



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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### CERTIFIED MAIL RETURN RECEIPT REQUESTED

May 3, 2016

Kathleen Shanley  
Manager-Transmission Siting  
Eversource Energy  
P.O. Box 270  
Hartford, CT 06141-0270

RE: **PETITION NO. 1217** – Eversource Energy petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed separation of the existing 1779/1777 115 kilovolt (kV) electric transmission lines for 1.6 miles within existing right of way from Bloomfield Substation to Bloomfield Junction; proposed separation of the existing 1751/1777 115kV electric transmission lines for 5.3 miles within existing right of way from Bloomfield Junction to North Bloomfield Substation; modifications to the existing overhead 1779 115 kV electric transmission line to loop into the Rood Avenue Substation via underground cables; including related transmission line structure improvements; and modifications to the Bloomfield Substation, 40 Crestview Drive and North Bloomfield Substation, 2 Hoskins Road both in Bloomfield, Connecticut and modifications to the Rood Avenue Substation located at 275 Rood Avenue, Windsor, Connecticut.

Dear Ms. Shanley:

At a public meeting held on April 28, 2016, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. The Petitioner shall prepare a Development and Management Plan (D&M Plan) for this project in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Towns of Bloomfield and Windsor for comment and submitted to and approved by the Council prior to the commencement of construction and shall include:
  - a) Statement that transmission structures located within the 100-year flood zone are designed to withstand inundation;
  - b) Statement that Petitioner shall implement protective measures for Natural Diversity Database wildlife in consultation with the Connecticut Department of Energy and Environmental Protection;
  - c) Any additional staging area locations not identified in the Petition;
  - d) Timing of work in the vicinity of Wintonbury Hills Golf Course;
  - e) Consideration of limited landscaping along the north side of the expanded area of the Rood Avenue Substation to improve aesthetics as viewed from Sunnyfield Drive;
  - f) Vernal pool study consistent with Calhoun and Klemens 2002 Best Development Practices; and
  - g) Wildlife analysis for the blue spotted salamander and marbled salamander with protective measures as applicable.



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2. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
3. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Towns of Bloomfield and Windsor;
4. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
5. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
6. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
7. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated March 8, 2016 and responses to interrogatories dated April 1, 5, and 18, 2016.

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

Very truly yours,



Robert Stein  
Chairman

RS/MP/lm

Enclosure: Staff Report dated April 28, 2016

- c: The Honorable Joan A. Gamble, Mayor, Town of Bloomfield  
Philip K. Schenck, Jr., Town Manager, Town of Bloomfield  
Jose Giner, Director of Planning, Town of Bloomfield  
The Honorable Donald Trinks, Mayor, Town of Windsor  
Peter Souza, Town Manager, Town of Windsor  
Eric Barz, Town Planner, Town of Windsor



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### Petition No. 1217

## The Connecticut Light and Power Company d/b/a Eversource Energy Bloomfield and Windsor, Connecticut Staff Report April 28, 2016

### Introduction

On March 8, 2016, the Connecticut Siting Council (Council) received a petition (Petition) from The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for proposed modifications to transmission line nos. 1777, 1779 and 1751 and modifications to the Bloomfield Substation, North Bloomfield Substation and Rood Avenue Substation in the Towns of Bloomfield and Windsor. Council member Robert Hannon and Council staff member Michael Perrone conducted a field review of the proposed project on March 29, 2016. Kathleen Shanley, Manager – Transmission Siting, Eversource; Ervin Qyra, Transmission Line Engineer, Eversource; Paul Melzen, Substation Engineer, Eversource; Thanh Nguyen, Substation Engineer, Eversource; Justin Adams, Permitting, Eversource; and J. Patrick Holmes, Project Manager, Burns & McDonnell also attended the field review.

The purpose of the proposed project is to eliminate potential transmission system thermal and voltage criteria violations in the Bloomfield and Hartford area that were identified in the May 2014 Greater Hartford and Central Connecticut Area Needs Assessment performed by ISO New England (ISO-NE) and in subsequent analyses by Eversource. In planning simulations, N-1-1 contingencies cause thermal overloads on a section of the 1779 115-kV line and on the 1756 115-kV line, both of which are located between Bloomfield Junction and Northwest Hartford Substation, as well as cause low voltage conditions at Northwest Hartford and Bloomfield Substations. Without these improvements to the transmission system, the violations would have to be addressed by reducing the load at the Bloomfield and Northwest Hartford substations by approximately 64 megawatts, which is greater than the forecasted reductions in demand response. Furthermore, this reduction would equate to approximately 30 percent of the net load served by those substations. This proposed project is currently identified in the March 2016 ISO-NE Regional System Plan Project List with an estimated in-service date of December 2017.

Specifically, the proposed project would address these criteria violations with the following project components:

- a) Separation of the existing 1779/1777 115-kV transmission lines (currently on double-circuit lattice structures) for 1.60 miles between Bloomfield Substation and Bloomfield Junction and install the 1779 line with a larger conductor size on new single circuit monopoles;
- b) Separation of the existing 1751/1777 115-kV transmission lines (currently on double-circuit steel monopoles) for 5.30 miles between Bloomfield Junction and North Bloomfield Substation and install the 1777 line on new single circuit monopoles and replace two single-circuit guyed wood H-frame structures between Bloomfield Junction and North Bloomfield Substation;
- c) Modification to the overhead 1779 line to loop into Rood Avenue Substation via an underground connection;



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- d) Modifications to and expansion of Rood Avenue Substation;
- e) Modifications to Bloomfield Substation; and
- f) Modifications to North Bloomfield Substation.

#### **Transmission Reliability - Single-circuit versus Double-circuit Towers**

The reliability standards, criteria and procedures with which the electric transmission systems must comply are promulgated at both the national and regional levels. At the national level, the North American Electric Reliability Corporation (NERC) adopts standards that are applicable throughout the United States (U.S.) and Canada. These standards, when approved by the Federal Energy Regulatory Commission, are mandatory in the U.S. The Northeast Power Coordinating Council (NPCC) adopts additional criteria that applies throughout the Northeastern U.S. Finally, criteria and procedures adopted by ISO-NE, the regional planning authority for New England, apply throughout the New England states. Thus, transmission-related projects in Connecticut must comply with NERC, NPCC, and ISO-NE reliability standards.

The contingencies that these standards and criteria specify include double-circuit contingencies, that is, the simultaneous failure of both circuits supported by a common set of support structures. Such a failure could be due to events such as a structure failure or a lightning strike. The relevant provisions include the following:

- a) NERC TPL-001-4 requires modeling of a "Multiple Contingency Common Structure" event, which is defined as "the loss of any adjacent (vertically or horizontally) circuits on a common structure";
- b) NPCC Regional Reliability Reference Directory #1 (NPCC Directory #1), titled Design and Operation of the Bulk Power System, requires that the electric system withstand the "simultaneous fault on two adjacent transmission circuits on a multiple circuit tower"; and
- c) ISO-NE Planning Procedure 3 (ISO-NE PP-3), titled Reliability Standards for the New England Area Bulk Power Supply System, requires that the system withstand "simultaneous permanent phase-to-ground faults on different phases of each of the two adjacent transmission circuits on a multiple circuit transmission tower, with normal fault clearing."

NPCC Directory #1 and ISO-NE PP-3 require that the system not only withstand the loss of such adjacent circuits as a first contingency (N-1) but also that it withstand such a loss as a second contingency (N-1-1). To simulate such a N-1-1 contingency, the loss of certain other system elements, including a generator or another transmission circuit is modeled, after the loss of the two adjacent circuits.

Unlike some other regional criteria, the ISO-NE criteria do not automatically exempt short segments of double-circuit towers (DCTs) from contingency analysis. Thus, the ISO-NE criteria relating to DCTs are somewhat more stringent than required by the NERC and NPCC standards and even somewhat more stringent than criteria of other regional reliability organizations.

Notwithstanding, the requirements that DCT contingencies be addressed in planning studies does not necessarily mean that no new DCTs may be built or that all existing DCTs must be separated. In developing transmission solutions, the Eversource transmission planners may consider keeping existing DCTs, or separating double-circuit lines, or building new DCTs.

The power flow analyses that transmission planners use to design the transmission grid both model the existing system and also take into account anticipated future system loads and known future changes to generation and transmission system elements. Modeling the simultaneous loss of both circuits on an existing or a potential future DCT in these simulations may or may not result in a violation of the thermal and voltage performance criteria with which the system is required to conform. If the simultaneous failure of both circuits on an existing double-circuit transmission structure does not violate any thermal or voltage criteria, then the existing double-circuit towers will not be disturbed. However, their reliability impact will continue to be monitored in the future.

#### **Separation of 1779/1777 Lines Portion of the Project**

Eversource seeks to install 16 galvanized single-circuit monopoles and two three-pole galvanized steel poles required to separate the existing 1777/1779 lines that are currently supported on the same structures. The 1779 would be relocated to the new structures, and the 1777 line would remain on the existing painted lattice structures. The proposed relocated 1779 line would be installed adjacent to the existing double-circuit lattice structures within Eversource's existing right-of-way. Eversource would utilize gray galvanized steel for the new structures because it would be reasonably close in color to the greenish-gray color of the existing double-circuit lattice structures. The new structures would be placed approximately 35 feet laterally to the east of the existing structures and staggered up to 25 feet longitudinally from the existing structure locations.

The height of existing structures ranges between 80 to 100 feet above ground level (agl). The proposed structures would be 5 to 10 feet taller than the existing structures, with a maximum height of 105 feet agl. The increase in heights is required to comply with the 2012 National Electrical Safety Code (NESC) conductor to ground clearance requirements, phase to phase clearance requirements and Eversource's updated Overhead Transmission Line Standards.

Eversource would remove the existing 1779 556-kcmil aluminum conductor steel reinforced (ACSR) conductors as well as the associated conductor and shield wire arms from the existing double-circuit lattice structures. Eversource would install new 1272-kcmil aluminum conductor with steel support (ACSS) conductors on the new monopoles for the 1779 line. Eversource would relocate the existing optical ground wire to the new monopoles.

#### **Separation of 1751/1777 Lines Portion of the Project**

Eversource would install 49 single-circuit weathering steel monopoles in order to separate the existing 1751/1777 lines that are currently supported on the same structures. The 1777 line would be relocated to the new structures, and the 1751 line would remain on the existing double-circuit weathering steel structures (with unused arms removed). The proposed relocated 1777 line would be installed approximately 5 feet laterally to the east of, and staggered up to 20 feet longitudinally from, the existing 1751/1777 double-circuit steel poles.

The height of existing monopole structures ranges between 75 to 105 feet agl. The proposed monopole structures would be 5 to 20 feet taller than the existing structures, with a maximum height of 105 feet agl.

Eversource would also replace two 115-kV double-circuit horizontal weathering steel lattice towers with four three-pole structures on new drilled shaft foundations in Bloomfield Junction. The existing structures are 60 feet agl. The new structures would be approximately 20 feet taller in height with the tallest structure being about 80 feet agl. The increase in height would provide the necessary NESC clearances at Bloomfield Junction.

Eversource would replace two existing 115-kV direct-embedded single-circuit guyed wood H-frame structures with two new direct-embedded single-circuit guyed weathering steel H-frame structures at Bloomfield Junction. The existing structure heights are 36 feet agl and 60 feet agl. The new structures would be approximately 15 feet taller than the existing structures with the tallest proposed structure being approximately 70 feet agl. The increase in height would provide the necessary NESC conductor to ground clearances.

Eversource would also replace 0.15 miles of existing 1272-kcmil ACSR conductors with 1272-kcmil ACSS conductors on the 1751 and 1777 lines span at Bloomfield Junction. This conductor type would be required to support modifications to the proposed configuration at Bloomfield Junction.

Eversource would remove the unused conductor and shield wire arms from the existing double-circuit steel monopole structures. Eversource would also relocate the 5.30 miles of the existing 1777 line conductor and optical ground wire from the existing double-circuit steel poles to the proposed steel structures.

### **Modifications to Overhead 1770 Line Loop into Rood Avenue Substation Portion of the Project**

Eversource seeks to install two weathering steel transition structures to configure the 1779 line from overhead to underground, to be looped in and out of Rood Avenue Substation. The use of weathering steel would match the existing weathering steel structures in the area. The transition structures would be approximately 95 feet and 100 feet above ground level and on new drilled shaft foundations.

Approximately 800 feet of 5000-kcmil cross-linked polyethylene insulation 115-kV underground cable would be installed in a concrete duct bank from the two transition structures to the proposed termination structures (or terminal structures) inside the Rood Avenue Substation. These proposed terminal structures would be shorter than the existing terminal structures inside Rood Avenue Substation because they are associated with underground transmission connections.

Eversource would also remove one existing span of 1272-kcmil ACSR conductor on 1779 line between structures 20076 and 20077.

Eversource would also replace one existing 115-kV three-pole wood guyed structure with a new three-pole weathering steel structure and install a new 115-kV weathering steel three-pole structure on new drill shaft foundations. The existing height of the structures is 50 feet above ground level. These new structures would be about 65 feet tall in order to provide the necessary substation equipment clearances inside Rood Avenue Substation.

Finally, Eversource would install new overhead 1272-kcmil ACSS from the two proposed 115-kV steel three-pole structures to the existing 1751 and 1448 terminal structures inside the Rood Avenue Substation.

### **Modifications to Rood Avenue Substation Portion of the Project**

Eversource would remove two existing 115-kV circuit switchers, install four 115-kV circuit breakers on new foundations, install two additional terminal structures (to accommodate the 1779 line loop) on new foundations, and install nine 115-kV disconnect switches. In addition, Eversource would install six 115-kV coupling capacitor voltage transformers on new foundations, replace two existing 115-kV manually-operated disconnect switches with two motor-operated switches installed on existing structures. Eversource also would install underground conduits, wave traps, bushings, lightning arresters, mounting and support beams, and relay/controls and cables to accommodate the new equipment.

To accommodate these modifications, Eversource would expand the substation fence line (within Eversource's property) approximately 81 feet to the southwest and 46 feet to the southeast. Two 20-foot wide gates would be replaced. The fence and gates would be the same height as the existing. Eversource would maintain the same 1 ¼-inch mesh size for the expansion area as the existing fence. All new equipment would be no taller than the tallest existing equipment within Rood Avenue Substation.

#### **Modifications to Bloomfield Substation Portion of the Project**

Eversource would remove two single-phase bus supports and foundations. Eversource would also install one new 115-kV circuit breaker on a new foundation and relocate one existing 115-kV disconnect switch onto a new foundation. Eversource would install underground conduits, mounting and support beams, and relay/controls and cables to accommodate the new equipment. The proposed new equipment would be no taller than the tallest existing equipment within Bloomfield Substation. All work would remain within the existing fenced boundaries of the substation.

#### **Modifications to North Bloomfield Substation Portion of the Project**

Eversource would relocate one 115-kV circuit breaker to a new position next to its existing location in order to create space for the installation of one additional 115-kV circuit breaker on a new foundation. The original foundation for the relocated circuit breaker would be removed. Eversource would also relocate two existing 115-kV disconnect switches on new foundations. The original foundations for the relocated 115-kV disconnect switches would be removed, and equipment and new foundations would be installed in the same physical location.

Eversource would install underground conduits, mounting and support beams, and relay/controls and cables to accommodate the new equipment. The proposed new equipment would be no taller than the tallest existing equipment within the North Bloomfield Substation. All work would remain within the existing fenced boundaries of the substation.

#### **Construction Methods**

Eversource would utilize Bloomfield Substation, North Bloomfield Substation and Rood Avenue Substations as the staging area locations for the proposed project. In addition, Eversource is currently investigating additional potential staging area locations within an approximately five mile radius to store additional equipment and materials associated with the line separations. Eversource would consult with the municipality and provide notice to the Council once the additional staging areas are identified. If approved, staff suggests including a condition that notice to the Council be provided for additional staging areas that are not currently identified in the Petition and that approval of additional staging areas be delegated to staff.

Between Bloomfield Substation and Bloomfield Junction, approximately 25 feet of vegetation edge clearing beyond the currently maintained corridor (but within the right-of-way) would be required for 1.60 miles. Trees and brush would be cleared to widen the existing maintained corridor while preserving all of the other low-growing plant species. Maintenance clearing, removal of non-compatible tree species and brush to allow for the establishment and preservation of low growing plant communities that have a mature height of eight feet or less would also occur.

Between Bloomfield Substation and North Bloomfield Substation, approximately 5 feet of vegetation edge clearing beyond the currently maintained corridor (but within the right-of-way) would be required for 5.30 miles. Similar maintenance practices to remove non-compatible tree species and allow shorter species would occur.

Erosion and sedimentation control measures (E&S controls) would be installed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource's Best Management Practices (Eversource BMPs). Typical E&S controls include, but are not limited to, the use of hay bales and silt fence, check dams, berms, swales, and sediment basins. Following the completion of construction, seeding and mulching would occur to permanently stabilize previously disturbed areas. Temporary E&S controls would remain in place until construction is complete and all disturbed areas are stabilized.

Existing access roads may need to be graded, widened, and/or improved in order to be used safely and effectively during construction. Access road improvements typically include clearing adjacent vegetation and widening the road as needed to provide a travel surface approximately 16 to 20 feet wide (with additional width possible at turning or passing locations). Access roads would typically be gravel. However, where access roads traverse streams or wetlands, construction mats would be utilized.

At each transmission line structure site, a work pad would be required to stage material for final on-site assembly and to provide a safe, level work base for the construction equipment. Typical work pads would be approximately 100 feet by 100 feet in size, with the exception of one work pad at Bloomfield Junction, which would be approximately 200 feet by 400 feet to accommodate both conductor pulling and the structure replacements. Other work pads would also be used for wire pulling. No separate pull pads are required.

A typical (upland) installation of a work pad begins with the removal of vegetation, if necessary. If not already level, the work pad site would then be graded to create a level work area, and the upper three to six inches of topsoil would be removed. A gravel rock base layered on a filter fabric becomes the work pad area.

The new structure sections and associated materials and hardware would be delivered by truck and would be stored at the staging area. The new structure would be delivered to the installation location in sections, and then it would be assembled and installed with a crane. Insulators and connecting hardware would be installed on most structures at this time.

The installation of the overhead line conductors and shield wires would require the use of special pulling and tensioning equipment, which would be positioned at the work pad locations. Helicopters may be used for conductor and shield wire pulling activities. Old conductors, hardware, structures, etc. to be removed would be recycled and/or disposed of (as applicable) in accordance with Eversource BMPs and applicable government rules and regulations.

Access roads and/or structure work pads in uplands would, in general, be left in place to facilitate transmission line maintenance, unless requested to be removed by the property owner. However, access roads and work pads located within improved residential, commercial or industrial areas would typically be removed and restored unless the property owner requests that they remain in place.

By letter dated April 4, 2016, the Connecticut Department of Transportation notes that some portions of the project may occur within State right-of-way including but not limited to access roads, work pads, utility work, tree/brush cutting or removal. Therefore, Eversource would have to obtain a Highway Encroachment Permit prior to performing any work within the State right-of-way.

Eversource anticipates beginning construction during summer 2016 and completing construction during fall 2017. Normal working hours would be Monday through Saturday from 7:00 a.m. to 7:00 p.m. Sunday working hours may be required during transmission line outages. Multiple crews may work concurrently on different sections of the transmission lines. Staff recommends that approval of any changes in work hours be delegated to staff.

### **Environmental Effects and Mitigation Measures**

Land uses in the project area are a mix of residential, recreational and undeveloped lands. Specifically, adjacent land uses to the proposed project right-of-ways include a mix of suburban residential developments and subdivisions, religious institutions, public open space, recreational areas, including a golf course, open fields, forest lands, and undeveloped areas associated with flood control reservoirs. Residential features that abut and extend into the right-of-way include maintained lawns and gardens. Though the project would traverse through some maintained lawns and gardens within the established right-of-way, Eversource would work with the property owners to restore these and other similarly improved areas upon completion of the project. In addition, there are no designated scenic resources in the vicinity of the project area.

A public golf course known as the Wintonbury Hills Golf Course (WHGC) is located off of Terry Plains Road in Bloomfield. Given the recreational value of such property, Eversource is collaborating with the management of WHGC in order to complete the proposed work activities during the winter months when the course is closed to the public.

Heritage Consultants, LLC (Heritage) performed an assessment of archaeological and historical resources (i.e. cultural resources review) for the proposed project area. As a result of Heritage's Phase I Cultural Resources Reconnaissance Survey, no cultural resources were identified within the proposed project area. Eversource reviewed the results with the State Historic Preservation Office (SHPO) and the Tribal Historic Preservation Office (THPO). During this review, the SHPO requested additional sampling or photo documentation of certain locations in the Bloomfield Junction to North Bloomfield Substation ROW. Eversource expects to complete this work in April 2016 and forward the results to SHPO.

Any artifacts discovered in disturbed soils are not eligible for the National Register; therefore, no additional investigations or protective measures are required. Artifacts discovered in undisturbed soils require a Phase II investigation to follow up and may require additional protection measures during construction. Eversource is currently and will continue to coordinate with the SHPO and the THPO requiring the requested additional sampling and any further protective measures if required.

Eversource's review of the Connecticut Department of Energy and Environmental Protection's (DEEP) Natural Diversity Database identified State-listed endangered, threatened, or special-concern species in the vicinity of the proposed project area. According to a data sharing agreement with DEEP, Eversource is unable to publicly identify the protected species. However, no portions of the proposed project fall within a DEEP mapped critical habitat area. Eversource has consulted with DEEP's Wildlife Division. By letter dated September 30, 2015, Eversource recommended protection measures for the identified State-listed species within the proposed project area and will adhere to any recommendations made by DEEP. These recommendations would be incorporated into Eversource's BMPs relative to the listed species. Eversource is also consulting with DEEP and the U.S. Fish and Wildlife Service regarding one federally-listed species with potential habitat in the vicinity of the proposed project. Eversource would continue to consult with these agencies to ensure that measures are undertaken to minimize the potential impact to these species.

The 2009 expansion of the Rood Avenue Substation displaced a small community of Pink Lady Slipper located along the southwest corner of the Rood Avenue Substation. At the request of the Town of Windsor's Environmental Planner, the plants were carefully removed from the development area and transplanted to a suitable area located east of the substation to re-establish the community. The proposed expansion of the Rood Avenue substation would not affect this relocated plant community.

Temporary wetland impacts would be approximately 2.4 acres and associated with the use of construction mats in the existing ROW. The construction mats that cross wetlands would be removed upon completion, and wetland conditions would be restored in accordance with Eversource BMPs.

Permanent wetland impacts would include the installation of two new monopole structures within wetlands associated with the 1777/1779 line separation, and seven new monopole structures within wetlands associated with the 1751/1777 line separation, resulting in a total of approximately 450 feet of wetland fill, and the secondary impact of wetland habitat conversion associated with tree clearing and trimming. Tree clearing in the forested wetland areas would result in the modification of approximately 1.2 acres of palustrine forested wetlands into palustrine scrub shrub wetlands. Work activities in water resources, including the proposed tree clearing, would be conducted in accordance with Eversource BMPs and comply with applicable regulatory permit/authorization terms and conditions.

Eversource identified 15 vernal pools in the proposed project area. These vernal pools range from immediately adjacent to and up to approximately 260 feet away from structure work pad locations. The proposed construction activities would not result in the fill or loss of vernal pools. Eversource BMPs would be employed including, for example, exclusionary fencing around pads or work areas, modified mowing and tree clearing methods, syncopated silt fencing, mat bridging and other measures to allow migration, prevent trapping and/or mortality to vernal pool dependent wildlife. In addition, the proposed mitigation and Eversource BMPs are consistent with Calhoun and Klemens 2002 Best Development Practices to the extent practicable. Specifically, the proposed tree clearing would result in less than one percent conversion of currently forested areas of right-of-way within the proposed project's vernal pool envelopes and critical terrestrial habitats.

The proposed project area encompasses three flood storage areas that are part of the North Branch Park River Flood Control System. These areas were established in the 1960s to control flooding in the tributaries flowing south to the North Branch Park River and ultimately to alleviate flooding in the Park River through Hartford. These flood control reservoir areas are currently under the jurisdiction, ownership and management of DEEP. Eversource continues to coordinate and communicate with DEEP relative to the construction through these flood storage areas. Specifically, approximately 20 new transmission structures would be located within the 100-year flood zone due to the necessary locations of such structures along the span of the line. All of these structures would be installed on new drilled shaft foundations approximately eight feet in diameter. (Direct-embedded structures would be utilized for structures that are not proposed to be located within a flood zone.) The proposed structures that would be located within the 100-year flood zone would have a de minimis effect on the flood storage capacity of the flood control system. Staff recommends including a condition that the structures located in the 100-year flood zone be designed to withstand inundation.

No public water supply reservoirs are located in the vicinity of the proposed project. The project is not located within an aquifer protection area.

New transmission structures would be comparable in height to existing structures, though approximately 5 to 20 feet taller. To maintain aesthetics, Eversource's new structures would have a similar steel finish (either galvanized or weathering steel as applicable) to match or approximately match the finish/color of existing adjacent structures that would remain. In addition, Eversource is working with and would continue to work with affected property owners to provide plantings to mitigate the visual impacts associated with clearing in the right-of-way.

The modifications of the three substations, except for the Rood Avenue Substation expansion, are limited to work within the existing fenced areas, and the new equipment/structures are not taller than the tallest existing structures. The expansion of Rood Avenue Substation would be in an already cleared gravel area where existing access exists. No new clearing is associated with this expansion. The substation is largely wooded on all sides. However, staff suggests that Eversource consider limited landscaping plantings near the northern edge of the substation expansion area because some direct views may open up between trees to residences on Sunnyfield Drive.

The proposed substation modifications would have a negligible effect on magnetic field levels at the nearest off-site residences. As for the line separation portions of the project, post-construction magnetic field levels would decrease at the edges of the rights-of-way. This is due to optimized phasing of the relocated 1779 line as well as the modified 1777 line. The highest existing magnetic field level is 9.59 milligauss (mG) on the western edge of the right-of-way between Bloomfield Substation and Bloomfield Junction. The post-construction magnetic field levels would decrease at this location to 9.23 mG. This is far below the International Commission on Non-ionizing Radiation Protection acceptable exposure level of 2,000 mG for the general public as recognized in the Council's "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut."

Construction-related noise is exempt per DEEP noise regulations. Notwithstanding, any construction-related impacts to existing noise levels would be short-term and localized in the vicinity of work sites. There would be no permanent changes to the existing sound levels along the transmission right-of-ways or the substations after completion of the project. Thus, transmission lines modified by the proposed project as well as the modified Rood Avenue Substation, North Bloomfield Substation and Bloomfield Substation would continue to meet applicable noise standards.

### **Municipal and abutter notice**

Eversource began consultations with the Towns of Bloomfield and Windsor collectively referred to as the Towns (Towns) in August 2015. Formal notice of the Petition was provided to the Towns and abutting property owners on or about March 8, 2016. The Council has not received any comments from abutters or the Towns to date.

### **Conclusion**

Staff recommends including the following conditions:

- The structures located within the 100-year flood zone shall be designed to withstand inundation;
- The Petitioner shall implement protective measures for Natural Diversity Database wildlife in consultation with the Connecticut Department of Energy and Environmental Protection;
- The Petitioner shall file with the Council any additional staging area locations not identified in the Petition and that approval of additional staging areas be delegated to staff.
- The Petitioner shall coordinate work to minimize the impact on the Wintonbury Hills Golf Course.
- The Petitioner should consider limited landscaping along the north side of the expanded area of Rood Avenue Substation to improve aesthetics as viewed from Sunnyfield Drive.