Certificate is not required because the proposed modifications would not have a substantial adverse environmental effect.

2. Purpose of the Project

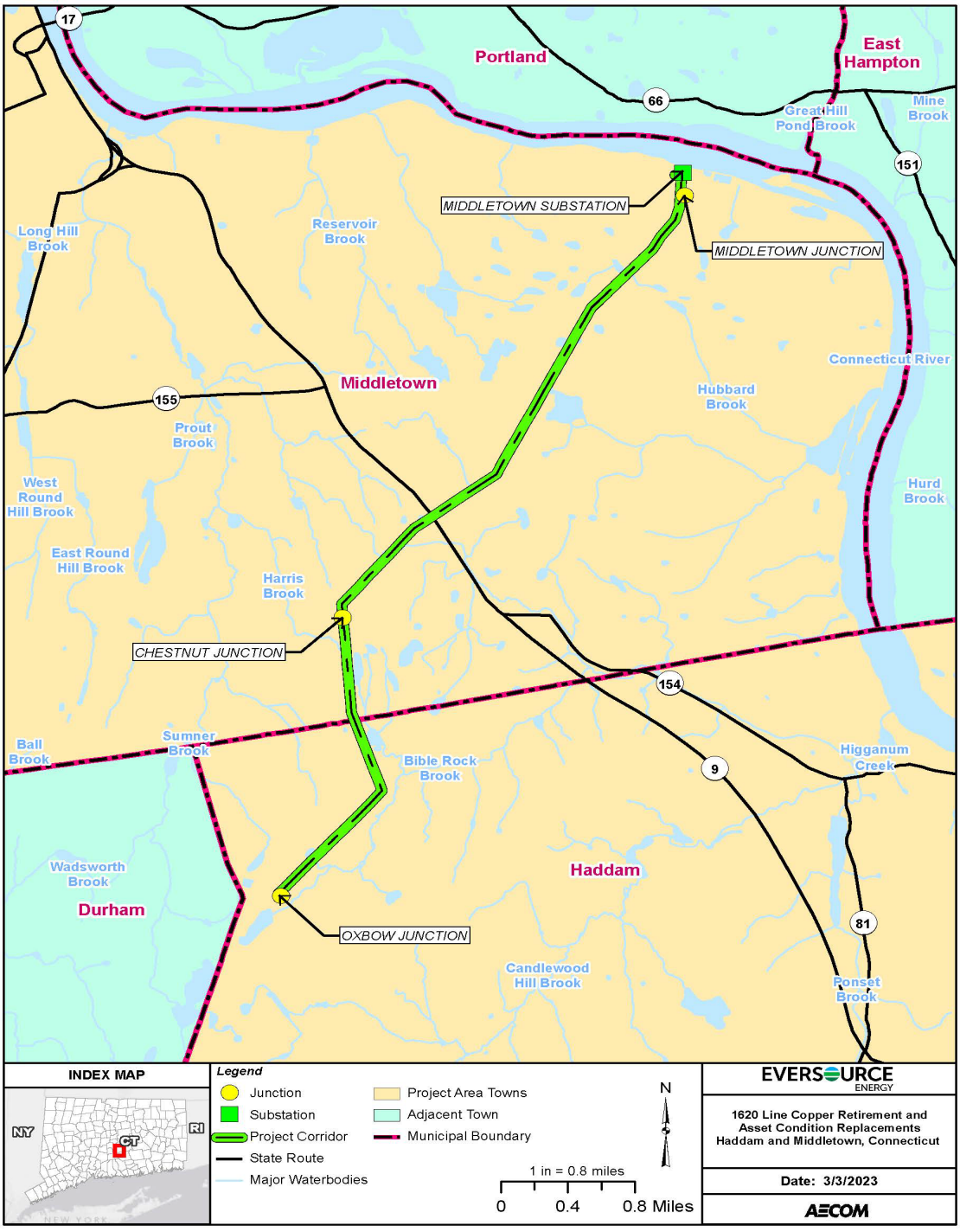
The purpose of the Project is to replace six wood structures on the 1620 transmission line. Three of the structure replacements are required due to age-related degradation [1] (Please see Attachment G: Photos). The other three structures require replacement due to

[1] Age related degradation is identified by the presence of splitting and rotting pole tops, woodpecker damage, and wood decay and cracks.

structural loading issues resulting from the replacement of the existing static wire with optical ground wire ("OPGW"). All work will take place in an approximately 5.5 mile section of the existing ROW between Middletown Substation (City of Middletown) and Oxbow Junction (Town of Haddam) for improved communications and lightning protection.

Figure 1 illustrates the general location of the proposed Project.

Figure 1: Project Overview Map



3. Existing Project Area

The Project area is approximately 5.5 miles of existing ROW of the 1620 Line from Middletown Substation, to Middletown Junction, to Chestnut Junction in Middletown, and then to Oxbow Junction in Haddam. The width of the existing ROW varies from 185 feet to 400 feet and is maintained its entire width.

Each area of the Project where structure replacement is proposed is described below:

Middletown Junction to Chestnut Junction:

This 3.13-mile segment of the ROW is occupied by the 115-kV 1050 and 1620 lines. The 1620 Line occupies the easterly portion of the ROW and the 1050 Line the west side of the ROW [2]. This ROW segment was established in 1958.

The 1620 Line is supported on wooden poles installed in 1958. A few of the structures in this segment were replaced in 2018 due to asset condition (wood rot, erosion and woodpecker damage), with a mixed design of weathering steel H-frame and monopole type structures. The conductor on this segment of the 1620 Line is 556 “Dove” Aluminum Conductor Steel Reinforced (“ACSR”), installed in 1958 and 3/8-inch copperweld type static wire, also installed in 1958.

[2] No work is proposed at this time on the 115-kV 1050 Line within the Middletown Junction to Chestnut Junction segment of the Project.

Chestnut Junction to Oxbow Junction:

This 2-mile ROW segment is occupied solely by the 115-kV 1620 Line. This ROW segment was established in 1958.

The 1620 Line is supported on wooden poles installed in 1958. A few of the structures in this segment were replaced in 2018 due to asset condition (wood rot, deterioration and woodpecker damage) width a mixed design of weathering steel H-frame and monopole type structures.

The conductor in this segment of the 1620 Line is 556 “Dove” ACSR with 3/8-inch copperweld type static wire. Both were installed in 1958.

4. Project Description

The Project scope consists of replacing six structures (one wood H-frame and five 3-pole angle wood structures) on the 1620 Line to address asset condition concerns and/or structural loading issues associated with the planned installation of OPGW. The proposed structure replacements will be located within 16 feet of the existing structures and will not require expansion of the ROW. OPGW will be installed on the 1620 Line the full length of the Project area.

Details of the proposed scope of work for the structure replacements are summarized by Project segment as follows:

1620 Line - Middletown Junction to Chestnut Junction

- Replace three three-pole wood angle structures with three-pole weathering steel angle structures

1620 Line - Chestnut Junction to Oxbow Junction

- Replace one single circuit wood H-frame structure, with a single circuit weathering steel H-frame structure
- Replace two three-pole wood angle structures, with three-pole weathering steel angle structures

Eversource also intends to replace the existing 3/8 inch copperweld shield wire (from Middletown Substation to Oxbow Junction) with OPGW and install hardware, as needed.

The heights of the six existing structures range from approximately 47.5 feet to 56.5 feet. Five of the new structures will have a height increase of 4.5 feet, one structure will have a height increase of 9.5 feet (Structure 14027 [3]). Please see Attachment B – "List of Structure Replacements" for detailed information on the heights and types of the existing and replacement structures.

Locations of existing and proposed structures, work pads, access roads, wetland areas and other Project elements are depicted in Attachment A: "Middletown Substation to Oxbow Junction Upgrade Project - Aerial Maps".

Cross-section drawings in Attachment B: "Oxbow Middletown Substation to Oxbow Junction - Cross-Sections" depict changes between the existing and proposed structures.

[3] There is existing cellular equipment on Structure 14027. The cell carrier will submit a filing to the Council for relocation of its telecommunication facility onto new Structure 14027 after the replacement structure is in place. The 9.5-foot replacement structure height increase does not include the cell carrier equipment.

5. Existing Environment, Environmental Effects and Mitigation

The Project would be constructed entirely within Eversource's ROW or its fee owned properties between Middletown Substation and Oxbow Junction. No expansion of the existing ROW would be required. The Project would not have a substantial adverse environmental effect for the reasons explained below.

Land Use

Land uses within and adjacent to the Project area consist of low-density residential properties, state owned open space and trail system (Cockaponset State Forest), Connecticut Forest and Park Association (CFPA) recreational trail (Mattabesett Trail), local and state (Route 9) roadways, and undeveloped upland and wetland areas.

Vegetation Removal

No tree removal is required for the work. Mowing or removal of low growing vegetation may be needed in select areas for construction.

Scenic, Recreational and Cultural Resources

The Project is not anticipated to have a substantial adverse impact to scenic, recreational, or cultural resources for the reasons explained below:

- No portion of the ROW traverses state designated scenic roadways [4] or other scenic resource.

- A desktop review of Connecticut Department of Energy and Environmental Protection ("CT DEEP") and CFPA GIS data was conducted to identify designated open space properties and trails within or near the Project area. A CFPA trail (Mattabessett Trail) and CT DEEP property and trail system (within the Cockaponset State Forest) cross the Project area. Eversource will coordinate with CT DEEP and CFPA representatives, as needed, to develop and implement measures to maintain public safety on and near the trails during the Project.

- A Phase 1A cultural (archaeological and historical) resource assessment of the proposed ROW was conducted by Heritage Consultants, LLC ("Heritage") in February 2023. This review consisted of an initial desktop archaeological and historical resource review and pedestrian survey ("Phase 1A Cultural Resource Assessment" or "Phase 1A").

The Phase 1A desktop evaluation determined that no documented National Register of Historic Places, state or locally listed properties, archeological sites or historic districts are located within 500 feet of the ROW where the structure replacement work will take place.

Based upon the presence of qualifying criteria (i.e., identification of areas that are likely to contain and/or retain archaeological deposits), the Phase 1A identified one location

[4] Connecticut Department of Transportation (CTDOT), Scenic Roads Interactive Map, Updated January 11, 2022, accessed March 23, 2023. URL: https://connecticut-ctdot.opendata.arcgis.com/apps/scenic-roads-interactive-map/explore

associated with replacement of Structure 14027 as having a moderate to high potential for archaeological sensitivity. As such, further investigation of this location was completed via the execution of a Phase 1B survey (shovel test), which was completed in March 2023. A single quartz flake dating from an unknown time-period was recovered, which was considered an isolated find. Therefore, the location included in the survey was determined by Heritage to not be eligible for listing on the National Register of Historic Places and no additional investigation of these areas was recommended.

The results of the Phase 1A and Phase 1B surveys have been provided to the State Historic Preservation Office ("SHPO") and the Tribal Historic Preservation Offices of the Connecticut Tribe of Mohegan Indians and the Mashantucket Pequot Tribal Nation for their review and concurrence. SHPO reviewed the results of the cultural assessment and provided written concurrence with the findings in a letter to Heritage dated March 28, 2023.

Wetlands, Watercourses and Flood Zones

Eversource identified and delineated regulated wetland and watercourse resources in the Project area in August 2022 (see Attachment D: Wetlands and Watercourses Report). The wetlands, watercourses and flood zones in the Project area are identified on mapping in Attachment A. Water resources include inland wetlands, watercourses (perennial and intermittent streams), vernal pools, and Federal Emergency Management Agency ("FEMA") Flood Zones and/or Aquifer Protection Areas. Work near these areas would be conducted in accordance with Eversource's *April 2022 Construction & Maintenance Environmental Requirements, Best Management Practices Manual for Massachusetts and Connecticut* ("BMPs") and with the applicable regulatory permit conditions and approvals. Details regarding each of these resource areas are provided below.

Wetlands

A total of 63 wetlands were identified and delineated in the 1620 Line ROW between Middletown Substation and Oxbow Junction. Of these, 33 wetland areas occur proximate to the structure replacements and access roads associated with the Project. Wetlands were identified and delineated through a field survey that was conducted in accordance with industry standard methodology. No permanent effects to wetlands would occur because of the Project structure replacement work. Temporary impacts associated with placement of timber mats totaling approximately 7,113 square feet.

Watercourses

A total of 20 watercourses were identified and delineated in the ROW between Middletown Substation and Oxbow Junction. Of these, 12 watercourses occur proximate to the structure replacement work associated with the Project. No permanent or temporary effects to watercourses would occur due to the Project structure replacement work.

Vernal Pools

The Project area was surveyed for vernal pool habitat in June 2021 and July – August 2022. Vernal pool habitat areas were identified based primarily on the presence of suitable physical and hydrologic indicators, such as the presence of seasonally to semi-permanently flooded wetlands, presence of vernal pool indicator species[5], and

[5] Indicator species include Spotted salamander, wood frog, marbled salamander, blue-spotted salamander, Jefferson salamander, eastern spadefoot toad, and fairy shrimp.

other indicators such as concave and unvegetated surfaces. The survey resulted in the identification of three confirmed vernal pools within the Project area. Two additional potential vernal pools were identified but were assessed to not meet the criteria necessary to be designated as vernal pools. The survey results are provided in Attachment E: Vernal Pool Survey.

No permanent effects to vernal pools or their associated 100-foot vernal pool envelopes would occur from the Project.

FEMA Flood Zones

No 100 Year FEMA Flood Zone areas extend into the Project area. As such, no permanent or temporary impacts to a 100 Year Flood Zone would occur due to the Project.

Water Supply

Based on Aquifer Protection Areas ("APA") mapping maintained by the CT DEEP, the Project area is not located within an APA. The Project area is not located within a public water supply watershed and does not cross any public supply reservoirs or public water supply wells.

Wildlife and Habitat

Wildlife habitats within the Project area are generally comprised of upland and wetland shrubland, meadow, and unvegetated or sparsely vegetated ledge outcroppings.

Based on the most recent CT DEEP Bureau of Natural Resources Wildlife Division's Natural Diversity Data Base ("NDDB") mapping, dated December 2022, portions of the Project area are near documented state listed species or significant natural communities. Eversource submitted a NDDB Review Request to CT DEEP in February 2023 for information pertaining to protection of listed species and natural communities near the Project area. Eversource received a NDDB Determination for the proposed Project on February 27, 2023. Eversource will adhere to recommendations and protection strategies identified in the Project NDDB Determination. Based on the NDDB Program recommendations, protective measures will be employed by the Project in NDDB buffered areas, to avoid or minimize impact to habitats that may support rare species.

Visual Effects

Due to the limited number of structure replacements, consistency of structure design and the use of weathering steel to replace wood, Eversource does not believe that the Project would result in a significant change to the visual character of the line. The weathering steel of the replacement structures would be similar visually to the existing wood structures and the replacement structures of the similar design would be located as close as possible to the existing structure locations. The average height increase is approximately 5.3-feet and is not anticipated to be visually discernable from the existing structure heights. As a result, the Project would not result in significant changes to visual effects.

Noise

The construction of the Project would result in short-term and localized noise, as is typical of any similar construction project, from the operation of equipment and other vehicles. Once in service, the replacement structures would not result in any changes to noise levels.

Air Quality

Short-term, localized effects from the Project construction on air quality may result, primarily from fugitive dust and equipment emissions. To minimize the amount of dust generated by construction activities, the extent of exposed/disturbed areas at any one time would be minimized. Vehicle emissions would be limited by requiring contractors to properly maintain construction equipment and vehicles, and by minimizing the idling time of equipment and vehicles, including diesel construction equipment, in accordance with Connecticut regulatory requirements [6]. The potential for tracking dirt onto local paved roads will be monitored by the Project personnel. Any such tracking will be promptly swept and removed. To further minimize dust, water may be used to wet down disturbed soils or work areas with heavy tracking as needed.

Radio and Television Interference; Sound

There would be no increase in radio interference or audible noise from the operation of the new transmission facilities.

[6] Regulations of Connecticut State Agencies (RCSA) Section 22a-174-18(b)(3)(C) prohibits the idling of motor vehicles for more than three consecutive minutes when not in motion.

6. Transportation and Traffic Management

The Project area extends across local roads and State Route 9.

Construction-related vehicular and equipment movements would utilize public roads in the Project area to access the ROW. However, the Project-related traffic is generally expected to be temporary and highly localized in the vicinity of the ROW access points and at the staging area described in the following Construction Sequence section. Due to phasing of construction work, Project-related traffic is not expected to significantly affect transportation patterns or levels of service on public roads.

To safely move construction vehicles and equipment onto and off of the ROW while minimizing disruptions to vehicular traffic along public roads, Eversource or its Project contractor would work with the City of Middletown, the Town of Haddam and the Connecticut Department of Transportation to develop and implement traffic management procedures, as needed. The construction contractor typically would be responsible for posting and maintaining construction warning signs along public roads near work sites and for coordinating the use of flaggers or police personnel to direct traffic, as required.

Construction vehicles and equipment to be used for the work may include pickup trucks, bucket trucks, flat-bed trucks, excavator, concrete trucks, drill rigs, front loaders, reel trailers, bulldozers, woodchippers, brush hogs/mower, forklifts, side booms, dump trucks and cranes. Pullers and tensioners would be used for the line work. Bat wing trucks and guard trucks would be used for protection of roads during the line work.

7. Construction Sequence

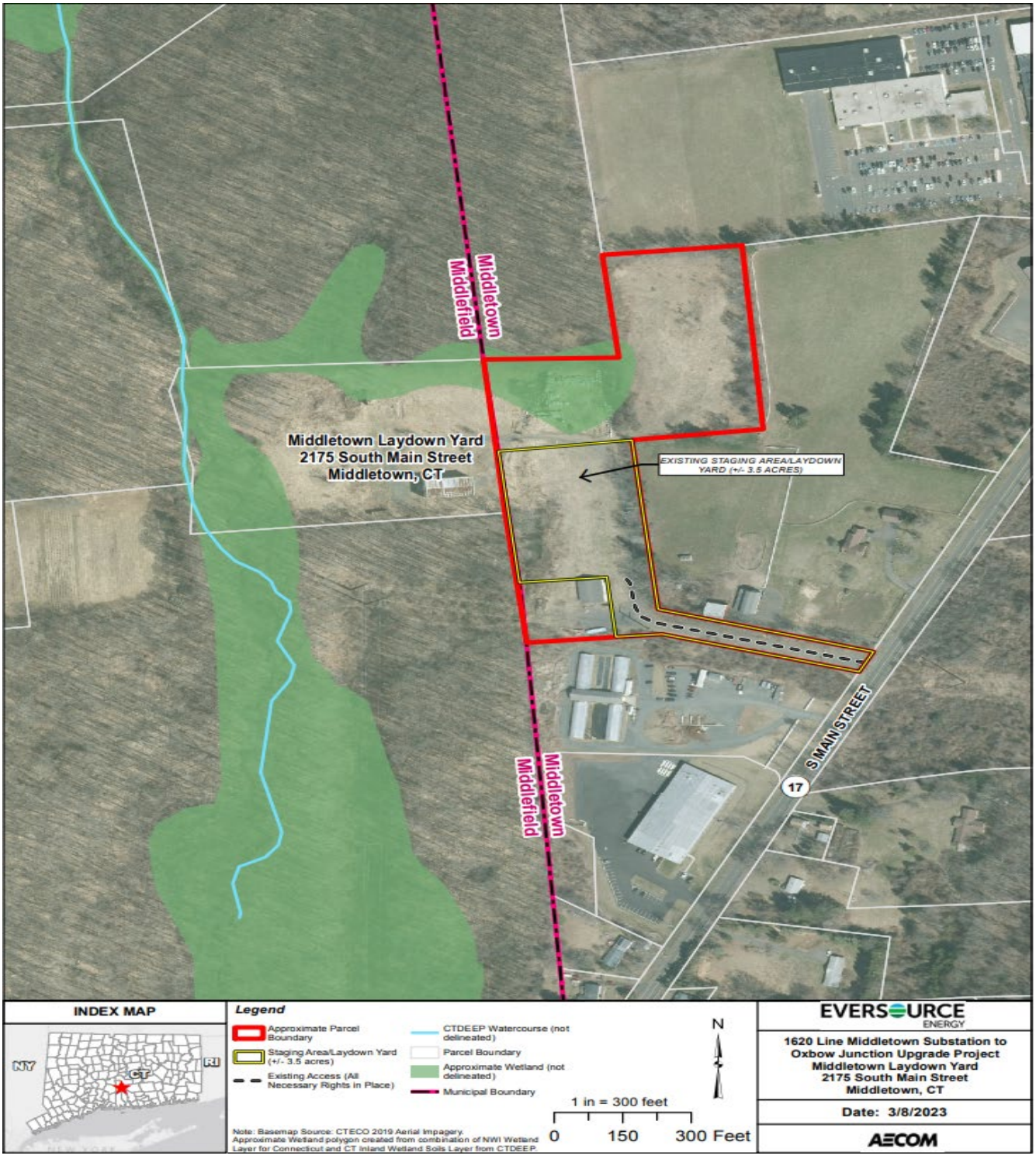
Project construction would include the following activities:

Establishing Staging Area

Eversource proposes to establish a staging area for the Project at 2175 S Main Street in Middletown. The staging area is depicted below in Figure 2 and is currently being utilized by Eversource as a staging area for general maintenance-related work on the transmission system.

The staging area would be utilized by the Project for surface storage of construction materials, equipment, tools, and supplies (including cable reels, insulators, hardware, poles and mats). One office trailer and Conex storage containers may also be located at the staging area. Components removed during the work (structures, hardware and insulators) may be temporarily accumulated and stored at the staging area prior to removal off-site for salvage and/or disposal. In addition, the staging area may also be used by construction crews for parking personal vehicles as well as for construction vehicles and equipment storage, and for performing minor maintenance, when needed, on construction equipment. No refueling of vehicles or equipment will take place at the staging area. Appropriate erosion and sedimentation ("E&S") controls would be installed at the staging area, as required, and maintained until completion of the work in accordance with Project permits and Eversource's BMPs.

Figure 2: Staging Area Map



Vegetation Removal

Side trimming and vegetation removal/mowing may be conducted in select areas where needed for construction. Eversource would conduct vegetation management activities in accordance with its BMPs.

Eversource would require the contractor to use low-impact vegetation removal and side trimming methods to remove brush vegetation, to protect state-listed species and their habitats. Low-impact vegetation removal incorporates a variety of approaches, techniques, and equipment to minimize site disturbance. Eversource would require the contractor to use some or all of the following low-impact methods, depending on site-specific considerations:

- Take into consideration soil and weather conditions when scheduling vegetation removal activities, such as during periods of heavy rainfall.
- Use appropriately sized equipment for the site conditions, where possible, to minimize impacts.
- Where practical, cut brush close to the ground, leaving root systems and stumps, to provide additional soil stability.

Soil Erosion and Sediment Control Installation

Project construction would conform to best management practices for E&S control, including those provided in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* ("*Connecticut Guidelines*") and the Eversource's BMPs. This would include the development of a Project specific Stormwater Pollution Control Plan ("SWPCP") and registration under CT

DEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("General Permit")*.

Typical E&S control measures include, but are not limited to, straw blankets, straw bales, silt fencing, rock construction entrances, soil and slope protection, water bars, check dams, berms, swales, plunge pools, and sediment basins. Silt fence would be installed as needed to intercept and retain sediment and/or construction materials from disturbed areas and minimize the potential for sedimentation outside of the Project area. Temporary E&S control measures would be maintained and inspected for the duration of the Project to ensure their integrity and effectiveness and for compliance with the General Permit. SWPCP inspections would be performed in accordance with the General Permit requirements. Following the installation of the structure replacements, seeding and mulching or hydroseeding would be completed to permanently stabilize the areas disturbed by the construction activities. The temporary E&S control measures would remain in place until the Project work is complete and all disturbed areas are stabilized.

Access Roads and Work Pads

Access to the locations of each existing and proposed structure location is required for the Project. As a result of historical line maintenance activities on the ROW, most access roads are already established and Eversource would utilize these existing access roads to the extent possible. The access roads expected to be used for the Project are illustrated on the maps in Attachment A.

Existing access roads may need to be improved (graded, widened, and/or reinforced) with additional stone material in order to accommodate the safe passage of construction vehicles

and equipment. Access road improvements typically include trimming adjacent vegetation and widening roads, as needed, to provide a minimum travel surface that is approximately 16 feet wide (additional width may be needed at turning or passing locations). Appropriate E&S controls would be installed as necessary before the commencement of any improvements to or development of access roads.

At each structure replacement location, a work pad would be required to stage material for final on-site assembly and/or removal of structures, and to provide a safe, level work base for the construction equipment. Typical work pads would be approximately 100 feet by 100 feet.

Typical work pad preparation involves several steps: (1) removal of vegetation, and (2) grading to create a level work area. The removed topsoil would be stockpiled and stabilized within the ROW, typically near the new work pad or access road. A rock base, which allows drainage, may be layered on top of filter fabric, if necessary. Additional layers of rock with dirt/rock fines (processed gravel) are typically placed over the rock base. To facilitate future transmission line maintenance, gravel work pads would be left in place, unless the property owner requests their removal.

Access roads and work pads located within improved areas (such as lawns) would typically be removed and the area restored. No new permanent work pads are proposed in water resource areas. Where required, stockpiled topsoil will be used for restoration and revegetation of the work pads.

The locations and configuration of the work pads are shown on Attachment A.

Foundation Installation

The proposed structures would be either directly embedded or have drilled (caisson) foundations. This work would require the use of equipment such as mechanical excavator (drill rigs), pneumatic hammers, augers, drill rigs, and dump trucks. If groundwater is encountered, pumping (vacuum) trucks or other suitable equipment would be used to pump water from the excavated areas as the shaft is being drilled or as the structure is being set. The water would then be discharged in accordance with the General Permit and applicable local, state and federal requirements.

Excavated soils that are generated during construction activities would not be stored or stockpiled inside of a wetland, or adjacent to a watercourse. Materials that cannot be utilized as backfill would be managed off-site in accordance with applicable regulations.

Depending on site-specific soil conductivity, supplemental grounding would be installed. A quad “ditch-witch” plow-cable trencher, or equivalent would be used to install the counterpoise.

Structure Assembly/Installation

Structure sections, structure components and hardware would be delivered to the individual structure locations using flat-bed trucks and assembled on-site using a crane and bucket trucks. After assembly, the area around the directly embedded structures would be backfilled with processed gravel. The existing conductor will be transferred to the new structures.

Counterpoise will be installed after the structures are constructed.

Restoration

Once the structure replacement work is completed, the existing structures would be removed. ROW restoration activities would also include the removal of construction debris, signage, flagging, and temporary fencing, as well as the removal of construction mats, and structure work pads that are designated for removal. Areas affected by construction would be re-graded as practical and stabilized using revegetation or other measures before removing temporary E&S controls.

Waste Management

Waste materials, such as structure components (i.e., wood and steel from the removed structures, shield wire, associated hardware, etc.) and any other construction debris would be reclaimed through the Eversource investment recovery system and/or managed/disposed of in accordance with Eversource's BMPs, applicable regulations or recycled consistent with applicable regulations and Eversource policies. Excess soils would be managed in accordance with the Eversource's BMPs.

Dewatering during construction activities would be conducted in accordance with the *Connecticut Guidelines,* Eversource's BMPs and applicable regulations.

8. Electric and Magnetic Fields

The structure replacements will only affect the height of conductor attachments in the immediate vicinity of the structure replacements. The Project will not alter the configuration of the conductors. As a result, electric and magnetic fields will change only slightly directly underneath the structures. At and beyond the edges of the ROW, any changes to the field will be almost immeasurable.

9. Construction Schedule and Work Hours

Eversource proposes to begin construction in the fourth quarter of 2023. Normal work hours would be Monday through Saturday from 7:00 AM to 7:00 PM. SWPCP and other inspections may occur outside of these standard hours, as necessary, to comply with permit requirements. Sunday work hours may also be necessary due to delays caused by inclement weather and/or outage constraints.

The proposed in-service date is the second quarter of 2024. Multiple construction crews may work concurrently on different sections of the line.

10. Municipal and Property Owner Outreach

In February 2023, Eversource consulted with the City of Middletown and Town of Haddam to brief municipal officials on the proposed Project.

In February 2023, Eversource also conducted outreach to property owners located along the ROW. In conjunction with the submission of this Petition, all abutting property owners were provided written notice of the filing and provided information on how to obtain additional information on the Project, as well as how to submit comments to the Council (see Attachment F: Letter to the Abutters and Affidavit).

Eversource Project representatives will continue to be in contact with adjacent property owners to provide advance notification as to the start of construction activities and will continue to update property owners throughout construction and restoration and respond to any inquiries or concerns.

Based on the foregoing, Eversource respectfully submits that the proposed modifications would not result in a substantial adverse effect on the environment, nor would they damage existing scenic, historical or recreational values. Accordingly, Eversource requests that the Council issue a declaratory ruling that the proposed modifications would have no substantial adverse environmental effect.

Communications regarding this Petition for a Declaratory Ruling should be directed to:

Deborah Denfeld
Team Lead – Transmission Siting
Eversource Energy
PO Box 270
Hartford, CT 06141-0270
Telephone: (860) 728-4527

By: _____
Deborah Denfeld

List of Attachments

Attachment A: Aerial Maps
Attachment B: List of Structure Replacements
Attachment C: Cross Sections
Attachment D: Wetlands and Watercourses Report
Attachment E: Vernal Pool Survey
Attachment F: Letter to the Abutters and Affidavit
Attachment G: Photos

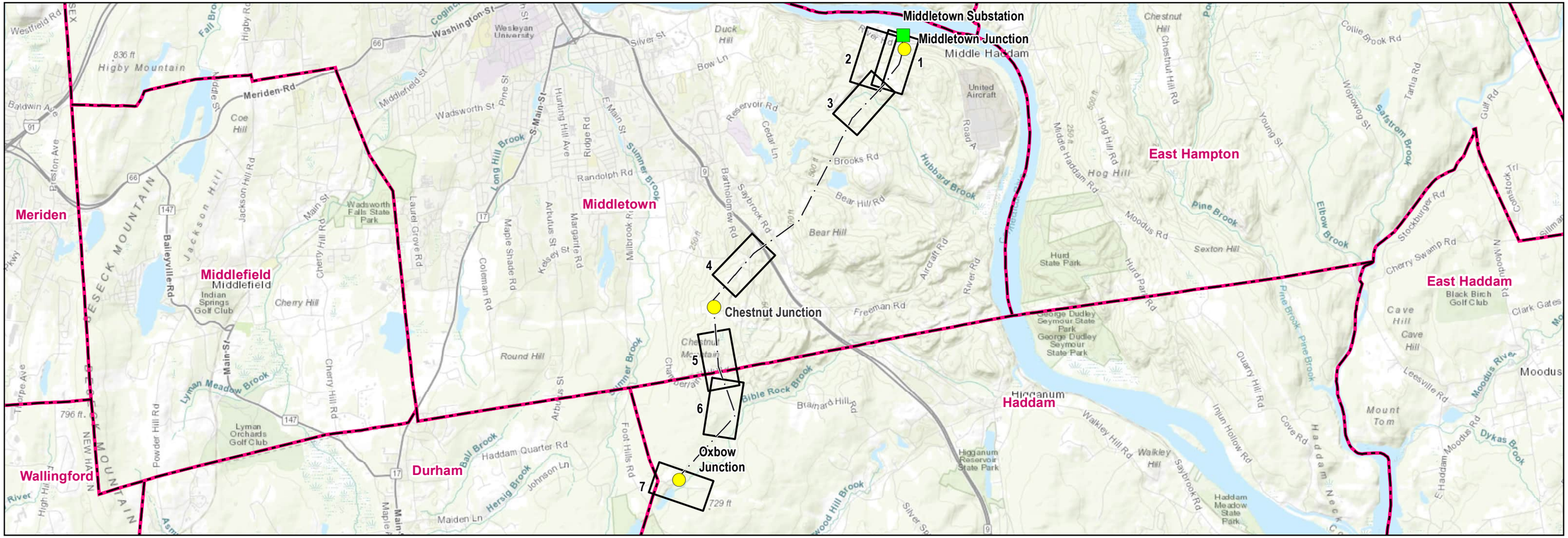
Attachment A:

Aerial Maps

1620 Line, Middletown Substation to Oxbow Junction Upgrade Project

MIDDLETOWN AND HADDAM, CT
Petition Map Set

Date: April 19, 2023



Legend

Junction | Substation | Map Sheet | Municipal Boundary | Overhead Eversource Line

PREPARED FOR:

EVERSOURCE ENERGY
107 Selden Street
Berlin, CT 06037

N

0 0.5 1 2 Miles

INDEX OF FIGURES

Title Sheet / Index Map
Abutter Tables & Map Sheets 1-7

NO.	DATE	REVISIONS

PREPARED BY:

AECOM
500 Enterprise Drive
Rocky Hill, CT 06067

MAPSHEET 1 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Middletown, CT

AREA DESCRIPTION

Existing Land Use

- **Industrial/Energy Facility**
- **Undeveloped, forest**
- **Natural Diversity Database Area**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Eversource electrical substation**
- **Wetlands and associated watercourses**
- **Roadway**

Right-of-Way Vegetation

- **Herbaceous**
- **Scrub-shrub**
- **Forested**
- **Barren/unvegetated**

Water Resources

- **Wetlands W01, W02, W03, W04**
- **Wetland Cover Types – PEM, PSS, PFO**
- **Watercourse S01, S02**

Wetland and Watercourse Crossings

- **Wetland W01 to W05 – No temporary or permanent work pads or access road crossings.**
- **Watercourse S01 to S02 – No temporary or permanent work pads or access road crossings.**

Access

- **Structures 14007 and 14008 - via River Road**

Road Crossings

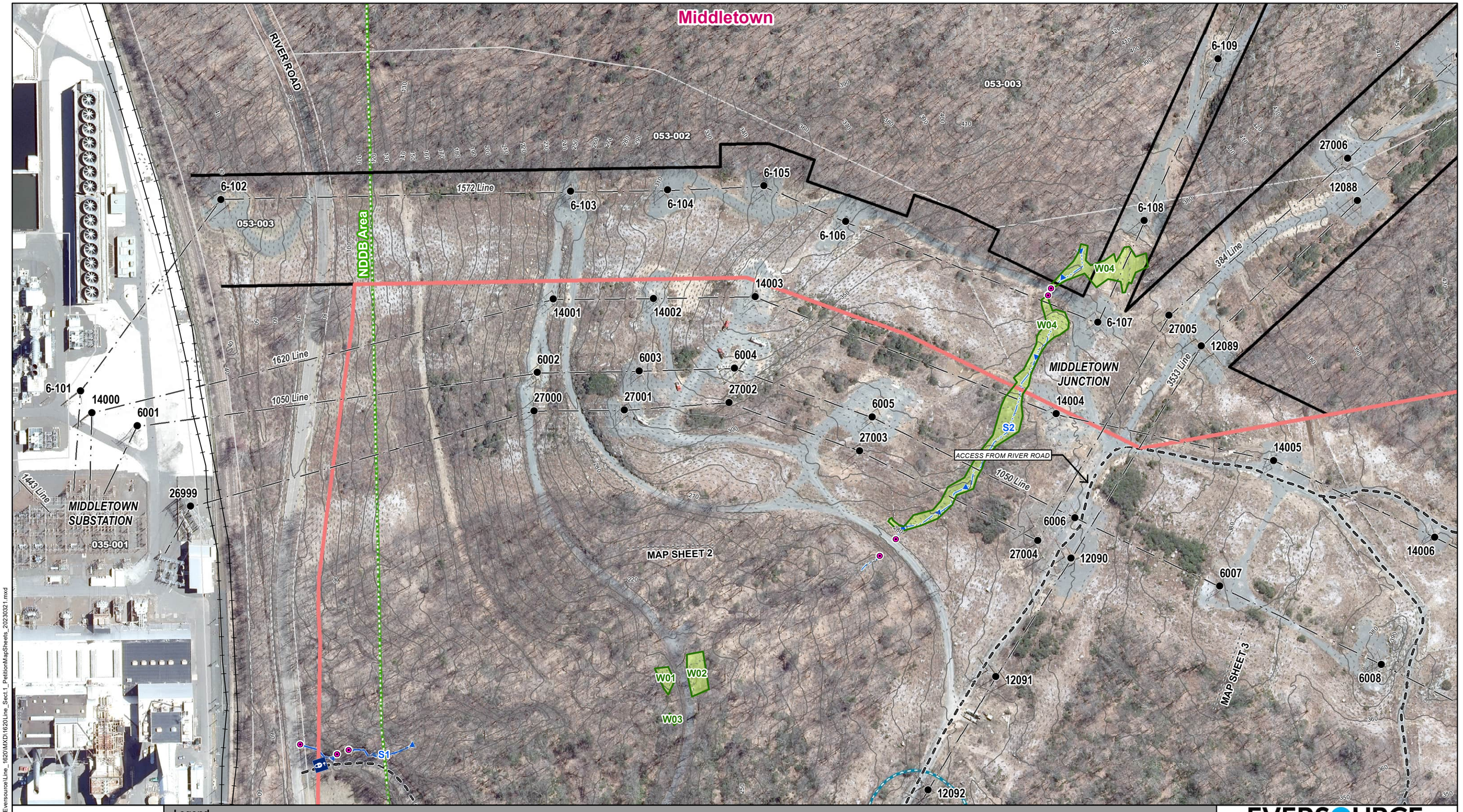
- **River Road**

Existing Maintained Right-of-Way Width

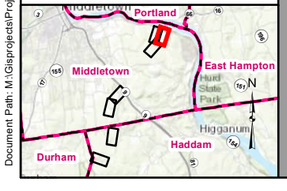
- **165 feet, variable**

ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
053-002	RIVER RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
035-001	1866 RIVER RD RD MIDDLETOWN, CT 06457	THE CONNECTICUT LIGHT AND POWER	PO BOX 2370 HARTFORD, CT 06101
053-003	RIVER RD RD MIDDLETOWN, CT 06457	UNITED AIRCRAFT CORP	8 FARM SPRINGS RD MS 8FS-2 FARMINGTON, CT 06032



INDEX MAP



Legend

- Existing Structure (Str Label)
- Eversource Overhead Lines
- Railroad
- Existing Access
- Existing Right-of-Way (ROW)
- Culverts
- Gates
- Eversource Owned Property
- 2' Contour
- 10' Contour
- Rare Species (December 2022)
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Delineated Perennial Watercourse
- 100' Vernal Pool Envelope
- Parcel Boundaries
- 105 LLNs/Property Owner
- Map Sheet Matchline

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Middletown, Connecticut

Map Sheet 1 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\EversourceLine_1620\MXD\1620Line_Sect1_PetitionMapSheets_20230321.mxd

MAPSHEET 2 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Middletown, CT

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Natural Diversity Database Area**
- **Recreational /Open Space: Mattabesett Trail (CTDEEP)**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands and associated Watercourses**
- **Roadway, River Road south of Middletown 5A Substation**

Right-of-Way Vegetation

- **Herbaceous**
- **Scrub-shrub**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W01, W02, W03, W05, W06, W07, W08, W09**
- **Wetland cover types – PEM, PSS, PFO**
- **Watercourse S1, S2, S3, S4, S5**
- **Vernal Pool VP1A**

Wetland and Watercourse Crossings

- **Wetland W01, W02, W03, W05, W06, W07, W08, W09 - No temporary or permanent work pads or access road crossings**
- **Vernal Pool VP1A - No temporary or permanent work pads or access road crossings**

Access

- **Structures 14007 and 14008 - via River Road**

Road Crossings

- **River Road**

Existing Maintained Right-of-Way Width

- **165 feet, variable**

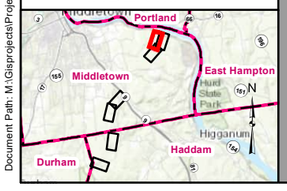
ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
053-002	RIVER RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
035-001	1866 RIVER RD RD MIDDLETOWN, CT 06457	THE CONNECTICUT LIGHT AND POWER	PO BOX 2370 HARTFORD, CT 06101
053-003	RIVER RD RD MIDDLETOWN, CT 06457	UNITED AIRCRAFT CORP	8 FARM SPRINGS RD MS 8FS-2 FARMINGTON, CT 06032

Middletown S2
12090
1050 Line
6007
1620 Line
6008
12091
MAP SHEET 3
W01
W02
W03
S1
MAP SHEET 1
12092
VP1A
W09
035-001
W05
053-003
RIVER ROAD
12093
053-002
W06
W07
S4
S3
12094
3533 Line
MATTABESETT TRAIL
(CFPA)
W08
S5
NDDB Area

Document Path: M:\Gisprojects\Projects\Eversource\Line_1620\MXD\1620Line_Sect.1_PetitionMapSheets_20230321.mxd

INDEX MAP



Legend

- Existing Structure Str Label
- Eversource Overhead Lines
- Railroad
- Existing Access
- Hiking Trail
- Culverts
- Gates
- Eversource Owned Property
- 2' Contour
- 10' Contour
- Rare Species (December 2022)
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Delineated Perennial Watercourse
- Confirmed Vernal Pool Extent
- 100' Vernal Pool Envelope
- Parcel Boundaries
- 105 LLNs/Property Owner
- Map Sheet Matchline

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Middletown, Connecticut

Map Sheet 2 of 7

4/19/2023

AECOM

MAPSHEET 3 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Structures to be Replaced: 14007 through 14008
Middletown, CT

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Recreational / Open Space: Cockaponsett State Forest Trail & Mattabesett Trail (CTDEEP)**
- **Hubbard Brook**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands and associated Watercourses**

Right-of-Way Vegetation

- **Herbaceous**
- **Scrub-shrub**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W10 through W15, W17**
- **Wetland cover types – PEM, PSS**
- **Watercourse S6, S7**

Wetland and Watercourse Crossings

- **Wetland W10- Temporary access road matting southwest of structure 14007**
- **Wetland W11 through W15 and W17 - No temporary or permanent work pads or access road crossings**
- **Watercourse S6 and S7- No temporary or permanent work pads or access road crossings**

Access

- **Structures 14007 and 14008 - Access via River Road**

Road Crossings

- **No road crossings**

Existing Maintained Right-of-Way Width

- **165 feet, variable**

ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
031-005	BROOKS RD RD MIDDLETOWN, CT 06457	STATE OF CONNECTICUT	P.O. BOX 351 MIDDLETOWN, CT 06457-0351
031-002	BROOKS RD RD MIDDLETOWN, CT 06457	STATE OF CONNECTICUT	55 ELM ST HARTFORD, CT 06106
053-002	RIVER RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141

Middletown

053-002

Hubbard Brook

Cockaponset State Forest

031-005

COCKPONSET FOREST TRAIL (CTDEEP)

MAP SHEET 1

MAP SHEET 2

ACCESS FROM RIVER ROAD

TEMPORARY ACCESS ROAD WETLAND IMPACT: 2,957 SQ. FT.

TEMPORARY ACCESS ROAD WETLAND IMPACT: 578 SQ. FT.

ACCESS FROM RIVER ROAD

MATTABESETT TRAIL (CFPA)

1620 Line

1050 Line

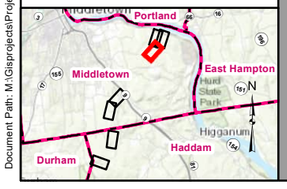
14006 14007 14008 14009 14010 14011

6008 6009 6010 6011 6012 6013 6014

W10 W11 W12 W13 W14 W15 W17

S6 S7

INDEX MAP



Legend

- Existing Structure Str Label
- Existing Structure to be Replaced
- Proposed Structure Location
- Existing Gravel Str Label
- Eversource Overhead Lines
- Matting
- Existing Access
- Hiking Trail
- Existing Right-of-Way (ROW)
- Eversource Owned Property
- State-Owned Property
- Public Water Supply Watershed
- 2' Contour
- 10' Contour
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Open Water
- Parcel Boundaries
- 105 LLNs/Property Owner
- Map Sheet Matchline

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Middletown, Connecticut

Map Sheet 3 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\Eversource\Line_1620\MXD\1620Line_Sect.1_PetitionMapSheets_20230321.mxd

MAPSHEET 4 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Structures to be Replaced: 14027
Middletown, CT

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Mixed Residential**
- **Natural Diversity Database Area**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands**
- **Residential, Lawn**
- **Roadway, Bartholomew Road Southwest of Structure 14027**
- **Roadway, Chester Bowles Highway (Route 9) North of Structure 14026**

Right-of-Way Vegetation

- **Scrub-shrub**
- **Lawn/Landscaping**
- **Herbaceous**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W33 through W40**
- **Wetland cover types – PEM, PSS, PFO**
- **Vernal Pool VP2**

Wetland and Watercourse Crossings

- **Wetland W33 through W40- No temporary or permanent work pads or access road crossings**
- **Vernal Pool VP2 - No temporary or permanent work pads or access road crossings**

Access

- **Structure 14027 - Access via Bartholomew Road**

Road Crossings

- **Route 9 (Chester Bowles Highway)**
- **Bartholomew Road**

Existing Maintained Right-of-Way Width

- **165 feet, variable**

ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
031-022	SAYBROOK RD RD MIDDLETOWN, CT 06457	WENDY JEAN PANDOLFE	4 HANSSON ST WATERFORD, CT 06385
031-037	CHAMBERLAIN RD RD MIDDLETOWN, CT 06457	THE ANTHONY KRIWOKULSKI	614 BOW LA MIDDLETOWN, CT 06457
031-023	1176 BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	ROBERT S BISHEL	1176 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-024	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JEFFREY D ISLEIB	1114 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-029	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
031-027	1114 BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JEFFREY D ISLEIB	1114 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-041	CHAMBERLAIN RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
031-038	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
031-032	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
031-039	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JONATHAN MORRIS	1253 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-036	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JONATHAN MORRIS	1253 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-030	1215 BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JOHN STEVEN DASCONIO	1215 BARTHOLOMEW ROAD MIDDLETOWN, CT 06457
031-035	1114 BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	JEFFREY D ISLEIB	1114 BARTHOLOMEW RD MIDDLETOWN, CT 06457
031-044	52 EAST MOUNT RD RD MIDDLETOWN, CT 06457	EILEEN HENRY & HENRY JEFFREY ALLEN PLANTE	52 EAST MOUNT RD MIDDLETOWN, CT 06457
031-040	167 CHAMBERLAIN RD RD MIDDLETOWN, CT 06457	JOHN & EMILIO (LU)THEN TO GRECO	167 CHAMBERLAIN RD MIDDLETOWN, CT 06457
031-025	BARTHOLOMEW RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
031-033	75 CHAMBERLAIN RD RD MIDDLETOWN, CT 06457	MARK FORMAN	75 CHAMBERLAIN RD MIDDLETOWN, CT 06457

Middletown

CHESTER BOWLES HIGHWAY

BARTHOLOMEW ROAD

CHAMBERLAIN ROAD

NDDB Area

MAP SHEET 5

1620 Line

1050 Line

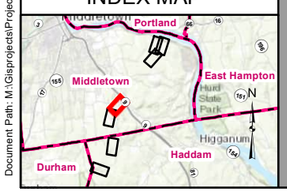
031-022 031-023 031-025 031-030 031-032 031-035 031-036 031-038 031-039 031-041 031-044 031-024 031-027 031-029 031-033 031-037 031-040

14026 14027 14028 14029 14030 14031 14032 6034 6035 6036 6037 6038 6039 6040

W33 W34 W35 W36 W37 W38 W39 W40

VP2

INDEX MAP



Legend

- Existing Structure (Str Label)
- Existing Structure to be Replaced
- Proposed Structure Location
- Stone Work Pad (Str Label)
- Eversource Overhead Lines
- Existing Access
- Existing Right-of-Way (ROW)
- Gates
- Eversource Owned Property
- 2' Contour
- 10' Contour
- Rare Species (December 2022)
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Confirmed Vernal Pool Extent
- 100' Vernal Pool Envelope
- Parcel Boundaries
- 105 LLNs/Property Owner
- Map Sheet Matchline

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Middletown, Connecticut

Map Sheet 4 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\Eversource\Line_1620\MXD\1620Line_Sect1_PetitionMapSheets_20230321.mxd

MAPSHEET 5 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Middletown, CT

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Mixed Residential**
- **Natural Diversity Database Area**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands and associated Watercourses**
- **Residential, Lawn**
- **Roadway, Chamberlain Hill Road between Structures 14043 and 14044**

Right-of-Way Vegetation

- **Scrub-shrub**
- **Herbaceous**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W52 through W55**
- **Wetland cover types – PEM and PSS**
- **Watercourse S16**

Wetland and Watercourse Crossings

- **Wetland W52 through W55 - No temporary or permanent work pads or access road crossings**
- **Watercourse S16 - No temporary or permanent work pads or access road crossings**

Access

- **Structures 14049 and 14051 - Access via Chamberlain Hill Road**

Road Crossings

- **Chamberlain Hill Road**

Existing Maintained Right-of-Way Width

- **165 feet**

ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
031-046	CHAMBERLAIN HILL RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
051-003	244 CHAMBERLAIN HILL RD RD MIDDLETOWN, CT 06457	JOSEPH C DIMAURO	244 CHAMBERLAIN HILL RD MIDDLETOWN, CT 06457
051-001	CHAMBERLAIN HILL RD RD MIDDLETOWN, CT 06457	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
051-002	CHAMBERLAIN HILL RD RD MIDDLETOWN, CT 06457	MARK SEVERINO	125 EAST MOUNT RD MIDDLETOWN, CT 06457
031-050	CHAMBERLAIN HILL RD RD MIDDLETOWN, CT 06457	CITY OF MIDDLETOWN	245 DEKOVEN DR MIDDLETOWN, CT 06457
010A-080	EAST MOUNT RD RD MIDDLETOWN, CT 06457	MARK SEVERINO	125 EAST MOUNT RD MIDDLETOWN, CT 06457
051-007	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	SETH MILLER	328 TRI MOUNTAIN RD DURHAM, CT 06422
051-005	215 CHAMBERLAIN HILL RD RD HADDAM, CT 06438	CHAMBERLAIN HILL LLC	47 CHURCH HILL RD HADDAM, CT 06438
051-010	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
051-006	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	MARK W EPRIGHT	3 OAK HILL TERRACE HADDAM, CT 06438

CHAMBERLAIN HILL ROAD

Middletown

Haddam

010A-080

051-002

NDDB Area

051-006

14039

14040

14041

14042

14043

14044

14045

051-001

051-010

051-007

W52

W53

W54

W55

1620 Line

031-046

S16

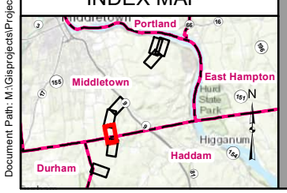
051-005

031-050

051-003

051-007

INDEX MAP



Legend

- Existing Structure
- Eversource Overhead Lines
- Existing Access
- Existing Right-of-Way (ROW)
- Culverts
- Gates
- Eversource Owned Property
- FEMA 100-year Flood Zone
- 2' Contour
- 10' Contour
- Rare Species (December 2022)
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Parcel Boundaries
- 105 LLNs/Property Owner
- Stonewall

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Middletown and Haddam, Connecticut

Map Sheet 5 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\Eversource\Line_ 1620\MXD\1620Line_Sect.1_PetitionMapSheets_20230321.mxd

MAPSHEET 6 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Structures to be Replaced: 14049 & 14051
Haddam, CT

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Mixed Residential**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands and associated Watercourses**
- **Residential, Lawn**

Right-of-Way Vegetation

- **Scrub-shrub**
- **Herbaceous**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W55 through W57**
- **Wetland cover types – PEM, PSS, PFO**
- **Watercourse S17**

Wetland and Watercourse Crossings

- **Wetland 55 & 57 - No temporary or permanent work pads or access road crossings**
- **Wetland 56 & Watercourse S17 - Temporary construction matting near Structure 14049**

Access

- **Structures 14049 and 14051 - Access via Chamberlain Hill Road**

Road Crossings

- **No Road Crossings**

Existing Maintained Right-of-Way Width

- **165 feet**

ABUTTERS TO PROJECT RIGHT-OF-WAY

Line List Number/ Account Number	Parcel Address	Owner Information	Owner Address
209A-288	OXBOW RD RD HADDAM, CT 06438	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
209A-287	116 OXBOW RD RD HADDAM, CT 06438	BRADFORD OLENICK	116 OXBOW RD HIGGANUM, CT 06441
051-011	82 OXBOW RD RD HADDAM, CT 06438	ORLANDO GABRIEL E TRUSTEE	82 OXBOW RD HIGGANUM, CT 06441
051-009	74 OXBOW RD RD HADDAM, CT 06438	DREW J LETHBRIDGE	74 OXBOW RD HIGGANUM, CT 06441
051-008	66 OXBOW RD RD HADDAM, CT 06438	GARRET COOK	66 OXBOW RD HIGGANUM, CT 06441
051-007	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	SETH MILLER	328 TRI MOUNTAIN RD DURHAM, CT 06422
051-005	215 CHAMBERLAIN HILL RD RD HADDAM, CT 06438	CHAMBERLAIN HILL LLC	47 CHURCH HILL RD HADDAM, CT 06438
051-010	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
051-006	CHAMBERLAIN HILL RD RD HADDAM, CT 06438	MARK W EPRIGHT	3 OAK HILL TERRACE HADDAM, CT 06438

Haddam

SPAN STREAM

TEMPORARY WORKPAD
WETLAND IMPACT OF: 3,578 SQ. FT.

S17

14049

14048

14047

14046

14045

14050

14051

1620 Line

ACCESS FROM CHAMBERLAIN HILL ROAD

W55

W56

W57

051-005

051-006

051-007

051-008

051-009

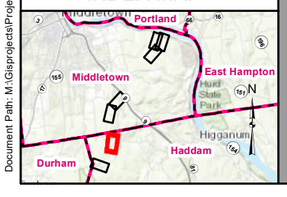
051-010

051-011

209A-287

209A-288

INDEX MAP



Legend

- Existing Structure
- Existing Structure to be Replaced
- Proposed Structure Location
- Temporary Construction Matting
- Stone Work Pad
- Eversource Overhead Lines
- Str Label
- Existing Access
- Existing Right-of-Way (ROW)
- Eversource Owned Property
- Str Label
- FEMA 100-year Flood Zone
- 2' Contour
- 10' Contour
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Parcel Boundaries
- 105 LLNs/Property Owner
- Stonewall

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Haddam, Connecticut

Map Sheet 6 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\Eversource\Line_1620\MXD\1620Line_Sect.1_PetitionMapSheets_20230321.mxd

MAPSHEET 7 of 7
1620 Line Middletown Substation to Oxbow Junction Upgrade Project
Structure to be Replaced: 14059
Haddam, CT

ABUTTERS TO PROJECT RIGHT-OF-WAY			
Line List Number/ Account Number	**Parcel Address**	**Owner Information**	**Owner Address**
209A-288	OXBOW RD RD HADDAM, CT 06438	CONNECTICUT LIGHT & POWER	PO BOX 270 HARTFORD, CT 06141
209A-294	334 OXBOW RD RD HADDAM, CT 06438	DIANE W ANDREWS	11 POKORNY RD HIGGANUM, CT 06441

AREA DESCRIPTION

Existing Land Use

- **Undeveloped / Forest**
- **Mixed Residential**
- **Recreational/ Open Space: Cockaponset Forest Trail (CTDEEP)**
- **Stepanksi Pond**

RIGHT-OF-WAY DESCRIPTION

Right-of-Way Land Use

- **Maintained electric transmission facilities corridor**
- **Wetlands and associated Watercourses**
- **Residential, Lawn**

Right-of-Way Vegetation

- **Scrub-shrub**
- **Herbaceous**
- **Wetland**
- **Barren/unvegetated**

Water Resources

- **Wetland W61 through W63**
- **Wetland cover types – PEM, PSS, PFO**
- **Watercourse S18 through S20**
- **Vernal Pool VP4**

Wetland and Watercourse Crossings

- **Wetland 61 through 63 - No temporary or permanent work pads or access road crossings**
- **Watercourse S18 through S20 - No temporary or permanent work pads or access road crossings**
- **Vernal Pool VP4 - No temporary or permanent work pads or access road crossings**

Access

- **Structure 14059 - Access via Oxbow Road**

Road Crossings

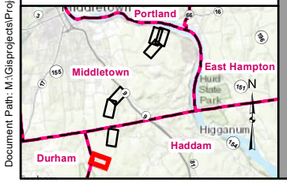
- **None**

Existing Maintained Right-of-Way Width

- **165 feet, variable**

14058
14059
4460A
4460
4461
OXBOW ROAD JUNCTION
209A-288
S18
S19
S20
4459
4458
4457
4457
1620 Line
3252 Line
W61
W62
W63
9883
9882
9881
24559
24559A
9884
1975 Line
209A-294
VP4
OXBOW ROAD
COCKAPONSET FOREST TRAIL (CTDEEP)
Cockaponset State Forest
HADDAM QUARTER ROAD
OXBOW RIDGE ROAD
Durham
Haddam
Stepanski Pond

INDEX MAP



Legend

- Existing Structure (Str. Label)
- Existing Structure to be Replaced
- Proposed Structure Location
- Stone Work Pad (Str. Label)
- Existing Gravel
- Eversource Overhead Lines
- Existing Access
- Hiking Trail
- Existing Right-of-Way (ROW)
- Culverts
- Gates
- Eversource Owned Property
- State-Owned Property
- 2' Contour
- 10' Contour
- Municipal Boundary
- Field Delineated Wetland Lines
- Field Delineated Wetland
- Delineated Intermittent Watercourse
- Confirmed Vernal Pool Extent
- 100' Vernal Pool Envelope
- Open Water
- Parcel Boundaries
- 105 LLNs/Property Owner

N

0 50 100 200 Feet

EVERSOURCE ENERGY

1620 Line Middletown Substation to Oxbow Junction Upgrade Project

Durham and Haddam, Connecticut

Map Sheet 7 of 7

4/19/2023

AECOM

Document Path: M:\Gisprojects\Projects\Eversource\Line_1620\MXD\1620Line_Sect.1_PetitionMapSheets_20230321.mxd

Attachment B:

List of Structure Replacements

1620 Line Structure No.	Existing Structure Design (eg, SCHF, DCHF, 3-	Existing Structure Material (eg, wood, steel, etc.)	Proposed Structure Design (eg, SCHF, DCHF, 3-	Proposed Structure Material (eg, weathering steel)	Existing Structure Height (feet) (Foundation Exposure	Proposed Structure Height (feet) Hgt. AGL	Structure Height Increase (feet)se if additional embedment
14007	3-pole angle	wood	3-pole angle	weathering steel	47.5-47.5-47.5	52-52-52	4.5
14008	3-pole angle	wood	3-pole angle	weathering steel	52-52-52	56.5-56.5-56.5	4.5
14027 (1)	3-pole angle	wood	3-pole angle	weathering steel	52-52-52	61.5-61.5-61.5	9.5
14049	3-pole angle	wood	3-pole angle	weathering steel	56.5-56.5-56.5	61-61-61	4.5
14051	SCHF	wood	SCHF	weathering steel	56.5-56.5	61-61	4.5
14059	3-pole angle	wood	3-pole angle	weathering steel	47.5-47.5-47.5	52-52-52	4.5
						Average Height Increase:	• **5.33**

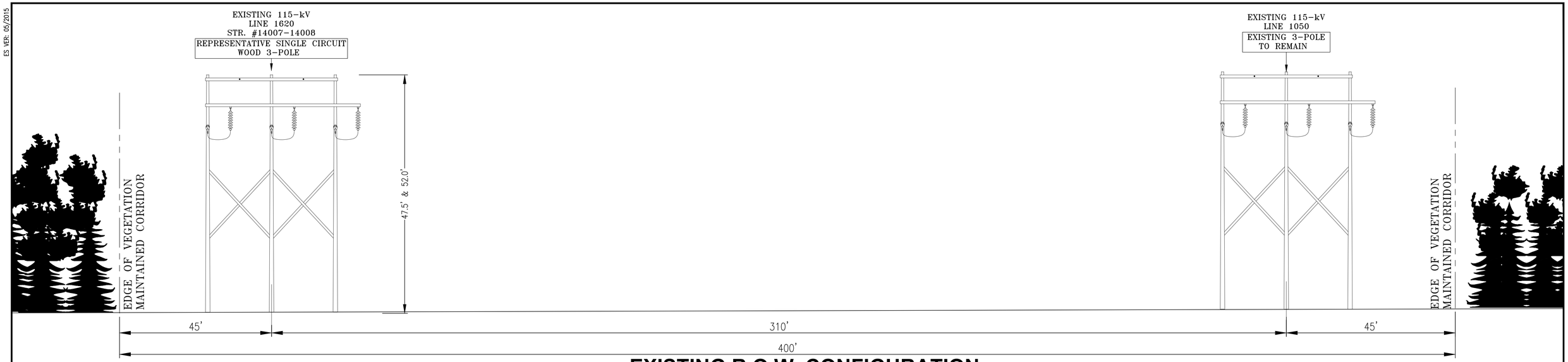
Footnote:

1. A telcom cell carrier will be filing independently to the CT Siting Council to add a pole to the top of the structure following approval of the structure replacements of this petiton filing.

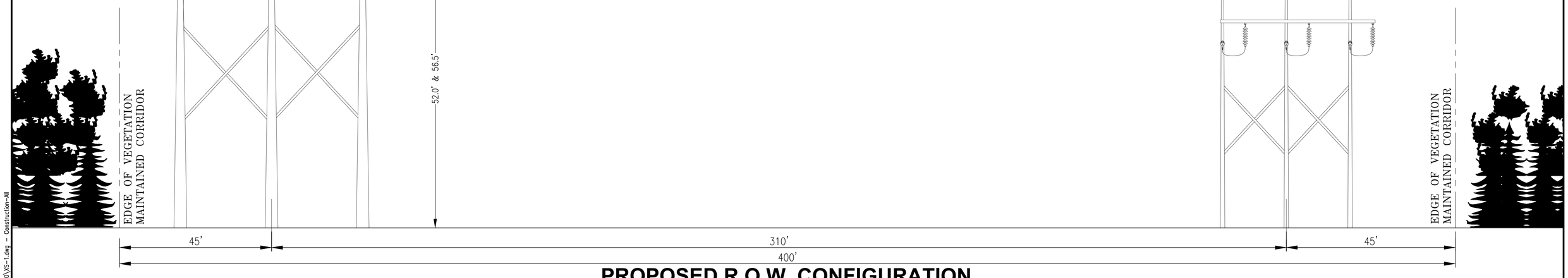
Attachment C:

Cross Sections

ES VER: 05/2015



EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT WOOD 3-POLE
MIDDLETOWN SUBSTATION LOOKING TOWARD CHESTNUT JUNCTION
IN THE TOWN OF MIDDLETOWN, CT
STR. #14007 & 14008



PROPOSED R.O.W. CONFIGURATION
SINGLE CIRCUIT STEEL 3-POLE
MIDDLETOWN SUBSTATION LOOKING TOWARD CHESTNUT JUNCTION
IN THE TOWN OF MIDDLETOWN, CT
STR. #14007 & 14008

Not to Scale

XS-1

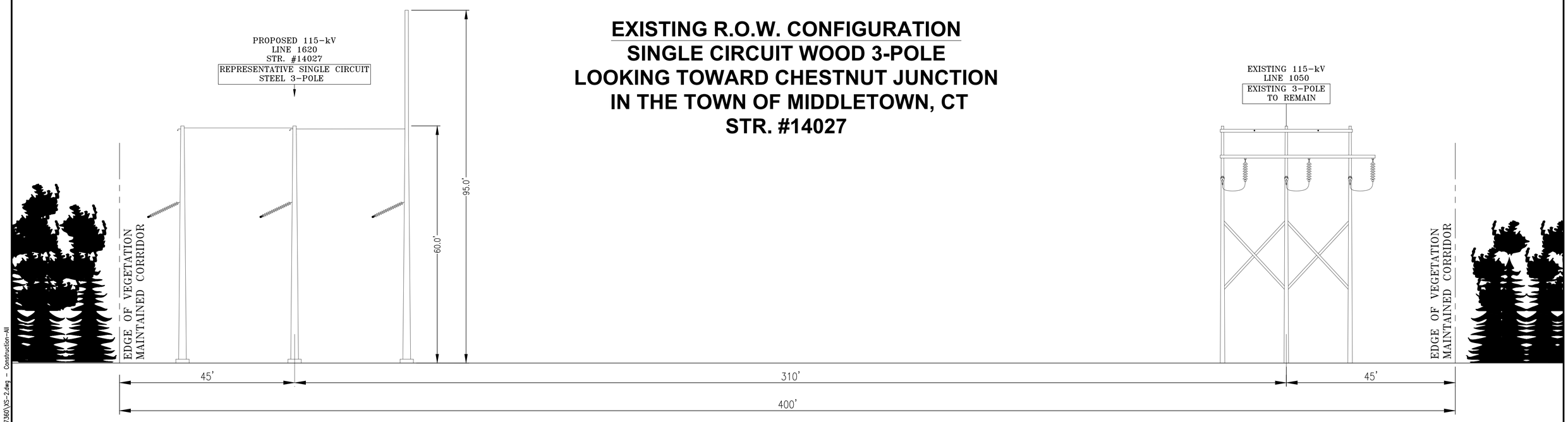
EVERSOURCE ENERGY

MIDDLETOWN S/S - HADDAM S/S
115-kV TRANSMISSION LINES CROSS SECTION
MIDDLETOWN & HADDAM, CONNECTICUT

5/19/2023 12:21 PM - mwhitehouse - C:\AutoCAD\Blocks\ePublish_27900\XS-1.dwg - Construction-All

ES VER: 05/2015

EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT WOOD 3-POLE
LOOKING TOWARD CHESTNUT JUNCTION
IN THE TOWN OF MIDDLETOWN, CT
STR. #14027



NOTE: A TELECOM CELL CARRIER WILL BE FILING INDEPENDENTLY TO THE CT SITING COUNCIL TO ADD A POLE TO THE TOP OF THE STRUCTURE FOLLOWING APPROVAL OF THE STRUCTURE REPLACEMENTS OF THIS PETITION FILING.

PROPOSED R.O.W. CONFIGURATION
SINGLE CIRCUIT STEEL 3-POLE
LOOKING TOWARD CHESTNUT JUNCTION
IN THE TOWN OF MIDDLETOWN, CT
STR. #14027

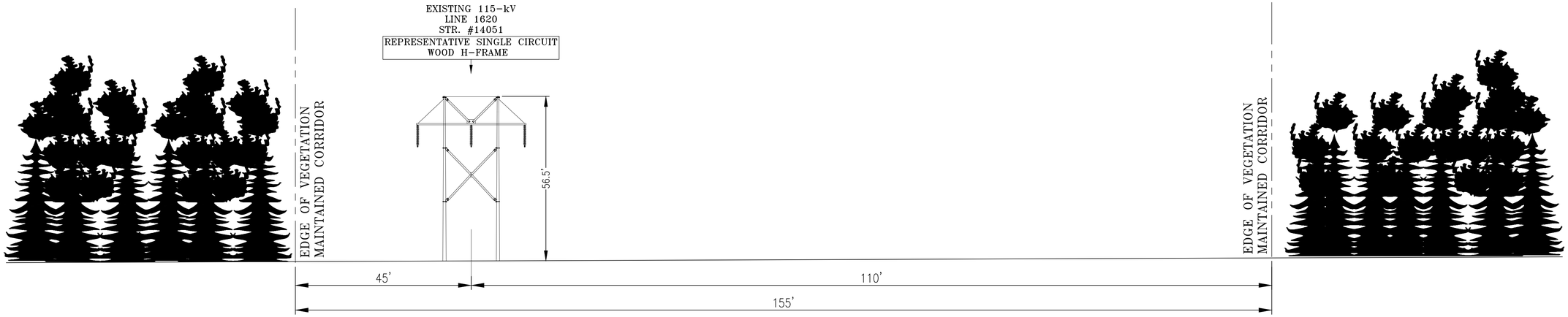
Not To Scale

XS-2

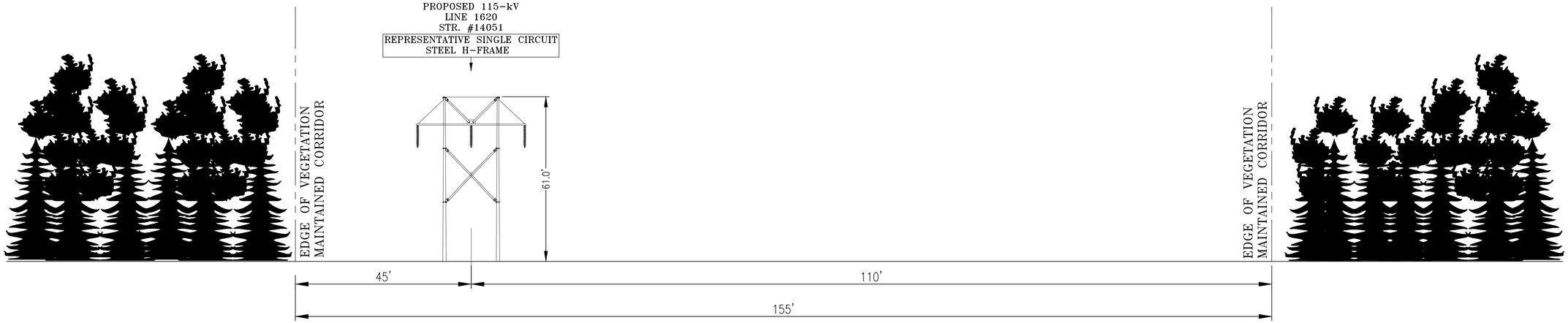
EVERSOURCE ENERGY

MIDDLETOWN S/S - HADDAM S/S
115-kV TRANSMISSION LINES CROSS SECTION
MIDDLETOWN & HADDAM, CONNECTICUT

5/19/2023 12:21 PM - mwhitehouse - C:\AutoCAD\Blocks\ePublish_273680\XS-2.dwg - Construction-All



EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT WOOD H-FRAME
FROM CHESTNUT JUNCTION LOOKING TOWARD OXBOW JUNCTION
IN THE TOWN OF HADDAM, CT
STR. #14051



PROPOSED R.O.W. CONFIGURATION
SINGLE CIRCUIT STEEL H-FRAME
FROM CHESTNUT JUNCTION LOOKING TOWARD OXBOW JUNCTION
IN THE TOWN OF HADDAM, CT
STR. #14051

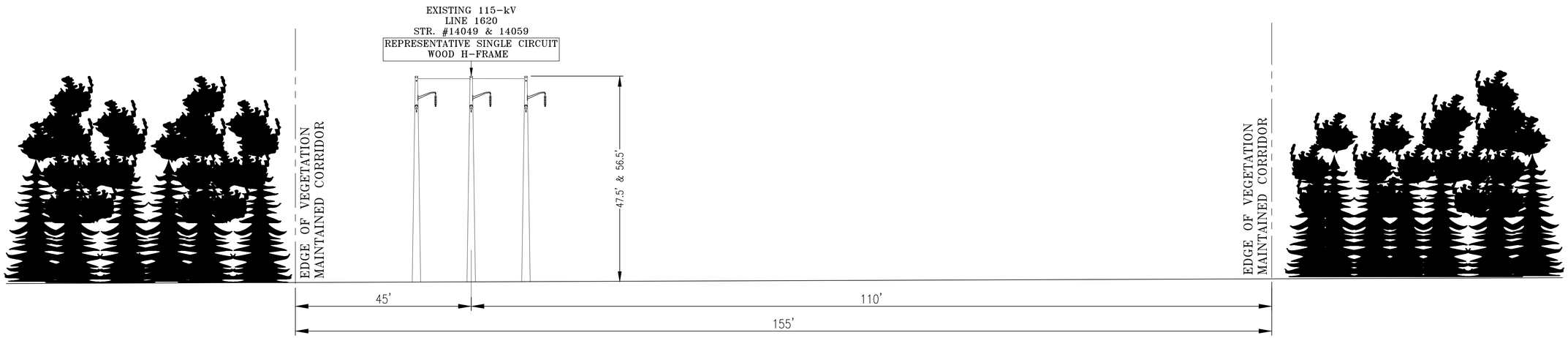
Not to Scale

XS-3

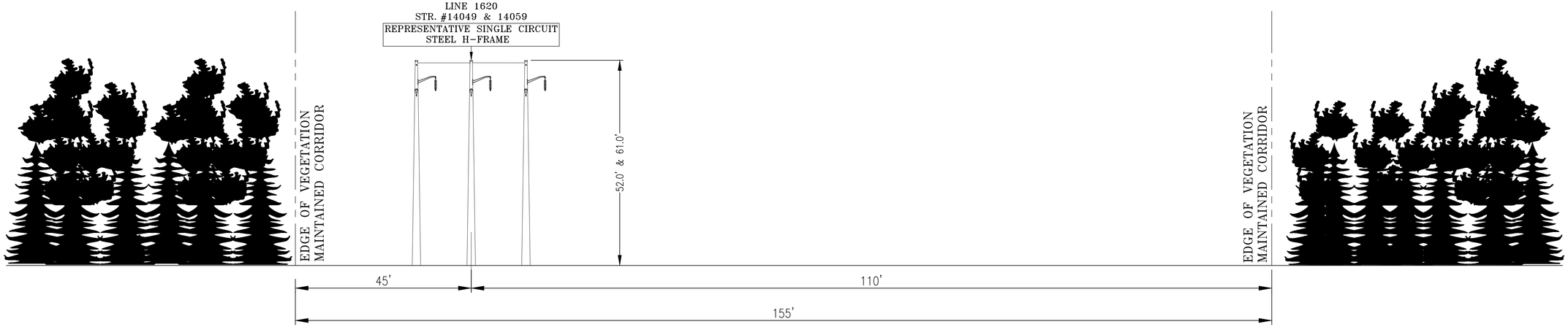
EVERSOURCE ENERGY

MIDDLETOWN S/S - HADDAM S/S
115-kV TRANSMISSION LINES CROSS SECTION
MIDDLETOWN & HADDAM, CONNECTICUT

ES VER: 05/2015



EXISTING R.O.W. CONFIGURATION
SINGLE CIRCUIT WOOD H-FRAME
FROM CHESTNUT JUNCTION LOOKING TOWARD OXBOW JUNCTION
IN THE TOWN OF HADDAM, CT
STR. #14049 & 14059



PROPOSED R.O.W. CONFIGURATION
SINGLE CIRCUIT STEEL H-FRAME
FROM CHESTNUT JUNCTION LOOKING TOWARD OXBOW JUNCTION
IN THE TOWN OF HADDAM, CT
STR. #14049 & 14059

Not To Scale

XS-4

EVERSOURCE ENERGY

MIDDLETOWN S/S - HADDAM S/S
115-kV TRANSMISSION LINES CROSS SECTION
MIDDLETOWN & HADDAM, CONNECTICUT

5/19/2023 12:21 PM – rwhitehouse – C:\AutoCAD\Blocks\AcPublish_27360\XS-4.dwg – Construction-All

Attachment D:

Wetlands and Watercourses Report

EVERSOURCE ENERGY

Line 1620, Middletown Substation

to Oxbow Junction Upgrade Project

WETLANDS AND WATERCOURSES REPORT

THE CONNECTICUT LIGHT AND POWER COMPANY
DOING BUSINESS AS

EVERSOURCE ENERGY

March 2023

Note: This page left intentionally blank

EVERSOURCE ENERGY

Line 1620, Middletown Substation

to Oxbow Junction Upgrade Project

WETLANDS AND WATERCOURSES REPORT

Prepared for:

The Connecticut Light and Power Company
doing business as

Eversource Energy
56 Prospect Street
P.O. Box 270
Hartford, CT 06103

Prepared by:

AECOM
500 Enterprise Drive
Rocky Hill, CT 06067

Note: This page left intentionally blank

Table of Contents

1.0 Introduction....1
1.1 Project Background and Summary of Proposed Action....1
1.2 Physiographic and Geologic Overview....1
2.0 Wetland and Watercourse Regulations....3
2.1 Section 404 – Clean Water Act....3
2.2 Connecticut Inland Wetland and Watercourses Act....4
3.0 Wetland and Watercourse Delineation Procedures....5
3.1 Pre-survey Desktop Investigations....5
3.2 Field Surveys....5
3.2.1 Soils....5
3.2.2 Vegetation....6
3.2.3 Hydrology....6
3.2.4 Wetland and Watercourse Boundary Flagging....6
3.3 Wetland Classification....7
3.3.1 Palustrine Forested Wetlands (PFO)....7
3.3.2 Palustrine Scrub-Shrub Wetlands (PSS)....7
3.3.3 Palustrine Emergent Wetlands (PEM)....7
3.4 Watercourses....7
3.5 Post-Survey Desktop Analysis....8
4.0 Results....9
4.1 Wetlands....9
4.2 Watercourses....**Error! Bookmark not defined.**

List of Appendices

Appendix A, Wetland and Watercourse Summary Tables

Appendix B, Wetland data forms

1.0 Introduction

The Connecticut Light and Power Company, doing business as Eversource Energy (Eversource), proposes to replace 6 structures along an approximately 5.75-mile section of its existing 1620 Line right-of-way (ROW) in Middletown and Haddam, Connecticut (Project). This report provides a summary of wetland and watercourse inventories and field delineations conducted by AECOM within the Project area. Specifically, this report discusses applicable federal and state wetland and watercourse regulations, the methodologies used to identify the wetland and watercourse resources encountered along the Project and summarizes the findings of the surveys. These field delineations were conducted to identify both federal and State of Connecticut jurisdictional water resources.

Tables listing all wetlands and watercourses identified during the course of the surveys are located in Appendix A. Appendix B contains U.S. Army Corps of Engineers wetland data forms for all wetlands which will have temporary Project related impacts.

1.1 Project Background and Summary of Proposed Action

The proposed Project includes the replacement of existing transmission structures with steel monopole structures along a segment of the existing 1620 Line. Project work would be completed along the existing Right-of-Way (ROW) section between Middletown Substation and Oxbow Junction. Work would be completed along an approximately 5.75 mile ROW and at associated access and entry points. The Project ROW section includes four overhead transmission lines between Middletown Substation and Middletown Junction (1620, 384, 1050, and 1572), two overhead transmission lines between Middletown Junction and Chestnut Junction (1620 and 1050), and one overhead transmission line (1620) between Chestnut Junction and Oxbow Junction. The Project includes the crossing of wetlands, watercourses, and state land. Structures will be replaced utilizing a combination of existing gravel, additional gravel work pads, and temporary matting.

1.2 Physiographic and Geologic Overview

The Project area is situated within the Southern New England Coastal Plains and Hills (59c) level IV Ecoregion[1] of Connecticut. The Connecticut Valley region is characterized by a mostly level rolling landscape with some higher hills. In contrast to the surrounding upland ecoregions, this portion of Connecticut is dominated by Jurassic-age Holyoke basalt where surficial hydrology deposits in valleys are relatively thick and include outwash, alluvial, and lake bottom deposits. The dominant geology is sedimentary, such as arkose, siltstone, sandstone, shale, and conglomerate. The landscape of Connecticut was heavily shaped by the late Wisconsin glaciation episode from the Laurentide ice sheet and the associated outwash meltwaters which resulted in a flattened Connecticut River Valley. Natural vegetation in this ecoregion tends towards deciduous forests of transitional hardwood in uplands and maple/cottonwood dominated floodplain areas. The Southern New England Coastal Plains and Hills ecoregion is a diverse collection of ecosystems ranging from irregular plains with low hills and some open high hills. Bedrock in this region is characterized by granites, schist, and gneiss. Topography consists of

1 Griffith, G.E., Omernik, J.M., Bryce, S.A., Royte, J., Hoar, W.D., Homer, J.W., Keirstead, D., Metzler, K.J., and Hellyer, G., 2009, *Ecoregions of New England* (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,325,000).

rolling hills topped with shallow soils or exposed bedrock and valleys formed in glacial till. Coarse-loamy and sandy, mesic Inceptisols and some Entisols are typical. Vegetation in this ecoregion is historically dominated by deciduous hardwoods, however, many areas were cleared for farming, grazing or other purposes.

2.0 Wetland and Watercourse Regulations

In Connecticut, wetlands and watercourses are subject to state and/or federal jurisdiction based upon the Federal Clean Water Act ("CWA"; 33 U.S.C. 1251 *et seq.*) and the Connecticut Inland Wetland and Watercourses Act ("IWWA"; C.G.S. Section 22a-36 through 45) and implementing regulations (R.C.S.A. Section 22a-39-1 to 22a-39-15). The following wetland and watercourse regulations are applicable to the Project.

2.1 Section 404 – Clean Water Act

Wetlands, springs, and other waters of the United States are regulated under Section 404 CWA (33 U.S.C. 1344) by the United States Army Corps of Engineers ("Corps"). Federal jurisdictional "waters of the United States" include:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (1)-(4) above;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) above.

According to the *1987 Corps of Engineers Wetland Delineation Manual*[2] (Corps Manual), areas must exhibit three distinct characteristics to be considered wetlands jurisdictional under Section 404 of the CWA:

- Hydrophytic Vegetation: Plants growing in water or in a substrate that is at least periodically deficient in oxygen during a growing season as a result of excessive water content;
- Hydric Soils: Soils that, in an undrained condition, are saturated, flooded, or ponded long enough during a growing season to develop an anaerobic condition that supports the growth and regeneration of hydrophytic vegetation; and,

[2] Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

- Wetland Hydrology: Inundation or saturation by surface or groundwater at a frequency and duration during the growing season sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

In January 2012, the USACE issued a *Regional Supplement to the Corps of Engineers Delineation Manual*[3] (Regional Supplement), which provides further guidance for wetland delineations in the northeastern United States. The Regional Supplement provides wetland indicators, delineation guidance, and other information specific to the Northcentral and Northeast Regions, supplementing the 1987 USACE Manual. Indicators and procedures in the Regional Supplement are designed to identify wetlands as defined jointly by the USACE (33 CFR 328.2) and the U.S. Environmental Protection Agency (40 CFR 230.3) and subject to regulation under Section 404 of the CWA.

2.2 Connecticut Inland Wetland and Watercourses Act

The State of Connecticut Department of Energy and Environmental Protection ("DEEP") regulates work in and around inland wetlands under the IWWA (C.G.S. Section 22a-36 through 45) and implementing regulations (R.C.S.A. Section 22a-39-1 to 22a-39-15). Typically, the state statute is implemented through the Inland Wetlands and Watercourse Regulations as administered by individual municipalities.

Under Section 2 of the IWWA, a wetland is defined as "land, including submerged land…which consists of poorly drained, very poorly drained, alluvial and floodplain soils as defined by the National Cooperative Soil Survey. Such areas may include filled, graded or excavated sites which possess an aquic (saturated) moisture regime as defined by the United States Department of Agriculture (USDA) Cooperative Soil Survey."

Watercourses are defined in the IWWA as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof." The IWWA defines Intermittent Watercourses as having a defined permanent channel bed and bank and the occurrence of two of the following: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration of longer than a particular storm incident, or C) the presence of hydrophytic vegetation.

[3] U.S. Army Corps of Engineers. 2011a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

3.0 Wetland and Watercourse Delineation Procedures

On behalf of Eversource, AECOM conducted wetland and watercourse identification and delineations along the Project's existing ROW corridor between July and August of 2022 to determine state and federal wetland boundaries in accordance with applicable state and federal regulations. The methods of investigation and procedures used include pre-survey desktop investigations and on-site field surveys to determine the wetland and watercourse resource areas within the Project area.

3.1 Pre-survey Desktop Investigations

Prior to the commencement of field surveys, AECOM reviewed information from multiple sources to determine the potential extent of state and federal wetlands within the Project area. Pre-survey information reviewed included:

- United States Geological Survey (USGS) 7.5-minute topographical quadrangles;
- USGS National Hydrography Dataset (NHD);
- National Wetlands Inventory (NWI) map data;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) data;
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) web soil surveys; and,
- CT DEEP inland wetland soils mapping.

3.2 Field Surveys

The wetland delineation methodologies outlined in the Corps Manual and the Regional Supplement and definitions included in the IWWA were used in conjunction with NRCS soil surveys to identify and delineate wetlands within the Project area. During the process of delineating wetlands within the ROW, both state and federal methodologies were employed and state and federal wetland criteria were evaluated. In order to meet federal jurisdictional wetland status, wetlands must meet the hydric soil, hydrophytic vegetation, and wetland hydrology criteria per the Corps Manual and Regional Supplement. Connecticut-only jurisdictional wetlands consist of areas of poorly drained, very poorly drained, alluvial, and floodplain soils.

Field surveys were initiated with an inspection of the ROW to identify soil types, topographic and drainage features, and plant associations that would indicate the potential for jurisdictional wetland classification. Soil profiles were sampled using a Dutch auger or a tile spade ("sharpshooter") to determine if any alluvial, floodplain, poorly drained, very poorly drained or hydric soil indicators were present. The indicator status of dominant plant species in each stratum was evaluated in the field to determine whether a hydrophytic plant association was present. Indicators of wetland hydrology were also observed and recorded. Specific methods for characterizing and evaluating the soil, vegetation, and hydrologic indicators are described below.

3.2.1 Soils

At the center of each wetland data plot, AECOM observed and documented the soil profile morphology to classify the soil type and depth to evidence of aquic conditions. Typically, a soil pit was dug to 20 inches with a Dutch auger or tile spade to provide a soil profile for examination. The information collected for each soil profile included soil horizons, depth, texture, color, and the

presence or absence of redoximorphic features (mottles and other features). Colors of the soil matrix and mottles were identified using Munsell Soil Color Charts. AECOM based all hydric soil determinations on criteria established in the Corps Manual, Regional Supplement, and *Field Indicators for Identifying Hydric Soils in New England* [4]. Additionally, AECOM noted the presence of any saturation and/or standing water encountered during the soil profile description.

3.2.2 Vegetation

Species abundance in both upland and wetland communities was visually estimated. Dominant trees and shrubs/saplings were recorded within a 30-foot and 15-foot radius, respectively, from the center of each documentation plot. Woody vines were recorded within a 30-foot radius plot. Dominant herbaceous vegetation was recorded within a 5-foot radius plot. AECOM identified plant species using appropriate botanical reference material for the region. The hydrophytic indicator status of each species was identified using *The National Wetland Plant List: 2014 Update of Wetland Ratings*[5].

Indicators of hydrophytic vegetation are satisfied if the results of the rapid assessment include all species rated as OBL or FACW (Indicator 1), the dominance test is greater than 50% (Indicator 2), or the prevalence index is less than or equal to 3.0 (Indicator 3) based on the Corps Wetland Determination Data Form.

3.2.3 Hydrology

The term wetland hydrology encompasses all hydrologic characteristics for areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Site hydrology was evaluated during field surveys by initially observing whether the soil at the surface was inundated or saturated. If the ground surface was dry, the depth to freestanding groundwater or saturated soil was measured, and the presence or absence of other indicators of wetland hydrology (e.g., drift lines, water-stained leaves, etc.) was noted. The wetland hydrology criterion was met if one or more primary or two or more secondary field indicators were present.

3.2.4 Wetland and Watercourse Boundary Flagging

For the purposes of documenting and organizing the wetland and watercourse information on maps and tables for this Project, each resource was assigned a unique alpha-numeric code. Wetlands and watercourses were numbered sequentially from the northern extent of the Project to the southern extent. Wetlands were labeled with a “W” prefix and watercourses were labeled with an “S” prefix. Tables 1 and 2 (Attachment A) list the delineated wetlands and watercourses identified within the Project area, respectively.

During the field investigations, the boundaries of each resource were identified by sequentially-numbered vinyl flagging tied to vegetation and spaced at regular intervals. Wetland/upland boundaries were flagged with pink ribbon preprinted with the words “Wetland Delineation” in black letters, and watercourses were flagged with blue ribbon. Watercourses less than three feet wide were field-identified with a single series of flags established along the centerline of the stream. In

4 New England Hydric Soils Technical Committee. 2019 Version 4, Field Indicators for Identifying Hydric Soils in New England. New England Interstate Water Pollution Control Commission, Lowell, MA.

5 U.S. Army Corps of Engineers 2018. National Wetland Plant List, version 3.4

instances where the watercourse was greater than three feet wide, the ordinary high water mark (OHWM) boundary on each bank was flagged.

3.3 Wetland Classification

While in the field, AECOM soil and wetland scientists classified the various wetlands and watercourses according to the "Cowardin system", which is a process discussed in *Classification of Wetlands and Deepwater Habitats of the United States*[6]. Identified wetlands were classified as Palustrine Forested (PFO), Palustrine Scrub-Shrub (PSS), or Palustrine Emergent (PEM), all of which are further described below. In some cases, a wetland complex contained more than one wetland classification type. In those situations, each wetland type is listed and the first classification type represents the more dominant characteristic. Wetland vegetation found in these community types within the Project area are described in Section 4.0.

3.3.1 Palustrine Forested Wetlands (PFO)

Palustrine forested wetlands or PFO are characterized by woody vegetation that is six meters (approximately 20 feet) tall or taller. These areas normally contain an overstory of trees, an understory of young trees and/or shrubs, and an herbaceous layer. These wetland types are located predominantly in unmanaged or non-cleared areas of the existing ROW or in adjacent off-ROW areas.

3.3.2 Palustrine Scrub-Shrub Wetlands (PSS)

Palustrine scrub-shrub wetlands or PSS are typically dominated by woody vegetation less than six meters (approximately 20 feet) tall. Areas classified as scrub-shrub cover types may represent a successional stage that through natural processes would transition to a forested wetland; or may contain trees or shrubs that are small and/or stunted due to environmental conditions. Within the Project area, PSS wetlands often occur within the ROW as a result of ongoing routine vegetation management practices.

3.3.3 Palustrine Emergent Wetlands (PEM)

Palustrine emergent wetlands or PEM are characterized by erect, rooted, herbaceous hydrophytes not including mosses and lichens. These wetlands maintain the same appearance year after year and are typically dominated by perennial plants that are present for the majority of the growing season.

3.4 Watercourses

According to the IWWA, "Rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof" are considered watercourses. The "top of bank", or OHWM, was used to demarcate the limits of a watercourse when no wetlands were adjacent to the channel. Watercourses were investigated to determine if they are listed as a National Wild and Scenic River under the National Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1287) or rivers designated by the CT DEEP Protected

[6] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service Biological Report 79/31. Washington, D.C.

Rivers Act (C.G.S. §§ 25-200 through 25-210). Water quality designations were determined using CT DEEP mapping resources.

3.5 Post-Survey Desktop Analysis

The wetland and watercourse boundaries were plotted on aerial imagery by AECOM field personnel. The aerial-based maps show the locations of the delineated resources relative to the proposed limits of the Project.

4.0 Results

A total of 63 wetlands and 20 watercourses were identified within this portion of Eversource's ROW and/or fee-owned properties, with 33 wetlands and 12 watercourses proximal to proposed Project activities, as shown on mapping included in this Petition submittal. A summary of the wetlands and watercourses are presented in Tables 1 and 2, respectively, in Appendix A.

4.1 Wetlands

Wetland 1

This wetland was classified in the field as a PFO wetland. Hydrology indicators within this wetland consisted of saturated soils, high water table, drainage patterns and drift deposits. Dominant vegetation identified within the wetland included trees of red maple (*Acer rubrum*), white oak (*Quercus alba*), and shagbark hickory (*Carya ovata*), saplings and shrubs of green ash (*Fraxinus pennsylvanica*), and a herbaceous dominated by cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), and jewelweed (*Impatiens capensis*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6). W1 is connected to W2 via a culvert under the existing access road.

Wetland 2

This wetland was classified in the field as a PFO wetland. Hydrology indicators within this wetland consisted of saturated soils, high water table. Dominant vegetation identified within the wetland included trees of red maple (*Acer rubrum*) saplings and shrubs of green ash (*Fraxinus pennsylvanica*) and red maple (*Acer rubrum*) and a herbaceous dominated by skunk cabbage (*Symplocarpus foetidus*), sensitive fern (*Onoclea sensibilis*), and jewelweed (*Impatiens capensis*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3), "Depleted Below Dark Surface" (A11), and "Redox Dark Surface" (F6). W2 is connected to both W1 and W3 via culverts.

Wetland 3

This wetland was classified in the field as a PFO wetland. W3 consists of a linear depressional wetland, however, no flow was identified during field reviews. Hydrology indicators within this wetland consisted of saturated soils, high water table, drainage patterns and drift deposits. Dominant vegetation identified within the wetland included trees of red maple (*Acer rubrum*), white oak (*Quercus alba*), and shagbark hickory (*Carya ovata*), saplings and shrubs of green ash (*Fraxinus pennsylvanica*), and a herbaceous dominated by cinnamon fern (*Osmundastrum cinnamomeum*) and jewelweed (*Impatiens capensis*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6). W3 is connected to W2 via a culvert.

Wetland 4

This wetland was classified in the field as a PSS wetland within a valley and contains Stream 2 (S2). Hydrology indicators within this wetland area consisted of a high water table, saturated soils, drift deposits, and drainage patterns. Vegetation identified within the wetland included saplings

and shrubs of speckled alder (*Alnus incana*), multiflora rose (*Rosa multiflora*), highbush blackberry (*Rubus allegheniensis*), and gray birch (*Betula populifolia*) and an herbaceous layer of woolgrass (*Scirpus cyperinus*), NY ironweed (*Vernonia noveboracensis*), lurid sedge (*Carex lurida*), and Joe-Pye-weed (*Eutrochium purpureum*). Soils within this wetland satisfy criteria for Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 4 (northern portion)

This wetland was classified in the field as a depressional PEM wetland. This wetland is continuous with wetland 4 but contains different characteristics. Hydrology indicators within this wetland area consisted of a high water table and saturated soils. Vegetation identified within the wetland woolgrass (*Scirpus cyperinus*), arrow arum (*Peltandra virginica*), Joe-Pye-weed (*Eutrochium purpureum*), and vines of river grape (*Vitis riparia*). Soils within this wetland satisfy criteria for or "Depleted Matrix" (F3), "Depleted Below Dark Surface" (A11).

Wetland 5

This wetland was classified in the field as a PEM wetland. Hydrology indicators within this wetland area consisted of water stained leaves, saturated soils, and a high water table. Vegetation identified within the wetland included saplings of gray birch (*Betula populifolia*) and a herbaceous layer of purple loosestrife (*Lythrum salicaria*) and wrinkleleaf goldenrod (*Solidago rugosa*). Soils within this wetland satisfy criteria for Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 6

This wetland was classified in the field as a PFO wetland. This wetland is located along the banks of Stream 3 (S3) as a wetland fringe. Hydrology indicators within this wetland area consisted of a drainage patterns and drift deposits. Vegetation identified within the wetland included trees of gray birch (*Betula populifolia*), slippery elm (*Ulmus rubra*), a herbaceous layer of cinnamon fern (*Osmundastrum cinnamomeum*), and vines of Oriental bittersweet (*Celastrus orbiculatus*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6). W6 is associated with Stream 3 (S3).

Wetland 7

This wetland was classified in the field as a PSS wetland. This wetland is within the greater drainage area of Streams 3 and 4 (S3-4). Hydrology indicators within this wetland area consisted of a water stained leaves. Vegetation identified within the wetland included saplings and shrubs of gray birch (*Betula populifolia*) and buckthorn (*Rhamnus cathartica*) and a herbaceous layer of jewelweed (*Impatiens capensis*), lurid sedge (*Carex lurida*), and deertounge (*Dichanthelium clandestinum*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 8

This wetland was classified in the field as a PSS wetland. Wetland 8 is located along the banks of Stream 5 (S5). Hydrology indicators within this wetland area consisted of drainage patterns, a high water table, and saturated soils. Vegetation identified within the wetland included saplings an shrubs of speckled alder (*Alnus incana*), common elderberry (*Sambucus canadensis*), and tulip poplar (*Liriodendron tulipifera*), and a herbaceous layer of yellow nutsedge (*Cyperus*

esculentus), lurid sedge (*Carex lurida*), wrinkleleaf goldenrod (*Solidago rugosa*), and soft rush (*Juncus effusus*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3)

Wetland 9

This wetland was classified in the field as a depressional PEM wetland. Hydrology indicators within this wetland area consisted of water stained leaves, saturated soils, and a high water table. Vegetation identified within the wetland included lurid sedge (*Carex lurida*), woolgrass (*Scirpus cyperinus*), and tussock sedge (*Carex stricta*). Soils within this wetland contained gleied materials and satisfy criteria for "Depleted Matrix" (F3) and "Depleted Below Dark Surface" (A11).

Wetland 10

This large wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland area consisted of saturated soils, a high water table, and standing water. Vegetation identified within the wetland included a sapling and shrub layer of speckled alder (*Alnus incana*), sweet pepperbush (*Clethra alnifolia*), and arrowwood viburnum (*Viburnum dentatum*) and a herbaceous layer of soft rush (*Juncus effusus*), sensitive fern (*Onoclea sensibilis*), woolgrass (*Scirpus cyperinus*), royal fern (*Osmunda regalis*), purple loosestrife (*Lythrum salicaria*), deertounge (*Dichanthelium clandestinum*), arrow arum (*Peltandra virginica*), and American bur-reed (Sparganium americanum). Soils within this wetland satisfy criteria for "Thick Dark Surface" (A12).

Wetland 11

This wetland was classified in the field as a depressional PSS wetland. Hydrology indicators within this wetland area consisted of drainage patterns, geomorphic position and FAC-neutral test. Vegetation identified within the wetland included a sapling and shrub layer of highbush blueberry (*Vaccinium corymbosum*), buckthorn (*Rhamnus cathartica*), and multiflora rose (*Rosa multiflora*) and a herbaceous layer of wrinkleleaf goldenrod (*Solidago rugosa*), Joe-Pye-weed (*Eutrochium purpureum*) and sensitive fern (*Onoclea sensibilis*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 12

This wetland was classified in the field as a PEM wetland located on the edge of the existing access road. Hydrology indicators within this wetland area consisted of oxidized rhizospheres on living roots. Vegetation identified within the wetland included woolgrass (*Scirpus cyperinus*), false nettle (*Boehmeria cylindrica*), soft rush (*Juncus effusus*), and wrinkleleaf goldenrod (*Solidago rugosa*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6)

Wetland 13

This wetland was classified in the field as a PSS wetland within the ROW. Hydrology indicators within this wetland area consisted of a high water table, saturated soils and drainage patterns. Vegetation identified within the wetland included a sapling and shrub layer of multiflora rose (*Rosa multiflora*) and setose blackberry (*Rubus setosus*) and a herbaceous layer of woolgrass (*Scirpus cyperinus*), soft rush (*Juncus effusus*), false nettle (*Boehmeria cylindrica*), and sensitive fern (*Onoclea sensibilis*). Soils within this wetland satisfy criteria for "Redox Dark Surface.

Wetland 14

This wetland was classified in the field as a PFO wetland. Hydrology indicators within this wetland area consisted of a drainage patterns and drift deposits. Vegetation identified within the wetland included red maple (*Acer rubrum*), American witch-hazel (*Hamamelis virginiana*), northern spicebush (*Lindera benzoin*), white mulberry (*Morus alba*), false nettle (*Boehmeria cylindrica*), and jewelweed (*Impatiens capensis*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6). This wetland is associated with Stream S7.

Wetland 15

This wetland was classified in the field as a PEM wetland. Hydrology indicators within this wetland area consisted of iron deposits, water stained leaves, and drainage patterns. Vegetation identified within the wetland included black willow (*Salix nigra*), soft rush (*Juncus effusus*), jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), woolgrass (*Scirpus cyperinus*), and phragmites (*Phragmites australis*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 17

This wetland was classified in the field as a PEM wetland. This wetland is impacted by an off-ROW trail that runs through the center of the wetland. Hydrology indicators within this wetland area consisted of iron deposits, surface soil cracks, and drainage patterns. Vegetation identified within the wetland included tulip poplar (*Liriodendron tulipifera*), woolgrass (*Scirpus cyperinus*), false nettle (*Boehmeria cylindrica*), and fowl bluegrass (*Poa palustris*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 33

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland area consisted of drainage patterns, a high water table, iron deposits, and saturated soils. Vegetation identified within the wetland included red maple (*Acer rubrum*), common elderberry (*Sambucus canadensis*), speckled alder (*Alnus incana*), sweet pepperbush (*Clethra alnifolia*), hardhack (*Spirea tomentosa*), jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), and skunk cabbage (*Symplocarpus foetidus*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 34

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland area consisted of drainage patterns, a high water table, and saturated soils. Vegetation identified within the wetland included red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), sweet pepperbush (*Clethra alnifolia*), hardhack (*Spirea tomentosa*), Joe-Pye-weed (*Eutrochium purpureum*), and phragmites (*Phragmites australis*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 35

This wetland was classified in the field as a PEM wetland. This wetland is a small, disconnected wetland that may have been connected to others in the area in the past. Hydrology indicators

within this wetland area consisted of oxidized rhizospheres on living roots. Vegetation identified within the wetland included Joe-Pye-weed (*Eutrochium purpureum*), phragmites (*Phragmites australis*), woolgrass (*Scirpus cyperinus*), and wrinkleleaf goldenrod (*Solidago rugosa*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 36

This wetland was classified in the field as a PSS wetland and abuts the side of the existing roadway. Hydrology indicators within this wetland area consisted of geomorphic position and drainage patterns. Vegetation identified within the wetland included red maple (*Acer rubrum*), speckled alder (*Alnus incana*), sweet pepperbush (*Clethra alnifolia*), black willow (*Salix nigra*), common blackberry (*Rubus allegheniensis*), cinnamon fern (*Osmundastrum cinnamomeum*), sensitive fern (*Onoclea sensibilis*), and river grape (*Vitis riparia*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 37

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland area consisted of drainage patterns and geomorphic position. Vegetation identified within the wetland included red maple (*Acer rubrum*), slippery elm (*Ulmus rubra*), multiflora rose (*Rosa multiflora*), speckled alder (*Alnus incana*), phragmites (*Phragmites australis*), sensitive fern (*Onoclea sensibilis*), and wrinkleleaf goldenrod (*Solidago rugosa*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 38

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland area consisted of standing water, a high water table, and saturated soils. Vegetation identified within the wetland included red maple (*Acer rubrum*), speckled alder (*Alnus incana*), black willow (*Salix nigra*), cattails (*Typha latifolia*), phragmites (*Phragmites australis*), sensitive fern (*Onoclea sensibilis*), and woolgrass (*Scirpus cyperinus*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 39

This wetland was classified in the field as a PEM wetland. Hydrology indicators within this wetland consisted of geomorphic position and drainage patterns. Vegetation identified within the wetland included cinnamon fern (*Osmundastrum cinnamomeum*), hardhack (*Spirea tomentosa*), Joe-Pye-weed (*Eutrochium purpureum*), phragmites (*Phragmites australis*), and purple loosestrife (*Lythrum salicaria*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 40

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland consisted of saturated soils and a high water table. Vegetation identified within the wetland included red maple (*Acer rubrum*), slippery elm (*Ulmus rubra*), arrowwood viburnum (*Viburnum dentatum*), hardhack (*Spirea tomentosa*), Joe-Pye-weed (*Eutrochium purpureum*), soft rush (*Juncus effusus*), and river grape (*Vitis riparia*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 52

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland consisted of a high water table and saturated soils. Vegetation identified within the wetland included sweet pepperbush (*Clethra alnifolia*), mountain laurel (*Kalmia latifolia*), royal fern (*Osmunda regalis*), common greenbrier (*Smilax rotundifolia*), and river grape (*Vitis riparia*). Soils within this wetland satisfy criteria for "Thick Dark Surface" (A12) and "Histic Epipdon" (A2).

Wetland 53

This wetland was classified in the field as a PEM wetland associated with Stream S16 and flows over the access road at an existing unimproved crossing. Hydrology indicators within this wetland consisted of saturated soils with refusal at 8". Vegetation identified within the wetland included wood lily (*Lilium philadelphicum*), sweet pepperbush (*Clethra alnifolia*), deertounge (*Dichanthelium clandestinum*), false nettle (*Boehmeria cylindrica*), lurid sedge (*Carex lurida*), and soft rush (*Juncus effusus*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 54

This wetland was classified in the field as a PEM wetland. This wetland crosses the existing access road at an improved ford crossing. Hydrology indicators within this wetland consisted of a high water table, saturated soils, and standing water. Vegetation identified within the wetland included sweet pepperbush (*Clethra alnifolia*), jewelweed (*Impatiens capensis*), reed canary grass (*Phalaris arundinacea*), skunk cabbage (*Symplocarpus foetidus*) and Japanese honeysuckle (*Lonicera japonica*). Soils within this wetland satisfy criteria for "Redox Dark Surface" (F6).

Wetland 55

This wetland was classified in the field as a PSS wetland. This wetland does not extend to the south side of the access road where hydric soils were not identified. Hydrology indicators within this wetland consisted of a geomorphic position and drainage patterns. Vegetation identified within the wetland included silky dogwood (*Cornus amomum*), sweet pepperbush (*Clethra alnifolia*), jewelweed (*Impatiens capensis*), sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), and New York fern (*Thelypteris noveboracensis*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 56

This wetland was classified in the field as a PSS wetland. This is a large wetland that is hydrologically connected over the access road. Hydrology indicators within this wetland consisted of a high water table and saturated soils. Vegetation identified within the wetland included silky dogwood (*Cornus amomum*), speckled alder (*Alnus incana*), sweet pepperbush (*Clethra alnifolia*), false nettle (*Boehmeria cylindrica*), phragmites (*Phragmites australis*), sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), wrinkleleaf goldenrod (*Solidago rugosa*), tussock sedge (*Carex stricta*), and jumpseed (*Persicaria virginiana*). Soils within this wetland satisfy criteria for Redox Dark Surface" (F6).

Wetland 57

This wetland was classified in the field as a PEM/PSS wetland. Hydrology indicators within this wetland consisted of high water table, drainage patterns, and saturated soils. Vegetation identified within the wetland included multiflora rose (*Rosa multiflora*), lurid sedge (*Carex lurida*), sensitive fern (*Onoclea sensibilis*), and soft rush (*Juncus effusus*). Soils within this wetland satisfy criteria for Redox Dark Surface" (F6).

Wetland 61

This wetland was classified in the field as a PSS wetland. Wetland 61 contains Stream S18. Hydrology indicators within this wetland consisted of standing water, saturated soils, and a high water table. Vegetation identified within the wetland included red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), arrowwood viburnum (*Viburnum dentatum*), highbush blackberry (*Rubus allegheniensis*), silky dogwood (*Cornus amomum*), speckled alder (*Alnus incana*), sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), soft rush (*Juncus effusus*), river grape (*Vitis riparia*), and woolgrass (*Scirpus cyperinus*). Soils within this wetland satisfy criteria for "Depleted Matrix" (F3).

Wetland 62

This wetland was classified in the field as a PSS wetland. Hydrology indicators within this wetland consisted of saturated soil and a high water table. Vegetation identified within the wetland included multiflora rose (*Rosa multiflora*), speckled alder (*Alnus incana*), fringed sedge (*Carex crinita*), jewelweed (*Impatiens capensis*), skunk cabbage (*Symplocarpus foetidus*), wrinkleleaf goldenrod (*Solidago rugosa*), seaside goldenrod (*Solidago sempervirens*), hop sedge (*Carex lupulina*), fringed sedge (*Carex crinita*), common boneset (*Eupatorium perfoliatum*), river grape (*Vitis riparia*), and fox grape (*Vitis labrusca*). Soils within this wetland satisfy criteria for Redox Dark Surface" (F6).

Wetland 63

This wetland was classified in the field as a PEM wetland. This wetland spans both sides of the access road without obvious improvements. Hydrology indicators within this wetland consisted of oxidized rhizospheres on living roots. Vegetation identified within the wetland included lurid sedge (*Carex lurida*), phragmites (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), sensitive fern (*Onoclea sensibilis*), soft rush (*Juncus effusus*), and fringed sedge (*Carex crinita*). Soils within this wetland satisfy criteria for Redox Dark Surface" (F6).

4.2 Watercourses

A total of 4 perennial watercourses and 8 intermittent watercourses were identified within the Project area, and are included in the watercourse summary table (Table 2) in Appendix A.

Stream 1

This stream is a perennial watercourse which flows along the east side of the existing access road. This stream originates outside of the ROW and flows north within the ROW through a series of culverts and continuous north outside of the ROW. Within the ROW, the stream is approximately 2'-6' wide with low-moderate flow. Stream substrate within the ROW consists of sand, gravel, and cobble.

Stream 2

This stream is an intermittent watercourse associated with Wetland W04. This stream originates outside of the ROW and flows west through the ROW through an existing culvert through an existing access road and west off the ROW. Within the ROW, the stream is approximately 2'-4' wide with low-moderate flow. Stream substrate within the ROW consists of gravel and organics.

Stream 3

This stream is a perennial watercourse which flows along the west side of the existing access road. This stream originates outside of the ROW and flows north within the ROW through a series of culverts and continuous north outside of the ROW. There is an existing crossing over the stream to accommodate an access road. Within the ROW, the stream is approximately 6'-8' wide with moderate flow and pools approximately 6" deep. Stream substrate within the ROW consists of organics, bedrock, gravel, and cobble. Stream S3 is associated with Wetland W6 located along the banks of the stream.

Stream 4

This stream is an intermittent watercourse which flows into Stream S3. This stream originates within the ROW at a headcut and flows northeast to empty into Stream S3. Within the ROW, the stream is approximately 2'-4' wide with low flow and pools approximately 2" deep. Stream substrate within the ROW consists of sand and gravel. The steam is heavily eroded with steep banks and is severely overgrown.

Stream 5

This stream is an intermittent watercourse which flows along the west side of an existing access road that is not being utilized for the project. This stream originates outside of the ROW and flows north within the ROW through a series of culverts and continuous north outside of the ROW. There is an existing crossing over the stream to accommodate an access road. Within the ROW, the stream is approximately 4'-8' wide with no flow and pools approximately 2" deep. Stream substrate within the ROW consists of sand, gravel, and cobble.

Stream 6

This stream is an intermittent watercourse which flows into wetland W10. This stream originates outside of the ROW and flows east within the ROW to terminate within Wetland W10. The stream

flows over the existing access road at an unimproved crossing. Within the ROW, the stream is approximately 2'-6' wide with low flow and pools approximately 2" deep. Stream substrate within the ROW consists of sand and gravel.

Stream 7

This stream is an intermittent watercourse which flows through several wetlands onsite. This stream originates within the ROW where Wetland W17 become channelized and flows west through wetlands W15, W14, and W13 and continues off-ROW. Within the ROW, the stream is approximately 6'-8' wide with moderate flow and pools approximately 6" deep. Stream substrate within the ROW consists of organics, bedrock, gravel, and cobble.

Stream 16

This stream is an intermittent watercourse that flows east through wetland W53. This stream originates outside of the ROW and flows east within the ROW. Within the ROW, the stream is approximately 2'-4' wide with low flow and shallow pools. Stream substrate within the ROW consists of gravel and cobble.

Stream 17

This stream is an intermittent watercourse which flows west through Wetland W56. This stream originates within the ROW within wetland W56 at a significant topographic break. Within the ROW, the stream is approximately 4'-8' wide with moderate flow and pools approximately 6" deep. Stream substrate within the ROW consists of gravel, boulders, and cobble.

Stream 18

This stream is an intermittent watercourse which flows north through Wetland W61. This stream originates outside of the ROW and flows north within a defined bed and bank within wetland W61. Within the ROW, the stream is approximately 6'-10' wide with low flow and pools approximately 4" deep. Stream substrate within the ROW consists of gravel and cobble.

Stream 19

This stream is an intermittent watercourse which flows south through Wetland W62. This stream originates north of the ROW and flows south through wetland W62. This stream flows through a culvert under the existing access road. Within the ROW, the stream is approximately 1'-3' wide with low flow and pools approximately 2" deep. Stream substrate within the ROW consists of organics and cobble.

Stream 20

This stream is an intermittent watercourse which flows west into Wetland W53. This stream originates north of the ROW. Within the ROW, the stream is approximately 1'-4' wide with low flow and shallow pools. Stream substrate within the ROW consists of a gravel, silt, and cobble.

No watercourses along the Project fall under the jurisdiction of the National Wild and Scenic Rivers Act or are designated as wild and scenic under the CT DEEP Protected Rivers Act.

Appendix A
Wetland and Watercourse Summary Tables

Table 1 – Summary of Wetlands Delineated along the 1620 Line

Table 2 – Summary of Watercourses Delineated along the 1620 Line

Table 1. Summary of Wetlands along the 1620 Line Maintenance Project.

Wetland ID	Map Sheet	Wetland Type	Latitude	Longitude	NRCS Mapped Soil Series	Drainage Class	Associated Watercourse
Wetland 1 (W1)	1	PFO	41.551351	-72.580747	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 2 (W2)	1	PFO	41.551157	-72.580785	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 3 (W3)	1	PFO	41.551377	-72.581089	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 4 (W4)	1	PSS	41.548915	-72.579556	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	Stream (S2)
Wetland 5 (W5)	1	PEM	41.553005	-72.582201	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 6 (W6)	2	PFO	41.551909	-72.583687	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	Stream (S3)
Wetland 7 (W7)	2	PSS	41.551477	-72.583955	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	
Wetland 8 (W8)	2	PSS	41.552245	-72.585567	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	Stream (S5)
Wetland 9 (W9)	2	PEM	41.550159	-72.582616	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 10 (W10)	3	PSS	41.5451	-72.584178	Timakwa and Natchaug soils, 0 to 2 percent slopes (17)	Very Poorly Drained	Stream (S6)
Wetland 11 (W11)	3	PSS	41.542569	-72.586288	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky (73C)	Well Drained	
Wetland 12 (W12)	3	PEM	41.54285	-72.588352	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 13 (W13)	3	PSS	41.542522	-72.588995	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	Stream (S7)
Wetland 14 (W14)	3	PFO	41.542005	-72.588891	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	Stream (S7)
Wetland 15 (W15)	3	PEM	41.541423	-72.588588	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky (73C)	Well Drained	Stream (S7)
Wetland 17 (W17)	3	PEM	41.540509	-72.589257	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky (73C)	Well Drained	Stream (S7)
Wetland 33 (W33)	4	PSS	41.521795	-72.607192	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	
Wetland 34 (W34)	4	PSS	41.52125	-72.607298	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	

Wetland ID	Map Sheet	Wetland Type	Latitude	Longitude	NRCS Mapped Soil Series	Drainage Class	Associated Watercourse
Wetland 35 (W35)	4	PEM	41.521494	-72.607462	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	
Wetland 36 (W36)	4	PSS	41.520773	-72.609153	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 37 (W37)	4	PSS	41.518718	-72.610592	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	
Wetland 38 (W38)	4	PSS	41.518557	-72.611851	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes (75E)	Well Drained to Somewhat Excessively Drained	
Wetland 39 (W39)	4	PEM	41.516091	-72.613967	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 40 (W40)	4	PSS	41.516336	-72.61461	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 52 (W52)	5	PSS	41.50511	-72.615989	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 53 (W53)	5	PEM	41.50318	-72.615219	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	Stream (S16)
Wetland 54 (W54)	5	PEM	41.502314	-72.614944	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 55 (W55)	5	PSS	41.501058	-72.614514	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky (73E)	Well Drained	
Wetland 56 (W56)	6	PSS	41.494951	-72.613168	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony (3)	Poorly Drained and Very Poorly Drained Soils	Stream (S17)
Wetland 57 (W57)	6	PEM/PSS	41.492557	-72.615455	Wethersfield loam, 8 to 15 percent slopes, extremely stony (89C)	Well Drained	
Wetland 61 (W61)	7	PSS	41.485251	-72.622168	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony (3)	Poorly Drained and Very Poorly Drained Soils	Stream (S18)
Wetland 62 (W62)	7	PSS	41.4842	-72.620304	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky (73C)	Well Drained	Stream (S19)
Wetland 63 (W63)	7	PEM	41.484728	-72.618978	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony (3)	Poorly Drained and Very Poorly Drained Soils	Stream (S20)

Table 2. Summary of Watercourses along the 1620 Line Project.

Watercourse ID	Map Sheet	Watercourse Name	Latitude	Longitude	Flow Regime	CT DEEP Water Quality Designation
Stream 1 (S1)	1	Tributary to the Connecticut River	41.55327161930	-72.58054093890	Perennial	SB
Stream 2 (S2)	1	Tributary to the Connecticut River	41.54919580210	-72.57998499510	Intermittent	SB
Stream 3 (S3)	2	Tributary to the Connecticut River	41.55172757260	-72.58389877160	Perennial	SB
Stream 4 (S4)	2	Tributary to the Connecticut River	41.55105808730	-72.58415568190	Perennial	SB
Stream 5 (S5)	2	Tributary to the Connecticut River	41.55258121710	-72.58514449260	Perennial	SB
Stream 6 (S6)	3	Tributary to Hubbard Brook	41.54464918020	-72.58534735810	Intermittent	A
Stream 7 (S7)	3	Tributary to Hubbard Brook	41.54113305910	-72.58865389730	Intermittent	A
Stream 16 (S16)	5	Tributary to Bible Rock Brook	41.50317518499	-72.61554120679	Intermittent	A
Stream 17 (S17)	6	Tributary to Bible Rock Brook	41.49565669210	-72.61170981040	Intermittent	A
Stream 18 (S18)	7	Tributary to Bible Rock Brook	41.48537533060	-72.62212681970	Intermittent	A
Stream 19 (S19)	7	Tributary to Bible Rock Brook	41.48488945000	-72.62069637440	Intermittent	A
Stream 20 (S20)	7	Tributary to Bible Rock Brook	41.48497272850	-72.61930205430	Intermittent	A

Appendix B

USACE Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Eversource Line 1620 City/County: Middletown, CT Sampling Date: 08/03/2022

Applicant/Owner: Eversource Energy State: CT Sampling Point: W10

Investigator(s): Conor Makepeace & Terry Ramborger Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2-4

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 41.545136 Long: -72.583380 Datum: NAD83

Soil Map Unit Name: Timakwa and Natchaug soils, 0 to 2 percent slopes (17) NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
W10 is a Wetland datapoint recorded at Wetland 10 within the ROW. The datapoit was recorded near the wetland crossing of the existing access road. There is no gravel or existing improvement within the existing access road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 2"	
Water Table Present?	Yes	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):	**Wetland Hydrology Present?** **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present onsite.

VEGETATION – Use scientific names of plants. Sampling Point: W10

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Alnus incana*	40	Yes	FACW
2. *Clethra alnifolia*	15	Yes	FAC
3. *Viburnum dentatum*	10	No	FAC
4.			
5.			
6.			
7.			
	65 =Total Cover		
Herb Stratum (Plot size:)			
1. *Scirpus cyperinus*	25	Yes	OBL
2. *Osmunda regalis*	20	Yes	OBL
3. *Lythrum salicaria*	15	No	OBL
4. *Dichanthelium clandestinum*	15	No	FACW
5. *Peltandra virginica*	5	No	OBL
6. *Sparganium americanum*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	85 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	55	x 2 =	110
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	150 (A)		255 (B)

Prevalence Index = B/A = 1.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation onsite meets criteria for Dominance Test of Hydrophytic vegetation.

SOIL

Sampling Point: W10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	100					Loamy/Clayey	
12-20	10YR 3/1	100					Loamy/Clayey	
20-28	10YR 5/1	90	5YR 4/4	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- _X_ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

Hydric soil criteria for Thick Dark Surface (A12).

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Eversource Line 1620 City/County: Haddam, CT Sampling Date: 07/05/2022

Applicant/Owner: Eversource Energy State: CT Sampling Point: W56

Investigator(s): Conor Makepeace & Terry Ramborger Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 41.49495057270 Long: -72.61316773590 Datum: NAD83

Soil Map Unit Name: Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony (3) NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
W56 is a Wetland datapoint recorded at Wetland 56 within the ROW on the south side of the access road. The datapoint was recorded near the intersection with Stream S17.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____
Water Table Present?	Yes X	No ____	Depth (inches):	6"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	4"

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators present onsite.

VEGETATION – Use scientific names of plants. Sampling Point: W56

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Cornus amomum*	25	Yes	FACW
2. *Clethra alnifolia*	15	Yes	FAC
3. *Alnus incana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	50 =Total Cover		
Herb Stratum (Plot size:)			
1. *Symplocarpus foetidus*	15	Yes	OBL
2. *Solidago rugosa*	15	Yes	FAC
3. *Persicaria virginiana*	15	Yes	FAC
4. *Boehmeria cylindrica*	10	No	OBL
5. *Phragmites australis*	10	No	FACW
6. *Onoclea sensibilis*	10	No	FACW
7. *Carex stricta*	5	No	OBL
8.			
9.			
10.			
11.			
12.			
	80 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	55	x 2 =	110
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		275 (B)

Prevalence Index = B/A = 2.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation onsite meets criteria for Dominance Test and Prevalence Index for hydrophytic vegetation.

SOIL

Sampling Point: W56

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/2	95	7.5YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
6-16	7.5YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Hydric soil criteria for Redox Dark Surface (F6).

Attachment E:

Vernal Pool Assessment

AECOM
500 Enterprise Drive
Rocky Hill, CT 06067
aecom.com

April 4, 2023

Subject: **Vernal Pool Assessment**
Eversource Energy
Line 1620, Middletown Substation to Oxbow Junction Upgrade Project
Middletown and Haddam, CT

Project Summary

AECOM has prepared this report for Eversource's Middletown Substation to Oxbow Junction Upgrade Project (Project) as a summary of vernal pools (VPs) and potential vernal pools (PVPs) documented between Middletown Substation and Oxbow Junction in Middletown and Haddam, CT. The Project is part of an ongoing maintenance program which evaluates the integrity of utility structures and implements repair, upgrade, or replacement to ensure the safe and reliable transmission of power to its customers. Due to asset condition, the Project proposes to replace structures, maintain existing structures, and add structures where needed along the existing 1620 Line. The Project will extend from Middletown Substation in Middletown to Oxbow Junction in Haddam.

All PVP areas were initially identified through review of historic aerials, topographic mapping, historic site delineation data, and initial site reviews. These PVPs were then examined during the spring and early summer for evidence of obligate vernal pool indicators. Follow-up reviews were conducted during the late summer to confirm the surficial hydrology/hydroperiod of identified pools.

As part of the environmental review process for the Project, AECOM wetland scientists and ecologists field reviewed the portion of the Right of Way (ROW) where work is being performed for evidence of VPs in June 2021 and July-August 2022, with select reviews conducted in April 2023. All vernal pools were classified according to Eversource's December 2019 Vernal Pool Best Management Practices. Areas classified as decoy vernal pools and areas identified as PVPs but subsequently ruled out as VPs, based upon a lack of biological evidence, are not shown on Project mapping. Please see Table 1 below for vernal pool identification and classification. Appendix A of the Connecticut Siting Council Petition contains Project mapping and the attached Appendix A contains photographs of select confirmed vernal pools.

Table 1: Vernal Pools Identified within the Eversource 1620 Lines ROW

Vernal Pool ID	Type	Cover Type	Latitude / Longitude	Species Identified*	Map Sheet
PVP01	Decoy	Emergent	41.548039, -72.578648	SSEM, WFL	1
VP1A	Classic	Emergent	41.550186, -72.582622	SSEM, SP	2
PVP03	Failed	Scrub-Shrub	41.521456, -72.607254	None	4
VP2	Cryptic	Forested	41.520791, -72.607471	SSEM, WFEM	4
VP4	Cryptic	Forested	41.484329, -72.620656	Previously Confirmed	7

*Species Listed: Wood Frog Egg Mass (WFEM), Wood Frog Larvae (WFL), Spotted Salamander Egg Mass (SSEM), Spring Peepers (SP), and Green Frog (GF)

Vernal Pool General Description

Vernal Pool 1A (VP1A): This area consists of a medium sized pool approximately 18 inches at the deepest point. The pool is a self-contained distinct depression classified as a PEM wetland and is not continuous with a larger wetland system. The pool is located northwest of the 3533 Line structure 12092 in Middletown, please see map sheet 2 of 12. Vegetation within the depression consisted of sphagnum moss (*Sphagnum spp.*), tussock sedge (*Carex stricta*), lurid sedge (*Carex lurida*), fowl managrass (*Glyceria striata*), and sensitive fern (*Onoclea sensibilis*). During follow-up site visit in April 2023, spring peepers were heard within the pool and numerous spotted salamander egg masses were identified. The pool is within the maintained ROW and not shaded by any trees. Due to the location of the vernal pool within a self-contained depression not continuous with a larger wetland complex, the pool was classified as a classic vernal pool. The project will utilize existing site access within the 100' vernal pool envelope. There will be no impacts to the vernal pool.

Vernal Pool 2 (VP2): This area consists of a medium sized pool approximately 4 inches at the deepest point. The pool is associated with a forested wetland system east of the 1620 Line structure 14027 in Middletown, please see map sheet 7 of 12. The wetland is a forested (PFO) wetland classified as a PSS wetland within the majority of the ROW and PFO on ROW fringes and outside ROW. The pool itself occupies a depressional portion of the wetland and is located south of the existing Eversource Owned Property. Vegetation noted in the area, at the time of the site visit, included: red maple (*Acer rubrum*), sweet birch (*Betula lenta*), sweet pepperbush (*Clethra alnifolia*), royal fern (*Osmunda regalis*), Virginia creeper (*Parthenocissus quinquefolia*), and sensitive fern (*Onoclea sensibilis*). During the site visit, wood frog egg masses and spotted salamander egg masses were observed. This pool is confirmed to dry up in the mid-late summer. This pool is entirely shaded by surrounding trees located outside of the Project ROW. Due to the location of this vernal pool within a larger wetland complex it is classified as a cryptic vernal pool. There are no Project related impacts to VP2. There is an existing gravel access road located on the edge of the northern side of the 100' vernal pool envelope. This existing access road will be utilized during construction.

Vernal Pool 4 (VP4): This area consists of a shallow pool within a forested wetland. The pool is approximately 6 inches at the deepest point. The pool is associated with a forested wetland system southeast of the 3252 Line structure 9883 in Haddam, please see map sheet 12 of 12. The wetland is a forested (PFO) wetland classified as a PSS wetland within the majority of the ROW and PFO on ROW fringes and outside ROW. The pool itself occupies an area of the wetland situated near an upland island and a culvert under an existing access road. Vegetation noted in the area differs from that on the ROW due to the change in cover type. Vegetation noted surrounding VP4 include red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), skunk cabbage (*Symplocarpus foetidus*), and tussock sedge (*Carex stricta*). This vernal pool was previously confirmed prior to field reviews. Due to the location of this vernal pool within a larger wetland complex it is classified as a cryptic vernal pool. There will be no impacts to the vernal pool depression or work within the 100' vernal pool envelope associated with this project.

General Description of Potential Vernal Pools

Potential Vernal Pool 1 (PVP1): This area consists of a shallow depression within a historic access road and within a mapped PEM wetland. The water depth was approximately 3 inches at the deepest point. Vegetation within the depression consisted of lurid sedge (*Carex lurida*), deer tounge grass (*Dichanthelium clandestinum*), river grape (*Vitis riparia*), and arrow arum (*Peltandra virginica*). During initial site visits, wood frog larvae were observed within the ponded area. Due to the impact of the access road on the pool's hydrology and historic and recurring disturbance within the pool this area was classified as a decoy vernal pool and excluded from mapping.

Potential Vernal Pool 3 (PVP3): This PVP was identified by previous site delineations within the bounds of wetland W34. Field reviews of the site failed to identify a closed depression within the wetland and failed to identify any obligate vernal pool species within the wetland. Vegetation within this wetland consists of sweet pepperbush (*Clethra alnifolia*), red maple (*Acer rubrum*), highbush blueberry (*Vaccinium corymbosum*), phragmites (*Phragmites australis*), hardack (*Spiraea douglasii*) and burnweed (*Erechtites hieracifolia*). The wetland is identified as a PSS wetland. Due to the lack of a confined depression and obligate vernal pool species, this site failed to meet criteria for a vernal pool.

Appendix A
Vernal Pool Photolog

Photo 1	
Date:04-03-2023	
Description: Vernal Pool 1A (VP1A). Vernal pool basin. Facing southwest.	
Photo 2	
Date:04-03-2023	
Description: Vernal Pool 1A (VP1A). Spotted Salamander (*Ambystoma maculatum*) egg masses (seen through a polarized lens).	

Photo 3 Date:06-25-2021 Description: Vernal Pool 2 (VP2). Vernal pool basin with no surface water. Facing southwest.	
Photo 4 Date:06-25-2021 Description: Vernal Pool 2 (VP2). Spent spotted salamander (*Ambystoma maculatum*) egg mass.	

Attachment F:

Letter to the Abutters and Affidavit

AFFIDAVIT OF SERVICE OF NOTICE

STATE OF CONNECTICUT)
) ss. Berlin
COUNTY OF HARTFORD)

Sec. 16-50j-40 of the Regulations of Connecticut State Agencies ("RCSA") provides that proof of notice to the affected municipalities, property owners and abutters shall be submitted with a petition for declaratory ruling to the Connecticut Siting Council ("Council"). In accordance with that RCSA section, I hereby certify that I caused notice of the petition for a declaratory ruling of The Connecticut Light and Power Company doing business as Eversource Energy to be served by mail or courier upon the following municipal officials:

- Mayor, Ben Florsheim
  City of Middletown
  245 Dekoven Drive
  Middletown, CT 06457

- First Selectman, Robert McGarry
  Town of Haddam
  30 Field Park Drive
  Haddam, CT06438

I also certify that I caused notice of the proposed modifications to be served by mail or courier upon owners of abutting properties shown on the List of Abutters included in Attachment F of the Petition.

Christine Farrell
Siting Specialist

On this the 18th day of May, 2023, before me, the undersigned representative, personally appeared, Christine Farrell, known to me (or satisfactorily proven) to be the person whose name is subscribed to the foregoing instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Notary Public/My Commission expires: 10/27

Officer of the Superior Court/ Juris No.: _____

SUSAN NAPOLITANO
Notary Public, State of Connecticut
My Commission Expires 10/27

EVERSOURCE

P.O. Box 270
Hartford, CT 06141-0270

May 19, 2023

Dear Neighbor,

At Eversource, we're always working to serve you better. We are submitting a Petition to the Connecticut Siting Council (CSC) for a proposed electric reliability project in your area.

Proposed Project Information

The Project, called the **Middletown Substation to Oxbow Junction Copper Retirement and Asset Condition Replacement Project**, is one of several projects designed to support the continued reliability of the transmission system in your region. The Project work would be located within the existing Eversource right-of-way (powerline corridor) on or near your property in the towns of Middletown and Haddam.

The proposed Project includes:

- Replacing 6 existing wood transmission structures with new steel structures. When complete, we will remove the old structures from the right of way.
- Replacing existing shield wire on the structures with Optical Ground Wire (OPGW). The OPGW will be installed on structures within the right of way between the Middletown Substation off River Rd in Middletown and Oxbow Junction off Oxbow Rd in Haddam. With these improvements, Eversource will improve electric reliability by enabling communication between substations.
- Conduct vegetation management within the right of way to comply with updated electrical standards.

What You Can Expect

Pending receipt of the necessary approvals for this proposed work, construction is expected to begin by the fall of 2023.

Contact Information

Eversource is committed to being a good neighbor and doing our work with respect for you and your property. For more information, please call our Projects Hotline at 1-800-793-2202 or send an email to ProjectInfo@eversource.com and refer to the above-named project.

If you would like to send comments regarding Eversource's Petition to the CSC, please send them via email to siting.council@ct.gov or send a letter to the following address: Melanie Bachman, Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT 06051.

Sincerely,

Alex DiBella

Alex DiBella
Project Manager – Eversource Energy