

PETITION TO THE
CONNECTICUT SITING COUNCIL FOR DECLARATORY RULING
OF NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

for

**MODIFICATIONS
TO THE
EAST SHORE SUBSTATION**

in the
City of New Haven, Connecticut

Submitted By:

THE UNITED ILLUMINATING COMPANY

August 21, 2017



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EXECUTIVE SUMMARY

The United Illuminating Company (“UI” or the “Company”) hereby petitions the Connecticut Siting Council (“Council”) for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required pursuant to Section 16-50g et seq. of the Connecticut General Statutes (“Conn. Gen. Stat.”) for UI’s proposed modifications to its existing East Shore Substation, located at 1 Waterfront Street in the City of New Haven (“Petition”). UI submits that no such Certificate is required because the proposed East Shore 345-kV Circuit Switcher Replacement Project (the “Project”) would not have a substantial adverse environmental effect.

As part of the continuing effort to maintain a reliable electric power system in southeastern Connecticut, transmission planning has identified the need to replace the existing 345-kilovolt (“kV”) Mark II Center-Break Style Circuit Switchers at East Shore Substation. These circuit switchers serve as the primary high-side disconnect devices for two autotransformers at the East Shore Substation on the existing 345-kV 387 Line that extends between Scovill Rock, Halvarsson, and East Shore substations. Failure of the existing circuit switchers to operate properly can result in arcing, flashover, and major damage to the circuit switcher and surrounding equipment, and also can jeopardize the safety of switching personnel and compromise the reliability of the transmission system. To resolve these issues, for the Project, UI proposes to:

- Replace the two existing 345-kV circuit switchers with two 345-kV Dead Tank Circuit Breakers.
- Install two new 345-kV disconnect switches.
- Replace six existing 345kV coupling capacitor voltage transformers (“CCVTs”).
- Install six ground switches.
- Install six 345-kV surge arresters.
- Replace the fence section on the east side of the substation yard.
- Upgrade the existing 345-kV 387 Line primary and secondary protective relaying schemes.
- Upgrade the existing 345-/115-kV transformer primary and secondary protective relaying schemes.

While the proposed Project will constitute “modifications” of the existing East Shore Substation, no

substantial adverse environmental impacts will result from such modifications, for the following reasons:

- All Project work will be located either within the existing East Shore Substation yard or on UI's property. The nearest residential area is located approximately 2,200 feet away from the substation.
- The East Shore Substation, which was initially developed in the early 1970s, is situated in an industrial area adjacent to New Haven Harbor. The site is zoned for heavy industrial use and is bordered principally by other heavy industrial uses.
- The proposed Project activities will be located entirely in upland areas; thus, there will be no adverse effects on wetlands, watercourses, floodplains, coastal resources, or vernal pools.
- The Project will not affect the visual character of the substation because the new equipment will be visually similar to the existing equipment.
- Electric and magnetic fields ("EMF") levels will remain in compliance with the Council's EMF best management practices.
- The potential increase to the ambient sound levels due to the equipment modifications at the substation will be compliant with the sound level limits established by both the City of New Haven and the State of Connecticut.

A. PROJECT BACKGROUND AND NEED

As part of a continuing effort to maintain a reliable electric power system in southwestern Connecticut, UI conducted a condition assessment review of the two 345-kV S&C Electric Company (“S&C”) Mark II circuit switchers at East Shore Substation, located in the City of New Haven. This review determined that the circuit switchers are obsolete and pose a reliability risk to the bulk electric system. In order to avoid the risk of failure on two critical 345- to 115-kV transformers at the East Shore Substation, UI proposes to replace the existing circuit switchers with 345-kV dead tank circuit breakers. The need for the proposed Project was identified by UI’s Transmission Planning Team.

The existing East Shore Substation occupies approximately 3.85 acres of a 19.26-acre parcel of UI-owned property located at 1 Waterfront Street in the City of New Haven. The UI-owned property, referred to herein as “the Site”, is located east of and adjacent to New Haven Harbor. Figure A-1 provides an aerial photograph of the Site, showing the boundaries of the existing fenced substation in relation to the larger UI property.

The 387-9G-1-3 and 387-9G-2-3 circuit switchers at East Shore Substation were commissioned and put into service, along with the 9G-8X & 9G-9X autotransformers, in the early 1970s. Due to the location of the substation near New Haven Harbor, for the past 40 years, the circuit switchers have operated in a highly corrosive environment, which is characterized by both salt spray and industrial pollutants.

In addition to these challenging environmental operating conditions, the Mark II circuit switcher used at East Shore Substation is now obsolete; the manufacturer, S&C, discontinued production of the switcher approximately 10 years ago. As a result, replacement parts for Mark II circuit switchers are extremely difficult to source. For example, a UI request for parts from S&C indicated that there are no available spares in stock for the model at East Shore Substation and that, in the event of a circuit switcher failure or defect, approximately 24 weeks would be required to provide the appropriate replacement parts.

Given the age of the existing Mark II circuit switchers and the long lead time required to obtain replacement parts in the event of an equipment failure, S&C recommended that the circuit switchers be upgraded to the Mark IV platform – a later version of this switcher.

The Mark II circuit switchers use a gas-pressure indicator, located at the terminal end of each sealed interrupting unit, to signal when gas pressure is low. There is no means of monitoring these gas pressures remotely prior to conducting a switching operation. A low/loss of gas pressure may result in improper interrupting action, which could lead to a catastrophic failure during switching of the unit. Further, the plastic indicator covers are cracked from exposure to weather and sun; as a result, it is very difficult to verify the gas content.

Although the units have reasonably good performance records, the 387-9G-2-3 circuit switcher developed some operational issues over the past decade. For example, the operator direct current (“DC”) breaker has tripped while the switcher was in the process of closing, leaving the blades about 95% closed. When this occurred, it could have jeopardized the safety of switching personnel and compromised the reliability of the transmission system. A restriction was placed on the circuit switcher for it to be operated only while the 387 Line is de-energized as partial blade closure will result in arcing, flashover, and major damage to the circuit switcher and surrounding equipment.

As a result of these factors, UI proposes to replace the circuit switchers and thereby expand and upgrade East Shore Substation.

Figure A-1: Existing East Shore Substation



Source: Google Maps East Shore Substation (2017)

B. TECHNICAL DESCRIPTION

The modifications to the East Shore Substation will be located entirely on UI's existing property at 1 Waterfront Street in the City of New Haven. The existing property is bounded to the north, south, and east by industrial / commercial uses that front on Waterfront Street and to the west by the New Haven Harbor shoreline. The East Shore Substation is connected to the transmission system via one 345-kV transmission line (the 387 Line) and three 115-kV transmission lines. The proposed modifications to the substation will be situated primarily on the eastern portion of the substation yard and would extend a maximum of 25 feet east, beyond the current substation fence location.

Within the developed substation, the topography is generally flat. The area of the proposed expansion slopes gently toward the substation to the southeast down to the New Haven Harbor. A variety of low growth vegetation and trees are located adjacent to and outside of the southern and eastern existing substation fence line. Some of this vegetation will be removed for the proposed fence expansion to the east and south, as required to accommodate the planned substation modifications. Figure A-2 illustrates the location of the proposed substation expansion.

Figure A-2: East Shore Substation: Proposed Fence Expansion



Source: All-Points Technology (Pictometry 2017)

B.1. EXISTING FACILITY

The 345-/115-kV East Shore Substation is an outdoor, air-insulated, breaker and a half station with seven bays, a generator bus, and a line bus. Two 345-kV circuit switchers are located on the east side of the yard and are connected to 345/115-kV autotransformers in Bays 40 and 70.

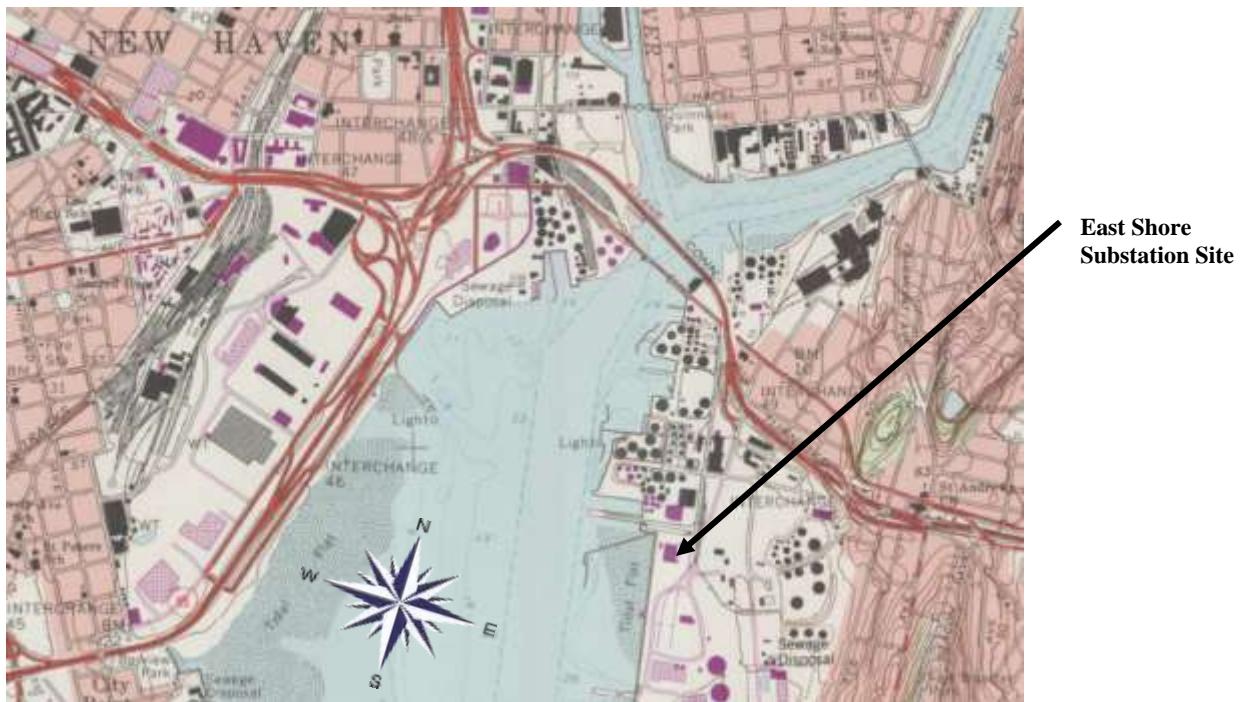
A single-story control house contains protection, control, and metering equipment for the 345-kV circuit switchers, 345-/115-kV autotransformers, and 345-kV transmission line. A separate single-story switchgear enclosure contains 13.8-kV distribution feeders and associated protection and control equipment. The distribution enclosure is located on the west side of the substation yard, along with the associated 115-/13.8-kV transformers.

Access to the Site is along the north side of the UI property. The remaining land owned by UI to the east of the substation includes an access driveway, parking lots, and small warehouse/office buildings.

Apart from the modifications proposed for this Project, as part of the ongoing substation security upgrade projects, UI has scheduled and budgeted work to replace the existing East Shore Substation fence. In conjunction with this fence replacement, UI proposes to expand the substation yard to the east in order to accommodate the Project modifications and to provide the required electrical clearance between the fence and the new energized substation equipment. Therefore, the costs associated with the expansion of the substation fence to the east, and associated appurtenances (such as camera hardware, mounts, etc...), will be included in the security upgrade project rather than this Project.

Figure B-1 depicts the substation site on a U.S. Geological Survey topographic map (New Haven Quadrangle). Figure B-2 provides an aerial-photograph illustrating the existing substation in relation to surrounding land uses.

Figure B-1: East Shore Substation: General Project Location



Source: Connecticut USGS Topographic Maps (June 27, 2017)

Figure B-2: Aerial Photograph of East Shore Substation Site and Vicinity



Source: Source: All-Points Technology (Pictometry 2017)

B.2. PROPOSED MODIFICATIONS

The proposed Project will consist of the following modifications to the existing 345-kV and 115-kV equipment at East Shore Substation:

- Replace two existing circuit switchers with dead tank circuit breakers.
- Two 345-kV electric operated disconnect switches with integral ground switches.
- Two 345-kV stand-alone ground switches.
- Six 345-kV CCVTs.
- Six 345-kV surge arrestors.
- Install 345-kV circuit breaker controls and breaker management relays (“BMR”).
- Install primary and secondary trenwa.
- Replace 345-kV 387 Line primary and secondary relays.
- Install full positron teleline isolation on frontier circuits.
- Relocate Line Relaying and Transformer Relaying from autotransformer bushing current transformers (“CTs”) to 345-kV circuit breaker bushing CTs.
- Replace 9G-8X and 9G-9X primary and secondary electromechanical differential relays with microprocessor relays.
- Replace all remaining control cable to autotransformers to replace aging control cable.
- Raise the 115-kV motor operator disconnects (“MOD”) above flood levels, as identified by the Federal Emergency Management Agency (“FEMA”) and compliant to UI standards.
- Any new 345-kV equipment cabinets will be installed above flood levels as identified by FEMA and compliant to UI standards.
- Add Dynamic Disturbance Recorder / Phasor Measurement Unit Recorder (“DDR/PMU”) current and voltage data acquisition unit to the Halvarsson terminal, and reprogram East Shore for DDR function (per the NERC PRC-002/ISO-NE OP-22 requirement).
- Upgrade/replace BEN 5000 with BEN 6000.
- Upgrade the DR2086 and DR2087 (transformer monitoring systems).

The proposed substation modifications will require an expansion of the existing substation fence line, for minor realignments to address existing infrastructure, by a maximum of 25 feet to the east, as

depicted on the Site Plan in Attachment A. This expansion, that will occur entirely on UI property, will require vegetation removal (clearing and grubbing). In total, UI will remove 24 trees less than 12 inches in diameter and four trees less than 24 inches in diameter. The locations of the areas of the Site where this vegetation will be removed are depicted on drawing 15247-401B in Attachment A, and illustrated in the photographs included in Figure B-3.

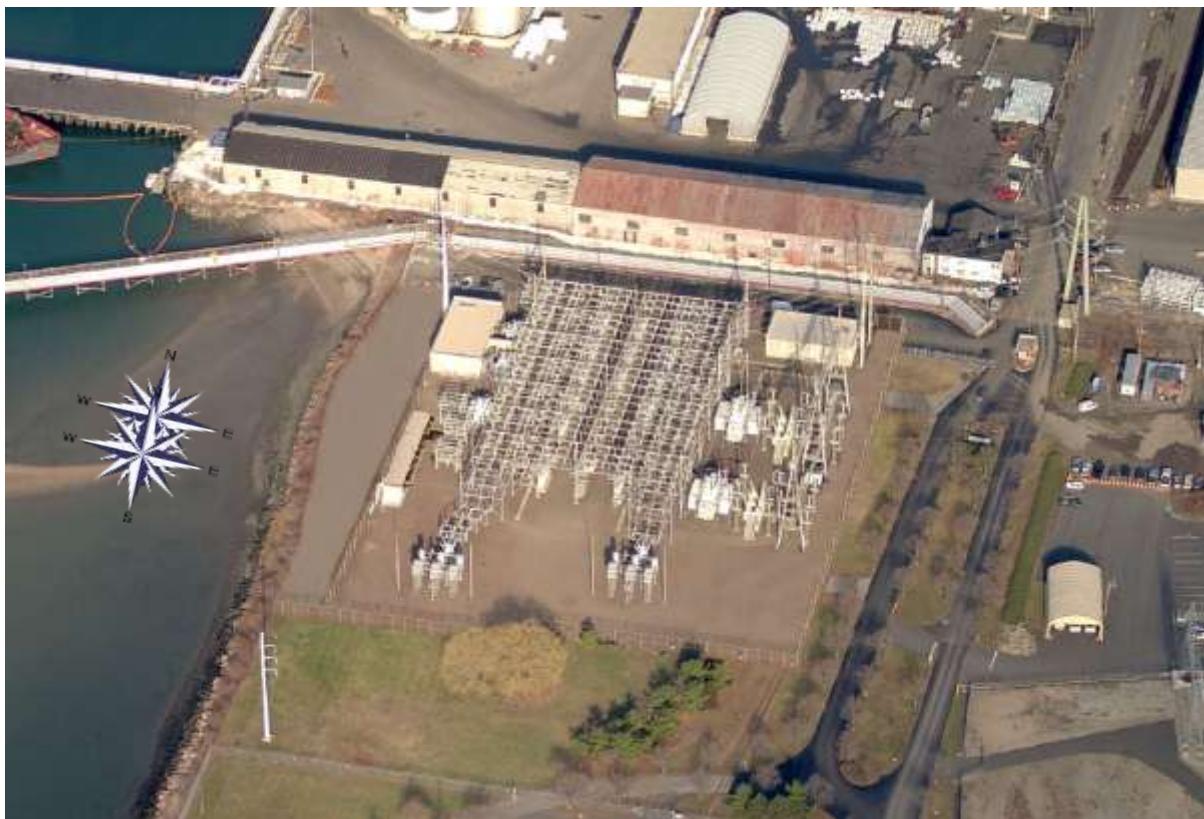
No existing major overhead or underground utilities will require removal or relocation as a result of the construction and operation of the Project.

Figure B-4 provides a visual rendering of the East Shore Substation, as proposed for expansion with the above-grade Project modifications.

Figure B-3: Photographs of Vegetation to be Removed for Substation Expansion (Near Eastern Fence)



Figure B-4: Visual Rendering of East Shore Substation with Proposed Project Modifications



Source: Visibility Analysis, East Shore Substation (June 2017)

C. CONSTRUCTION

C.1. CONSTRUCTION PROCEDURES

The Project will be constructed in accordance with UI engineering and construction specifications, established industry practices, and any conditions of the ruling on the Petition issued by the Council.

C.2. CONSTRUCTION SEQUENCE AND ACTIVITIES

UI will construct the Project in several stages, some overlapping in time. Certain work activities and sequences may vary, based on factors such as the final project design, specific conditions encountered during construction, the availability of transmission line outages, and regulatory approval timelines and requirements, as applicable.

Pre-Outage Construction Activities will include the following:

- Survey and stake the property lines.
 - Install erosion and sedimentation control measures, as appropriate, in conjunction with or prior to ground disturbance.
 - Establish field construction areas and prepare staging and lay-down areas.
 - Install new fence and gates on the east side of the substation yard.
 - Remove existing eastern fence and gates.
 - Install new cable trench.
 - Relocate cameras mounted on existing Eastern fence to the new eastern fence.
 - Install new DC panel, cable tray and cable riser within the high relay house.

Construction Activities will include the following:

- Mobilize field construction.
- Perform site development activities, including the removal of vegetation from the substation expansion area, removal of the existing substation fence, and cut and fill to bring the Project expansion area to proper grade.
- Excavate and install below grade and above grade grounding and conduits.
- Excavate and install slab and spread footing foundations.
- Remove existing and install new equipment steel.
- Remove and install high voltage equipment and associated bus, conductor, and fittings.

- Install all primary, secondary, and transformer relays, control panels, and control cable
- Commission the substation, as modified.
- Replace the existing asphalt drive.
- Complete site cleanup and add trap rock within the limits of the expanded substation security fence area.
- Remove temporary erosion and sedimentation control measures after site stabilization is achieved.
- The construction and operation of the Project will not affect the potential for coastal flooding. *See Attachment E.*

The construction of the Project is expected to require the use of equipment such as pickup trucks, bucket trucks, front loaders, reel trailers, bulldozers, cranes, forklifts, side booms, and dump trucks.

The Project modifications will involve a total disturbance of approximately .33 acres. The Connecticut Department of Energy and Environmental Protection's ("CT DEEP's") *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* applies to projects that have a total disturbed area of 1 or more acres of land. The East Shore Substation Project falls below this threshold, and therefore is exempt from this General Permit. However, in accordance with sound engineering practices, the design and construction of the Project will incorporate erosion and sediment control best management practices to prevent or minimize the potential for off-Site sedimentation. These best management practices may include, but are not limited to, the use of silt fence, hay bales, compost filter socks, stabilized construction entrance, concrete washout, inlet protection, temporary and permanent seeding, and aggregate surfacing. The Project contractor will be responsible for installing, maintaining, and inspecting erosion and sediment controls to verify that they are functioning properly and, if not, to repair or replace the controls.

Upon completion of construction, the contractor will perform the necessary restoration, remove and dispose of all erosion-control measures, and remove sediment and debris from areas where control measures were used. Any excess sediment or soil built up along the boundaries of the E&S controls will be managed in accordance with UI's Project-specific Soil & Groundwater Management Plan. Portions of the Site that are not otherwise graveled or paved will be stabilized with topsoil, seeded, and mulched.

C.3. CONSTRUCTION SCHEDULE

The installation of the new fence, cable trench, and cable risers are scheduled to be completed in the fall of 2017. Installation and testing of the new substation equipment are expected to occur over an eight-to-10-month period, commencing in the fall of 2018. An in-service date of September 2019 is anticipated.

In general, construction hours will be from 7:00 AM to 5:00 PM, Monday through Friday, although certain critical tasks will require extended work hours. Site preparation, including minor grading and installation of foundations, will take place during the initial three months of construction and will involve the use of excavators and construction vehicles. The installation and testing of substation equipment will take approximately five to six months.

D. ENVIRONMENTAL EFFECTS

Based on UI's analyses of the environmental characteristics of the Site in relation to the planned substation modifications, the Project will not result in any significant adverse environmental impacts. All construction activities will be localized on or in the vicinity of the Site, and limited principally to the construction phase(s). All work will be on upland portions of UI's property, which has long been dedicated to utility use. UI has performed the necessary environmental due diligence regarding the Project and is confident that the proposed modifications will result in no adverse impacts to the environment. The following summarizes the potential minor and generally short-term effects from the Project.

D.1 SURFACE AND STORMWATER MANAGEMENT

During construction, UI's contractor will implement the necessary erosion and sediment controls in order to protect abutting properties and New Haven Harbor. Erosion and sediment controls will be installed based on the location of Project construction activities, grade of the area and recommendations from the on-site Project team. During the Project, UI's Environmental Analyst along with UI's Construction Manager and civil contractor will perform inspections of the erosion and sediment controls to ensure that they are appropriately deployed and maintained to avoid or minimize the potential for off-Site erosion. Some erosion and sediment controls which UI may use during the Project but are not limited to are as follows: tracking pad(s), silt fence, hay bale corrals, diversionary swales, etc.

D.2 SOIL AND GROUNDWATER

Because the East Shore Substation is located in an industrial area, UI commissioned field investigations of soil and groundwater. Accordingly, on July 5 - 6, 2017 representatives from UI and its consultant, Fuss and O'Neill, assessed both the soil and groundwater conditions at the Site. Results were compared to the CT DEEP Remediation Standard Regulations and the requirements of the U.S. Environmental Protection Agency ("EPA") (40 CFR 261) to determine the appropriate management techniques for both excavated (excess) soils and the groundwater encountered during construction.

Based on the results of these analyses, soils excavated during construction will be compared to the appropriate regulatory criteria and managed in accordance with the techniques described in UI's Soil and Groundwater Management Plan. Disposal locations will be determined based on the laboratory results and applicable landfill or facility criterion.

If encountered during construction, groundwater will be containerized onsite and then be transported for disposal at one of two disposal facilities; Clean Harbors of Bristol, CT or Tradebe of Bridgeport, CT.

D.3 NATURAL DIVERSITY DATABASE & SPECIES HABITAT REVIEW

Based on a review of the updated June 2017 maps on CT DEEP's Natural Diversity Database, UI has submitted a Project Review Form. Once any correspondence is received from CT DEEP UI will address as necessary and forward the documentation onto the Council.

D.4. VEGETATION

The majority of the Site is presently either occupied by the existing East Shore Substation or consists of vacant land used by UI for materials storage and laydown. As a result, the Site encompasses minimal vegetated areas, apart from the transmission line ROWs and the vegetated areas that abut the eastern border of the existing substation fence. As noted in Section B.2 and illustrated in Figures B-3 and B-4, UI will remove a small amount of vegetation (including some trees) as part of the substation expansion. (A more detailed description of UI's proposed Project activities is included in Attachment A, drawing 15247-401B.) The removal of this small amount of vegetation will have a minor, but long-term effect.

D.5. LAND USES AND VISUAL RESOURCES

The proposed Project will be developed entirely on UI-owned property, which has been used, in part, for utility purposes for many years. The Project is not expected to cause any negative environmental affects along the eastern boundary of the substation and is consistent with all policies pertaining to Connecticut's Coastal Management Act. The UI property is zoned for industrial/commercial uses, including utility structures. Surrounding land uses consist primarily of industrial and commercial uses along Waterfront Street. The closest residence is approximately 2,250 feet east from the existing substation fence line.

To assess the potential visual effects of the Project, UI retained All-Points Technology Corporation ("All-Points") to perform a visual analysis of the proposed Project area. Attachment B includes All-Points' before (existing conditions) and after (with the proposed Project modifications) photographs and visual simulations of the East Shore Substation and vicinity.

Based on the results of the visual simulations, All-Points concluded that the proposed Project facilities will not adversely affect the overall visual character of the Site and surrounding areas. In general, the effects of the proposed Project will represent incremental modifications to views of the Site, which is located in an area zoned and used principally for heavy industrial uses.

D.6. NOISE AND AIR QUALITY

The construction of the Project will result in temporary and highly localized (to the Site and immediate vicinity) increases in fugitive dust and noise levels attendant with typical civil construction activities. However, construction-related noise will have a minimal impact because ambient sound levels in the vicinity of East Shore Substation are presently influenced by the various industrial activities in the surrounding areas, as well as by Interstate 95 (located north of the Site) and general activities in New Haven Harbor.

Further, UI anticipates that construction work will be performed principally during the daytime (typically between 7 AM to 5 PM, Monday to Saturday), when human sensitivity to noise is less than at night.

D.7. ELECTRIC AND MAGNETIC FIELDS

Electric and magnetic field (“EMF”) levels at the East Short Substation property boundary would not change as a result of the Project modifications as the capacity and configuration of the transmission line has not changed.

The transmission line would be the controlling factor for EMF at the property boundary, as the distance between the transmission line conductors are in a closer proximity to the property boundary than the project modifications. The difference is approximately 80ft for the transmission line to the property boundary and 625ft from the project modifications to the property boundary.

D.8. CULTURAL (ARCHAEOLOGICAL AND HISTORIC) RESOURCES

In July 2017, UI retained Heritage Consultants Inc. (“Heritage”) to review the proposed Project and to assess the potential for the proposed substation modifications to affect archeological or historic resources. In addition, to assess the Project Site, in July, 2017, Heritage submitted, on behalf of UI, a Project Review Form to the Connecticut State Historic Preservation Office (“SHPO”). Once UI receives the form back from SHPO, UI will forward a copy to the Council.

F. MUNICIPAL AND COMMUNITY OUTREACH

UI provided notice of the proposed East Shore Substation modifications to abutters of the Project Site. Attachment C includes a list of the abutters notified, along with a map identifying the abutters' properties.

G. CONCLUSION

Based on the foregoing, UI respectfully submits that the Project will not have a substantial adverse environmental effect and, therefore, does not require a Certificate of Environmental Compatibility and Public Need pursuant to Conn. Gen. Stat. § 16-50k(a).

The name, title, address and telephone number of the person to whom correspondence and communication in regard to this petition are to be addressed is:

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Very truly yours,

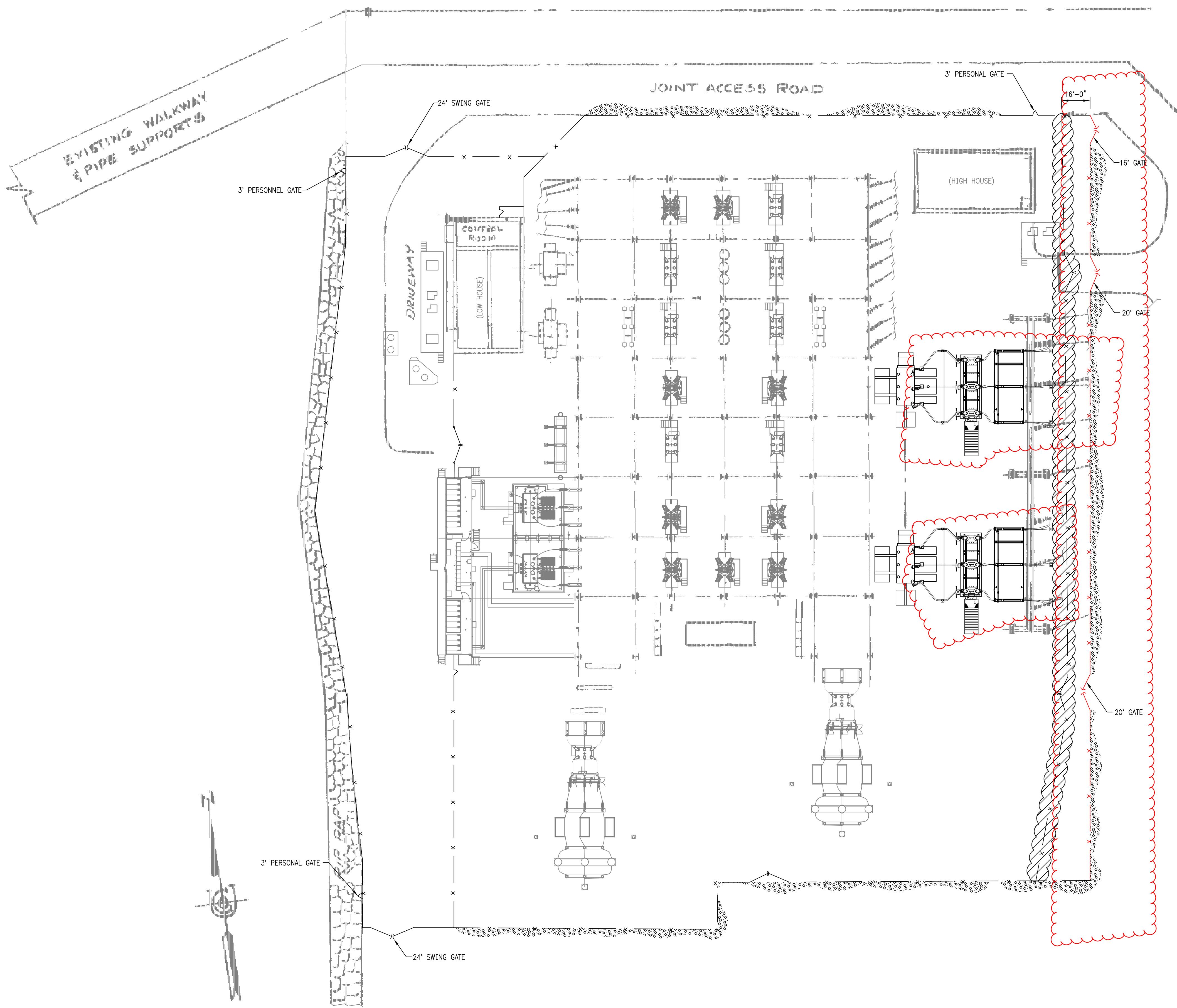
THE UNITED ILLUMINATING COMPANY

By: _____

James R. Morrissey

Attachment A

Site Plan



LEGEND:

- x — NEW 15' HIGH FENCE
- ██████ WHITE ROCK SURFACING

GENERAL NOTES:

1. WHITE ROCK SURFACING SHALL BE INSTALLED 6'-0" OUTSIDE SUBSTATION FENCE

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

BLACK & VEATCH Building a world of difference®			
DESIGNER EBG	DRAWN CRE		
CHECKED —	DATE —		
PROJECT # 194962			
A 05/24/2017 ISSUED FOR UI 30% REVIEW-PROJECT #194962-345KV CIRCUIT SWCHR REPLACEMENT	CRE — EBG MAV		
NO DATE	REVISION DRN CHKD DESN SUPR.		

NEW DRAWING

30' 20' 10' 0 30' 60'
1"=30'

1	04/2017 EAST SHORE 345KV CIRCUIT SWITCHER REPLACEMENT	CRE — EBG MAV	
No	Date Revision	By Chkd. Engr. Supv.	Drawn Date Scale: 1"=30'-0" Chkd. Design Engr. Design Supv.



The United Illuminating Company

FENCE PLAN

EAST SHORE SUBSTATION

CAD FILE NAME SEQUENCE No. DRAWING NUMBER
099514 15247-401B

Attachment B
All Points Visibility Analysis



VISIBILITY ANALYSIS

EAST SHORE SUBSTATION MODIFICATIONS

WATERFRONT STREET

NEW HAVEN, CONNECTICUT



Prepared for:

Prepared by:

**3 Saddlebrook Drive
Killingworth, CT 06419**

July 2017

VISIBILITY ASSESSMENT

The United Illuminating Company (“UIC”) proposed to modify its existing electrical Substation on Waterfront Street in New Haven, Connecticut (the “Site”). The proposed modifications include replacing two 345-kV circuit switchers with dead tank circuit breakers. Existing capacitor voltage transformers (“CCVTs”) will be replaced and moved to the east side of 345-kV A-frame structures along with new surge arrestors. UIC will extend the facility to the east in association with this work by installing a new fence approximately 14 feet away from the existing fence on that side of the Substation.

At the request of UIC, All-Points Technology Corporation, P.C. (“APT”) completed a visibility assessment of the proposed modifications to evaluate potential views from nearby locations.

Site Description and Setting

The Site is currently developed with the existing East Shore Substation and is located in a highly developed industrial area on the east shore of New Haven Harbor, south of Interstate 95. Surrounding land uses include oil storage facilities, Port of New Haven storage yards, warehouses and commercial office buildings.

Methodology Employed

On June 30, 2017, APT personnel conducted a field reconnaissance to photo-document existing conditions at the Substation and determine locations from where the proposed modifications would be visible. The geographic coordinates of the camera’s position at each photo location were logged via GPS. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter (“mm”) zoom lens. Three-dimensional computer models were developed for the project area and Substation components from digital elevation models and AutoCAD information. Photographic simulations were generated to portray scaled renderings of the proposed Substation modifications. Using field data, site plan information and image editing software, the Substation and associated appurtenances were scaled to the correct locations and heights, relative to the photo location and surrounding area. For presentation purposes in this report, all of the photographs were produced in an approximate 7-inch by 10.5-inch format.

Photographs and renderings are provided in the attachment to this report. The photo-simulations provide a representation of the proposed project under similar settings as those encountered during the field reconnaissance. Views of the project can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the days of the reconnaissance consisted of partly cloudy skies and the photo-simulations presented in this report provide an accurate portrayal of the Facility during comparable conditions.

Visibility Assessment Results

The results of this assessment indicate that the proposed Substation project will not adversely affect views from the surrounding area. Portions of the Substation can be seen today along relatively short stretches of Waterfront Street and Connecticut Avenue to the east. The proposed modifications will not substantially change existing views nor will they increase the current viewshed of the Substation by opening up any new areas of visibility.

Prepared by:

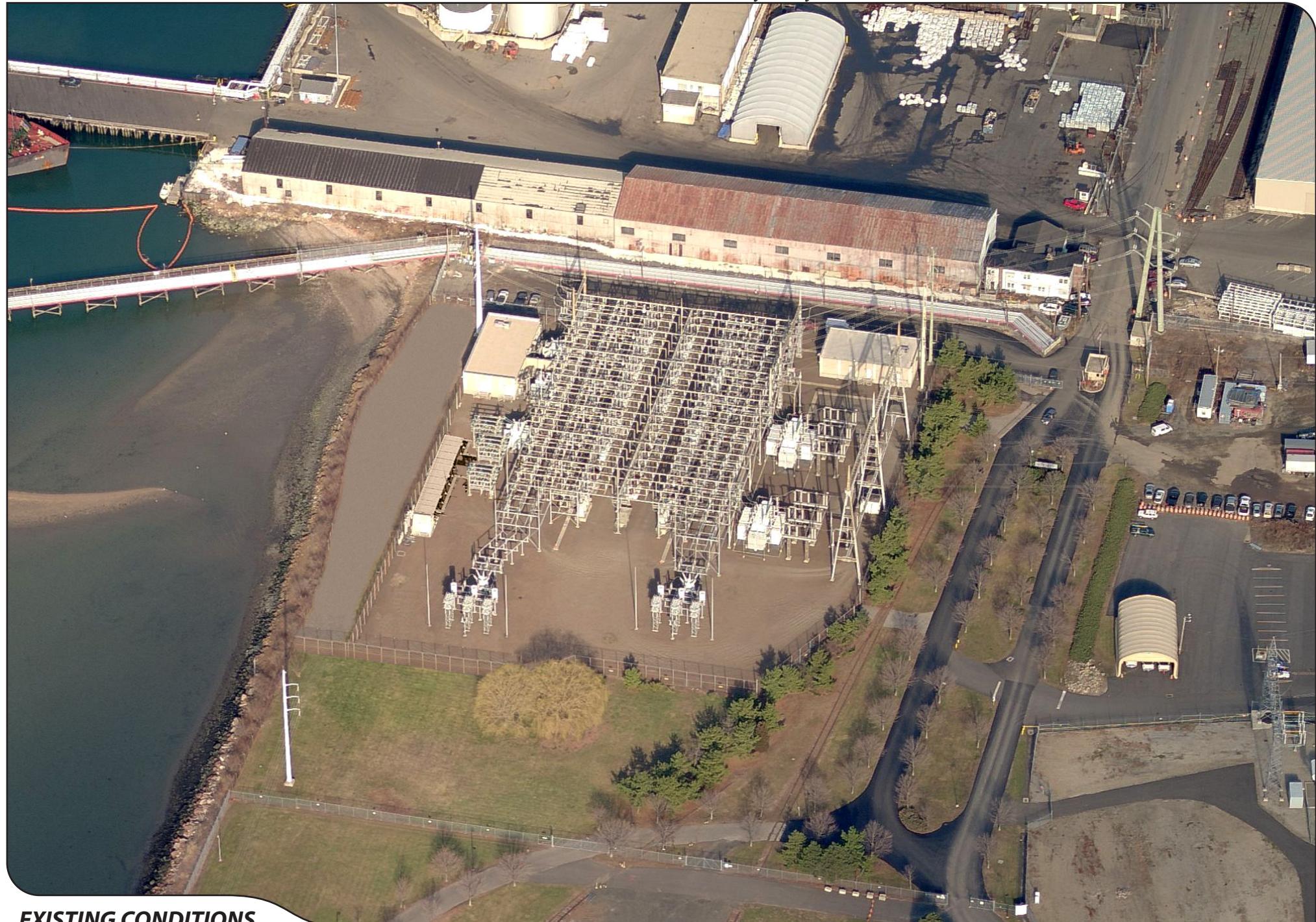
All-Points Technology Corporation, P.C.



Michael Libertine
Vice President, Director of Siting & Permitting

ATTACHMENT

Attachment B - All Points Visibility Analysis



EXISTING CONDITIONS

Photo Source - Pictometry

Attachment B - All Points Visibility Analysis



PROPOSED MODIFICATIONS

Attachment B - All Points Visibility Analysis



FINAL CONFIGURATION

Attachment B - All Points Visibility Analysis



PHOTO LOG

Legend

- Photo Location



1 inch = 400 feet
400 200 0 400
Feet



DOCUMENTATION

PROPOSED MODIFICATIONS NOT VISIBLE FROM THIS LOCATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	CONNECTICUT AVENUE	NORTHWEST	+/- 0.38 MILE



DOCUMENTATION

PROPOSED MODIFICATIONS NOT VISIBLE FROM THIS LOCATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	CONNECTICUT AVENUE	NORTHWEST	+/- 0.28 MILE



DOCUMENTATION

PHOTO

3

LOCATION

CONNECTICUT AVENUE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.24 MILE



DOCUMENTATION

PROPOSED MODIFICATIONS NOT VISIBLE FROM THIS LOCATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
4	CONNECTICUT AVENUE	NORTHWEST	+/- 0.22 MILE

**DOCUMENTATION**

PHOTO

5

LOCATION

CONNECTICUT AVENUE

ORIENTATION

WEST

DISTANCE TO SITE

+/- 0.20 MILE



DOCUMENTATION

PHOTO

6

LOCATION

CONNECTICUT AVENUE

ORIENTATION

WEST

DISTANCE TO SITE

+/- 0.19 MILE

**OVERLAY**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
6	CONNECTICUT AVENUE	WEST	+/- 0.19 MILE



DOCUMENTATION

POTENTIAL VISIBILITY FROM THIS LOCATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
7	CONNECTICUT AVENUE	SOUTHWEST	+/- 0.20 MILE



OVERLAY

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
7	CONNECTICUT AVENUE	SOUTHWEST	+/- 0.20 MILE



DOCUMENTATION

PHOTO

8

LOCATION

ALABAMA STREET

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.26 MILE

**DOCUMENTATION****POTENTIAL VISIBILITY FROM THIS LOCATION**

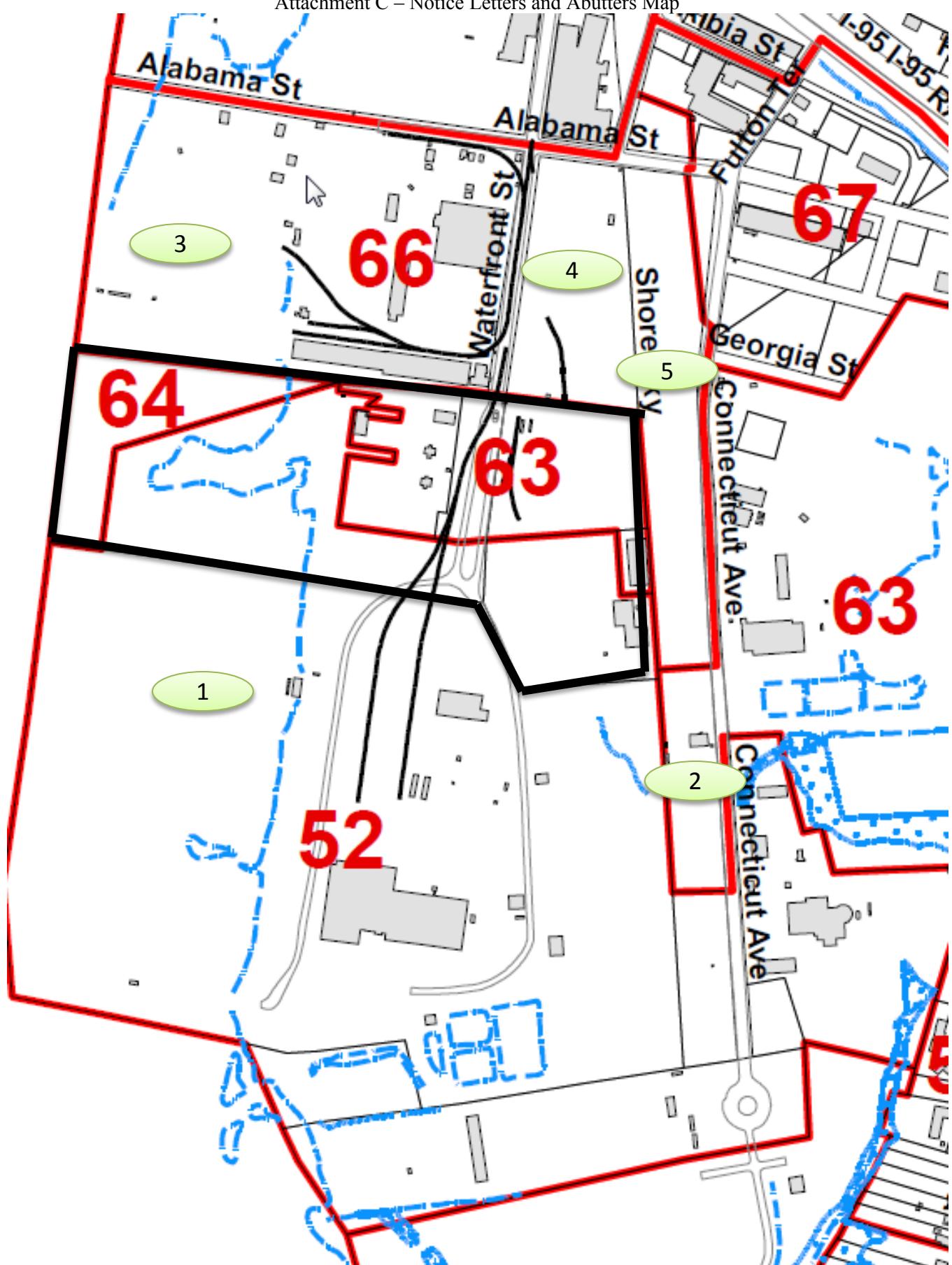
PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
9	WATERFRONT STREET	SOUTHWEST	+/- 0.26 MILE

**OVERLAY**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
9	WATERFRONT STREET	SOUTHWEST	+/- 0.26 MILE

Attachment C
Notice Letters and Abutters Map

Attachment C – Notice Letters and Abutters Map



East Short Substation Adjacent owners

<u>Owner ID</u>	<u>Address</u>	<u>Parcel ID</u>	<u>Owner Name</u>	<u>Mailing Address</u>
1	600 Connecticut Avenue	052-950-00200	PSEG Power Connecticut LLC	80 Park Plaza T-6B Newark, NJ 07101
2	481 East Shore Parkway	063-950-00106	Motiva Enterprises	PO Box 4369 Houston, TX 77210
3	30 Waterfront Street	066-951-00100	New Haven Terminal	100 Waterfront Street New Haven, CT 06512
4	31 Waterfront Street	066-951-00200	New Haven Terminal	100 Waterfront Street New Haven, CT 06512
5	Connecticut Avenue	066-951-00400	New Haven Port Authority	200 Orange Street, Room G3 New Haven, CT 06510



August 21, 2017

Dear Property Owner:

The purpose of this letter is to notify you that The United Illuminating Company (“UI”) is filing a petition with the Connecticut Siting Council (“Council”), proposing modifications to UI’s East Shore Substation. The project will include the replacement of the two existing 345-kV circuit switchers with two 345-kV Dead Tank Circuit Breakers, along with replacement of other antiquated or obsolete equipment, which will require extension of the fence line to the east.

The need for the proposed Project was identified by UI’s Transmission Planning group, as part of a continuing effort to maintain a reliable electric power system in southwestern Connecticut.

With this letter, UI is providing notice to you of its filing with the Council. Please contact the Council within 30 days with any comments or concerns at the following address:

Attorney Melanie Bachman
Acting Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Email: siting.council@ct.gov

Please do not hesitate to contact Samantha Marone at 203-499-3824 if you have any questions regarding the Petition or the proposed work. You may also feel free to view information on our Projects at <http://www.uinet.com/wps/portal/uinet/about/theplanahead>.

Sincerely,

A handwritten signature in black ink that appears to read "Richard J. Reed".

Richard J. Reed
VP Engineering & Project Excellence



August 21, 2017

The Honorable Toni Harp, Mayor
165 Church Street
New Haven, CT. 06510

Dear Mayor Harp:

The United Illuminating Company (“UI”) has filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) for a determination that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to UI’s East Street Substation Project. The project will include the replacement of the two existing 345-kV circuit switchers with two 345-kV Dead Tank Circuit Breakers, along with replacement of other antiquated or obsolete equipment, which will require extension of the fence line to the east.

A copy of the petition is enclosed for your information. Should you wish to comment or express concerns about the Project, please do so by sending the comments/concerns to:

Attorney Melanie Bachman
Acting Executive Director/Staff Attorney
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Email: siting.council@ct.gov

Please do not hesitate to also contact Samantha Marone at 203-499-3824 if you have any questions regarding the Petition or the proposed work. You may also feel free to view information on our Projects at theplanahead.uinet.com.

Sincerely,

A handwritten signature in black ink that appears to read "Richard J. Reed".

Richard J. Reed
VP Engineering & Project Excellence

Enclosures



August 21, 2017

Chairman Robert Stein
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Dear Chairman Stein:

Enclosed please find an original plus fifteen (15) copies of The United Illuminating Company's ("UI") petition to the Connecticut Siting Council requesting a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is necessary for the proposed modifications to UI's East Shore Substation, referred to as the proposed East Shore 345-kV Circuit Switcher Project (the "Project"). The Project will include the replacement of the existing 345-kilovolt ("kV") Mark II Center-Break Style Circuit Switchers at the facility, along with other antiquated and obsolete equipment which will require an extension of the fence line.

Pursuant to the Regulations of Connecticut State Agencies § 16-50j-40, all required parties, including the appropriate municipal and governmental agencies and officials and all abutting property owners, are being notified contemporaneously with this submittal.

Should you have any questions, please contact me at 203-499-2864.

A check in the amount of \$625 for the required filing fee is also attached.

Very truly yours,


A handwritten signature in black ink, appearing to read "J. Morrissey".

James R. Morrissey
Attorney
UIL Holdings Corporation
Counsel for The United Illuminating Company

Enclosures

cc: Amy Hicks, Analyst, The United Illuminating Company

Attachment D
Soil Boring Test Location Site Plan



Attachment E
FEMA Flood Insurance Rate Map (FIRM)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on this FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Connecticut State Plane Zone (FIPS zone 0600). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on FIRM panels produced for this coastal study revision was derived from United States Geological Survey 2008 High Resolution Orthophotography produced from 1 foot pixel cells from photography dated April 2008. The projection used in the preparation of this map was Connecticut State Plane Feet, FIPS Zone 0600. The horizontal datum used was North American Datum of 1983 (NAD 83).

The AE Zone category has been divided by a **Limit of Moderate Wave Action (LIMA)**. The LIMA represents the approximate landward limit of the 1.5 foot breaking wave. The effects of wave hazards between the VE Zone and the LIMA (or between the shoreline and the LIMA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and accurate stream channel configurations and floodplain delineations than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at 1-877-FEMA-MAP (1-877-36-2627) or visit the FEMA website at <http://www.fema.gov/business/mfip>.

Only coastal structures that are certified to provide protection from the 1 percent annual chance flood are shown on this panel. However, all structures taken into consideration for the purpose of coastal flood hazard analysis and mapping are present in the FIRM database in S_Gen_Struct.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A
No Base Flood Elevations determined.

ZONE AE
Base Flood Elevations determined.

ZONE AH
Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO
Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR
Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99
Area to be protected from 1% annual chance flood for a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V
Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE
Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X
Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
 0.2% Annual Chance Floodplain Boundary

Flood boundary
 Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

Limit of Moderate Wave Action

Boundary coincident with Zone Break

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

Culvert

Bridge

Geographic coordinates referred to the North American Datum of 1983 (NAD 83) Western Hemisphere

500-foot grid: Connecticut State Plane Feet Zone (FIPS Zone 0600), Lambert Conformal Conic projection

100-meter Universal Transverse Mercator grid values; zone 18N

Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

December 17, 2010

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

July 8, 2013 - to change zone designations, to update the effects of wave action, to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision and to modify Coastal Barrier Resources System units.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6820.

MAP SCALE 1" = 500' 0 FEET 1000 METERS

150 0 150 300

250 500

1000 2000

1500 0 1500 3000

2000 5000

10000 20000

15000 0 15000 30000

20000 50000

100000 200000

150000 0 150000 300000

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