

DRAFT

Docket 3B

The United Illuminating Company

Derby Junction to Ansonia 115-kV Transmission Line Rebuild Project

**Derby Junction, off of Constitution Blvd. North, Shelton to Ansonia S/S, off of Riverside Drive,
Ansonia**

Partial Development and Management Plan II

Staff Report

July 14, 2023

Introduction

On October 28, 2022, the Connecticut Siting Council (Council) issued a Modified Certificate of Environmental Compatibility and Public Need (Certificate) to The United Illuminating Company (UI) for the Derby to Ansonia 115-kilovolt (kV) Transmission Line Rebuild Project that traverses the municipalities of Shelton, Derby and Ansonia and consists of the construction, maintenance and operation of a rebuilt 115-kV overhead electric transmission line entirely within approximately 4.1 miles of existing UI right-of-way (ROW) by relocating existing electric transmission lines from lattice structures to new steel monopole structures and associated equipment and related improvements to Derby Junction¹ and UI's Indian Well and Ansonia Substations (Project). In its Decision and Order (D&O), the Council required UI to submit a Development and Management (D&M) Plan in compliance with § 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies (RCSA).

On December 28, 2022, in compliance with RCSA §16-50j-62, UI submitted a partial D&M Plan² (Partial D&M Plan I) for the Project to the Council and the service list. Partial D&M Plan I addressed the configuration of Structure Nos. 17 and 18 replacements in Ansonia and whether to replace these two existing double-circuit lattice structures with pairs of single-circuit monopoles or with double-circuit monopoles. On January 20, 2023, the Council approved Partial D&M Plan I with pairs of single-circuit monopoles at both structure locations.

On June 9, 2023, in compliance with RCSA §16-50j-62, UI submitted Partial D&M Plan II for the Project to the Council and the service list. Partial D&M Plan II addresses the entire Project as one complete "segment" that extends for a total of approximately 4.1-miles from Derby Junction in Shelton to Indian Well Substation in Derby to Ansonia Substation in Ansonia. Pursuant to RCSA §16-50j-61(d), a copy of the D&M Plan was provided to the service list for comment. No comments regarding Partial D&M Plan II were received.

Condition 3 of the Council's D&O requires the following information to be included in the D&M Plan:

a) **Detailed site plans depicting final transmission line structure heights and identification of locations for the access roads, structure foundations, equipment laydown areas; material staging areas; field office trailers, sanitary facilities and parking;**

Partial D&M Plan II includes detailed site plans including structure heights and identification of locations for the access roads and structure foundations.

¹ Derby Junction is a location where UI's 115-kV transmission connects to the 115-kV transmission of The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) at Eversource Structure 1364.

² Regulations of Connecticut State Agencies §16-50j-60(b) states, "A *partial* or full D&M plan shall be prepared in accordance with this regulation..." (Emphasis added).

UI will rebuild the existing 1560-3 115-kV line from Derby Junction to Ansonia Substation and the 1808-2 115-kV line from Derby Junction to Indian Well Substation and the 1594 115-kV line from Indian Well Substation to Ansonia Substation.³ The lines will be installed on mostly double-circuit monopole structures within the ROW. Some single-circuit monopoles are also required in certain locations.

Specifically, one 80-foot single-circuit H-frame structure and nine double-circuit monopoles (ranging in heights from 95 feet to 170 feet) will be installed within the Shelton portion of the Project. Seven single-circuit monopoles (ranging in heights from 75 feet to 110 feet) and eight double-circuit monopoles (ranging in heights from 100 feet to 170 feet) will be installed within the Derby portion of the Project. Six single-circuit monopoles⁴ (ranging in heights from 105 feet to 115 feet) and nine double-circuit monopoles (ranging in heights from 100 feet to 130 feet) will be installed in the Ansonia portion of the Project. All structures will be galvanized steel. The new monopoles will be installed primarily on drilled pier foundations.⁵

The two rebuilt 115-kV lines will consist of 795 kcmil aluminum conductor steel reinforced (ACSR) “DRAKE” conductors arranged in a vertical configuration. UI will also install 7#7 Alumoweld shield wire on the 1560-3 Line from Derby Junction to Ansonia Substation; optical ground wire (OPGW) with 96 fibers on the 1808-2 Line from Derby Junction to Indian Well Substation; and OPGW with 72 fibers on the 1594 Line from Indian Well Substation to Ansonia Substation. For the Housatonic River crossing, UI will install 19#8 Alumoweld shield wire on the 1560-3 Line and OPGW with 96 fibers on the 1808-2 Line to complete the fiber optic connection at Derby Junction. Shield wire is used for lightning protection.

UI will utilize a combination of public roads and proposed or existing access roads within or adjacent to the ROW for construction. Most access roads crossing wetlands and watercourses will be temporary and comprised of timber mats (or equivalent). Access roads in uplands will typically be gravel, and construction mats will be used on agricultural lands. Access roads will have a typical width of 16 to 20 feet. Access roads may be wider in some areas to accommodate equipment turning and passing or to account for terrain. Existing paved access is not expected to require significant upgrades, and existing non-paved access may require the addition of gravel or asphalt patch. UI will also utilize anti-tracking pads at entrances and exits to work sites from public roads.

Construction work pads will be required to install the new monopoles and remove existing 115-kV structures. Gravel or timber mat work pads will be used to provide a safe, level base for construction equipment as well as locations to temporarily stage materials. Work pads will typically measure 150 feet by 80 feet. Specific work pad dimensions vary subject to topography. Grading will be performed as necessary to accommodate the pad installations. Pull pads will typically measure 300 feet by 80 feet.

UI will utilize a contractor yard/staging area at a location to be determined for material laydown and staging, parking for personal vehicles, contractor equipment, construction office trailers,

³ The 1808-2 and 1594 Lines are connected to each other and are collocated on the same structures as the 1560-3 Line for this route.

⁴ This includes a pair of single-circuit structures at each of Structure Nos. 17 and 18 locations in accordance with Partial D&M Plan I. The replacement single-circuit structures are identified as Structure Nos. 17A, 17B, 18A, and 18B.

⁵ Direct embed structures and structures supported by pile type foundations may be installed at certain locations pending further engineering analyses.

CONEX storage boxes, portable restrooms, and a generator if necessary for on-site power. UI will submit information on the staging/laydown area prior to use of such staging/laydown area.

Notwithstanding, UI will also utilize portions of Indian Well and Ansonia Substations to support the construction activities at each substation to accommodate the line rebuilds and removal of existing associated equipment.

b) Review and consideration of double-circuit monopole configurations for Structure Nos. 17 and 18, including, a cost estimate;

Partial D&M Plan I addressed the monopole configurations and cost estimates for Structure Nos. 17 and 18. The Council approved the two pole, single circuit configuration (or a total of four structures) to replace Structure Nos. 17 and 18. Partial D&M Plan II, Volume I, Table 2-2 contains such approved configuration.

c) Detailed site plans for equipment installation/modifications at Ansonia and Indian Well Substations;

Partial D&M Plan II includes the modifications to Derby Junction, Indian Well Substation and Ansonia Substation that will be performed to connect the rebuilt 115-kV lines to the junction and substations and remove existing 115-kV line connections.

The Derby Junction modifications include, but are not limited to, removing the existing 115-kV lines and connecting the rebuilt lines to Eversource's rebuilt Structure 1364. UI has been coordinating with Eversource regarding the Project plans for this critical tie-in point. All work will be performed within the UI and/or Eversource ROWs. Eversource's replacement of Structure 1364 with new Structures 19624 and 19624A was approved by the Council on December 9, 2022 as part of Eversource's Stevenson to Pootatuck Rebuild Project⁶. Construction commenced in February 2023, and Eversource work at Derby Junction is expected to be completed in advance of UI's commencement of Project construction.

The Indian Well Substation modifications include, but are not limited to, hardware modifications to the H-frame structures on the line termination side up to the switch attachment location; installation of two fiber splice boxes to terminate OPGW fibers on two existing H-frame structures inside the substation fence; installation of underground All-Dielectric Self Supporting (ADSS) fiber optic cable inside separate inner ducts from control/switchgear enclosure through the backup cable trench; and termination of ADSS fiber into separate fiber patch panels inside the control/switchgear enclosure.

The Ansonia Substation modifications include, but are not limited to, hardware modifications to the A-frame structure on the line termination side up to the switch attachment location; installation of one fiber splice box to terminate OPGW fibers on an existing A-frame structure inside the substation fence; and installation of ADSS inside inner ducts extending from the existing (secondary) cable trench before terminating at the fiber patch panel inside the control enclosure.

⁶ https://portal.ct.gov/CSC/3_Petitions/Petition-Nos-1501-1600/PE1527

d) **Decommissioning plan for existing structures;**

Partial D&M Plan II includes a Project-wide Decommissioning Plan for the lattice and other structures that currently support the 115-kV lines along the route. UI will decommission one side (circuit) of the double-circuit lattice structures at a time and install its replacement circuit on the new structures in order to keep the other circuit energized. This will involve removing de-energized conductor, insulators, overhead shield wire (OHSW), and lattice cross arms from one side of the existing double-circuit structures at a time.

After both circuits are installed and energized on the new structures, UI will remove 29 steel lattice structures, six monopole structures, and one wide-flange column pole. UI will break apart lattice tower footings (foundations) to a depth below grade per UI specifications.

UI conducted inspections, sampling and analyses of materials and coatings on existing lattice and other structures to be removed. The results indicate that asbestos-containing materials (ACM), consisting of paint and damp proofing, are present on Structures 351-359, 360, and 4. Additionally, some of the lattice towers contain lead-based paint (LBP), as well as paint that contains heavy metals as defined by the Resource Conservation and Recovery Act. UI will retain contractors that adhere to all federal, state and UI requirements during the structure deconstruction process. The contractor will also utilize a Connecticut Department of Public Health-licensed Asbestos Abatement Supervisor to oversee the work.

All materials (including non-ACM and non-LBP) will be handled, transported and disposed of in accordance with federal and state requirements as well as UI's Materials Management Plan. UI will recycle the structural components to the extent practical.

e) **An erosion and sediment control plan, consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended;**

Partial D&M Plan II includes a Project-wide Erosion and Sediment Control Plan for erosion and sedimentation control measures (E&S controls) that will be installed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, the *2004 Stormwater Quality Manual*, the Stormwater Pollution Control Plan (SWPCP), and DEEP Stormwater Permit.

E&S controls will typically include, but not be limited to, straw bales, silt fence, straw wattles, coir logs, diversion swales, anti-tracking pads, temporary access matting, straw bale corrals for management of spoils or concrete washout areas, and erosion control blankets. E&S controls will be inspected and repaired/replaced as necessary until affected areas are stabilized.

Per Condition 5 of the Council's D&O, UI shall obtain a Stormwater Permit prior to commencement of construction.

f) **A plan to notify the public when helicopters would be used for project construction;**

Helicopters may be used to install pulling ropes at the commencement of the conductor/OPGW pulling process; to assist in the removal of existing steel lattice towers; and to install marker balls on the lines across the Housatonic River.

Helicopter use, if any, would be determined by the contractors. UI's construction contractor will provide a three-week advance notice to UI of any activities that will involve helicopter use and will

specify the type of work to be performed and the locations. UI will inform the municipalities one week in advance of planned helicopter work and will post the anticipated schedule for the work on the Project website.

g) **Identification of wetland and watercourse resources, related temporary construction impacts and methods to reduce such impacts;**

Partial D&M Plan II identifies water resource crossings, construction-related impacts and plans to mitigate such impacts. Both the existing and rebuilt 115-kV lines span the Housatonic River, which is the boundary between Shelton and Derby. No work will be performed in the river. No wetland or watercourses will be impacted in the Derby or Ansonia portions of the Project.

Construction activities including, but not limited to, vegetative clearing, temporary access roads, and temporary work pads will be required in three wetlands (W2, W3 and W5) and two watercourses (WC1 and WC3) in the Shelton portion of the Project. No new monopoles will be installed within wetlands or watercourses. Construction activities will result in permanent impacts to W4 and WC2 associated with two permanent access crossings and culvert installations in the Shelton portion of the Project. The impacts to wetlands and watercourses in Shelton are identified in the table⁷ below:

Volume 2 Mapsheet No.	Watercourse/Wetland No.	Estimated Project Impact, by Type (Sq. Ft.)			
		Temporary Impacts ^a		Permanent Impacts (Fill) ^b	Wetland Forest Vegetation Clearing ^c
		Access Roads	Work Pads		
1, 2	W2	2,306	0	0	0
2	W3; WC1	1,520	0	0	0
3	W4; WC2 (two crossings, permanent culverts)	0	559	2,500 (1,000 = WC2) (1,500 = W4)	0
4	W5; WC3	268	0	0	350
TOTAL		4,094	559	2,500	350

^aThe placement of temporary construction matting that is not subject to federal regulatory review.

^bDirect fill placed in wetlands and watercourses that are subject to State and Federal regulatory review. Includes approximately 1,000 square feet of permanent impacts due to the two culvert installations and 1,500 square feet of fill in adjacent wetlands.

^cRefers to a change in wetland vegetation type (e.g., forested to shrub-scrub), but not a net reduction in wetland function or size. Wetland forested vegetation will be removed only to establish a temporary access road. Forested vegetation will be allowed to become re-established after the completion of Project construction.

During construction, UI will implement measures to protect wetlands. Specifically, UI will install E&S controls, implement wetland invasive species control procedures, and perform environmental inspections per the SWPCP, Stormwater Permit, and the Project-wide On-Site Environmental Inspection and Monitoring Plan.

After the rebuilt lines are installed and existing 115-kV facilities are removed, all temporary timber mats will be removed from wetlands, and wetlands will be restored and stabilized per Partial D&M Plan II, SWPCP and any permit requirements of DEEP and USACE.

⁷ Column 1 (Volume 2 Mapsheet No.) has a typographical error. W4 and WC2 impacts are identified on Map Sheet 4, and W5 and WC3 impacts are identified on Map Sheet 5.

h) **Vegetative clearing plan;**

Construction of the Project will require vegetation removal along access roads and at work pads as well as to maintain required clearance between the rebuilt transmission line conductors. The vegetation that must be removed consists of a mix of scrub-shrub species and mature trees.

Partial D&M Plan II includes a Project-wide Vegetation Clearing Plan that specifies clearing methods and vegetation management consistent with the construction and operation of overhead transmission lines per industry and UI standards for conductor clearance. Total tree clearing in the Shelton, Derby and Ansonia portions of the Project will be approximately 0.5-acre, 1.0-acre and 4.8 acres, respectively⁸. Total tree clearing for the Project (based on trees of at least six inches diameter) will be approximately 6 acres.

Clearing will typically be performed using a combination of equipment including, but not limited to, chain saws, brush hogs or other mowing equipment, skidders, forwarders, bucket trucks for canopy trimming, feller bunchers for mechanical tree cutting, woodchippers, log trucks, flatbed trucks, and chip vans.

In upland areas, grubbing will only be performed where grading is required. Grubbing will not be performed in wetland areas except where permanent access roads are required. In wetlands, trees and brush will generally be cut flush with the ground, and stumps will be left in place. Additionally, low-impact clearing methods will be employed in water resource areas such as manual clearing of vegetation.

Danger or hazard trees deemed to be a potential risk to the overhead 115-kV lines may need to be trimmed or removed. If such trees are located on private property outside of a UI easement, UI will coordinate, as required, with the property owner.

The clearing contractor will be responsible for the temporary stockpiling (to be located in uplands only) and disposal of vegetative materials where the wood is not requested to be left for the landowner.

i) **Restoration plan of disturbed areas, including incorporation of areas for pollinator habitat consistent with CGS §16-50hh, if feasible;**

Partial D&M Plan II includes a Project-wide Restoration Plan for re-grading work areas as necessary; removal of temporary work pads and access from wetland areas; re-seeding or allowing natural re-vegetation of wetland areas; removal of temporary work pads and access from upland areas; and removal of E&S controls after final stabilization is achieved for both wetland and upland areas.

In upland areas, where appropriate, UI would utilize seed mixes that serve as habitat or food sources for pollinators. Such seed mixes will be low-growing to be compatible with overhead transmission lines. The seed mixes may include, milkweed, the host plant for the monarch butterfly, as well as grasses, such as little bluestem to provide nesting habitat for pollinators.

⁸ This adds up to greater than 6 acres because the entire area does not consist of mature trees six inches diameter or greater.

j) **A spill prevention control and countermeasures plan for the petroleum storage site and plans to locate the storage site at least 100 feet from wetlands;**

Partial D&M Plan II includes a Project-wide Spill Prevention and Control Plan for refueling of vehicles at a minimum of 50 feet from wetlands (unless temporary containment is provided), spill response, cleanup, and reporting procedures. Storage of petroleum products will be located at least 100 feet from wetlands.

k) **Wetland Invasive Species Control Plan;**

Partial D&M Plan II includes a Project-wide Wetland Invasive Species Control Plan to avoid or minimize the potential spread of invasive species in wetlands. Measures include cleaning of equipment and any other materials (including wood mats) to remove excess soil, debris, and vegetation before being initially deployed and also prior to any relocations from one wetland area to another.

l) **Provisions for on-site environmental inspection and monitoring of the ROW and substations during construction;**

Partial D&M Plan II includes a Project-wide On-Site Environmental Inspection and Monitoring Plan. UI's environmental inspector(s)/monitor(s) will perform the following duties: conducting weekly field inspections (depending on Project activities and state and federal permit obligations) to monitor conformance with D&M Plans as well as USACE and DEEP approvals; providing contractor training; coordinating with Project management and contractors; and preparing field monitoring reports consistent with state and federal permit approval requirements.

m) **A schedule of construction hours;**

Construction activities are expected to begin in September 2023. The rebuilt transmission lines are expected to be in service by the end of 2024.

Construction work will typically occur between 7:00 a.m. and 7:00 p.m., Monday through Saturday. However, certain activities may require work outside of the typical construction hours. Such non-typical work includes activities that must be performed during an outage and/or due to the work needing to be performed on a continuous basis such as concrete pours and setting for foundations. Additionally, extended and/or Sunday hours may be necessary to accommodate CDOT requirements when conductors and OPGW are installed or removed over state roads.

n) **A blasting plan, if necessary;**

Blasting is not expected to be necessary for the Project. UI plans to utilize mechanical means to remove bedrock as necessary. Notwithstanding, should blasting be required due to the depth, extent and type of bedrock encountered, UI would retain a licensed blasting contractor to develop a site-specific blasting plan. The blasting plan would comply with state and local regulations and would be provided to the municipal fire marshal and the Council for review and approval prior to initiating blasting activities.

o) **Plans to comply with DEEP Natural Diversity Database recommendations to reduce impacts to state-listed endangered, threatened and special concern species, including, but not limited to, plans to avoid tree cutting during the months of June, July and August on the western side of the ROW at OSP to protect tree roosting bat species; and**

Two listed species may occur within the Project area: sedge wren, a state-listed Endangered Species; and bald eagle, a state-listed Threatened Species. Partial D&M Plan II includes a Project-wide Species Protection Plan based on DEEP recommendations.

Tree clearing will be performed during the fall of 2023 and the winter of 2023-2024. Thus, no tree clearing will be performed along the ROW in Osbornedale State Park (OSP) during June, July or August.

p) **EMF Monitoring Plan.**

Partial D&M Plan II includes a Project-wide Post-Construction Electric and Magnetic Field Monitoring Plan. UI will perform measurements to verify the efficacy of prior modeling and perform profile measurements to document the actual post-construction magnetic field levels at various distances from the ROW. UI has selected the following locations for verification and profile measurements:

EMF Monitoring Site No.	Municipality	Location Type	Location
1	Derby	Verification (Transect 1)	Field, Between Str 351 and 352
2A	Ansonia	Verification (Transect 2) OPTION A	Near Coon Hollow Road
2B	Ansonia	Verification (Transect 2) OPTION B	Near Silver Hill Road
3	Derby	Public Site	Glider Boathouse
4	Derby	Public Site	Derby High School
5	Ansonia	Public Site	Nolan Athletic Complex
6	Shelton	Residential Site	Mayflower Lane / Meadow Street
7	Derby	Residential Site	Coppola Terrace / Coon Hollow Road
8	Ansonia	Residential Site	Hull St / Willow Street

Within 12 months of the in-service date (i.e. energization of all rebuilt 115-kV lines), UI will submit a report to the Council.

Conclusion

Partial D&M Plan II is in compliance with the Council's D&O dated October 28, 2022.

If approved, staff recommends the following conditions:

1. Submission of staging/laydown area(s) and provisions for erosion and sedimentation controls, if necessary, at the staging/laydown area(s) prior to commencement of construction; and
2. Submission of the name and contact information for the spill response contractor and the local emergency community coordinator prior to commencement of construction.