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December 29, 2022

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

Re: Petition 1545 – Wawecus Junction to Montville Junction Upgrade Project

Dear Ms. Bachman:

This letter provides an original and 15 copies of the response to the requests for information listed below:

Response to CSC-01 Interrogatories dated December 12, 2022
Set 01 – Questions 1-25

Sincerely,

A handwritten signature in cursive script that reads "Deborah Denfeld".

Deborah Denfeld
Team Lead – Transmission Siting

Enclosure

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-01

Referencing page 25 of the Petition, were there any comments from the City of Norwich and the Town of Montville or abutting property owners? If so, what were their concerns, and how were these concerns addressed?

Response:

There were no comments from the City of Norwich or the Town of Montville.

The Town of Montville received an email from an abutting property owner located on Skyline Drive in Montville and the Town asked that Eversource respond to the property owner's requests. One request was related to avoiding the current planned side trimming of an oak tree on the property within the Eversource right of way ("ROW"). Eversource Transmission Vegetation Management representatives previously met with the property owner to discuss the cyclical vegetation maintenance program within the ROW. The owner was also provided information on typical vegetation maintenance zone widths within a transmission line ROW for system reliability and safety.

The other request of the property owner was related to a consideration of shifting the footprint of the transmission line structures in the subdivision, more specifically, if the northerly single-circuit could be moved away from the edge of the ROW, and if the structures of the southerly double-circuit could be moved closer, toward the middle of the ROW, stating that there is more than enough clearance distance between the two lines, and that if shifted, future vegetation trimming and clearing within the ROW would be limited. Eversource sent an e-mail reply addressing the property owner's request with an explanation that line locations consider clearance requirements between circuits and blowout conditions, as well as requirements for aerial bucket worker safety clearance between the circuits.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-02

Would notice to the Federal Aviation Administration be required for any of the proposed new or replacement structures? If yes, would marking and/or lighting be required for any of the proposed new or replacement structures?

Response:

The Federal Aviation Administration (FAA) Notice Criteria Tool (NCT) was used to check all proposed structures. Per the NCT, notice to the FAA would not be required. Therefore, the proposed structures would not require marking and/or lighting.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-03

When was the right-of-way (ROW) established for the #1080 and #1000/#1070 Lines, and the #1080 and #1000/#1090 Lines? What public utility uses/rights are identified under the easements along the existing ROW?

Response:

The ROW from Wawecus Junction to Montville Junction for the 1080/1090/1070/1000 lines was established in 1931. Although some of the easements have minor wording differences, the easements grant Eversource public utility uses/rights consistent with the following:

The right to construct, maintain, rebuild and relocate, at all times, forever, on, over, or/and under any part of a strip of land any number and all kinds and sizes of poles, towers, wires, guy wires and all fixtures and things, except buildings, useful at this time or hereafter for the transmission of electricity of every voltage and for telephone, telegraph, and signal purposes and the right to transmit by the same, for any and every purpose, electricity of every voltage and use the same for telephone, telegraph and signal purposes.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-04

What is the total number of existing structures over the 8-mile long project area (not including the separate #1080 Line)?

Response:

There are 90 existing structures over the 8-mile Project area. This count does not include the #1080 Line.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-05

What is the age of the structures and conductors on each line?

Response:

The oldest structures existing on the lines today are from the original construction, which occurred between 1950 and 1970 depending on the particular line and section of the line. Numerous structures along the lines have been replaced over the years with the most recent replacements completed between 2018 and 2020 due to asset condition.

The conductor on the 1000/1070/1090 Lines is approximately 60 years old. The conductor on the 1080 Line is approximately 50 years old.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-06

How does the project relate to other proposed, planned or constructed Connecticut reliability and asset condition projects?

Response:

This Project is included in an asset condition replacement initiative that aims to increase system reliability by routinely performing foot patrol and aerial inspections on the lines in the Eversource system and identifying structures for replacement. Wood structures that are candidates for asset condition replacement typically have one or more of the following defects: woodpecker or insect damage, splits, cracks, and/or decay.

In addition, this Project is included in the Copper Retirement Program; an initiative that will be retiring all remaining copper conductor and copperweld shield wire on the Eversource system. The copperweld shield wire will be replaced with optical ground wire, which supports Eversource's current standard to provide all facilities with a high-bandwidth, low latency, secure, reliable network operation.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-07

What are the size and type of the existing conductors? What is the remaining useful life of the conductors? Explain why the conductors are not being replaced or upgraded?

Response:

The 1000/1070/1090 Lines conductor is 556-kcmil Aluminum Conductor Steel Reinforced (ACSR) – Installed in 1962 with approximately 10 years of useful life now remaining*.

The 1080 Line conductor is 1272-kcmil ACSR – Installed in 1972 with approximately 20 years of useful life now remaining*.

**Useful life of ACSR can vary depending on a variety of environmental factors. The conductor is routinely inspected for any wear or damage. The conductor may last shorter or longer than the remaining useful life approximations given due to these environmental factors.*

The conductors are not being replaced or upgraded at this time as there is no system need currently identified.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-08

If the existing conductors were to be replaced or upgraded, what would be the approximate additional cost to the project?

Response:

If the existing conductors were to be replaced or upgraded on all circuits in the project area, including select structure replacements due to the increased load of the proposed conductor, the order of magnitude estimate of additional cost to the project would be approximately \$23.5 million.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-09

Is the proposed project identified in any ISO-New England, Inc. (ISO-NE) needs and solutions analyses? Is the proposed project on the ISO-NE Regional System Plan (RSP), Project List and/or Asset Condition List?

Response:

The Wawecus Junction to Montville Junction Upgrade Project (the Project) was not identified by an ISO-New England Inc. (ISO-NE) needs and solutions analysis. The Project is associated with the Asset Condition List project numbers 213 and 216.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-10

Are any generation facilities listed on the ISO-NE interconnection queue associated with the proposed project? If so, please identify the generation facilities and the queue position.

Response:

No, there are no generation facilities listed on the ISO-NE interconnection queue associated with the proposed project.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-11

What is the total estimated cost of the project? Of this total, what costs would be regionalized, and what costs would be localized? Estimate the percentages of the total cost that would be borne by Eversource ratepayers, Connecticut ratepayers, and the remainder of New England (excluding Connecticut) ratepayers, as applicable.

Response:

The total estimated cost of the project is approximately \$35.9 million. Eversource anticipates that the entire cost will be regionalized pending the final determination of ISO-New England's Schedule 12C Review.

The Company anticipates the following overall allocations for the total cost:

- Eversource Connecticut customers 19.1%
- Other Connecticut customers: 5.9%
- Other New England customers: 75.0%

The estimated allocations are based on 2021 actual loads.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-12

Identify all other permits required to perform the proposed work.

Response:

Please see the following list of permits required for the proposed work:

Connecticut Department of Energy and Environmental Protection

Self-Verification Notification ("SV") under Connecticut General Permits 6 and 21

Natural Diversity Data Base Determination ("NDDB")

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("SWPCP")

United States Army Corps of Engineers

SV under the Connecticut General Permits 6 and 21

Connecticut Public Utilities Regulatory Authority

Approval for Method and Manner of Construction

Connecticut Department of Transportation

Encroachment Permits for Routes 82, I-395 and 32

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-13

Referencing page 4 of the Petition, second bullet point, explain how the optical ground wire (OPGW) installation would cause structural loading that exceeds structure loading capacity.

Response:

The telecommunications need in this area requires that we utilize 96-Fiber OPGW. The smallest available size of OPGW is 0.646 inch in diameter. This cable weighs approximately 0.5 pound/per foot and is of a larger diameter than the existing shield wire. The existing shield wire weighs approximately 0.26 pound/per foot, at nearly half the weight of the new OPGW.

The standard tension of the proposed OPGW is also significantly higher than the existing shield wire, which has a standard tension of approximately 4200 pounds in compliance with the National Electrical Safety Code (NESC) "250B Heavy Case" (½ inch radial ice in combination with 4 pounds/per square foot wind on wire). The proposed 0.646-inch diameter OPGW has a standard tension of approximately 5500 pounds at the NESC 250B Heavy Case standard.

The proposed OPGW also has an increased diameter as compared to the existing shield wire. This dimensional difference causes an increase in potential ice loading and wind pressure on the structure. As the diameter increases, the total consideration of radial ice during the ½ inch ice case increases, which also increases the total surface area subject to wind forces.

Due to the combination of the required higher weight, diameter and tension considerations, loadings that exceed the existing structures' loading capacity were calculated for many of the existing structures. Therefore, Eversource engineering has determined that the existing structures that could not support the structure loadings for the OPGW installation require replacement, consistent with meeting the applicable NESC requirements.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-14

Referencing page 5 of the Petition, Structure No. 7641 would be reinforced. What would the remaining useful life of the structure be after the reinforcements?

Response:

Adding reinforcements to a structure increases the remaining useful life by allowing the structure to have adequate strength to support the new optical ground wire. The structure was originally installed in 1963. Based on the typical lifespan of lattice towers, we expect that this structure will remain useful for approximately ten years after reinforcement, based on other structural considerations.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-15

Would any modifications be required, or have any modifications been completed, at Wawecus Junction, Fort Hills Farms Substation, or Montville Junction to facilitate this project?

Response:

Wawecus Junction: A short run of underground All-Dielectric Self-Supporting cable (ADSS) will be required to facilitate the fiber connection involved with this project.

Fort Hills Farms Substation: A few structure changes and ADSS/fiber connections are required in front of the Substation. These changes are detailed in the petition filing.

Montville Junction: A short run of overhead ADSS cable will be required to facilitate the fiber connection involved with this project.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-16

Provide sample photos of the asset conditions associated with the structures to be replaced.

Response:

Please see sample photographs of structures proposed to be replaced due to asset condition:



Structure 6311: Split top, Woodpecker Damage, cracks



Structure 6320: Split top, Woodpecker Damage, cracks, decay



Structure 6318: Split top, Woodpecker Damage, cracks, decay



Structure 6358: Split top, cracks, decay



Structure 7617: Split tops, Woodpecker Damage, decay



Structure 7619: Split tops, Woodpecker Damage, cracks, decay, cracks in arm



Structure 7656: Split tops, Woodpecker Damage, cracks in arm



Structure 7659: Split tops, cracks, decay

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-17

Referencing page 7 of the Petition, the average height increase of the replacement structures is approximately 6 feet. Why are structure height increases proposed, e.g. National Electric Safety Code (NESC) clearance requirements? Are the proposed structure height increases at the absolute minimum to meet these requirements?

Response:

No, the proposed structure heights are not at the absolute minimum to meet clearance requirements. As with any Eversource design, there is an additional safety buffer included to ensure that the clearances are maintained at all times under a variety of conditions. When determining design structure heights, the conductor clearances in both the ahead span and back span need to be considered. It is not uncommon to have clearances in one span drive the structure height in the ahead and/or back spans, especially in hilly terrain. Eversource evaluated the design to minimize structure height increases and meet clearance requirements and added a safety buffer in accordance with Eversource standards. Even though the primary driver for structure heights is to meet minimum clearance criteria, the need to mitigate insulator swing and conductor uplift contributed to structure height increases in certain locations. Conductor clearance to the supporting structure must be maintained in certain wind conditions. Lightly loaded spans tend to experience greater insulator swing in wind events. Depending on the elevation and terrain, an increase in structure height provides for more heavily loaded insulator strings, thereby reducing insulator swing. In addition to insulator swing, conductor uplift is a related and similarly undesirable phenomenon. To maintain tension on suspension insulators and other hardware, a minimal amount of "weight" should be maintained on each insulator string. Eversource analyzes uplift at the coldest reasonably anticipated temperature in its service area (-20 degrees F) when the conductor has minimal sag and maximum uplift would occur. An increase in structure height typically provides a cost-efficient solution to mitigate uplift.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-18

Describe the clearing that will be required within the ROW to facilitate the project. To what height will vegetation be cut?

Response:

As stated in the Petition under Section 4, Tree Removal and Vegetation Management, the majority of the ROW is fully maintained and will not require clearing but will require some focused areas of tree trimming/vegetation management and select tree removal work. The Project will mow work pad areas and access roads, remove small amounts of non-compatible vegetation from within the maintained ROW, remove danger trees and hazard trees and prune side trees as necessary to maintain required electrical clearances within the ROW. The vegetation will be cut to an above ground height of 6-8 inches to limit soil disturbance.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-19

Are CT DEEP and/or the US Army Corps of Engineers permits required for working within wetlands and vernal pools? If yes, what is the status of such permits?

Response:

There are no proposed Project activities within vernal pools.

Proposed work activities within wetlands will result in minimal impacts, meet all applicable terms and conditions of the Connecticut General Permit and are eligible for Self-Verification under General Permits 6 and 21 of the Department of the Army Regional General Permits for the State of Connecticut.

Self-Verification Notification Forms and the required accompanying materials will be submitted to the U.S. Army Corps of Engineers - New England District and the Connecticut Department of Energy and Environmental Protection in advance of Project construction.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-20

In addition to Eversource's Best Management Practices, what other specific environmental mitigation measures and/or monitoring would be conducted for construction within environmentally sensitive areas?

Response:

In addition to Eversource's Best Management Practices ("BMPs"), the following mitigation measures and monitoring will be conducted within environmentally sensitive areas:

- Measures will be implemented for the protection of state-listed species documented within the Project corridor. Eversource will comply with recommendations detailed in the Connecticut Department of Energy and Environmental Protection ("CTDEEP") Natural Diversity Database ("NDDDB") Determination Letter that was received for this Project (NDDDB Determination Number: 202207378, dated July 27, 2022). Protection measures include, but are not limited to, contractor training, time of year best management practices, monitoring, and installation of exclusionary features (e.g., silt or snow fencing) as directed by qualified individuals.
- Work pad restoration measures will be implemented to mitigate impacts within environmentally sensitive areas, which will include amendment of the work pad surface with stockpiled topsoil or fine process gravel, application of a native warm season grass mix, and installation of temporary erosion and sediment controls (e.g., straw mulch, compost filters, biodegradable erosion control blankets, etc.), which will be regularly inspected and maintained until final stabilization has been achieved.
- The Project Vernal Pool Report, submitted with the Petition, includes additional habitat and species protection measures that will be implemented during construction. This includes but is not limited to: avoiding civil construction to the maximum extent practicable near Vernal Pools 7 and 15 during high sensitivity periods for the observed vernal pool indicator species, and protection of compatible vegetation within these vernal pool envelopes.
- Weekly and monthly inspection will be completed per permit requirements.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-21

Has Eversource developed a Protection Plan for Wetlands in its construction plans for the project? If so, please submit the plans. If not, when would the plans be developed?

Response:

The Project Stormwater Pollution Control Plan (“SWPCP”), submitted to the Connecticut Department of Energy and Environmental Protection on November 28, 2022, with an anticipated permit approval by February 28, 2023, details work areas, erosion and sedimentation control measures, and matting configurations, which are intended to protect sensitive resource areas during construction. Project work will comply with the SWPCP, Eversource’s Best Management Practices (“BMPs”), which focuses on the protection of wetlands and vernal pools, Vernal Pool Report - Recommended Protection Measures (Section 9.0), and U.S. Army Corps of Engineers Self-Verification Authorizations for work in wetlands. Eversource will conduct weekly inspections to ensure compliance with the BMPs, authorizations, and permit conditions.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-22

Describe site construction inspections that are required for this project under the DEEP General Permit.

Response:

In accordance with Section 5(b)(4)(B) (Routine Inspections) of the General Permit, a qualified inspector (as defined by CT DEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities) will inspect the site a minimum of weekly and within 24 hours of the end of a storm that generates a discharge that equals or exceeds 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-23

Has Eversource evaluated the project area for existing invasive species consistent with Section 3.10.4.1 of the Eversource April 2022 BMPs that are posted on its website? If invasive species exist, how would Eversource control the spread of invasive species for this project?

Response:

Yes, Eversource has evaluated the Project area for existing invasive species consistent with Section 3.10.4.1 of the Eversource April 2022 BMP Manual (“BMP Manual”) and has identified invasive species within both upland and wetland work areas. Eversource will follow the practices outlined in Section 3.10, Decontamination Procedures and Methods of Cleaning, of the BMP Manual, including the following additional actions to control the potential spread of invasive species:

- Clean vehicles, equipment, materials (including matting), gear, footwear or clothing of all visible soil and plant material on site in the infested area, or as near as practical to the infested area, prior to leaving the Project site.
- Cleaning may be accomplished using a brush, broom, or hand tools, by shaking or dropping mats in a controlled manner to dislodge attached soil and debris, or compressed air.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-24

Could restoration of disturbed areas incorporate habitat for the benefit of pollinator species, such as bees, moths and butterflies?

Response:

The Project will include restoration and long-term management practices that promote habitat for pollinator species. Where practical, Eversource's transmission line corridors are regularly maintained as early successional habitat that provides vital conservation benefits for wild pollinators.

This Project corridor has historically been, and will continue to be, maintained as early successional habitat. Further, restoration within sensitive areas (such as Connecticut Department of Energy and Environmental Protection Natural Diversity Database areas, New England Cottontail areas, and open space areas) will incorporate habitat enhancements for the benefit of pollinator species. These enhancements will include amending gravel work pads with either stockpiled native topsoil or fine process material, and application of a native warm season grass mix.

Date Filed: December 29, 2022

Request from: Connecticut Siting Council

Question: CSC Set-01-25

How will ATVs be discouraged from accessing the ROW from public roads/access points?

Response:

Existing gates, pole barriers and signage are currently utilized to discourage ATV's from accessing the ROW. It is standard work practice to close and lock all gates at the end of the workday. In addition, for any new access points that currently do not have gates or pole barriers installed, Eversource will install these measures upon request by the property owner during and/or after construction. During construction, Eversource will make every attempt to barricade open access points using natural features such as large rocks and downed trees.