

DRAFT

Docket No. 490
The United Illuminating Company
Old Town Substation Rebuild Project
312 and 330 Kaechele Place, Bridgeport
Development and Management Plan

Staff Report
March 14, 2025

On February 3, 2021, the Connecticut Siting Council (Council) issued a Certificate of Environmental Compatibility and Public Need (Certificate) to The United Illuminating Company (UI) for the Old Town Substation Rebuild Project (Project) in the City of Bridgeport (City).¹ In its Decision and Order (D&O), the Council required UI to submit a Development and Management (D&M) Plan in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies (RCSA).

On December 26, 2024, in compliance with RCSA §16-50j-62, UI submitted a D&M Plan for the Project to the Council. Pursuant to RCSA §16-50j-61(d), a copy of the D&M Plan was provided to the service list for comment. No comments were received from Eversource, the City, the Town of Trumbull², or neighbors since the D&M Plan was filed with the Council.

Pursuant to RCSA §16-50j-60(d), the Council shall approve, modify or disapprove the D&M Plan no later than 60 days after receipt. On January 30, 2025, the Council requested an extension of time until April 23, 2025 to review the D&M Plan, and on January 31, 2025, UI granted such extension.

The replacement substation site is located on the 0.9-acre parcel located at 280 Kaechele Place that hosts UI's existing Old Town Substation and an approximately 1.35-acre portion of UI-owned parcels located at 312 and 330 Kaechele Place and totaling about 3 acres. The site is bordered to the west by commercial development along Kaechele Place and Main Street; to the north by commercial and residential development along Main Street and Sequoia Road; and to the east and south by Elton Rodgers Woodland Park (a City-owned park). An existing Eversource Energy (Eversource) electric transmission line right-of-way (ROW) extends in a generally east-west direction through the existing substation site.

The existing Old Town Substation will be decommissioned after the replacement substation is placed into service.

Condition No. 1 of the Council's D&O requires the following information to be included in the D&M Plan:

- a) **A final site plan showing the placement of all substation equipment, structures, and buildings within the substation perimeter, tap structures, access, landscaping, and fencing;**

The D&M Plan includes a final site plan showing the placement of all substation equipment, structures, and buildings within the substation perimeter as well as tap structures. Equipment includes, but is not limited to, the following:

¹ On January 15, 2025, pursuant to Condition Nos. 7 and 8 of the Council's D&O, UI requested an extension of time to complete construction, which was granted until June 1, 2028.

² The Town of Trumbull is located within 2,500 feet of the approved replacement substation site.

- i. Two 45/60/75 MVA 115-kV/13.8-kV power transformers;
- ii. Three 115-kV SF₆ dead tank circuit breakers;
- iii. 115-kV disconnect switches;
- iv. Coupling capacitor voltage transformers (CCVTs);
- v. Associated 115-kV insulators, tubular aluminum bus, surge arrestors, and connectors;
- vi. Provisions to accommodate a temporary mobile transformer for emergency conditions;
- vii. Lightning masts;
- viii. Associated structural steel to support electrical equipment; and
- ix. One 13.8-kV switchgear and control enclosure (approximately 120 feet long by 32 feet wide by 16 feet high).

Since the Certificate was issued in 2021, UI experienced delays associated with revised design standards and deferred capital investment. The originally approved replacement substation design contained space for a third power transformer, if necessary, for future demand. However, recent load studies determined that a third power transformer will not be necessary. Specifically, the 2024 90/10 Ten Year Load Forecast for Old Town Substation indicates that Old Town Substation will not reach 90 percent of its rated capacity (with two transformers) by 2033. UI will consider a capacity solution in the future when the 90 percent threshold is reached. Accordingly, the two power transformers were moved closer together and towards the center of the substation. This increases the distances from the transformers to abutting properties. Noise levels at property lines are not expected to increase as a result of the revised transformer layout, and this configuration could result in a noise reduction at the property lines.

Since the Project was certificated in 2021, the National Electrical Safety Code (NESC) standards were updated in 2023. These updated standards apply to Project construction. The approved replacement substation design was not impacted by any NESC updates since the Council issued the Certificate.

Access to the site will be via two gated and paved access drives off Kaechele Place. One is the existing access to Old Town Substation, and the other is a new access located to the north. These two paved access drives will connect within the fenced substation to provide access to the substation equipment. Additionally, to the south of the fenced replacement substation, UI and Eversource will utilize an off-site approximately 14-foot wide by 250-foot long gravel access via an easement across City-owned property to the southern substation fence and the Eversource ROW. The easement has been approved by the City Council as of January 31, 2025. Anti-tracking pads will be utilized as necessary at construction access points to prevent off-site tracking of sediment.

The replacement substation will be surrounded by a 14-foot tall chain link fence with one foot of barbed wire on top, and privacy slats will be installed on all fence sections. A concrete retaining wall will be installed along the northwestern, northeastern and southeastern perimeter of the substation to accommodate the site topography and minimize grading. The retaining wall will be approximately 700 feet long and will vary in height from approximately 2 to 10 feet. The 14-foot fence will be installed on top of the retaining wall.

The fence/retaining wall layout was revised in the D&M Plan to minimize impacts to adjacent properties and drainage patterns and to better accommodate the final substation design. Specifically, the following fence/retaining wall revisions were included in the D&M Plan:

- i. The northern retaining wall was shifted approximately 10 feet to the south to provide additional spacing between the substation fence and abutting funeral home property to the north;
- ii. The eastern fence line was shifted approximately 15 feet to the west to increase the buffer to a wetland and intermittent stream; and

- iii. The western fence line will remain in approximately the same location, but the northern access gate will be shifted approximately 25 feet to the east, and the southern access gate will be shifted approximately 20 feet to the east to allow for additional parking on the access roads while unlocking and opening the gates; accommodate a leach field for the substation septic system; improve alignment for a mobile transformer delivery if necessary; and provide additional space for the two monopoles to replace Structure No. 857.5.

The revised fence design will comply with NESC fence requirements.

The existing Old Town Substation will be surrounded by a temporary anti-climb security fence of at least 8 feet in height with 2 feet of barbed wire on top. This temporary fence will be left in place until the existing Old Town Substation is decommissioned. An additional temporary fence will surround the active construction area and will comply with the Occupational Safety and Health Association standards.

The existing Old Town Substation lighting scheme consists of a combination of yard entry and task lighting for equipment. The standards have not changed. Thus, the replacement substation would employ the same lighting scheme as the existing Old Town Substation.

Cut and fill and tree clearing for the originally approved Project configuration versus the D&M Plan configuration are identified in the table below.

	Approved Project	D&M Plan	Change Description
Total cut and fill	9,300 cubic yards cut - 8,800 cubic yards of fill	5,700 cubic yards cut – 7,400 cubic yards of fill	The quantities initially provided for cut and fill were approximations based on a conceptual design. The final values changed as a result of the detailed engineering process, and these values were calculated by our detailed engineering contractor.
Total limits of Disturbance	Total limits of disturbance to be calculated and provided with the D&M Plan	Approximately 3.1 acres	Total limits of disturbance were developed through UI's design process.
Total Tree Removal (6" diameter or greater)	Approximately 70 trees.	Approximately 70 trees	No change.

Bedrock may be encountered at shallow depths at portions of the site. UI plans to utilize mechanical means to remove bedrock for the development of the replacement substation and its related foundations. Blasting may be required depending on the depth, extent and type of bedrock. If blasting is necessary, UI would retain a blasting contractor licensed by the Department of Emergency Services and Public Protection and prepare a blasting plan. The blasting plan would include, but not be limited to, work to be performed, schedule, safety measures, noise and vibration monitoring, pre and post blasting inspections, and traffic control measures.

The additional access via the City-owned property would require the removal of 10 trees; however, with the additional substation layout modifications identified above, there will be no net increase in tree clearing.

By letter dated December 1, 2023, the Department of Energy and Environmental Protection (DEEP) issued its final Natural Diversity Database determination that indicates that there are no known state-listed species proximate to the site.³ UI's consultations with the U.S. Fish and Wildlife Services (USFWS) indicate that the tricolored bat, a federally-listed Endangered Species, may occur at the site. Additionally, three to five trees at the site could potentially be roosting trees of the northern long-eared bat (NLEB), a federal-listed and state-listed Endangered Species. Accordingly, tree clearing for the Project will be performed outside of the June 1 through August 15 pup season of the NLEB and the tricolored bat to be protective of both species.

Landscaping will be planted along Kaechele Place and in between the access entrances and will include 7 inkberry holly (5 gallon size), 9 rosebay (2 gallon size) and 4 common junipers (5 gallon size). Landscaping contractors will perform seasonal landscaping maintenance.

The Project is not located within a Federal Emergency Management Agency 100-year or 500-year flood zone. Thus, no flood mitigation measures are required.

A cost comparison of the originally projected costs and the updated costs based on the D&M Plan for the development of the replacement substation is provided below.

	2020 Estimate (in \$M)	Current Estimate (in \$M)	Explanation
Engineering and Internal Resources	\$6.727	\$8.757	Current estimated engineering costs are greater than 2020 estimates due to site complexity, such as: space constraints and constructability, topographical and subsurface challenges, construction sequencing, etc.
Construction (includes contingency)	\$14.972	\$31.602	Site preparation activities such as rock removal and laydown logistics are significantly affecting construction costs over conceptual estimate. Also, the current cost estimate incorporates escalation costs associated with construction schedule shift into 2026-2028.
Material	\$12.545	\$11.549	
AFUDC	\$4.300	\$11.128	Reflects revised estimate due to the extension of the project schedule.
Miscellaneous	\$0.638	\$0.567	
TOTAL	\$39.182	\$63.603	

Decommissioning of the existing Old Town Substation is projected to cost approximately \$1.3M, which is included in the total project cost.

The original conceptual design Project cost had an accuracy band of -60% to +120% or between \$15.7M and \$86.2M. The total project cost of \$63.6M is approximately 62 percent greater than the original projected cost of \$39.2M. Thus, the total Project cost remains within the accuracy band of the original cost projection.

³ The eastern box turtle (EBT), a state-listed Species of Species Concern, was identified in a previous NDDDB Determination letter dated October 18, 2019, but it was removed in the 2023 determination. Notwithstanding, UI will implement EBT protection measures as a precaution and consider the use of netless E&S controls.

b) An erosion and sediment control plan consistent with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Controls*;

Under Section 6 and Appendix B of the D&M Plan, UI included its Erosion and Sedimentation Control Plan consistent with the applicable version of the *Connecticut Guidelines for Soil Erosion and Sediment Controls* (E&S Guidelines).

UI submitted an application for a stormwater permit and a project-specific Stormwater Pollution Control Plan to DEEP. The stormwater permit for this Project was issued by DEEP on November 4, 2024.

Construction of the substation would require approximately 637 square feet of temporary matting on the western portion of a wetland, located in the northern portion of the site. This temporary matting will also be installed over a portion of an intermittent stream. The flow of the intermittent stream will be maintained during construction.

c) A spill prevention, control and countermeasures plan;

UI included its Spill Prevention and Control Plan (SPCP) under Appendix B of the D&M Plan. The SPCP includes spill prevention protocols such as performing refueling in uplands to the extent feasible and ensuring that stored petroleum products have a minimum containment capacity of 110 percent. The SPCP includes contact information for DEEP.

d) Details of the transmission interconnections; and

One existing 105-foot tall double-circuit lattice structure (Eversource Structure 857) that currently supports the 1710 and 1714 Lines is directly located outside of the southeastern corner of the existing Old Town Substation. One existing 105-foot tall double-circuit lattice structure (Eversource Structure 857.5) that currently supports the 1222 and 1714 Lines⁴ is located within the existing Old Town Substation.

Five galvanized UI monopoles between 80 and 100 feet tall will be installed within the replacement substation as part of UI's D&M Plan to support the 115-kV line connections for the 1710 and 1222 Lines to the substation and to support the realignment of the 1714 Line through the substation yard.⁵

The two double-circuit lattice structures will be replaced with four single-circuit galvanized monopoles at approximately 105 feet tall each. Two of the monopoles will be located within the Eversource ROW to the east of the substation, and two will be located outside of the western substation fence, adjacent to Kaechele Place. Eversource will prepare a Partial D&M Plan per Condition 2 of the of the Council's D&O that will address the replacement of the lattice structures with monopoles. Eversource's Partial D&M Plan is expected to be filed with the Council by the end of June 2025.

Use of helicopters is not anticipated for the Project.

e) A decommissioning plan for the existing Old Town Substation.

UI included its decommissioning plan for the existing Old Town Substation under Section 5 of Volume I of the D&M Plan. The primary steps involved with the decommissioning process are noted below as follows:

⁴ The 1714 Line does not connect to the existing substation.

⁵ The 1714 Line will also bypass the replacement substation; however, the replacement substation is designed to facilitate a future interconnection to the 1714 Line, if required.

- i. De-energize the substation;
- ii. Decommission electrical components within the substation and remove oil from circuit breakers and dielectric fluid from transformers;
- iii. Remove metal clad switchgear, panels, racking, steel structures, conductors, high voltage equipment, transformers, capacitor bank, and circuit breakers;
- iv. Dismantle and remove above-ground structures at the substation, including, but not limited to, the control enclosure;
- v. Remove foundations generally to approximately six inches below grade; and
- vi. Resurface the property with crushed stone.

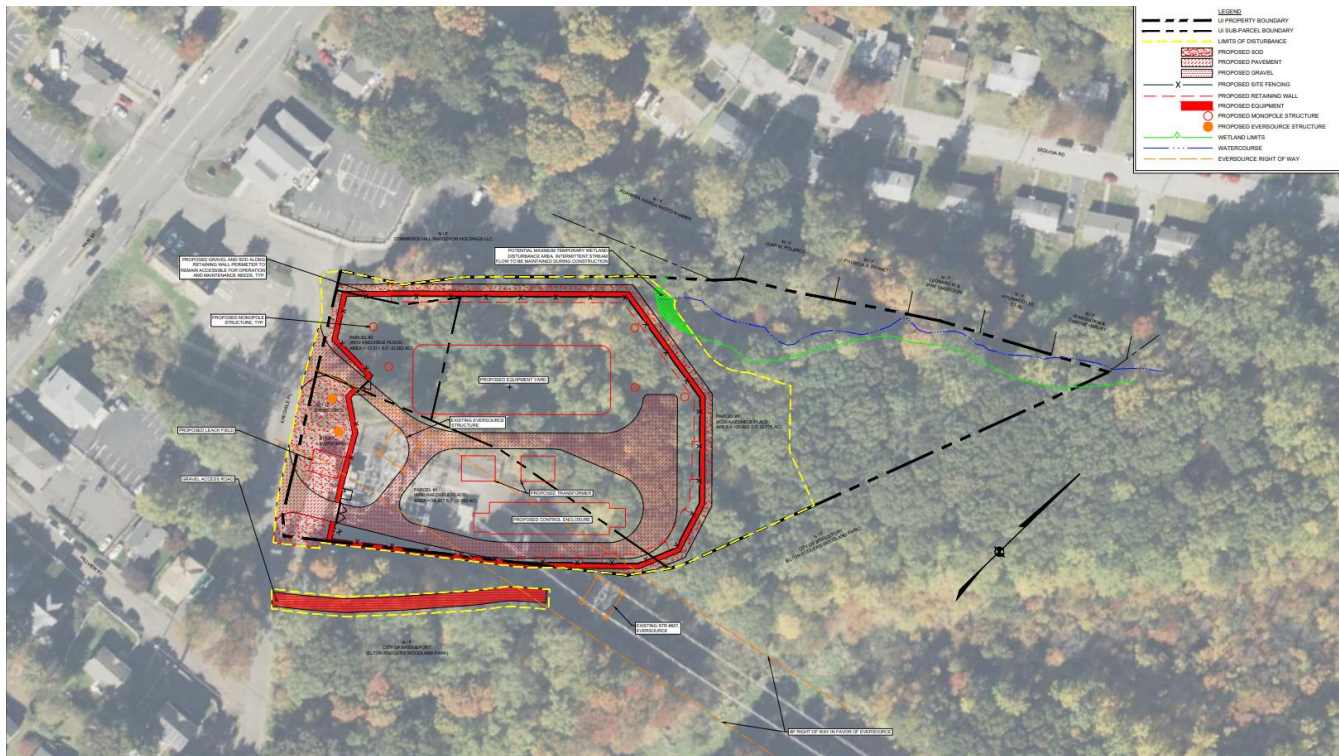
Conclusion

The D&M Plan complies with requirements of RCSA § 16-50j-60 to 16-50j-62 and is consistent with the Council's D&O dated February 3, 2021.

If approved, staff recommends the following conditions:

1. Submit the location(s) of the final staging area(s) and include provisions for erosion and sedimentation (E&S) controls, if necessary, at the staging area location(s) prior to commencement of construction;
2. Use of meshless or natural fiber erosion control blankets/netting to reduce the potential for wildlife entanglement; and
3. Submit a copy of the Blasting Plan, if necessary.

Aerial View of Existing and Replacement Substations



Replacement Substation Site Plan

