MURTHA CULLINA
ATTORNEYS AT LAW

BRUCE L. MCDERMOTT
203.772.7787 DIRECT TELEPHONE
860.240.5723 DIRECT FACSIMILE
BMCDERMOTT@MURTHALAW.COM

August 23, 2018

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

Re: DOCKET NO. 483 - The United Illuminating Company Application for a Certificate of Environmental Compatibility and Public Need for the Pequonnock Substation Rebuild Project that Entails Construction, Maintenance, and Operation of a 115/13.8-kilovolt (kV) Gas Insulated Replacement Substation Facility Located 700 Feet Southwest of UI's Existing Pequonnock Substation on an Approximately 3.7 Acre Parcel Owned by PSEG Power Connecticut, LLC at 1 Kiefer Street, Bridgeport, Connecticut, and Related Transmission Structure and Interconnection Improvements

Dear Chairman Stein:

Enclosed please find the original and fifteen (15) copies of The United Illuminating Company's post-hearing brief in connection with the above-referenced docket.

Please feel free to contact me with any questions concerning this submittal at (203) 772-7787.

Very truly yours,

Bruce L. McDermott

Enclosures

Murtha Cullina LLP
265 Church Street
New Haven, CT 06510
T 203.772.7700
F 203.772.7723

The United Illuminating Company Application for a Certificate of Environmental Compatibility and Public Need for the Pequonnock Substation Rebuild Project that Entails Construction, Maintenance, and Operation of a 115/13.8-kilovolt (kV) Gas Insulated Replacement Substation Facility Located 700 Feet Southwest of UI's Existing Pequonnock Substation on an Approximately 3.7 Acre Parcel Owned by PSEG Power Connecticut, LLC at 1 Kiefer Street, Bridgeport, Connecticut, and Related Transmission Structure and Interconnection Improvements	)	Docket No. 483
	)	August 23, 2018

Post-Hearing Brief of The United Illuminating Company

I. Executive Summary

The United Illuminating Company ("UI" or the "Company") requests that the Connecticut Siting Council (the "Council") issue a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, maintenance and operation of a new 115/13.8 kilovolt ("115/13.8-kV") electric substation and associated facilities (the "Project") at 1 Kiefer Street in the City of Bridgeport ("City" or "Bridgeport") (the "Site"). The Project will replace the existing Pequonnock Substation, which is located at 1 Atlantic Street, Bridgeport (the "Existing Substation"). UI proposes to locate the Project roughly 700 feet southwest of the Existing Substation on an approximately 3.7-acre lot currently owned by PSEG Power Connecticut LLC ("PSEG"). The Site abuts a railroad corridor, electrical energy production facilities, commercial enterprises, and other industrial activities and will have no substantial adverse environmental impact

and is consistent with state policies concerning the natural environment and ecological balance, public health and safety, and scenic, historic, and recreational values.[1]

The Project is needed due to the Existing Substation's degraded condition and flood risk exposure resulting from its current elevation and proximity to Bridgeport Harbor and the Long Island Sound. The Existing Substation is at risk from coastal flooding and storm damage, such as the type that occurred during Tropical Storm Irene (2011), and Hurricane Sandy (2012). UI Exhibit 1 at 1-4. During Hurricane Sandy, UI preemptively de-energized the Existing Substation due to the risk of catastrophic failure, which would have resulted in long-term customer outages. Id. at 1-6. Aside from coastal flooding risks, UI has also determined (after an asset condition review) that a new substation project was necessary to address the Existing Substation's asset deficiencies. Id.

The Project components will be elevated three feet above the 14 foot base flood elevation ("BFE") for the area, as defined in 2013 by the Federal Emergency Management Agency ("FEMA"), which is substantially higher than the Existing Substation. UI Exhibit 1 at ES-4; Tr. 6/14/18 at 46; see also Figure 1. Additionally, the Project will result in the beneficial reuse of a portion of a former industrial site. UI Exhibit 1 at 9-9.

The Site represents the best opportunity to maintain the long-term viability and reliability of the bulk electric system while balancing environmental, aesthetic and cost considerations. The Site provides a number of benefits including the following: (i) the Site was previously developed for industrial purposes (minimizing the environmental impact); (ii) the Site is located immediately adjacent to transmission lines (minimizing

[1] The Connecticut Department of Energy and Environmental Protection ("DEEP") has noted in regard to UI's Site location that, "the location selected for the new substation is an appropriate site in an area of well-established industrial and utility land uses" and "it is the logical and reasonable site for the substation." DEEP Letter to the Council dated June 6, 2018 (the "June 6th DEEP Letter").

interconnection costs); and (iii) the Site is located in an area dominated by commercial, industrial and rail activities. UI has gone to great lengths to protect the surrounding community and environment in accordance with federal, state, and local requirements. For these reasons, the Project satisfies the criteria for the issuance of a Certificate.

II. Overview of the Project

A. Site Description

The Site is currently owned by PSEG, but the Site's ownership will be transferred to UI upon completion of negotiations with PSEG. Id. at 1-7. The Project will be located on a portion of a 3.7-acre parcel located at 1 Kiefer Street. Id. The Property is bounded to the east by a coal-fired electric generating facility known as the Bridgeport Harbor Generating Station owned by PSEG; to the south by a natural gas-fired combined cycle electric generating facility owned by Bridgeport Energy LLC; to the west by a mix of commercial and industrial uses; and to the north by Metro-North Railroad. Id. at 1-3.

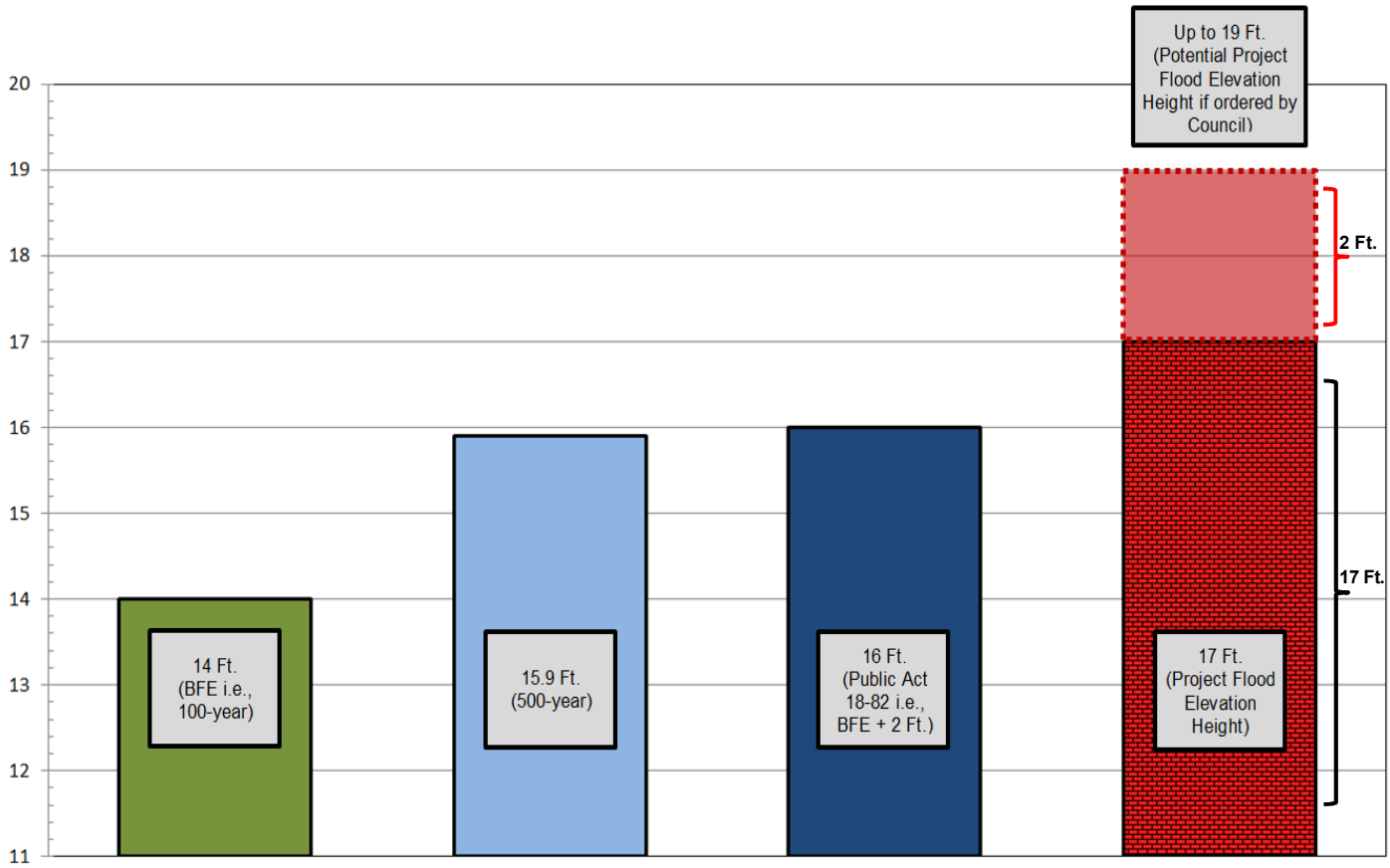
B. Need For the Project

The Project is necessary because the Existing Substation has been found to have significant asset condition deficiencies ranging from exposure to destructive coastal flooding events, to widespread and persistent site settling issues. Id. at ES-3, 1-6, 9-3. The Existing Substation also has asset condition deficiencies such as structural concerns, control room congestion and clearance concerns along with inadequate emergency mobile transformer access. Id. at 1-6. The Project will replace and upgrade the Existing Substation at a higher flood elevation on an adjacent parcel, thereby improving the

resilience and reliability of the bulk electric system serving Connecticut and New England. Id. at FR-1, ES-3, 1-6.

C. Flood Elevation and Public Act 18-82

Figure 1: Elevation in Feet (NAVD88)[2]



[2] A vertical datum is a surface of zero elevation to which heights of various points are referenced (i.e., a fixed reference point used for sea level rise analysis). The current vertical datum for the contiguous United States is the North American Vertical Datum of 1988 ("NAVD88"). https://www.ngs.noaa.gov/datums/vertical/. For the purposes of this Brief, all elevations are in reference to NAVD88.

Historically, the electric utility industry flood design elevation practice has been to construct electric substation facilities at one foot over the level of the 100-year flood (i.e., the "base flood") elevation. Tr. 7/24/18 at 17, 88; UI Exhibit 5 at CSC-33; see also Figure 1. At the initiation of design efforts for this Project, UI began by consulting with other electric utility industry peers about their flood protection standards and practices, which included site visits to a number of substations impacted by Hurricane Sandy and Tropical Storm Irene. All of the electric utilities consulted confirmed that their historic design flood elevation used for siting electric infrastructure in coastal flooding zones had been the 100-year plus one foot design standard, thereby matching UI's historic practices. However, after recent storm events, some of those electric utilities recently had considered and implemented a more cautious design elevation up to as high as the 100-year plus three feet level. Tr. 7/24/18 at 17. UI also consulted with ISO New England Inc. ("ISO-NE"), FEMA flood level guidance, and DEEP prior to implementing its flood elevation design practice. For example, ISO-NE's flood elevation guidance suggests the use of the American Society of Civil Engineers 24 standard. This standard applies to facilities like the Project and provides that the electric infrastructure should be designed and constructed on an elevation that is the greater of (i) two feet above the 100-year flood elevation or (ii) the 500-year flood elevation. Id. at 21.

UI also considered information provided in FEMA's guidance document entitled "Designing for Flood Levels Above the BFE After Hurricane Sandy". Id. at 19; see also UI Exhibit 5 at CSC-33. This document states that if no site specific sea level rise predictions exist, then developers should use a standard of one foot over the level of the 100-year flood elevation. Id.

At the July 24, 2018 Council hearing, UI responded to the Council's questions regarding Public Act 18-82 (Senate Bill No. 7), *An Act Concerning Climate Change Planning and Resiliency* (the "Act"), and specifically how the Act impacts the Project's flood elevation analysis. Tr. 7/24/18 at 23. The Act integrates sea level change projections (as determined by the University of Connecticut's Marine Sciences Division) into Connecticut's coastal and flood management laws. Under Conn. Gen. Stat. Section 25-68c(8), DEEP has the duty and the authority to identify measures for state owned coastal property and make such property less susceptible to flooding including "flood-proofing." The Act expands upon the definition of "flood-proofing" by adding language that such measures are to include "an additional two feet of freeboard[3] above base flood and any additional freeboard necessary to account for the most recent sea level change scenario." Conn. Gen. Stat. (Rev. to 2018), § 25-68b(6), as amended by Public Acts, June, 2018, No. 18-82 § 8(6).

The Project meets the additional flood-proofing measures recommended by the Act. The Site is at a base flood elevation level of 14 feet, and therefore, UI's decision to include three additional feet of freeboard (a height of 17 feet total) for the Project results in the Project being one foot above the two foot flood-proofing measure prescribed by the Act. Tr. 7/24/18 at 13, 25, 88; see also Figure 1. If the Council requires that UI increase the Project height above 17 feet, UI does not object to raising the Project an additional one to two feet. Tr. 7/24/18 at 20; see also Figure 1.

[3] Under Conn. Gen. Stat. Section 25-68b(7), "freeboard" means a safety factor, expressed in feet above a calculated flood level, that compensates for unknown factors contributing to flood heights greater than the calculated height, including, but not limited to, ice jams, debris accumulations, wave actions, obstructions of bridge openings and floodways, the effects of urbanization on the hydrology of a watershed, loss of flood storage due to development and sedimentation of a watercourse bed.

It should also be noted that on August 8, 2018, DEEP affirmed its position made in the June 6th DEEP Letter that "the proposed substation design, which elevates substation components three feet above the base flood elevation of 14', is consistent with, *and in fact exceeds, the design requirements of Section 9 of P.A. 18-82*." June 6th DEEP Letter (emphasis added); DEEP Letter to the Council dated August 8, 2018 (the "August 8th DEEP Letter"). In the August 8th DEEP Letter, DEEP stated that the federal standards of the FEMA National Flood Insurance Program (under 44 C.F.R. 60.3) "require the lowest floor of any structure, or any critical equipment or infrastructure to be sited above the base flood elevation, i.e., the 100-year storm elevation, which at the Pequonnock Substation site is now stipulated at 14.0' NAVD88." August 8th DEEP Letter. Additionally, regarding the Act and flood-proofing measures DEEP determined that:

> Public Act 18-82 . . . states that a minimum of two feet of freeboard above base flood elevation shall be assumed and provided for when floodproofing coastal structures to account for sea level change . . . . United Illuminating is proposing to elevate all functional components of the new substation to an elevation of 17.0' . . . [t]herefore . . . the design standard proposed by United Illuminating is consistent with, and in fact exceeds, the requirements of Public Act 18-82 and the planning recommendations of the CIRCA[4] study.

Id.

In addition to rectifying asset deficiencies, UI is undertaking the Project because the Existing Substation is at risk from coastal flooding damage. Building the Project farther inland and at a higher elevation will enhance the resiliency of the Connecticut

[4] In 2018, the Connecticut Institute for Resilience and Climate Adaptation ("CIRCA") published a study that includes a sea level rise projection scenario estimating a sea level rise of slightly over two feet by 2070, however, it should be noted that this study is still in draft form. Tr. 7/24/18 at 35–36, 39; see also Sea Level Rise in Connecticut, University of Connecticut - CIRCA (March 27, 2018).

electric grid from outages that result from coastal flooding damage. As is clear from the August 8th DEEP Letter and as is shown on Figure 1, the proposed elevation of the Project exceeds all relevant flood elevation benchmarks in that: (1) it is substantially higher than the flood elevation of the Existing Substation; (2) it is higher than the 100-year and 500-year flood elevations of the Site; and (3) it is higher (by one foot) than the Site's flood elevation level when considering the Act's flood-proofing measures. August 8th DEEP Letter; UI Exhibit 5 at CSC-8; UI Exhibit 1 at ES-4; Tr. 6/14/18 at 46; see also Figure 1. These comparisons do not include the fact that the Project's elevation could be raised an additional two feet if the Council determines such an increase is warranted and requires UI to make such a design modification. Tr. 7/24/18 at 20.

D. Alternative to Project Site

The most feasible alternative proposed site that UI has identified is located at 375 Main Street, Bridgeport (the "Alternative Site"). However, the Alternative Site presents no advantages over the Site as it would cause the project to be (1) more costly; (2) located at an elevation equal to or in some instances *below* the elevation of the Site; and (3) outside the existing fence line and closer to a residential neighborhood. UI Exhibit 5 at CSC-30; Tr. 7/24/18 at 59; UI Exhibit 1 at 9-10. Therefore, in comparison to the Site, the Alternative Site fails on all relevant criteria that the Council will consider in choosing an alternative site.

E. Cost Analysis

The Project is estimated to cost approximately $171,300,000. UI Exhibit 5 at CSC-30. Of that cost, it is estimated that $40,500,000 will be spent on electric distribution plant, and $130,800,000 will be spent on transmission plant. Id.

UI estimates that increasing the elevation of the Project by an additional foot would cost approximately an additional $1,200,000, and by an additional two feet would cost approximately an additional $1,700,000.[5] Tr. 7/24/18 at 81; UI Exhibit 5 at CSC-34. Beyond cost considerations, an increase of the Project Site elevation by more than two feet would be infeasible because such an increase would cause a number of engineering design and use difficulties. Tr. 7/24/18 at 81–82.

As stated above, the Alternative Site would be more costly than the Site. The Alternative Site is estimated to cost $195,000,000. UI Exhibit 5 at CSC-30. Additionally, a "Rebuild On Site" of the Existing Substation is even more costly than the Alternative Site, and is estimated to cost $269,600,000. Id.

F. The Project Satisfies the Criteria for Issuing a Certificate

Connecticut General Statutes § 16-50k(a) provides that no person shall "commence the construction or supplying of a facility, or commence any modification of a facility, that may, as determined by the [Council], have a substantial adverse environmental effect in the state without having first obtained a certificate of environmental compatibility and public need." As thoroughly explained within the record, this Project will not have a substantial adverse environmental impact, and further, it complies with state policies concerning the natural environment and ecological balance, public health and safety, and scenic, historic and recreational values. The Project will not have a substantial adverse impact on the visual characteristics of the area (UI Exhibit 1 at 5-5) and the Project's development and subsequent commercial operation will not result in a substantial adverse impact to the ecological balance of the Site. Id. at 5-3. The Project is

[5] It should be noted that this additional cost would likely be borne by Connecticut rate-payers and not regionally allocated. UI Exhibit 5 at CSC-34.

necessary for the safe and reliable transmission and distribution of electric power in Connecticut and New England. The Project therefore satisfies the criteria for the issuance of a Certificate.

UI conducted extensive municipal and community outreach and received the City's support for the Project. UI Exhibit 1 at Section 8. No individuals or community organizations expressed concern or opposition to the Project.

G. Noise

The Project will result in minimal noise impacts. The predicted substation sound levels will comply with the regulatory limits specified by the City and the state. The potential increase to the ambient sound level at the nearest noise sensitive receptors are expected to be less than perceptible due to the influence of traffic on local roads and Interstate 95 (I-95), train traffic, and the surrounding industrial and commercial uses. UI Exhibit 1 at 5-7.

During Project construction, temporary increases in sound levels on and in the vicinity of the Site will occur as a result of activities such as the operation of construction equipment and vehicles. Id. However, because the Project facilities are located within an industrial area, adjacent to the railroad corridor, and near I-95, the temporary increases in sound levels will be consistent with other uses in the vicinity. Id. at 5-7, 5-8.

H. Water Resources

The Site and the Project's transmission line interconnections are all located in upland areas. Id. at 4-2. As determined by a review of the Natural Resources Conservation Service soil survey mapping and on-site field investigations, no inland wetlands or watercourses (based on federal or state jurisdictional criteria) are located

on the Site. Id. Therefore, the development of the substation will not impact any wetland or other water resources.

I. Public Health, Safety, and Security

The Project and, in particular, the electric and magnetic fields ("EMF") that the Project generates, will have no impact on public health and safety. Id. at 6-5; Tr. 6/14/18 at 31. The configurations of the Project and the relocated 115-kV transmission line connections will be similar to those at the Existing Substation, and the resulting EMF levels also will be similar. UI Exhibit 1 at 6-5. The calculated magnetic field levels and measured electric levels that are in the vicinity of the substation will be a small fraction of the maximum allowable EMF levels recommended for the general public by international health-based standards. Id. at ES-7, 6-5.

The perimeter of the substation will be enclosed by a 14-foot-high fence topped with an additional foot of barbed wire to discourage unauthorized entry and/or vandalism to the substation. Id. at 3-5. Additional safety and security features employed by the Project will include the following: (1) the substation entrance will be fenced, gated, and locked; (2) appropriate signs will be posted alerting the general public to the presence of high-voltage facilities; and (3) low-level lighting will be installed for safety and security purposes. Id. at 3-12, 5-8; Tr. 6/14/18 at 25–26; Tr. 7/24/18 at 72–73. UI will also install security cameras and motion detectors to provide complete visibility within the interior of the substation and perimeter fence. UI Exhibit 1 at 3-12.

J. Scenic, Historic, and Recreational Values

The Project will have no impact on scenic and historic values. UI has determined that the archaeological and historic viewsheds of the Site would not be impacted by the

Project due to the area's long history of land modification and urban development. Id. at 4-12. The Connecticut State Historic Preservation Office concurred with the determination of UI's consultants stating that "no historic properties will be affected by the Project and no further review is required." Id. at 4-12, Appendix B.1.2.

With regard to recreational values, the Project will have no impact. Id. at 5-4. The Site historically has been used for industrial purposes. Id. at 4-6. No parks, designated recreational areas, or public open space abut or are adjacent to the Site, and aside from small portions of Seaside Park and the University of Bridgeport, no such areas are within 2,000 feet of the Site. Id. at 4-7, 4-10.

Construction and commercial operation of the substation will similarly not impact the scenic value of the Project area because the visual environment is currently dominated by heavy industrial uses and transportation facilities (e.g., the various power generating facilities, the Existing Substation, railroad corridor, and ferry terminal). Id. at 4-9. As a result of these land uses, the Project area has no designated scenic attributes and, therefore, the Project will not impact the scenic value of the Project area. Id.

K. Visual Assessments

Once constructed, the Project will remain consistent with the surrounding land uses. Id. at 4-9. Portions of the Project will be seen from abutting northern and western locations along Ferry Access Road and Singer Avenue, as well as from a short stretch of elevated I-95 farther to the northwest. Id. at 5-5. In addition to these locations, views of the new transmission structures will extend out up to ¼-mile west and north. Id. The presence of large, existing utility and industrial infrastructure will serve to obstruct the

new facilities from several surrounding locations. Id. Based on the results of UI's visual assessment, the Project will not adversely affect views in the surrounding community.

L. Wildlife and Vegetation

The development of the substation will have no significant adverse effects on vegetation or wildlife. No federal or state-listed threatened, endangered or special concern species are located in the upland Project area. Id. at 4-5, 4-6 and Appendix B.2. UI has worked with DEEP on a set of procedures to both screen for and, if necessary, modify construction practices to avoid any impacts to nesting peregrine falcons should they be identified nesting within 600-feet of the Site. DEEP Letter to the Council dated June 5, 2018.

The 3.7-acre Site is characterized by limited vegetation, except for small areas of lawn and landscaping along Ferry Access Road and a sparsely wooded area adjacent to the Metro-North Railroad corridor. UI Exhibit 1 at 4-5. The area proposed for the Project consists predominantly of a vacant, graveled lot that is presently used by PSEG for equipment and material laydown in support of the construction of its new Unit #5 generator. Id. Small patches of weeds are found along portions of the Site boundaries. Id. Vegetation on the northern portion of the Site (from the Metro-North Railroad corridor to the Site) consists of some trees (a mix of conifers and deciduous species) and brush, as well as lawn areas and non-native ornamental plantings along either side of Ferry Access Road. Id. Most other vegetation found on the Site is dominated by state-listed invasive species that are typical of disturbed sites. Id. Therefore, the Project will have no significant adverse effects on vegetation.

III. Conclusion

The effects associated with the relocation, construction, operation, and maintenance of a new 115/13.8-kV electric substation and associated facilities located at 1 Kiefer Street, Bridgeport, do not conflict with state policies concerning such effects and do not constitute sufficient cause to deny the issuance of a Certificate.

The Project will not result in a substantial impact to the natural environment; ecological integrity and balance; forests and parks; scenic, historic, and recreation values; air and water purity; fish and wildlife; or to public health and safety. The Project has also been designed to minimize any impacts from coastal flooding. The benefits of the Project far exceed any potential disruption to the property or surrounding area. Therefore, UI respectfully requests that the Council issue a Certificate as provided by Conn. Gen. Stat. § 16-50k.

Respectfully submitted,

The United Illuminating Company

Bruce L. McDermott
Samuel R. Volet
Murtha Cullina LLP
265 Church Street
New Haven, CT 06510
Phone: (203) 772-7787
E-mail: bmcdermott@murthalaw.com

CERTIFICATE OF SERVICE

I hereby certify that on this day a copy of the foregoing was sent to the service list in compliance with Regs. Conn. State Agencies Section 16-1-15 on this 23rd day of August, 2018.

Bruce L. McDermott