

**APPLICATION TO THE CONNECTICUT
SITING COUNCIL**

**FOR THE
CONSTRUCTION AND OPERATION OF A NEW 115/13.8
KILOVOLT DISTRIBUTION SUBSTATION
IN THE
TOWN OF STRATFORD, CONNECTICUT**

BY

THE UNITED ILLUMINATING COMPANY

DECEMBER 2015



A UIL HOLDINGS COMPANY

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**CONNECTICUT SITING COUNCIL APPLICATION GUIDE FOR AN ELECTRIC
SUBSTATION FACILITY April 2010**

This application guide is designed to assist applicants in filing for a Certificate of Environmental Compatibility and Public Need (Certificate) from the Connecticut Siting Council (Council) for the construction of an electric substation facility. Such facilities are defined in the Connecticut General Statutes § 16-50i (a) (4).

Applicants should consult Connecticut General Statutes §§ 16-50g through 16-50aa, § 16a-7c, and Sections 16-50j-1 through 16-50z-4 of the Regulations of Connecticut State Agencies to assure complete compliance with the requirements of those sections. Where appropriate, statutory and regulatory references are noted below.

I. PRE-APPLICATION PROCESS

A. Municipal Consultation (Conn. Gen. Stat. § 16-50l (e))

Refer to Bulk Filing

“...at least 60 days prior to the filing of any application with the Council, the applicant shall consult with the municipality in which the facility may be located and with any other municipality required to be served with a copy of the application under subdivision (1) of subsection (b) of this section [any adjoining municipality having a boundary not more than 2500 feet from such facility] concerning the proposed and alternative sites of the facility.....Such consultation with the municipality shall include, but not be limited to, good faith efforts to meet with the chief elected official of the municipality. At the time of the consultation, the applicant shall provide the chief elected official with any technical reports concerning the public need, the site selection process and the environmental effects of the proposed facility. The municipality may conduct public hearings and meetings as it deems necessary for it to advise the applicant of its recommendations concerning the proposed facility. Within 60 days of the initial consultation, the municipality shall issue its recommendations to the applicant. No later than 15 days after submitting the application to the Council, the applicant shall provide to the Council all materials provided to the municipality and a summary of the consultations with the municipality including all recommendations issued by the municipality.”

“...the applicant shall submit to the Connecticut Energy Advisory Board (CEAB) the same information that it provides to a municipality ... on the same day of the consultation with the municipality.”

B. APPLICATION TO MUNICIPAL AGENCIES (CONN. GEN. STAT. § 16-50X (D))

Refer Bulk Filing

Municipal zoning and inland wetland agencies may regulate and restrict the location of an electric substation facility. Such action must be taken within 30 days of application filed with the Council. Orders made by the municipal zoning and inland wetland agencies may be appealed within thirty days by any party or municipality required to be served with a copy of the application.

II. Form of Application (Regs. Conn. State Agencies § 16-50I-2)

All applications shall include the following components:

- A. The purpose for which the application is being made; **Refer to Section II.A**
- B. The statutory authority for such application; **Refer to Section II.B**
- C. The exact legal name of each person seeking the authorization or relief and the address or principal place of business of each such person. If any applicant is a corporation, trust association, or other organized group, it shall also give the state under the laws of which it was created or organized; **Refer to Section II.C**
- D. The name, title, address, and telephone number of the attorney or other person to whom correspondence or communications in regard to the application are to be addressed. Notice, orders, and other papers may be served upon the person so named, and such service shall be deemed to be service to the applicant; **Refer to Section II.D**
- E. Such information as may be required under the applicable provisions of Section 16-50I of the Connecticut General Statutes; **Refer to this Document and Bulk Filing**
- F. Such information as any department or agency of the state exercising environmental controls may, by regulation, require; and **Refer to this Document and Bulk Filing**
- G. Such information as the applicant may consider relevant. **Refer to this Document and Bulk Filing**

III. FILING REQUIREMENTS (REGS. CONN. STATE AGENCIES § 16-50J-12)

- A. Except as may be otherwise required, at the time applications are filed with the Council, there shall be furnished to the Council an original and 20 copies. All filings from the applicant, parties, or intervenors must consist of an original and 20 copies, labeled with the docket number, properly collated and paginated, and bound. An electronic version of all filings, as appropriate, should be provided.
We are providing one (1) original and 20 copies of this Application
- B. Bulk filing should be provided of not less than four (4) copies of the applicable town zoning and Inland wetlands regulations (including a map showing the location of inland wetlands if relevant) and plan of development and any other publicly available material in support of the application. These documents shall include effective dates, revision dates, or dates of adoption. If no such dates are available, the document shall include the date the document was obtained. **Refer to Appendix C and Bulk Filing**
- C. Applications filed for the purpose of any proceeding before the Council shall be printed or typewritten on paper cut or folded to letter size, 8 1/2 by 11 inches. Width of margins shall be not less than one inch. The impression shall be on only one side of the papers, unless printed, and shall be double spaced, except that quotations in excess of five typewritten lines shall be single spaced and indented. Mimeographed, multigraphed,

photoduplicated, or the like copies will be accepted as typewritten, provided all copies are clear and permanently legible. In accordance with the State Solid Waste Management Plan, all filings should be submitted on recyclable paper, primarily regular weight white office paper. Applicants should avoid using heavy stock paper, colored paper, and metal or plastic binders and separators.

Refer to this Document and Bulk Filing

- D. Every original shall be signed by the applicant or by one or more attorneys in their individual names on behalf of the applicant. All applications shall be filed at the office of the Council, Ten Franklin Square, New Britain, Connecticut 06051. Service of all documents and other papers filed as applications, briefs, and exhibits, but not limited to those categories, shall be by personal delivery or by first class mail to the Council and all parties and intervenors to the proceeding, unless service has been waived.

Refer to this Document and Bulk Filing

- E. Any exhibits, sworn written testimony, data, models, illustrations, and all other materials that the applicant deems necessary or desirable to support the granting of the application shall be attached to the application. In addition, annexed materials shall include such exhibits, sworn written testimony, and other data that any statute or regulations may require. The applicant may request that administrative notice be taken of and refer in the application to portions of other Council docket records and generic hearings or statements prepared by the Council as a result of generic hearings. All documents, including but not limited to maps, shall include effective dates, revision dates, or dates of adoption. If no such dates are available the document shall include the date the document was obtained. Maps must include a key table(s) and a matching source list/table, appropriately organized.

Refer to this Document and Bulk Filing

- F. Applicants may present material in a sequence and format most appropriate for the particular proposal. To allow timely Council review, include with the application a copy of this form with page references for each item required in Section VI below.

Included Herein

- G. Potential applicants are urged to carefully review Connecticut General Statutes §§ 16-50l(e), 16-50i and 16a-7c to determine whether the proposed project falls within the Connecticut Energy Advisory Board (CEAB) “request-for-proposal” process.

No Longer Applicable

IV. APPLICATION FILING FEES (CONN. GEN. STAT. § 16-50(A); CONN. GEN. STATE. §4-189J; REGS., CONN. STATE AGENCIES § 16-50V-1A)

Conn. Gen. Stat. § 16-50l(a) mandates a municipal participation fee of \$25,000 to be deposited in the account established in accordance with Conn. Gen. Stat. § 16-50bb.

The filing fee for an application is determined by the following schedule:

<u>Estimated Construction Cost</u>		<u>Fee</u>
Up to	\$5,000,000	0.05% or \$1,250.00, whichever is greater;
Above	\$5,000,000	0.1% or \$25,250.00, whichever is less.

All application fees shall be paid to the Council at the time an application is filed with the Council. Additional assessments may be made for expenses in excess of the filing fee. Fees in excess of the Council's actual costs will be refunded to the applicant.

Refer to Section XV - Filing Fees accompany CSC Application

V. MUNICIPAL PARTICIPATION ACCOUNT (CONN. GEN. STAT. § 16-50BB)

Conn. Gen. Stat. § 16-50bb requires that each application be accompanied by a payment in the amount of \$25,000 to be deposited in a Municipal Participation Account within the General Fund to defray expenses incurred by each municipality entitled to receive a copy the application under Conn. Gen. Stat. § 16-50l that chooses to participate as a party to the certification proceeding. Any moneys remaining at the end of the proceeding shall be refunded to the applicant.

Refer to Section XV (Application Filing Fees) and Application Cover Letter

VI. CONTENTS OF APPLICATION

An application for a Certificate for the construction of an electric substation or switchyard shall include the following (Conn. Gen. Stat. § 16-50l(A)(1)(A)):

- A. An executive summary. A description and the location of the proposed facility, including an artist's rendering and/or narrative describing its appearance.

Refer to Executive Summary (ES)

- B. A description of the technical specifications, including but not limited to:

1. Itemized estimated costs;
2. Comparative costs of alternatives considered;
3. Facility service life;
4. Bus design and specifications;
5. Overhead take-off design, appearance, and heights, if any;
6. Length of interconnections to transmission and distribution;
7. Initial and design voltages and capacities;
8. Rights-of-way and access-way acquisition;
9. Transmission connections and distribution feeders; and
10. Service area.

Refer to Sections V, IV and Appendix A

- C. A statement and full explanation of why the proposed facility is needed and how the facility would conform to a long-range plan for the expansion of the electric power grid serving the state and interconnected utility systems that would serve the public need for adequate, reliable, and economic service, including:

1. A description and documentation of the existing system and its limitations;
2. Justification for the proposed in-service date;

3. The estimated length of time the existing system is judged to be adequate with and without the proposed facility;
4. Identification of system alternatives with the advantages and disadvantages of each;
5. If applicable, identification of the facility in the forecast of loads and resources pursuant to Connecticut General Statutes § 16-50r; and

Refer to Sections IV and (1-5 above)

6. An impact assessment of any electromagnetic fields to be produced by the proposed transmission line, pursuant to Conn. Gen. Stat. § 16-50l(a)(1)(A).

Refer to Section IX

- D. A justification for overhead portions, if any, including life cycle cost studies comparing overhead alternatives with underground alternatives.

Refer to Section I and V

- E. A schedule of dates showing the proposed program of right of way or property acquisition, construction, completion and operation.

Refer to Section XI

- F. A description of the named sites, including:

Refer to Sections I,V, VII and Appendix A and E

1. The most recent U.S.G.S. topographic quadrangle map (scale 1 inch = 2,000 feet) marked to show the site of the facility and any significant changes within a one mile radius of the site.
2. A map (scale not less than 1 inch = 200 feet) of the lot or tract on which the facility is proposed to be located showing the acreage and dimensions of such site, the name and location of adjoining public roads or the nearest public road, and the names of abutting owners and the portions of their lands abutting the site and the proximity to the following:
 - a. Settled areas;
 - b. Schools and daycare centers;
 - c. Hospitals;
 - d. Group homes;
 - e. Forests and parks;
 - f. Recreational areas;
 - g. Seismic areas;
 - h. Scenic areas;
 - i. Historic areas;
 - j. Areas of geologic or archaeological interest;
 - k. Areas regulated under the Inland Wetlands and Watercourses Act;
 - l. Areas regulated under the Tidal Wetlands Act and Coastal Zone Management Act;
 - m. Public water supplies;
 - n. Hunting or wildlife management areas; and
 - o. Existing transmission lines within one mile of the site.

3. A site plan (scale not less than 1 inch = 40 feet) showing the proposed facility, set back radius, existing and proposed contour elevations, 100 year flood zones, waterways, wetlands, and all associated equipment and structures on the site.
4. Where relevant, a terrain profile showing the proposed facility and access road with existing and proposed grades; and
5. The most recent aerial photograph (scale not less than 1 inch = 1,000 feet) showing the proposed site, access roads, and all abutting properties.

Refer to Sections I and IV and Appendix A and E

- G. A justification for selection of the proposed site including a comparison with alternative sites which are environmentally, technically, and economically practicable. Include enough information for a complete comparison between the proposed site and any alternative site contemplated.

Refer to Section IV

- H. Safety and reliability information, including:

1. Provisions for emergency operations and shutdowns; and
2. Fire suppression technology.

Refer to Section IV

- I. A description of the effect that the proposed facility would have on the environment, ecology, and scenic, historic, and recreational values, including effects on:

Refer to Section VIII

1. Public health and safety;
2. Local, state, and federal land use plans;
3. Existing and future development;
4. Roads;
5. Wetlands;
6. Wildlife and vegetation, including rare and endangered species, and species of special concern, with documentation by the Department of Environmental Protection Natural Diversity Data Base;
7. Water supply areas;
8. Archaeological and historic resources, with documentation by the State Historic Preservation Officer; and
9. Other environmental concerns identified by the applicant, the Council, or any public agency, including but not limited to, where applicable:
 - Coastal Consistency Analysis (C.G.S. § 22a-90)
 - Connecticut Heritage Areas (C.G.S. § 16a-27)
 - Ridgeline Protection Zones (C.G.S. § 8-1aa)
 - Aquifer Protection Zones (C.G.S. § 22a-354b)
 - DOT Scenic Lands (C.G.S. § 13a-85a)
 - State Parks and Forests (C.G.S. § 23-5)
 - Agricultural Lands (C.G.S. § 22-26aa)
 - Wild and Scenic Rivers (C.G.S. § 25-199)
 - Protected Rivers (C.G.S. § 25-200)
 - Endangered, Threatened and Special Concern Species (C.G.S. § 26-303)

- J. Sight line graphs to the named sites from visually impacted areas such as residential developments, recreational areas, and historic sites;
Refer to Section VIII and Appendix E
- K. A statement explaining mitigation measures for the proposed facility including:
1. Description of proposed site clearing for access road and compound including type of vegetation scheduled for removal and quantity of trees greater than six inches diameter at breast height and involvement with wetlands;
 2. Construction techniques designed specifically to minimize adverse effects on natural areas and sensitive areas;
 3. Special routing or design features made specifically to avoid or minimize adverse effects on natural areas and sensitive areas;
 4. Establishment of vegetation proposed near residential, recreational, and scenic areas; and
 5. Methods for preservation of vegetation for wildlife habitat and screening.
Refer to Section VIII
- L. Justification that the location of the proposed facility would not pose an undue safety or health hazard to persons or property at the site of the proposed facility including:
1. Measurements of existing electric and magnetic fields (EMF) at site boundaries, and at boundaries of adjacent schools, daycare facilities, playgrounds, and hospitals, with extrapolated calculations of exposure levels during expected normal and peak normal line loading;
 2. Calculations of expected EMF levels at the above-listed locations that would occur during normal and peak normal operation of the facility; and
 3. A statement describing consistency with the Council's "Best Management Practices for Electric and Magnetic Fields," as amended; and
 4. A description of siting security measures for the proposed facility, consistent with the Council's "White Paper on the Security of Siting Energy Facilities," as amended.
Refer to Section VIII
- M. A schedule of the proposed program for right-of-way or property acquisition, construction, rehabilitation, testing, and operation.
Refer to Section XI
- N. A statement of estimated costs for site acquisition, construction, and equipment for a facility at the various proposed sites of the facility, including all candidates referred to in the application;
Refer to Section X
- O. Identification of each federal, state, regional, district, and municipal agency with which proposed route or site reviews have been undertaken or will be undertaken, including a copy of each written agency position on such route or site, and a schedule for obtaining approvals not yet received.
Refer to Section XII and Appendix B
- P. Bulk filing of the most recent conservation, inland wetland, zoning, and plan of development documents of the municipality, including a description of the zoning classification of the site and surrounding areas, and a narrative summary of the consistency of the project with the Town's regulations and plans.
Refer to section VIII and Bulk Filing

Please note that all documents, including but not limited to maps, must be dated. If the document date is unavailable, the date the document was obtained shall be provided. Maps must include a key table(s) and a matching source list/table, appropriately organized. **Included Herein**

VII. PROOF OF SERVICE (CONN. GEN. STAT. § 16-50/(B))

Refer to Section III.A

Each application shall be accompanied by proof of service of such application on:

- A. The chief elected official, the zoning commission, planning commission, the planning and zoning commissions, and the conservation and wetlands commissions of the site municipality and any adjoining municipality having a boundary not more than 2500 feet from the facility;
- B. The regional planning agency that encompasses the site municipality;
- C. The State Attorney General;
- D. Each member of the Legislature whose district is in or is within 2500 feet from the municipality where the facility is proposed;
- E. Any federal agency, department, commission or instrumentality which has jurisdiction over the proposed facility; and
- F. The state Departments of Environmental Protection, Public Health, Public Utility Control, Economic and Community Development, Agriculture and Transportation; the Council on Environmental Quality; and the Office of Policy and Management.
- G. Any such other state and municipal bodies as the Council may by regulation designate, including but not limited to, the State Historic Preservation Officer of the Commission on Culture and Tourism and the Department of Emergency Management and Homeland Security.

VIII. NOTICE TO COMMUNITY ORGANIZATIONS

The applicant shall use reasonable efforts to provide notice of the application on the following:

- A. Affected community groups including Chambers of Commerce, land trusts, environmental groups, trail organizations, historic preservation groups, advocacy groups for the protection of Long Island Sound and river protection organizations within the watershed affected by the proposed facility that have been identified by the municipality where the facility is proposed to be located or that have registered with the Council to be provided notice; and
- B. Any affected water company that would provide water to, or be within the watershed affected by, the proposed facility.

Refer to Section III.B

IX. PUBLIC NOTICE (CONN. GEN. STAT. § 16-50L(B))

Notice shall be made in accordance with all relevant sections of Conn. Gen. Stat. §16-50L(b). The Council's regulations should also be consulted when determining appropriate notice. Notice of the application shall be published at least twice prior to the filing of the application in a newspaper having general circulation in the site municipality or municipalities. The notice shall state the name of the applicant, the date of filing, and a summary of the application. The notice must be published in not less than ten point type.

The Council also advises each applicant that at least ten business days prior to the public hearing such applicant should erect and maintain in a legible condition a sign not less than six feet by four feet upon the site at the entrance to the property from a public road where such facility is to be located. The sign shall set forth the name of the applicant, the type of facility, the public hearing date, and contact information for the Council (Web site and phone number).

Example:

PUBLIC NOTICE:

CL&P has filed an application with the Connecticut Siting Council (Council) for construction of an electric substation facility on this site. The Council will hold a public hearing on March 27, 2010 at the Newington Town Hall Auditorium at 3 and 7 p.m. A copy of the application can be reviewed at the town hall or at the Council offices in New Britain, CT. For more information, please contact the Council by telephone at 860-827-2935, electronically at www.ct.gov/csc, or by mail at 10 Franklin Square, New Britain, Connecticut 06051.

Refer to Section III.C

X. NOTICE TO ABUTTING LANDOWNERS (CONN. GEN. STAT. § 16-50L (B))

Notice of the application shall be sent by certified or registered mail to each person appearing of record as an owner of property which abuts the primary or alternative sites on which the proposed facility would be located. Notice shall be sent at the same time that notice of the application is given to the general public.

The application shall be accompanied by an affidavit of notice to all abutting landowners and an affidavit of publication each time notice of application is published.

Refer to Section III.D

XI. PROCEDURES

- A. The Council will review and may reject the application within 30 days if it fails to comply with specific data or exhibit requirements or if the applicant fails to promptly correct deficiencies. (Regs., Conn. State Agencies §§ 16-50l-4 through 16-50l-5)
- B. The Council and any party or intervenor to the proceeding may file exhibits and interrogatories requesting supplemental or explanatory materials. All filings will be subject to cross-examination and the Council's discretion for admission into the record. (Conn. Gen. Stat. § 16-50o)
- C. A public hearing must be held at a location selected by the Council in the county in which the facility is proposed, with one session held after 6:30 p.m. for the convenience of the public. If the proposed facility is to be located in more than one county, the Council shall fix the location for at least one public hearing session in whichever county it deems appropriate, provided that the Council may hold hearing sessions in more than one county. The Council's record must remain open for 30 days after the close of the hearing. (Conn. Gen. Stat. §16-50n (f))
- D. The Council must render a decision within 180 days of receipt of an application, extendible by 180 days upon consent of applicant. (Conn. Gen. Stat. §16-50p)

PLEASE NOTE THAT THIS GUIDE IS NO SUBSTITUTION FOR OBTAINING ADVICE FROM LEGAL COUNSEL. IN THE EVENT OF ANY CONFLICT BETWEEN THIS GUIDE AND THE ACTUAL STATUTES AND REGULATIONS, THE STATUTES AND REGULATIONS SHALL GOVERN.

I. EXECUTIVE SUMMARY

I.A OVERVIEW OF THE PROPOSED PROJECT AND PROJECT NEED

The United Illuminating Company (“UI”) proposes to construct and operate a new open air-insulated 115/13.8 kilovolt (“kV”) distribution substation adjacent to UI’s existing Baird substation (“Baird”), located at 1770 Stratford Avenue in Stratford (“Stratford”), Connecticut, in order to address several compliance and aging infrastructure needs (“the Project”).

This is a replacement Project. UI, after careful review, has determined that it must address various issues at Baird. Although UI could temporarily resolve some of the issues through the replacement and expansion of existing facilities, the construction of an entirely new substation is the best option based upon constructability, reliability and cost considerations. Necessary improvements to the existing substation, if UI does not undertake this replacement include, but are not limited to: the replacement of the transmission path through the substation due to capacity limitations, the replacement of support structures due to integrity issues, additional major equipment to control voltage levels to customers, the replacement of existing components due to age, and the expansion of the control room to allow for needed upgrades.

The risks of not remediating the needs identified for this substation include;

- Unacceptable risks to the delivery of safe and reliable electric service to our customers.
- Inability to meet State voltage compliance requirements under certain loading scenarios.
- Long duration outages to address unexpected failure of equipment that has reached the end of its useful life.
- Inability to modify existing substation to accommodate identified upgrades to the control room and equipment.

Not addressing the needs could have significant negative impacts on reliability, customer satisfaction, and the economic vitality of the region.

Upon completion, the new Baird substation will occupy approximately 1.5 acres of the 3.5 acres between the 2 parcels. During construction there will be about 3 acres of disturbance between the substation construction and transmission monopole installation. The new Baird substation

will be positioned directly adjacent the existing Baird substation and have a slightly larger footprint than the existing substation.

UI will secure the perimeter of the open air-insulated substation with a 14 foot chain link fence equipped with opaque slats and topped with an additional one foot of barbed wire for enhanced physical security and visual screening. Various pieces of electrical equipment and structures (similar in scale to the existing substation) will be contained within this secure perimeter including a control enclosure, two switchgear enclosures, two 50 MVA transformers and associated 115 kV bus work and disconnect switches. The equipment within the substation yard will be protected with six 70-foot tall lightning masts. Additionally, there will be an 80 foot wood communication pole and low-level security lighting within the substation perimeter.

Electricity will be supplied to the new substation by two existing 115 kV transmission lines located in the Metro-North Railroad (“MNR”) corridor which abuts the site to the north. These transmission lines presently supply the existing Baird substation and will be redirected to the new Baird substation through the installation of eight transmission monopoles (the poles vary in height from 70-85 feet tall), three of the poles are part of a previously approved project and five poles will be installed as part of this project. The scope of this project did not explore the option of relocating any of the overhead transmission circuits along the MNR corridor underground but to only interconnect to the existing circuits. A visual simulation of the proposed substation and associated equipment is shown in Figure I-1.

Figure I-1: Visual Simulation of the Proposed Substation

Source: Visibility Analysis, Baird Substation

The construction, operation and maintenance of the proposed substation will result in generally minor impacts that will be localized to the Site and the immediate vicinity of the Site.

Overall, the Project will result in beneficial reuse of a portion of a former industrial site while addressing several aging infrastructure and compliance needs that threaten the reliability of electric service to the Stratford area. Currently, Baird helps to supply electricity to customers and businesses in the greater Bridgeport and Stratford areas and this Project is crucial to maintain that safe and reliable service.

Upon completion of the Project, the existing Baird substation will no longer be required and will be removed from service. UI is currently planning to keep the existing Baird substation intact and utilize it as a full scale substation training facility.

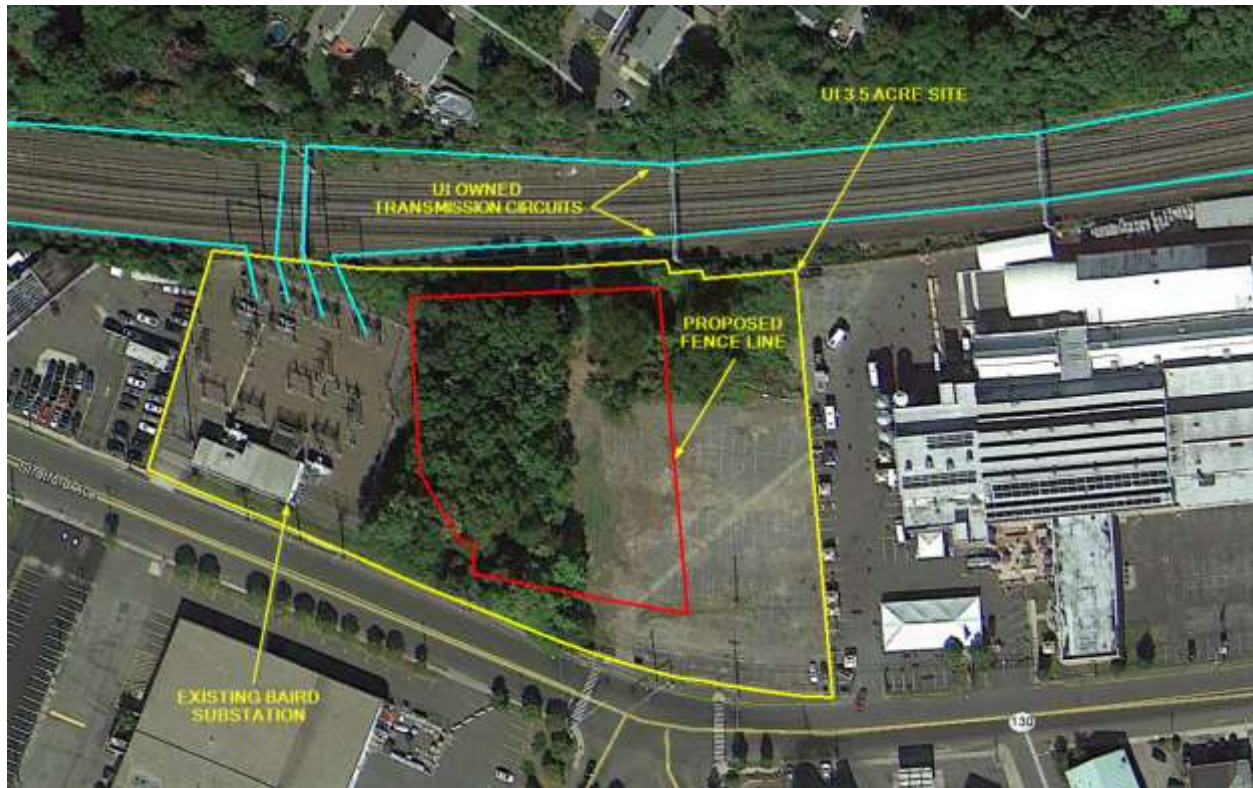
I.B LOCATION OF THE PROPOSED BAIRD SUBSTATION SITE

UI proposes to build the Baird substation on a portion of two adjoining UI-owned properties totaling 3.5 acres at 1770 Stratford Avenue in Stratford. The westernmost portion of these two combined parcels is presently occupied by the existing Baird substation. The Site is bounded to the west by the Savings Auto Center, to the south by Stratford Avenue (State Route 130), to the east by the Two Roads Brewing Company and to the north by the MNR corridor. Two UI-owned 115 kV transmission circuits occupy the MNR corridor, serving the existing Baird substation as well as nearby UI substations in Bridgeport and Stratford. (Refer to Figures I-2 and I-3.)

Figure I-2: Overview Map: Proposed Baird Substation Site



Source: Town of Stratford and the City of Bridgeport

Figure I-3: Aerial Photograph of UI Property and Substation Site at 1770 Stratford Avenue

Source: Google Earth, August 2015

The Project was originally planned for location solely on a 1.8-acre parcel of UI-owned property located at 1770 Stratford Avenue in Stratford, referred to as the Baird Annex. However, during discussions between UI, Stratford and the abutting property owners, several modifications were made to the original positioning of the substation. These modifications accommodate the proposed roundabout at the intersection of Stratford Avenue, Honeyspot Road and South Avenue. Additionally, an approximately 110-foot buffer area was created between the substation fence line and the Two Roads Brewing Company. The modifications better utilize an adjacent parcel to the west, also owned by UI. The western portion of this adjacent parcel is occupied by the existing Baird substation, while the eastern portion is comprised of a forested area with low-lying shrubs, a small wetland and visible rock outcroppings. The proposed substation Site comprises portions of both UI-owned parcels.

The Site was historically developed for industrial purposes by the U.S. Baird Corporation (“Baird Corporation”), which was established in the 1890s. UI has uncovered evidence that

Baird Corporation first built on the Site in 1920. Additional structures were added at other locations on the original Baird property, but no structures except for a small storage shed were constructed in the area UI plans to construct the Project. The parcel remained substantially wooded until the 1970s when it was partially paved and used for additional parking areas for the Baird Corporation.

The proposed substation Site consists of previously disturbed soils, with a small palustrine emergent nonpersistent wetland (approximately 654 square feet), located on the Site. Based on historic aerial photography, this area has consisted of primarily wooded and captured stormwater runoff from the railroad corridor to the north. Large deciduous trees and scrub shrub vegetation are the dominant forms of plant life surrounding the wetland.

I.C PROPOSED SUBSTATION FACILITIES

The proposed substation will bisect two existing UI-owned 115 kV transmission lines, which will be routed into the substation. Within the substation, power from the 115 kV transmission lines will be stepped down to 13.8 kV for delivery to the electric distribution system in the Stratford area. The proposed substation facilities will include 115 kV circuit breakers, disconnect switches, transformers to step down the voltage from 115 kV to 13.8 kV, metal switchgear enclosures and a control enclosure. The substation also will include space to accommodate a mobile transformer for emergency conditions.

As with all UI substations, the Baird substation will be designed to meet or exceed the State Building Code, which takes into account seismic loading, wind loading, and snow and ice loadings, among others.

To access the proposed substation, UI will construct a new driveway off of Stratford Avenue, west of the roundabout proposed by the Town of Stratford. The new access road will extend into the substation to provide direct ingress and egress to the substation equipment and enclosures, while avoiding impacts to the proposed roundabout.

I.D CONSTRUCTION SEQUENCING, SCHEDULE AND PROJECT COSTS

Among others, construction of the Baird substation will require the following activities:

- Install erosion and sedimentation control measures.
- Remove vegetation.
- Prepare the Site for development (cut, fill, grading).
- Install substation foundations, conduits, grounding grid and distribution facilities.
- Spread trap rock.
- Install power transformers.
- Install high-voltage circuit breakers.
- Set metal control enclosure and switchgear enclosures.
- Install steel structures, substation equipment and buswork.
- Install transmission line interconnections.
- Commission the substation.
- Install asphalt access drives.
- Complete Site restoration activities.
- Remove temporary erosion and sedimentation control measures after Site stabilization is achieved.

No blasting will be required for the construction of the substation. Grading will be performed as needed to level the substation Site for the electric transmission and distribution facilities.

The construction and testing of the substation facilities are expected to occur over a 12- to 18-month period, commencing in the fourth quarter of 2016 and ending with an in-service during the first quarter of 2018. In general, UI will limit construction to the hours between 7:00 AM to 5:00 PM, Monday through Friday, although certain critical tasks will require extended work hours. Site preparation, including grading and installation of foundations, will take place during the initial six months of construction and will involve the use of earth-moving equipment and construction vehicles. The installation and testing of the substation will take approximately nine months.

The estimated cost for the siting, design and construction of the Baird substation and supporting infrastructure is approximately \$35 million (in 2015 dollars).

I.E ENVIRONMENTAL IMPACT

The substation will represent a long-term change in the current (vacant) land use of the Project area, but will be consistent with the historical use of the Site for industrial/commercial purposes. The Project will modify on-site vegetation and wildlife habitats, as well as views of the Site. In addition, the development of the substation will require the unavoidable filling of a small isolated wetland (approximately 654 square feet) located on the western section of the undeveloped portion of the Site. UI will coordinate with the necessary federal and state regulatory authorities to obtain a permit for the filling of this wetland. In addition to obtaining the necessary permit(s) for the filling of this wetland, UI will provide Stratford with compensation consistent with the ACOE in-lieu fee schedule for the elimination of this wetland.

In August of 2015, UI performed a survey to determine whether or not a viable habitat for the Northern Long-Eared Bat (“NLEB”) was present on the proposed new Baird Substation property. Based on the results of the survey, factors such as the urbanized land use, diameter of trees and the observed smooth bark on the trees the new Baird Substation Project property, make this location an unlikely habitat for the NLEB.

In order to avoid, minimize and mitigate any secondary impacts from construction activities, UI will register under CT DEEP’s General Permit for Stormwater and Dewatering Wastewaters from Construction Activities. In addition to obtaining this registration from CT DEEP, UI will also employ a site-specific Stormwater Pollution Control Plan (“SWPCP”).

The construction, operation and maintenance of the proposed substation will result in minor impacts to the area within the construction boundaries of the Site. Taken as a whole, the Project will result in the beneficial reuse of a portion of a formerly used industrial facility.

I.F ELECTRIC AND MAGNETIC FIELDS

Electric and Magnetic Fields (“EMF”) surround anything that generates, transmits or uses electricity and are present in nearly every place we encounter daily, including our schools, workplaces and homes. Typical sources of EMF in these locations include appliances, nearby electric distribution and transmission lines, wiring in homes and businesses, and electric current flowing on conductive water pipes.

UI conducted the EMF assessment for this Project in accordance with the Connecticut Siting Council’s (“Council”) *Application Guide for an Electric Substation Facility*¹ and addresses requirements of the *EMF Best Management Practices (“BMP”) for the Construction of Electric Transmission Lines in Connecticut*.² In addition, the design of the substation has incorporated reasonable measures to minimize the EMF consistent with the Council’s recommendations for transmission lines.

The highest calculated magnetic field level at the perimeter of the proposed Baird substation is less than 6% of that recommended by international health-based standards (International Committee on Electromagnetic Safety and the International Commission on Non-Ionizing Radiation Protection) for the general public and is comparable to fields that may be found in homes near major appliances. At a distance of 170 feet from the substation perimeter (the distance of the nearest residence), this level reduces to 18.0 mG (0.9% of recommended guidelines). This level is comparable to fields that may be found in homes, particularly near appliances. The highest calculated magnetic fields found under the transmission lines entering the substation were determined to be 40% lower in post-Project conditions than in pre-Project conditions for the same load level. Additionally, the 100-foot shift of the substation to the west decreased the magnetic field levels calculated at the property line of the closest abutter to the east from approximately 41 mG to 14 mG, or less than 1% of the recommended guideline for the

¹ Connecticut Siting Council, *Application Guide for an Electric Substation Facility*, April 2010, available at http://www.ct.gov/csc/lib/csc/guides/guides2015/elec_sub_application_guide_410.pdf#55846.

² Connecticut Siting Council. *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut*, February 20, 2014, available at http://www.ct.gov/csc/lib/csc/emf_bmp/revisions_updates/754bmpfinal.pdf.

general public. The calculated magnetic fields produced by the proposed Baird substation, therefore, will be below recommended guidelines for exposure of the general public.

I.G ALTERNATIVE EVALUATION PROCESS

UI identified and evaluated various solutions to address aging infrastructure and compliance issues before determining that building a new substation at the Site is the best available option. For example, replacing and relocating the distribution or transmission portions of the substation while leaving the other in place were investigated; however, both options are either impractical or insufficient to address all of the identified needs and are not viable. Additionally, the “no action” alternative (i.e., not implementing any solution, including a new substation) was investigated; however, it was deemed not viable because it could have significant adverse impact on system reliability levels and, in turn, customer satisfaction and the economic vitality of the region. Based on this analysis, two feasible solutions were identified for further investigation: the “In-Kind” and “Full Replacement” options.

An In-Kind solution to replace all components identified for remedial action under the Baird Substation Needs Assessment³ was investigated. This alternative was based on the concept of upgrading the existing substation in a piecemeal fashion with minimal expansion of the existing footprint. However, this alternative was found to expose UI’s customers to significant reliability risks, due to the long equipment outages required to replace nearly the entire substation while the facility remained energized, operational and serving customers in the Stratford area. The construction sequencing and construction hazards are substantially greater in this alternative than for new construction. In addition, this alternative requires longer construction duration and is substantially more expensive than a full replacement of the facility on adjacent property.

This evaluation concluded that the construction of a new 115 kV/13.8 kV distribution substation in the Stratford area would best meet the long-term capacity, infrastructure and compliance needs of the area safely and reliably. A Site Selection Study was then conducted to evaluate the best

³ Baird Substation Assessment Report – Needs Assessment. April 2, 2012.

location for the proposed substation. The Baird Substation Site Selection Study (Appendix F)⁴ concluded that the Baird Annex Site is the best location for the proposed substation.

UI used an iterative process to identify feasible alternative sites for the development of the new substation. Potential locations were first identified and screened in accordance with UI's standard objectives for substation siting. UI's screening included consideration of the following guiding principles:

- Minimize the need to acquire residences and parcels with the potential for viable commercial/industrial use to accommodate substation development.
- Maintain consistency/compatibility with existing land uses and land use plans to the extent possible.
- Minimize adverse effects on sensitive environmental resources and the social environment.
- Maintain public health and safety.
- Demonstrate cost-effectiveness, while adhering to good engineering and sound environmental planning practices.
- Present the public with a clear and well-documented methodology for the identification of the proposed and alternative sites.

Other key considerations in the site evaluation process included the locations of potential sites in relation to the existing substation and to the 115 kV transmission lines that traverse east to west along the Metro-North Railroad corridor and feed nearby UI substations in Bridgeport and Stratford. Proximity to these two existing distribution and transmission assets reduces the likelihood of conflicts with physical encumbrances, presence of other utilities and the cost associated with the installation of new infrastructure.

UI proposes to develop the new substation at the Baird Annex Site. However, as part of the alternatives analysis process that led to the selection of this preferred Site, UI also identified

⁴ The Baird Annex Site was evaluated as a standalone site using criteria outlined in UI's *Transmission and Distribution Guideline for Substation Site Selection*. The incorporation of the adjacent UI-owned parcel to the west (on which the existing Baird substation resides) to accommodate the shift of the substation to the west occurred after the completion of the Baird Substation Site Selection Study.

other potential viable sites, but found them either impractical or not viable. Thus UI is not proposing an alternative location with this Application.

Of the twelve sites UI examined, it initially selected three sites for further examination. These three sites include the preferred Baird location, as well as sites on West Broad and Bruce Streets.

Although the West Broad Street location would make use of an unoccupied industrial site east of the existing Baird substation, UI does not prefer this site for the new substation based on anticipated remediation activities, distance to the existing Baird substation, a lack of existing distribution infrastructure in the area, the presence of existing foundations and buildings, and the additional required costs. For example, due to the distance from the existing Baird substation, UI would need to construct new underground distribution infrastructure over a distance of approximately one mile with two crossings under Interstate 95. In addition, the site is noted as a brownfield and would likely require significantly more remediation of contaminated soils during construction. While portions of the previous manufacturing facility have been demolished, a large building remains and is abandoned. Overall, the development of the new substation at the West Broad Street site would be approximately 54% more costly than the development of the substation at the preferred Baird Annex Site.

Additionally, UI does not consider the third site, Bruce Street, as viable as it does not contain sufficient space to house a new substation. Specifically, any substation design that meets UI's current needs would violate clearance requirements between the energized equipment and the fence line. Finally, the Bruce Street site could not accommodate a mobile transformer, limiting UI's ability to ensure safe and reliable service.

II. FORM OF THE APPLICATION

II.A PURPOSE OF THE APPLICATION

In this Application, UI is requesting that the Connecticut Siting Council (“Council”) issue a Certificate of Environmental Compatibility and Public Need (“Certificate”) for the construction and operation of a new 115/13.8 kV substation on a portion of two adjoining UI-owned properties at 1770 Stratford Avenue in Stratford, Fairfield County. The proposed Project will occupy approximately 1.5 acres within the 3.5 acre combined parcel (Appendix A includes a map of the Project location and Substation Site Plans). The substation is needed to reliably serve the customers in the Stratford and Bridgeport areas (“service area”).

II.B STATUTORY AUTHORITY

UI is making this Application pursuant to the Public Utility Environmental Standards Act, Section 16-50g *et seq.* of the Connecticut General Statutes (“Conn. Gen. Stat.”) and Section 16-50j-1 *et seq.* of the Regulations of Connecticut State Agencies (“RCSA”). This Application follows the Siting Council’s *Application Guide for an Electric Substation Facility* (April 2010).

II.C LEGAL NAME AND ADDRESS OF APPLICANT

UI is a specially chartered Connecticut corporation. UI’s name and permanent place of business is:

The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477

Mailing Address: 157 Church Street
PO Box 1564
New Haven, CT 06506

II.D APPLICANT'S CONTACTS AND FORMAL SIGNATURES

Correspondence and other communications with regard to the Baird Substation Project are to be addressed to, and notices, orders, and other papers may be served upon the following individuals:

Applicant Contacts: **James R. Morrissey**

Attorney

UIL Holdings Corporation

157 Church Street

New Haven, CT 06506

Contact numbers:

203.499.2864 (Telephone)

203.499.3664 (FAX)

james.morrissey@uinet.com

Richard J. Reed

Vice President – Engineering & Project Excellence

The United Illuminating Company

180 Marsh Hill Road

Orange, CT 06477

203.926.4500 (Telephone)

203.926.4664 (FAX)

rich.reed@uinet.com

Samantha Marone

The United Illuminating Company

Public Outreach and Permitting

180 Marsh Hill Road

Orange, CT 06477

203.499.3824 (Telephone)

203.926.4664 (FAX)

samantha.marone@uinet.com

III. FORMAL REQUIREMENTS

III.A PROOF OF SERVICE

In accordance with Conn. Gen. Stat. § 16-50l(b), and RCSA § 16-50j-12(d), on or before December 21, 2015, UI served this Application for a Certificate of Environmental Compatibility and Public Need to build an electric substation in Stratford, Connecticut, via hand-delivery or FedEx, on the following:

OFFICIAL/AGENCY	NAME/ADDRESS
Stratford Chief Elected Official	The Honorable John A. Harkins Mayor, Town of Stratford 2725 Main Street Stratford CT 06615
Stratford Building Official, Zoning Enforcement Officer	Gary Lorentson, Planning & Zoning Administrator Planning & Zoning Room 113&118 Stratford Town Hall 2725 Main Street Stratford, CT 06615
Stratford Inland Wetlands Department	Town of Stratford Inland Wetlands Department 2725 Main St. Stratford, CT 06615
Stratford Conservation Department	Town of Stratford Conservation Department 2725 Main St. Stratford, CT 06615
Stratford Town Counsel	Tim Bishop, Esq. 2725 Main Street Stratford, CT 06615
Stratford State Senator	The Honorable Kevin Kelly Senator 21st District Legislative Office Building, Room 3400 Hartford, CT 06106
Stratford State Senator	The Honorable Edwin A. Gomes Senator 23rd District Legislative Office Building, Room 3200 Hartford, CT 06106-1591
Stratford State Representative	The Honorable Laura Hoydick 120th Assembly District Connecticut House Republican Office Legislative Office Building, Room 4200 Hartford, CT 06106

Stratford State Representative	The Honorable Terry Backer 121st Assembly District Legislative Office Building, Room 2102 Hartford, CT 06106-1591
Stratford State Representative	The Honorable Ben McGorty 122nd Assembly District Connecticut House Republican Office Legislative Office Building , Room 4200 Stratford, CT 06106
Connecticut Attorney General	George Jepsen, Attorney General Office of the Attorney General 55 Elm Street Hartford, CT 06106
Department of Energy and Environmental Protection	Robert Klee, Commissioner Department of Energy and Environmental Protection 79 Elm Street Hartford, CT 06106-5127
Public Utilities Regulatory Authority	Arthur House, Chairman Department of Energy and Environmental Protection Public Utilities Regulatory Authority 10 Franklin Square New Britain, CT 06051
Department of Public Health	Dr. Jewel Mullen, Commissioner Department of Public Health 410 Capitol Avenue Hartford, CT 06134
Council on Environmental Quality	Susan D. Merrow, Chair Council on Environmental Quality 79 Elm Street Hartford, CT 06106
Department of Agriculture	Steven K. Reviczky, Commissioner Department of Agriculture 165 Capitol Avenue Hartford, CT 06106
Office of Policy and Management	Benjamin Barnes, Secretary Office of Policy and Management 450 Capitol Avenue Hartford, CT 06106
Office of Consumer Counsel	Elin Swanson Katz, Esq Consumer Counsel. Office of Consumer Counsel Ten Franklin Square New Britain, CT 06051-2605

Department of Economic and Community Development	Commissioner Catherine Smith Office of the Commissioner Department of Economic and Community Development 505 Hudson Street Hartford, CT 06106-7106
Department of Transportation	Commissioner James P. Redeker Office of the Commissioner Department of Transportation P.O. Box 317546 2800 Berlin Turnpike Newington, CT 06131-7546
State Historic Preservation Officer of the Connecticut Department of Economic and Community Development, Commission on Culture and Tourism	Daniel Forrest State Historic Preservation Officer One Constitution Plaza, 2nd Floor Hartford, CT 06103
Department of Emergency Services and Public Protection	Commissioner Dora Schriro Office of the Commissioner Department of Emergency Services and Public Protection 1111 Country Club Road Middletown, CT 06457
Greater Bridgeport Regional Council	Brian T. Bidolli Executive Director 525 Water Street Bridgeport, CT 06604
U.S. Fish and Wildlife Service	Supervisor Tom Chapman U.S. Fish & Wildlife Service New England Office 70 Commercial Street Concord, NH 03301-5087

For formal affidavit *see* Appendix L.

III.B NOTICE TO COMMUNITY ORGANIZATIONS

In accordance with the Siting Council’s Application Guide for an Electric Substation Facility (April 2010), UI has made reasonable efforts to provide notice of the Application to affected community groups including Chambers of Commerce, land trusts, environmental groups, trail organizations, historic preservation groups, advocacy groups for protection of rivers within the watershed of the proposed facility that have been identified by the municipality where the facility is proposed to be located or that have registered with the Council to be provided notice, and any affected water company that would provide water to, or be within the watershed affected by, the proposed substation. Accordingly, on or around December 21, 2015, UI sent notice of this Application for a Certificate of Environmental Compatibility and Public Need to build an electric substation in Stratford, Connecticut, via certified mail, postage prepaid, to the following:

OFFICIAL/AGENCY	NAME/ADDRESS
Stratford Chamber of Commerce Bridgeport Regional Business Council	10 Middle Street, 14th Floor Bridgeport, CT06604
Connecticut Audubon Society	314 Unquowa Road Fairfield, CT 06824
Connecticut’s Central Coast	157 Church Street MS 1-15E New Haven, CT 06510
East Coast Greenway	5826 Fayetteville Rd. Suite 210 Durham, NC 27713
Housatonic River Estuary Commission	70 West River Street Milford, CT 06460
Stratford Community Organizations Council South End Community Council of Stratford	19 Bates St. Stratford, CT 06615
Stratford Action for the Environment (SAFE)	c/o Charles A Perez 52 Cottage Pl. Stratford, CT 06614
Protect Your Environment (www.lordshiphistory.com)	PO Box 38 Stratford, CT 06615

Historic District Commission	45 Lyon Terrace Bridgeport, CT 06604
Long Island Sound Soundkeeper (www.soundkeeper.org)	7 Edgewater Pl # 1 Norwalk, CT 06855
Long Island Sound Futures Fund (www.longislandsoundstudy.net) EPA Long Island Sound Office Stamford Government Center	888 Washington Blvd. Stamford, CT 06904-2152
Soundvision (Save the Sound and the Citizens Advisory Committee)	142 Temple Street, Suite 305 New Haven, CT 06510
Connecticut River Recreation Management Plan (www.crjc.org) Connecticut River Joint Commissions	10 Water Street, Suite 225 Lebanon, NH 03766
Stratford Open Space Association (SOSA)	10 Circle Dr. Stratford, CT 06614
Aquarion Water Company of Connecticut	600 Lindley Street Bridgeport, CT 06606-5044

For formal affidavit *see* Appendix L.

III.C PUBLIC NOTICE

The undersigned hereby certifies, in accordance with Conn. Gen. Stat. § 16-50l(b) that the Notice of Application to the Connecticut Siting Council was published in *The Stratford Star* and *The Connecticut Post* on November 5, 2015, November 12, 2015, December 10, and December 17, as follows:

NOTICE. Pursuant to Connecticut General Statutes § 16-50l(b) and the Regulations of Connecticut State Agencies § 16-50l-1(e) notice is hereby given that on or about December 21, 2015, The United Illuminating Company (“UI”) will file an application with the Connecticut Siting Council (“Council”), 10 Franklin Square, New Britain, CT, for the issuance of a Certificate of Environmental Compatibility and Public Need to construct and operate a new electric substation and associated facilities in the Town of Stratford, Fairfield County, Connecticut (“Project”). The improvements are necessary to comply with current regulations while addressing compliance and aging equipment needs. This effort will help to strengthen the transmission and distribution system in the Stratford area, allowing UI to continue to provide reliable service to our customers.

The Project will be located at UI owned 1770 Stratford Avenue in Stratford, Connecticut at the intersection of Honeyspot Road, Stratford Avenue, and South Avenue. The new substation will replace the existing substation located adjacent to this site. Details on the Project will be included in UI’s application to the Council. Interested persons may obtain copies of the application from:

The United Illuminating Company
180 Marsh Hill Road, Orange, CT 06477
1-888-UI TEN YR (1-888-848-3697), www.uinet.com

A copy of the application will also be available at the Council’s office, Ten Franklin Square, New Britain, CT 06051, telephone 860-827-2935, www.ct.gov/csc.

For formal affidavit *see* Appendix L.

III.D NOTICE TO ABUTTING LANDOWNERS

In accordance with Conn. Gen. Stat. § 16-50(b), on December 10, 2015, the attached form of a letter providing notice of the Application of UI for a Certificate of Environmental Compatibility and Public Need to build an electric substation in Stratford, Connecticut, was provided via certified mail, return receipt requested to the owners of property that abuts the location of the proposed substation at 1700 Stratford Avenue, Stratford, Connecticut. Notice of the Application was provided to:

<u>Owner Name</u>	<u>Street</u>	<u>Town</u>	<u>State</u>	<u>Zip</u>
Two Roads Brewing Company LLC	1700 Stratford Ave	Stratford	CT	06615
State of CT Department of Transportation c/o Julie Thomas	Union Station 50 Union Ave	New Haven	CT	06519
Ademir Fedumenti and GRE LLC	1780 Stratford Ave	Stratford	CT	06615
Caroline Corniello	365 Village St	Northford	CT	06472
Strategic Realty Fund	4300 Stevens Creek Blvd #275	San Jose	CA	95129
Frank Mellers	70 Bittersweet Lane	Stratford	CT	06614
John J. Scarpetti & Carol R. Hecht	465 Woodstock Ave	Stratford	CT	06614
Sagamore Apartments Inc. c/o Joseph Szarmach	3 B1 Hartford Ave	Glens Falls	NY	12801
Louis R. Jr. & Anne Marie Pierro	45 Jackson Ave	Stratford	CT	06615
Manuel Jose Vasquez	55 Jackson Ave	Stratford	CT	06615
Manuel Jose Vasquez	57 Jackson Ave	Stratford	CT	06615
Georgia M. & Robert J. Chonka	65 Jackson Ave	Stratford	CT	06615
Aboul F. Yassin & Nevien Yassin	6 Knowlton St	Stratford	CT	06615

Town of Stratford	2725 Main Street	Stratford	CT	06615
Bulent M. Yilmaz	33 Hollister St	Stratford	CT	06615
Baltazar Hernandez	35 Hollister St	Stratford	CT	06615
Phoenix CT LLC	P.O. Box 110739	Trumbull	CT	06611
Matthew Flathers & Diana Flathers	5 Knowlton St	Stratford	CT	06615
Nicolino C. Buffone & Sandra Clarke	22 Hollister St	Stratford	CT	06615
Arnold K. & Lisa G. Miguel	32 Hollister St	Stratford	CT	06615
Mark Vernon	42 Hollister St	Stratford	CT	06615
Robert J. Scioscia Sr.	1725 Stratford Ave	Stratford	CT	06615
1747 Stratford Avenue LLC	1650 Bushwick Ave	Brooklyn	NY	11207
St. Nicholas Russian Orthodox Church	1 Honeyspot Rd	Stratford	CT	06615-6402
Stratford Town Fair Tire Assoc LLP	460 Coe Ave	East Haven	CT	06512-3800

For formal affidavit *see* Appendix L.

IV. PROJECT OVERVIEW AND NEED

IV.A PROJECT NEED

The existing Baird substation requires major modifications due to the following issues:

- Inadequate transmission bus capacity
- Lack of structural integrity of the transmission bus and support structures
- Inability to provide adequate distribution voltage regulation
- Aging and antiquated switchgear
- Insufficient control enclosure space for planned modifications

Four 115 kV transmission circuits carry electricity through the substation along the Metro-North Railroad corridor and supply power to the Baird substation. These transmission circuits not only deliver electricity to the Baird substation but also allow electricity to pass through it to nearby substations feeding UI customers. The Southwest Connecticut Area Transmission Needs Assessment from July 13, 2011,⁵ identified these circuits as requiring significant capacity upgrades due to projected load growth, generation and system topology changes. In addition, this assessment determined that the Baird transmission bus would be substantially overloaded under contingency conditions. These overloads range in severity under worst case contingency conditions. These necessary modifications to alleviate overloaded elements of the Baird substation require a substantial investment in the transmission bus system.

The transmission bus at Baird substation has structural concerns, due to the potential for overstressing of the existing strain bus and support structures under extreme weather conditions or due to certain faults on the transmission bus. The overstressed conditions could lead to a structural failure of the bus support system, which in turn could lead to an extended duration outage for the customers served from the substation. This kind of extended duration outage could have significant negative impacts on reliability, customer satisfaction, and the regional economy.

⁵ The Southwest Connecticut Area Transmission Needs Assessment is available on the ISO New England website. However, access to this document is restricted by the Federal Energy Regulatory Commission as it contains Critical Energy Infrastructure Information ("CEII"). With appropriate credentials, the document is available at https://smd.isone.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/reports/2011/final_swct_needs_report.pdf.

The Baird substation delivers electricity to UI's residential, commercial and industrial customers through a series of 13.8 kV distribution circuits. The Baird substation utilizes two 115 kV/13.8 kV transformers to transform (step down) the electric power carried by the railroad corridor transmission circuits. Currently these two transformers fail to maintain adequate distribution voltages to UI's customers under normal and contingency conditions. Under ANSI C84.1-2006 voltage regulations, voltages provided to customers should not fall below 91.6% nominal voltage. UI's System Integrity Department completed a formal report⁶ on the Baird substation's ability to adequately regulate voltage on its distribution circuits. The analysis found that voltages in 2011 would be below the ANSI allowable voltage level on all 16 distribution circuits supplied by the substation under line and transformer contingency conditions. These levels also violate the allowable voltage levels defined by PURA of - +3% for high voltage and -5% for low voltage. The full report detailing these analyses and conclusions can be found in Appendix H.

The distribution circuits supplied from Baird are controlled by switchgear manufactured over 50 years ago, that is reaching the end of its useful operating life. This equipment will need to be replaced in the near future. Although UI can keep this equipment in service, doing so will likely result in increased maintenance, custom fabrication of replacement components and harvesting parts from spare switchgear on UI's system. Aged equipment of this vintage can experience sudden failures resulting in unexpected customer outages, increased maintenance and unscheduled replacement activities. The increased risk of frequent sudden failures contributes to increased reliability risk and maintenance efforts. As a result of this equipment's deteriorating condition and risks to reliability, its replacement is required.

The existing Baird control enclosure lacks sufficient space to accommodate any future expansion, upgrades or modifications at the substation. Existing identified protection system upgrades at nearby substations will require modification of the protection and control systems at the Baird substation. These modifications are not viable within the existing control enclosure. Additionally, the existing cable tray system within the control enclosure is significantly overfilled, and any additional protection and control cable work at the station will be difficult to implement.

⁶ Baird substation Condition Assessment – Distribution Capacity and Voltage Regulation. November 18, 2011.

All of the aforementioned needs, as well as several others, were evaluated and thoroughly documented in the formal Baird Substation Needs Assessment.⁷ All of the needs exist with present-day conditions and require remediation as soon as practical.

Due to the extensive modifications and significant investment required to address the numerous deficiencies at the Baird substation, UI undertook a comprehensive Solution Study⁸ to evaluate potential alternatives. The Baird Substation Solution Study determined that UI should construct a new substation on property owned by UI to the east of the existing Baird substation.

IV.B BENEFITS OF THE SUBSTATION

The proposed Project will provide a new substation on land already owned by UI to the east of the existing Baird substation. The new substation will replace the existing Baird substation and allow UI to take the existing facility out of service once the new substation is in service. UI will construct the new substation to meet or exceed the capacity of the interconnected transmission circuits and utilize Load Tap Changing (“LTC”) transformers to provide adequate distribution voltage regulation. New 13.8 kV switchgear will control the new distribution circuits. As a result, the new substation will eliminate significant compliance issues and mitigate reliability risks to UI customers as a result of aging and antiquated equipment.

IV.C ALTERNATIVE ENERGY AND CAPACITY SOLUTIONS CONSIDERED

UI identified and evaluated five potential solutions, as follows:

- No Action
- Rebuild 115 kV Transmission Bus in Place and Relocate 13.8 kV Distribution System
- Rebuild 13.8 kV Distribution System in Place and Relocate 115 kV Transmission Bus
- In-Kind Replacement
- Full Replacement

⁷ Baird Substation Assessment Report – Needs Assessment, April 2, 2012, available at https://smd.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2012/jul182012/baird_old_town_needs.pdf. However, access to this document is restricted by the Federal Energy Regulatory Commission as it contains CEII.

⁸ Baird Substation Solution Study Report, March 2013, available at https://smd.iso-ne.com/committees/comm_wkgrps/prtcpnts_comm/pac/ceii/mtrls/2014/jun192014/a8_baird_substation_study.pdf. However, access to this document is restricted by the Federal Energy Regulatory Commission as it contains CEII.

These potential solutions were evaluated based on economics and system performance (capacity, availability and reliability), as well as engineering considerations. The following section summarizes the analysis of the above-referenced alternatives.

In the “No Action” alternative, UI must accept the risks and consequences associated with this option, including the possibility of insufficient transmission capacity during peak load and contingency scenarios. UI would also need to accept the risk of unacceptable distribution voltages provided to customers, potentially violating ANSI and CT PURA requirements, as well as the reliability risks associated with the aging and antiquated distribution switchgear. Accepting the risk associated with the “No Action” option is unacceptable and non-viable and was rejected due to the significant adverse impact on system reliability levels and, in turn, customer satisfaction and the economic vitality of the region.

UI discussed alternatives that involved changes to the existing substation configuration in terms of transmission and distribution connections or separation of the transmission and distribution facilities from each other (“Rebuild” alternatives). Both options are either impractical or insufficient to address all of the identified needs and are not viable.

The In-Kind Replacement alternative was based on the concept of upgrading the existing substation in a piecemeal fashion to address each area identified as requiring modification under the Needs Assessment. The parts of the substation not identified in the Needs Assessment would remain in place to the greatest extent possible. This alternative requires:

- Upgrading the existing 115 kV transmission bus current carrying components, to at least the ratings of the incoming/outgoing transmission lines.
- Replacement of two existing 115 kV/13.8 kV non-LTC transformers with two 115 kV/13.8 kV transformers with LTC capability.
- Replacement of the existing 13.8 kV distribution switchgear with new switchgear of a modern design inside the existing control enclosure.
- Addition of a new control enclosure, located adjacent to the existing masonry block enclosure, to allow for the additional space for planned modification/upgrades of protection and control equipment.

Any other minor ancillary needs would be addressed through modifications to the existing substation facility with minimal expansion of the existing footprint. While this alternative addressed all identified needs, it would expose UI's customers to significant reliability risks, due to the long equipment outages required to replace nearly the entire substation while the facility remained energized, operational and serving customers in the Stratford area. The construction sequencing and construction hazards are substantially greater in this alternative than for new construction. In addition, this alternative creates a longer construction duration and is substantially more expensive than a full replacement of the facility on adjacent property.

This evaluation concluded that the construction of a new 115 kV/13.8 kV distribution substation in the Stratford area would best meet the long-term capacity, infrastructure and compliance needs of the area safely and reliably. A Site Selection Study reviewed 12 sites and identified three that were potentially viable. UI evaluated each of the three sites from an engineering perspective as potential locations for a new substation in this area and concluded that the Baird Annex was the preferred location for the proposed Baird substation. Section X discusses the alternative site selection process in greater detail.

V. DESCRIPTION OF PROPOSED FACILITY

V.A PROJECT LOCATION

The new Baird substation was originally proposed for construction solely on a 1.8-acre parcel of UI-owned property located at 1770 Stratford Avenue in Stratford. UI purchased the property in December 2010. However, during discussions between UI, Stratford and the abutting property owners, several modifications were made to the original design, each of which are described in the following sections.

During initial conversations regarding the Project, Stratford notified UI of a proposed roundabout at the intersection of Stratford Avenue, Honeyspot Road and South Avenue, which would impact the proposed substation. The proposal included new sidewalks and street beautification in addition to the roundabout. The positioning of the roundabout would require use of the southern portion of the UI-owned 1.8-acre parcel. To accommodate Stratford's proposal, UI shifted the substation to the north. Additionally, UI performed an analysis to ensure large equipment access to the substation would be feasible. Incorporating the analysis and UI access requirements, the substation access road was relocated to the west on Stratford Avenue away from the roundabout to ensure safe access and egress from the substation.

Additionally, Stratford and neighboring property abutters voiced concerns regarding the substation's proximity to the Two Roads Brewing Company. To alleviate these concerns, UI further altered the proposed location to better utilize adjacent UI property to the west, resulting in a shift of the proposed substation approximately 110 feet and created a buffer area between the substation and the Two Roads Brewing Company. The existing Baird substation occupies the majority of this adjacent parcel. The eastern portion of this adjacent parcel includes a forested area with low-lying shrubs, a small wetland and visible rock outcroppings. The proposed shifted positioning of the substation utilizes portions of both UI-owned parcels.

Figure V.A-1 illustrates the location of the proposed substation within the UI-owned properties. The Site is bounded to the east by an approximately 110-foot buffer area to the Two Roads Brewing Company, to the south by Stratford Avenue, to the west by the existing Baird substation and to the north by the Metro-North Railroad. Existing stormwater and sanitary sewer easements extend the width of the property on the southern side along Stratford Avenue. Appendix A,

Drawing 1 includes a U.S. Geological Survey map of the proposed Site and vicinity, as well as a current aerial photograph of the Site.

Figure V.A-1: General Property Location

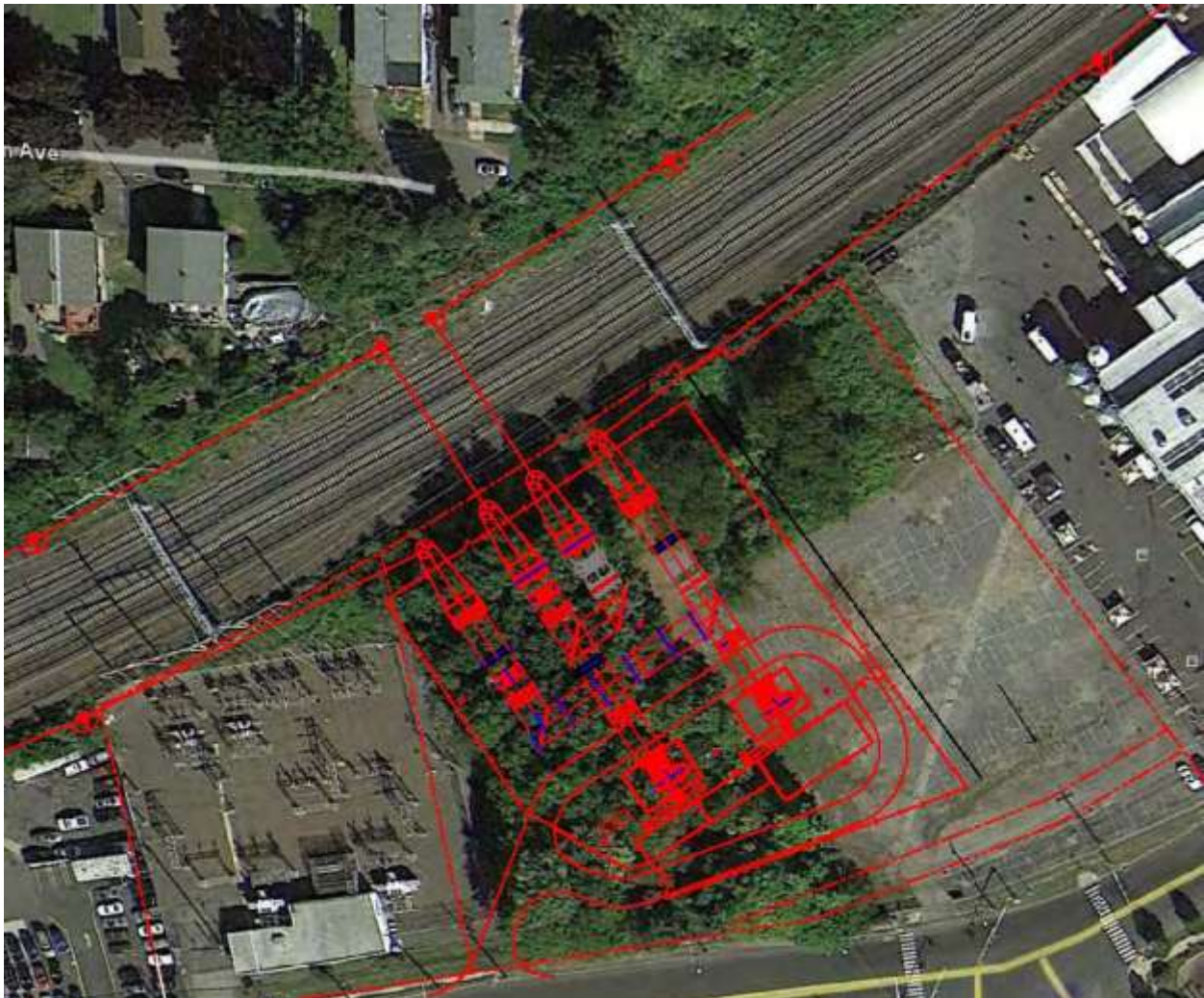


Source: Google Earth, July 2015

The majority of the property consists of undeveloped land with trees and low-lying vegetation between the existing Baird substation and the adjacent parking lot. Inside of this wooded strip of land is an approximately 654-square-foot wetland as well as visible rock outcroppings. The eastern portion of the property consists of paved asphalt surfacing used for overflow parking by the Two Roads Brewing Company through an agreement with UI. The area to the north of the property consists primarily of low-lying vegetation and sparse trees as well as concrete footings and sections of rail from an abandoned railroad spur. UI presently uses portions of the property for staging equipment and vehicles for construction activities on UI's four 115 kV transmission circuits.

The Site was historically developed for industrial purposes by the U.S. Baird Corporation. The company dates back to the 1890s, with evidence of original building occupation at the Site in 1920. Additional structures were added at other locations on the original Baird property, but no structures except for a small storage shed were constructed on this parcel. The parcel remained substantially wooded until the 1970s when it was partially paved and used for additional parking areas for the U.S. Baird Corporation.

Figure V.A-2: Aerial Overlay



Source: Google Earth, July 2015

V.B LAND REQUIREMENTS AND ACCESS

The proposed Project is located on approximately 1.5 acres spanning two UI-owned properties with a combined size of 3.5 acres. The existing Baird substation constructed in the early 1960s

occupies approximately 0.9 acres of the western UI-owned property. The new substation would utilize portions of both UI-owned properties and would abut the MNR corridor to the north. This corridor is presently occupied by two UI-owned 115 kV transmission lines.

Development of the Site includes a trap rock surface and installation of a 14-foot-high chain link fence equipped with opaque slats, topped with one foot of barbed wire (three strands) around the perimeter.

UI will construct a new access road for the proposed Project off of Stratford Avenue. This access road would exit the western portion of the substation in order to accommodate Stratford's roundabout proposed for the front of the substation.

Construction of eight new monopole structures in the MNR corridor and UI property will be required to reroute the two existing 115 kV transmission circuits through the proposed substation. The location and heights of these new monopoles are detailed on the Site Plan (Drawing #25253-401) included in Appendix A. These new monopole structures will support the energized circuits that will transmit electricity to and from the proposed substation. Due to the high-voltage nature of these circuits, appropriate electrical clearances are required for buildings, vegetation, temporary structures, etc. to ensure the safety of the general public and reliable operation of the circuits. To maintain these clearances and facilitate construction of the new monopoles, both permanent and temporary easements are required.

To maintain electrical clearances, a permanent easement is required across the northern border of the adjacent Two Roads Brewing Company property. This easement will ensure that new or existing structures are constructed/modified while maintaining a safe electrical clearance to the 115 kV transmission circuits. The easement required on Two Roads Brewing Company property varies in width depending on the location of the transmission circuits, but would extend approximately 12 feet from the property line at its widest point. This easement addresses not only the construction planned for the proposed Project, but also construction planned for the transmission circuits heading east along the MNR corridor during potential future UI projects.

To enable construction of three monopoles on the north side of the MNR corridor, a temporary construction easement is required through the property located at 45 Jackson Avenue. This easement will enable cranes to stage at the end of Jackson Avenue to install the two monopoles

in the MNR Right of Way (“ROW”). This temporary easement will require removal of portions of the existing vegetation; however efforts will be made to limit clearing activities in this area to maintain visual screening of the MNR ROW. The boundaries of this easement are shown on the Grading and Drainage Site Plan drawing (Drawing # 25253-004B) included in Appendix A. UI is continuing to investigate alternative access plans and construction practices for this area in an effort to minimize impacts to the property. Additionally, UI has engaged the property owner at 45 Jackson Avenue to develop a plan for permanent restoration of areas within the property line after construction activities have been completed in an effort to restore screening of new and existing infrastructure.

V.C ACCESS ROADS AND WORK PADS

To enable construction at each location of the new monopole structures for transmission interconnection, access roads will need to be created to permit safe passage of construction vehicles and equipment. Through the construction of the access roads and work pads, UI intends to trim and remove vegetation, as well as re-grade and excavate areas where and when necessary. Prior to any of the previously described construction activities for the building of access roads and work pads, UI will install all of the necessary erosion and sedimentation controls as outlined on UI’s Erosion Control Site Plan included in Appendix A (Drawing # 25253-006). UI anticipates access roads to range from 12 to 16 feet in width with the work pads between 1,500 and 5,000 square feet. Work pads range in size due to certain types of equipment needed, obstructions and/or grading challenges. At the close of the civil and electrical phases of the Project, all areas that were impacted due to construction will be restored. Restoration includes, but is not limited to, seeding, mulching and stabilization of soils. Vegetative screening will be restored where feasible, subject to federal and state electrical clearance requirements for overhead 115 kV transmission lines and approvals from the Connecticut Department of Transportation (“CDOT”) and MNR.

In total there will be two separate access drives required to enable movement of construction vehicles and equipment for the Project. One access road will extend from the south side of Hollister Street and the other from the northeast corner of the Project Site. Access to the MNR corridor will be achieved via a new access drive created through a currently wooded area on municipal property abutting the south side of Hollister Street. This access drive will extend to the

west, paralleling the MNR corridor, enabling access to the two new monopoles to the north of the proposed substation as well as the single new monopole northeast of the existing catenary structure. Additionally, a new graded access drive from the northeast corner of the Project Site will enable construction of the monopole behind the Two Roads Brewing Company. This access road will enter the MNR corridor and proceed parallel along its southern edge to the area of construction. Lastly, access to the remaining four new monopoles along the northernmost portion of the Site will be through the Project Site itself. Plan view drawings detailing the paths of each required access road and access pads can be found on the Grading and Drainage Site Plan in Appendix A (Drawing # 25253-004B).

V.D SITE HISTORY AND ENVIRONMENTAL REMEDIATION

The primary use of the Site by the U.S. Baird Corporation during their occupancy was for parking or material storage. Based on the Connecticut Department of Energy and Environmental Protection's ("CT DEEP") records, the segment of the Site where the substation will be located has had no historic environmental soil and/or groundwater contamination issues. However, according to CT DEEP, properties abutting the Site, such as 1725 Stratford Avenue and 1650-1700 Stratford Avenue, are on record with the CT DEEP as having remedial activities performed. These activities at the abutting properties include, but are not limited to, leaking underground storage tanks and a phase II/III site investigation. UI does anticipate performing minor remedial activities and intends to manage spills in accordance with the State of Connecticut Solid Waste Regulations during the civil construction of the substation.

V.E DESCRIPTION OF PROPOSED SUBSTATION FACILITIES

UI proposes to locate the Project adjacent to the MNR corridor and the existing 115 kV transmission lines. The 115 kV transmission line interconnection will be segmented and looped through the substation. Within the substation, UI will step down the power from these transmission lines to 13.8 kV for delivery to the electric distribution system in the Stratford region. As illustrated on the Site Plan and Drawings in Appendix A, the proposed substation facilities would include:

- Two 115 kV circuit breakers.
- Eight 115 kV disconnect switches.

- Two 50 MVA power transformers to step down the voltage from 115 kV to 13.8 kV.
- Provisions to accommodate a temporary mobile transformer for emergency conditions
- Two switchgear enclosures, each approximately 42 feet long, 15 feet wide and 13 feet high, installed to provide for the switching equipment, relaying and control equipment.
- A control enclosure (for equipment protection), approximately 60 feet long by 28 feet wide by 13 feet high, installed at the southern end of the substation and attached to the two switchgear enclosures. This enclosure would be designed to house the protective relaying and control equipment as well as the DC station service equipment.

UI will design the new Baird substation to meet or exceed the state Building and Fire Codes, taking into account seismic loading, wind loading, and snow and ice loadings, among others.

UI's existing transmission lines are supported on the MNR catenary structures running east to west along the northernmost edge of the Project Site. These transmission lines supply the existing Baird substation in a similar configuration as the proposed substation. The existing transmission lines would be routed into the new substation by installation of eight new steel monopoles. While all eight monopoles are integral for the interconnection of the new Baird substation and consequently will be discussed throughout this Application, three of these new monopoles were previously submitted to the Council and approved under UI Petition No. 1176.⁹ The remaining five monopoles fall solely under the purview of the proposed Project. The delineation of monopoles can be found on the Site Plan (Drawing # 25253-401) included in Appendix A.

The eight new steel monopoles, which will be installed to interconnect the substation to the existing transmission lines, will be 70 to 85 feet tall and similar in height to the monopole structures approved for future installation to the east of the Project Site on the MNR corridor. The height of each new monopole can be found on the Site Plan (Drawing # 25253-401) included in Appendix A. Four of the new monopoles will interconnect to the substation along the northernmost portion of the Project Site and will be located on UI property. To the north of the

⁹ The United Illuminating Company Petition to the Connecticut Siting Council for Declaratory Ruling for the Bridgeport 115-kV Transmission Line Upgrade Project, Decision Dated September 21, 2015, available at http://www.ct.gov/csc/lib/csc/pending_petitions/1_petitions_1144through1200/pe1176-dcltr-energy-bridgeport-stratford.pdf. The Petition is available at http://www.ct.gov/csc/lib/csc/pending_petitions/1_petitions_1144through1200/pe1176_filing_ui.pdf.

Project Site, UI will install two monopoles directly across the MNR corridor, as well as one monopole northeast of the existing railroad catenary structure to support the new transmission conductors that will interconnect the new substation. The remaining monopole must be installed in the MNR corridor behind the Two Roads Brewing Company as the existing catenary structure is insufficient to support the required interconnection to the proposed substation. The precise positioning and height of each monopole may vary marginally due to physical access considerations and design requirements. The proposed positioning and height of each monopole can be found on the Site Plan in Appendix A (Drawing #25253-401).

In addition to the eight new transmission monopoles (70-85 feet tall), six 70 foot tall lightning masts will be installed within the substation fence line, to prevent severe damage to critical equipment due to direct lightning strikes in accordance with UI and industry standards for lightning protection. These lightning masts provide a very low resistance path to the ground ensuring lightning strikes the masts rather than critical equipment susceptible to damage from strikes. The area of protection each mast provides is directly proportional to the masts height, with 70 feet providing the optimal area of protection with the fewest masts. The mast height can be lowered to 55 feet, but the total number of masts required must be increased to protect the same area. UI discussed this lower mast and higher quantity alternative with the Town of Stratford, however it was agreed that fewer masts at 70 feet was the least visibly obtrusive option. Additionally an 80 foot communication pole will be located on the west side of the site to provide communication between the substation and UI's distribution infrastructure.

To access the proposed substation, UI will create a new access road to the Site from Stratford Avenue. This new access road would enter Stratford Avenue to the west of the Honeyspot Road, South Avenue and Stratford Avenue intersection. The new access road will have a travel surface of approximately 190 feet and will extend into the substation to provide direct ingress and egress to the substation equipment and enclosures.

Development of the proposed substation requires protective relay system changes within the existing control enclosures at remote substations, including the existing Baird substation. These upgrades are required for the safe and proper operation of the proposed substation. Additionally, these upgrades will allow both the existing and new Baird substations to be in service simultaneously, enabling the transference of load between the two substations with minimal

potential for service interruption to customers. A temporary fiber connection will run between the existing and new control enclosures to coordinate protective relaying systems between the two facilities while they are both temporarily in service during the transition period.

V.F ESTIMATED COST OF THE PROJECT

The estimated cost for the siting, design and construction of the new Baird substation and supporting infrastructure is approximately \$35 million. The scope of this project did not explore the option of relocating any of the overhead transmission circuits along the MNR corridor underground but to only interconnect to the existing transmission circuits.

V.G FACILITY SERVICE LIFE

The substation equipment and supporting infrastructure are estimated to have a service life of approximately 40 years.

VI. PROPOSED CONSTRUCTION AND OPERATION/MAINTENANCE PROCEDURES

UI will construct, operate, and maintain the Baird substation in full compliance with the standards of the National Electrical Safety Code, any conditions of the Council's approval of the Project and good utility practice.

VI.A CONSTRUCTION PROCEDURES

Before any construction activities occur, UI will prepare and submit a Development and Management Plan ("D&M Plan") to the Council for approval. The D&M Plan will include the SWPCP and adhere to the *2002 Connecticut Guidelines for Sedimentation and Erosion Control*, which are designed to minimize or eliminate potential adverse environmental effects that may result from construction activities.

The D&M Plan will include specific procedures and information on, but not limited to, the management of spoils and groundwater, erosion and sedimentation control, spill prevention control and countermeasures, construction staffing and hours, traffic control, and provisions for restoration and landscaping after construction of the substation. The D&M Plan will also provide contact information should questions or concerns arise during construction or operation of the facility.

VI.B SUBSTATION CONSTRUCTION SEQUENCE

The general construction sequence of the substation and the 115 kV line interconnection is as follows:

- Install erosion and sedimentation control measures
- Manage vegetation
- Prepare the Site for development (cut, fill, grading)
- Install perimeter fencing
- Install substation foundations, conduits, grounding grid and distribution facilities
- Spread trap rock
- Install power transformers
- Install high-voltage circuit breakers
- Set control and switchgear enclosures
- Install steel structures and substation equipment
- Install transmission line interconnections

- Commission the substation
- Install asphalt access drives
- Complete Site restoration activities
- Remove temporary erosion and sedimentation control measures after Site stabilization is achieved

UI will deploy temporary erosion and sediment controls will be deployed during the earthwork and construction phases of the Project in accordance with the *CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*, a Site-specific SWPCP and the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, and as depicted on the approved Project Site Plan in Appendix A. On a weekly basis, GHD Pty Ltd (“GHD”) (formerly known as Conestoga Rovers Associates Inc.) of Plainville, Connecticut (UI’s qualified environmental professional/consultant), will inspect the temporary erosion control measures throughout the below-grade construction phase of the Project. If deficiencies are identified on any of the erosion and sediment controls during the construction of the Site, GHD will work with the construction team to mitigate the situation and provide a compliant solution. The above-grade construction subcontractor will assume this role after the below-grade construction subcontractor has demobilized from the Site. In addition, monthly inspections may occur within 24 hours after each qualifying storm event, assessing turbidity and the stability of erosion and sediment controls. If, during this inspection, GHD identifies areas where erosion and sediment controls have excessive sediment buildup, GHD will work with the contractor to have the sediment cleared from the erosion and sediment controls. Sediment will be managed in accordance with UI’s Site-specific Soil Management Plan.

In addition, UI will be fully responsible for sequencing construction activities such that earth materials are exposed for a minimum of time before they are covered, seeded or otherwise stabilized to prevent or minimize the potential for erosion. Upon completion of construction and establishment of permanent groundcover, the contractor will install new erosion and sedimentation controls per the restoration requirements in compliance with the SWPCP. In addition, UI’s contractor will remove excessive sediment and debris from areas where control measures were used.

UI will grade the substation Site to contain and treat stormwater runoff on the Site via a series of containment basins and underground storage chambers. The remainder of the stormwater will then infiltrate through the gravel base of the substation.

Upon completion of construction activities, all disturbed/exposed areas that are not otherwise developed with the substation facilities, graveled or paved would be stabilized with topsoil, seed and mulch. Erosion and sedimentation controls will remain in place until final Site stabilization. This is achieved by monthly inspections for a period of three months where no breaches or breakdown of erosion and sediment controls occur as outlined in UI's SWPCP. GHD will perform these inspections, confirming compliance with this condition.

The substation design includes two 50 MVA transformers that will contain insulating (mineral) oil. The transformers will each have secondary containment designed to hold 110% of a transformer's fluid capacity. UI proposes to install a gravity drain system that requires manual discharge via sump pump of the containment area through a petro barrier system to assist in minimizing the potential for inadvertent oil discharges from the containment. Further, UI will remotely monitor a low oil level alarm that is integral to the system and will notify UI in the event of an abnormal condition at the Site. Monthly inspections of the sumps will be performed by UI personnel to promote proper function of the systems. A float switch will be used to provide notification that water needs to be pumped out of the containment area to prevent any overflow.

The distribution circuit get-away from the substation will be two new PVC underground duct banks from the substation property exiting directly into two new splicing chambers located on Stratford Avenue. These new duct banks would interconnect to the existing and new underground infrastructure on Stratford Avenue. To accommodate Stratford's proposed roundabout and to address the aging underground infrastructure, UI is currently replacing and repairing duct banks and splicing chambers along Stratford Avenue under a separate UI project. The new duct banks and splicing chambers required for the proposed Project will interconnect to this new underground infrastructure on Stratford Avenue.

VI.C SUBSTATION CONSTRUCTION COORDINATION WITH PETITION 1176

Under Petition 1176, UI submitted the Bridgeport 115 kV Transmission Line Upgrade Project (“Transmission Line Upgrade Project”) and received Council approval on September 17, 2015. The Transmission Line Upgrade Project includes the construction of 83 new tubular steel monopole structures. Four of the 83 previously approved poles are integral to the design of the proposed Baird Substation.

As previously mentioned, UI modified its design of the proposed Baird substation in response to concerns over the Project’s proximity to the Two Roads Brewing Company and a roadway improvement scheme. *See* Section V.A for a more detailed explanation. This modification necessitates a change in the location of four poles approved in Petition 1176 as the locations of these poles are dependent on the final design of the proposed Project. UI will seek approval of such a change under a Request to Amend Petition 1176.

UI seeks approval within this Application for five monopoles to the east. All of the aforementioned monopole locations and the projects to which they belong are depicted in their final locations on the Site Plan (Drawing # 25253-401) found in Appendix A.

To coordinate between these two projects, UI has delineated both construction and engineering activities to eliminate conflicts and ensure synchronization. Not only will this enable the successful completion of both projects, but it will also make sure that UI can continue to deliver safe and reliable electric service throughout the duration of construction activities. To achieve this, the construction of the eight monopoles necessary for transmission interconnection of the new Baird substation (four of which are also part of the Transmission Line Upgrade Project) will be performed by the same construction contractors and during the same general time period. This will ensure that responsibility for all construction activities falls under the purview of only one set of construction contractors, thereby increasing efficiency, safety and accountability. Additionally, construction and maintenance of required access roads (detailed in Section V.D) for the proposed Project will be utilized for the installation of the three monopoles associated with the Transmission Line Upgrade Project, minimizing required grading activities and vegetation removal.

VI.D STORMWATER MANAGEMENT

The final grade elevations throughout the Site will be constructed to create a relatively uniform grade within the new substation area. The existing drainage patterns will be revised to direct runoff to flow to the catch basins located within the Project Site.

The stormwater system for the proposed substation would consist of a network of eight catch basins and one manhole with grates at grade elevation to collect runoff for various drainage areas within the Project Site. The catch basins will transport runoff via Corrugated High-Density Polyethylene (“CHDPE”) piping to an underground detention chamber, located in the southwestern portion of the substation. The below-grade stormwater detention chamber will be designed with a treatment chamber ahead of the storage chamber. This treatment chamber will provide for removal of sediment, trash or debris that enters the catch basin and piping system. The below-grade stormwater detention chamber will convey runoff via a pipe to the existing stormwater sewer system of Stratford. To maintain the post-development peak flow rates at less than the pre-development peak flow rates, the below-grade stormwater detention chamber will have a controlled outlet pipe. The pipe will transfer the excess runoff into the existing stormwater system of Stratford within the city drainage easement along the southwest border of the Site. Stormwater runoff from the access road will be conveyed via vegetated swales to the Site stormwater drainage system. The quantity and size of the swales will be finalized in final grading and drainage design for the Project Site. Additionally, the stormwater system design will be modified and finalized to accommodate Stratford’s proposed roundabout design.

Offsite runoff from the neighboring property along the eastern portion of the Site will be directed to a boundary swale constructed to limit off-site water to the existing Town of Stratford’s stormwater sewer system.

For rainfall events greater than the regulated rainfall events (100-year, 24-hour), the incremental runoff will be designed to flow through the substation stormwater sewer system (including the below-grade stormwater storage chamber) and conveyed to the Site stormwater outlet.

VI.E GENERAL CONSTRUCTION WORK HOURS AND SCHEDULE

All construction activities will be conducted in accordance with the D&M Plan as approved by the Council. The construction and testing of the substation facilities are expected to occur over a 12- to 18-month period. In general, construction hours will be scheduled within a window from 7:00 AM to 5:00 PM, Monday through Friday, but some extended hours and weekend work may prove necessary on a limited basis. Site preparation, including grading and installation of foundations, will take place during the initial six months of construction and will involve the use of earth-moving equipment and construction vehicles.

The installation and testing of substation equipment will take approximately nine months. These activities will involve the use of cranes to unload and install structural elements and large equipment.

The installation of the 115 kV line and substation terminal structure, interconnection of the supply lines to the substation and connections to the distribution system will require that critical transmission and/or distribution equipment be taken temporarily out of service. As a result, this work will be scheduled for off-peak electrical demand hours and coordinated with the Town of Stratford. To complete these interconnections as efficiently as possible with minimal service disruptions, work will have to be performed continuously, including outside of normal work hours.

VI.F DISTRIBUTION LINE CONNECTIONS

To deliver power from the substation into UI's electric distribution system in the Stratford area, new distribution circuits will be installed from the substation to interconnect with the existing distribution network presently served by the existing Baird substation. These distribution circuits will consist of duct lines and splicing chambers, which will be buried beneath local roads.

The distribution get-away from the Baird substation will consist of two PVC underground duct banks that will extend from the substation to two new splicing chambers that will be located beneath Stratford Avenue. One duct bank will exit the substation through the west side of the property directly onto Stratford Avenue by running adjacent to the new access road. The other duct bank will extend east into the 100-foot buffer area between the substation and the Two

Roads Brewing Company before exiting out to Stratford Avenue. This routing of the eastern duct bank prevents splicing chamber locations from interfering with the proposed roundabout.

In addition to the splicing chambers and duct banks required to connect the substation to Stratford Avenue, construction will take place on the underground distribution infrastructure along Stratford Avenue, Honeyspot Road and South Avenue under a separate UI project. This work is currently being performed prior to the Project to accommodate the proposed roundabout, replace aging infrastructure and allow for interconnection of the new substation.

VI.G PROJECT FACILITIES RELIABILITY, SAFETY AND SECURITY INFORMATION

UI will operate and maintain the new Baird substation in accordance with standard UI protocols and in conformance with required industry standards and good utility practice.

EMERGENCY OPERATIONS AND SHUTDOWN

UI will equip the substation with measures designed to ensure continued service in the event of outages or faults in transmission or substation equipment. The Project will achieve continued reliability by incorporating a “loop through” design configuration for the existing 115 kV overhead transmission lines, transformer protection and redundant automatic protective relaying equipment.

In the event that an energized line or substation equipment fails, protective relaying equipment will immediately remove the failed line or equipment from service, thereby protecting the public and the remaining equipment within the substation. The Project design includes protective relaying equipment to automatically detect abnormal system conditions (e.g., a faulted overhead transmission line) and will send a protective trip signal to circuit breakers to isolate the faulted section of the transmission system. The protective relaying schemes will include fully redundant primary and backup equipment so that a failure of one scheme would not require the portion of the system being monitored by the protective relaying equipment to be removed from service.

UI will house the protective relaying and associated equipment, along with a Supervisory Control and Data Acquisition (“SCADA”) system for 24/7 remote control and equipment monitoring, at the UI System Operations Center in a weatherproof, environmentally controlled electrical equipment enclosure.

FIRE DETECTION TECHNOLOGY

UI incorporates IEEE/ANSI and NFPA standards for fire protection in its substation design and operates these facilities to minimize the impact of fire, in the unlikely event it occurs. UI also trains its employees and the local fire department on the safe methods to deal with a substation fire. UI will secure the control enclosure and equip it with fire extinguishers, as well as remotely monitored smoke detectors. Smoke detection will automatically activate an alarm at the UI System Operations Center, and the system operators would then take appropriate action.

PHYSICAL SITE SECURITY

UI's currently employs fencing and gates to protect its facilities located at the Site. UI permits the Two Roads Brewing Company to use a paved portion of one of the parcels for overflow parking Wednesday through Sunday of each week, via a license agreement. This arrangement will continue post-construction, but UI will appropriately secure the Site to protect the public at large in addition to the existing and proposed equipment.

Security devices will constantly monitor the substation to alert UI of any abnormal or emergency situations. UI plans to implement several physical site security measures outlined as follows:

- UI will enclose the perimeter of the substation with a 14-foot-high chain link fence equipped with opaque slats, topped with an additional one foot (three strands) of barbed wire to discourage unauthorized entry and/or vandalism.
- Security cameras and motion detectors will be installed that provide complete visibility within the interior of the proposed substation and perimeter fence.
- The substation yard will be gated and locked. All gates will be padlocked at the end of the workday during construction activities and at all times once the substation is in service.
- Appropriate signs will be posted at the substation fence and gates, alerting the general public of the presence of high-voltage facilities.
- Crash barriers will be installed along the southern and eastern sides of the property to discourage vehicle entry through the chain link fence.
- UI will install low-level LED lighting within the substation yard to facilitate work at night or during inclement weather as well identify entry by unauthorized personnel.

UI will additionally install oil spill containment basins around the proposed transformers. UI will design the oil spill containment basins so that they meet the requirements under EPA's Spill Prevention Controls and Countermeasures secondary containment criteria for oil-filled equipment of 110% capacity. The containment basins will be pumped out through a petro barrier after a visual inspection.

VI.H TRAFFIC CONSIDERATIONS

UI will design the substation for remote operation, with personnel on site only for periodic inspections, maintenance and (as needed) emergency work. Permanent access to the property will be via the access road from Stratford Avenue. The access gates will be in a location where vehicles entering the Site will not impede traffic while unlocking the security gates. UI will develop an on-site access road to facilitate the movement of maintenance equipment and access to the control enclosure. This access road has been positioned to accommodate Stratford's planned roundabout in front of the substation.

VII. EXISTING ENVIRONMENTAL CONDITIONS

This section summarizes the existing environmental conditions on the Site and within the Project area of the Baird Annex property. This section is meant to illustrate the Project's potential environmental effects and the methods used to mitigate such effects.

UI has assessed and gathered the data specifically related to the potential environmental effects to the Site, which include the following:

- Wetland Delineation Report (Appendix C)
- Cultural Resource Review (Appendix J)
- Baseline Environmental Assessment: Baird Substation (Appendix I)
- Natural Diversity Database – CT DEEP Correspondence (Appendix B)

VII.A TOPOGRAPHY, GEOLOGY AND SOILS

The proposed substation Site is located within the southern portion of the Western Uplands, near the Coastal Slope physiographic province. The topography of the Site is relatively level, with elevations of approximately 13–15 feet North American Vertical Datum 1988 (“NAVD 88”). In general, past development modified the topography, including the former use of the Site for industrial purposes and the associated installation of parking areas and access roads. The topography on the western portion of the Site varies, with elevation of approximately 9–23 feet NAVD 88 Datum. In general, the topography is wooded with several rock outcrops. The western portion of the Site also includes a small wetland.

Connecticut's bedrock geology has a direct effect on landscape forms because of its different resistances to weathering and erosion. The proposed substation Site is located within the Western Uplands geologic terrain, where granitic gneisses and schists predominate. Bedrock beneath the proposed substation Site consists of medium-grained schists in the Trap Falls Formation.

The surficial (unconsolidated) materials that overlie bedrock in Connecticut consist of deposits from the continental glaciers that covered New England at least twice during the Pleistocene Ice Age. In the vicinity of the substation Site, these deposits are classified as glacial till, the most common type of deposit, which was laid down directly by glacier ice and consists of a matrix of

sand, silt and clay with variable amounts of stones and large boulders. The till is generally less than 10–15 feet thick.

The U.S. Department of Agriculture, Natural Resources Conservation Service maps soil types and produces countywide soil surveys. The Soil Survey of Fairfield County provides information concerning soil characteristics, including depth to bedrock, slope, drainage and erosion potential; soils information is also mapped and available via Connecticut Environmental Conditions Online.¹⁰

The soils on a portion of the proposed substation Site have been altered due to previous industrial development. The upland soil on the Site is characterized as an udorthent. This soil unit consists primarily of manmade or disturbed cut and/or fill areas that are not wet, with slopes ranging from 0% to 8%. Portions of the Site also include small areas of well-drained loamy soils and non-soil impervious areas (e.g., parking lot).

VII.B WATER RESOURCES AND WATER QUALITY

UI has reviewed the proposed Site for water resources including inland and tidal wetlands, watercourses, vernal pools and floodplains. UI also assessed the groundwater quality, as Connecticut has established both Water Quality Standards and Classifications in order to protect its surface and groundwater resources.

Surface Water Resources

On April 14, 2015, UI performed a Site wetland delineation to assess the presence of water resources such as wetlands, watercourses, vernal pools and/or floodplains. In the State of Connecticut, wetlands are determined by soils. These soil types include poorly drained, very poorly drained and alluvial plain soils. In addition to delineating wetlands in accordance with the State of Connecticut requirements, vegetation and hydrology were assessed in accordance with the *ACOE Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0; January 2012).

¹⁰Map Catalog, Connecticut Environmental Conditions Online, accessed December 15, 2015, available at http://www.cteco.uconn.edu/map_catalog.asp?town=138.

During the wetland delineation, UI only identified one small palustrine emergent nonpersistent wetland (approximately 654 square feet), located on the western boundary of the Site. Based on aerial photography, this area has historically consisted of primarily wooded and captured stormwater runoff from the railroad corridor to the north. Large deciduous trees and scrub shrub vegetation are the dominant forms of plant life surrounding the wetland. No vernal pools were identified during this delineation event. A Wetland Delineation Report generated by GHD can be found in Appendix C. This report explains how the resource area on the Site was determined, the approach for determining whether or not certain areas meet the qualifications of a resource area and the additional areas which were surveyed in order to determine whether or not they meet the State of Connecticut wetland definition.

Groundwater Resources

Based on the latest available (January 2011) DEEP Groundwater Quality Classification Map data, groundwater at the Site is classified as GB. Water with a GB classification includes industrial process and cooling waters and baseflow for hydraulically connected water bodies. Such water is presumed not suitable for human consumption without treatment. The classification of groundwater as GB is consistent with the historic uses at the Site. Therefore, in this section of Stratford, due to industrial and commercial activities, Aquarion Water Company supplies potable water.

Flood Zones

Based on a review of the Federal Emergency Management Agency Flood Insurance Rate Map (Map Number 09001C0442G), the proposed Site is not in a “Flood Hazard Area.”

VII.C BIOLOGICAL RESOURCES

Vegetation

Although the proposed substation Site is previously disturbed from historic commercial/industrial activities, the Site is predominantly occupied by deciduous and scrub shrub vegetation. Mature hardwoods such as pin oak, tree-of-heaven and Norway maple primarily extend along the western and northern sides of the Site. Also noted on the Site are such species as the southern catalpa, sycamore, black cherry and red mulberry. The eastern and southern portions of the Site are paved and do not contain vegetation.

Biological Habitat

Based on the CT DEEP obligation to conserve the habitats of both endangered and threatened species, and UI's commitment to environmental stewardship, in March 2015 UI submitted a "Project Review Form" to CT DEEP for a Natural Diversity Database ("NDDB") review. In April 2015, CT DEEP – NDDB Group responded to UI and stated that DEEP anticipates that no negative impact will occur to state-listed species resulting from the proposed activities. This correspondence can be found in the Agency Correspondence in Appendix B.

Additional wildlife inhabiting the Site and areas around the Project area includes, but is not limited to, raccoons, squirrels, chipmunks, rats and native birds such as crows, robins and Canadian geese. These species are typically more tolerant of human disturbance and are capable of adapting to alternate environments.

On July 8, 2015, UI was notified by the U.S. Fish and Wildlife Service and CT DEEP that Section 7 of the Endangered Species Act has been amended. The amendment to this section pertained to the conservation of the Northern Long Eared Bat ("NLEB") and its habitat(s). Based on this amendment, UI assessed the Baird Annex property for a sustainable habitat. UI and its consultant GHD determined that, due to the lack of hibernacula and smooth bark present on the tree species, the Baird Annex property does not provide a sustainable habitat for the NLEB. This report and its findings can be seen in Appendix K. UI therefore does not expect the Project to impact the biological habitat for any threatened or endangered species.

VII.D LAND USE, ZONING, LAND USE PLANS AND RECREATION

The Site is a portion of a former industrial property that is located in a substantially industrial/commercial area, although there are some nearby residential areas. The property is zoned industrial. The Site is adjacent to the MNR corridor to the north. Beyond the rail corridor, additional mixed use areas include residential and small commercial/industrial properties. The Site is approximately a quarter mile southeast of High Park on Graham Street in Stratford.

VII.E VISUAL AND AESTHETIC CHARACTERISTICS

As a former industrial property, a portion of the Site itself has no scenic value; the remainder would be considered a wooded area. Further, the visual landscape in the vicinity of the substation Site is a mix of commercial, utility and transportation features, including Stratford Avenue (State Route 130), the existing overhead UI 115 kV transmission lines, the Two Roads Brewing Company, MNR tracks, other commercial and retail uses abutting Stratford Avenue, and the existing Baird substation. Residential areas are located across the MNR tracks on the north and south of Stratford Avenue and south of the commercial businesses. The tallest features of the proposed substation will include a new 80-foot tall communications pole, six new 70-foot tall lightning masts and eight transmission monopoles (ranging in heights from 70 to 85 feet tall). Appendix A includes photographs that illustrate the visual environment on and in the vicinity of the Site as well as a visual simulation of the proposed substation and associated equipment. A visual simulation of the site with the areas of work highlighted is shown in Figure VII.E-1.

Figure VII.E-1 Visual Simulation of the Proposed Substation with Changes Highlighted



Source: Visibility Analysis, Baird Substation

VII.F TRANSPORTATION AND UTILITIES

The proposed substation Site is readily accessible via Stratford Avenue. Interstate 95 is accessible via South Avenue and Honeyspot Road, which intersect Stratford Avenue in front of the Site. Stratford Avenue is a major arterial road that extends generally east-west through Stratford as part of State Route 130. Route 130 extends approximately 40 miles from Fairfield to Stratford. Other major regional highways, including State Route 8 and the Merritt Parkway (State Route 15), are accessible from Interstate 95.

UI's overhead 115 kV transmission lines extend east to west across the northern portion of the proposed substation Site along the MNR corridor. The MNR corridor is approximately 100 feet wide and is occupied by two active transmission lines that loop through the existing Baird substation.

A municipal stormwater line also extends across the southern portion of the Site within a 15-foot-wide easement. This stormwater line extends across Stratford Avenue in front of the Site and to the east onto the Two Roads Brewing Company's property.

Additionally, a sanitary sewer line extends across the southernmost portion of the Site within a 10 to 12-foot easement retained by the U.S. Baird Corporation. The sanitary sewer line easement is directly between the adjacent stormwater line easement to the north and the Site property line to the south.

Lastly, Stratford proposes to construct a roundabout at the intersection of Stratford Avenue, Honeyspot Road and South Avenue. The construction of this roundabout requires use of the southern portion of the UI-owned property presently occupied by the aforementioned stormwater and sanitary line easements.

VII.G CULTURAL (ARCHAEOLOGICAL AND HISTORIC) RESOURCES

Based on the historical uses of the Baird Annex property, UI performed a review of any archaeological or historic structures contained within the Site. Based on an analysis performed by Heritage Consultants of Newington, Connecticut, in February 2015, UI determined that the proposed Project would not affect any historical archaeological sites. To further assess the Site,

in April 2015 a “Project Review Form” was submitted to the Connecticut State Historic Preservation Office (“CT SHPO”) in order to review the National and State Registers of Historic Places. On May 14, 2015, a response from CT SHPO was received by UI indicating that “no historical properties will be affected by this Project.” Please see Appendix B for official agency correspondence and Appendix J for the Cultural Resource Review.

VII.H AIR QUALITY, NOISE AND LIGHTING

AIR QUALITY

The construction of the substation will require the movement of construction equipment, as well as Site preparation activities (e.g., grading, filling), that will create vehicular air emissions and dust. UI will minimize emissions from construction equipment and vehicles through proper maintenance and by limiting unnecessary idling per CT DEEP’s Anti-Idling Program. In addition to minimizing the emissions generated from idling vehicles, UI’s below-grade contractor will be responsible for controlling dust emissions by applying water or equivalent substances to exposed soils on the Site, as necessary, per guidance through UI’s SWPCP.

NOISE

To assess the existing sound environment in the vicinity of the Project Site, UI commissioned a noise survey. Black & Veatch completed the noise survey in March 2015. The results of this survey are presented in Appendix D and summarized below and in Section VIII.H.

In order to effectively quantify and qualify the existing daily sound levels surrounding the Project Site, the ambient survey included continuous sound level monitoring and short-term (attended) sound level measurements. Noise measurement locations (“NMLs”) were selected to represent nearby noise-sensitive receptors. Specifically, NMLs were established at the end of Jackson Avenue (a residential neighborhood north of the Project Site) and south of the Project Site along Old Honeyspot Rd. (St. Nicholas Russian Orthodox Church and a residential neighborhood).

The existing ambient sound levels in the vicinity of the Project Site ranged from 52 dBA to 64 dBA at the two survey locations. The quietest periods occurred during the early morning hours (2:00 A.M., March 11) when traffic on Interstate 95 had subsided. In general, the existing

ambient conditions at the nearest noise-sensitive receptors are influenced by traffic on local roads and Interstate 95, train traffic, the existing Baird substation, VIP Car Wash dryer fans and wind blowing in the trees.

Table VII.H-1
Typical Noise Levels Associated with Different Indoor and Outdoor Activities

SOUND PRESSURE LEVEL, dBA	SUBJECTIVE EVALUATION	COMMON OUTDOOR ENVIRONMENT OR SOURCE	COMMON INDOOR ENVIRONMENT OR SOURCE
140	Deafening	Jet aircraft at 75 ft	
130	Threshold of pain	Jet aircraft during takeoff at a distance of 300 ft	
120	Threshold of feeling	Elevated train	Hard rock band
110	Extremely loud	Jet flyover at 1000 ft	Inside propeller plane
100	Very loud	Power mower, motorcycle at 25 ft, auto horn at 10 ft	
90	Very loud	Propeller plane flyover at 1000 ft, noisy urban street	Full symphony or band, food blender, noisy factory
80	Moderately loud	Diesel truck (40 mph) at 50 ft	Inside auto at high speed, garbage disposal, dishwasher
70	Loud	B-757 cabin during flight	Close conversation, vacuum cleaner, electric typewriter
60	Moderate	Air-conditioner condenser at 15 ft, near highway traffic	General office
50	Quiet		Private office
40	Quiet	Farm field with light breeze, birdcalls	Soft stereo music in residence
30	Very quiet	Quiet residential neighborhood	Bedroom, average residence (without TV and stereo)
20	Just audible		Human breathing
10	Threshold of hearing		
0			

Source: Adapted by Black & Veatch from *Architectural Acoustics*, by David M. Egan (1988) and *Architectural Graphic Standards*, by Ramsey and Sleeper (1994).

Stratford's noise regulations are more restrictive than those specified by the State of Connecticut. As such, UI used the noise level standards in Chapter 142 of the Stratford Town Code to evaluate regulatory compliance of the Project. To ensure regulatory compliance, the Project must meet the following criteria:

- The sound levels associated with the Project should not exceed 45 dBA along the residential zoning boundaries to the north and south
- The sound levels associated with the Project should not exceed 62 dBA along the commercial zoning boundaries to the east and west.

The Project will conform to Stratford's noise regulations and thus the less restrictive state standards.

LIGHTING

The proposed Project Site is located in a busy, well-lit industrial area. Parking lot and commercial lighting is evident along Stratford Avenue, as well as from the various factories, warehouses, and retail and restaurant locations in the adjacent areas.

VIII. POTENTIAL ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

This section discusses the localized potential environmental effects that would result from the construction and operation of the proposed Project and the measures that UI has identified to mitigate such effects. Overall, the Project will result in beneficial reuse of a portion of a former industrial site. As the Project proceeds, UI would implement measures to mitigate adverse effects, as described within this document.

The construction and operation of the substation will represent a long-term change in the current land use, but will be consistent with the historical use of the Site for industrial purposes. The Project will modify on-site vegetation and wildlife habitat, as well as views of the Site. The construction of the substation and transmission structures will remove about 130 trees greater than 6 inches in diameter. In addition, the development of the substation will require the unavoidable filling of 654 square feet of a small wetland located on the western portion of the Site, due to the final shifted arrangement of the substation.

In general, however, these changes will be localized to the Site, its immediate vicinity, and the Metro North ROW. Further, UI will implement measures to avoid, minimize or mitigate adverse effects, as appropriate, based on UI's SWPCP, standard construction best management practices, the results of the Council's process, and the conditions and other approvals required for the Project.

VIII.A TOPOGRAPHY, GEOLOGY AND SOILS

The construction and operation of the Project will not affect the Site's overall geological conditions. However, UI must excavate or remove soils and bedrock as required to level the Site for development. In order to determine the appropriate management of the soil and groundwater during construction, GHD and UI performed a baseline environmental assessment from May 4 through May 11, 2015, on the Baird Annex property. During this baseline assessment, UI sampled 16 different areas of the Site in order to classify the soil and determine a management approach to spoils. In addition to sampling the soil, UI and GHD also classified the groundwater. A summary report can be seen in Appendix I. Based on this report, the majority of the material

will be transported off-site for limited reuse or disposed of at an approved covered landfill. Additionally, the imported soils and fill materials will establish an appropriate base for the substation equipment and ground grid.

The existing Site drainage patterns are based on the present topography and do not include a constructed drainage system. Runoff that falls on the Site north of the abandoned railroad spur generally flows to the northeast corner of the property before flowing onto adjacent property. For the larger area south of the abandoned railroad spur, runoff flows to a low spot along the western boundary. There are multiple catch basins along the southern property line (Stratford Avenue) that connect to the town's stormwater system.

Based on CT DEEP's criteria under the General Permit for Stormwater and Dewatering Wastewaters from Construction Activities regarding construction activities disturbing greater than one acre, UI will submit a registration to CT DEEP and develop a Project-specific SWPCP. Under the Project-specific SWPCP, UI's civil contractor will deploy temporary soil erosion and sedimentation controls around construction work areas in order to minimize the potential for sedimentation or stormwater runoff into off-site areas. Some of the erosion and sediment controls which are to be implemented during construction include but are not limited to the following:

- Hay bales
- Silt fence
- Straw wattles
- Diversion swales
- Track pads
- Hay bale corrals for management of spoils or concrete washout areas
- Erosion control blankets

VIII.B WATER RESOURCES AND WATER QUALITY

The location of the proposed substation originally avoided impacts to the forested area adjacent to the existing Baird substation. However, after discussions with Stratford and the Two Roads Brewing Company, repositioning of the substation to the west was desirable to create a buffer area between the substation fence line and UI's eastern property line. Due to this proposed

configuration, UI's construction activities will permanently fill the small palustrine emergent nonpersistent wetland located on the Site. The total permanent impact caused by the configuration of the substation to the wetland is 654 square feet. Based on the permanent filling of this wetland, UI intends to submit an Army Corps of Engineers ("ACOE") Category I Certification Form ("CF") and copying CT DEEP. UI will implement the conditions per the ACOE and CT DEEP's approval during construction.

Because of the permanent filling of this wetland area, UI has developed a scenario to provide compensation to the town for this activity. The compensation scenario was developed by mirroring the ACOE's "In-Lieu Program." This program allows applicants who are permanently impacting wetlands or watercourses the ability to compensate the local chapter of the Audubon Society in order to provide a positive monitoring program and long-term solution. UI will be conducting work within the Housatonic River service area, and each square foot of impact would result in a rate of \$7.56 based on the compensation structure within the ACOE's program. UI would provide the town payment totaling \$4,944.24 (see Appendix C in the ACOE Final Instrument for the Audubon In-Lieu Fee Program).¹¹

During the construction and development of the Site, UI will install erosion and sediment controls in order to protect the water quality and localized resources that could be impacted by runoff. The installation of any erosion and sediment controls during the construction and development of the Site will conform to both the Site-specific SWPCP and the DEEP General Permit.

UI also will protect the water quality in this area by complying with appropriate Spill Prevention Control and Countermeasures ("SPCC") regulation, 40 CFR 112, due to the presence of oil-filled equipment. UI will install the necessary containment and best management techniques for oil-filled equipment in order to minimize the potential for inadvertent spills or leaks to watercourses or stormwater infrastructure.

¹¹ U.S. Army Corps of Engineers In-Lieu-Fee Program, accessed December 15, 2015, available at <http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/InLieuFeePrograms.aspx>.

VIII.C BIOLOGICAL RESOURCES

Vegetation

The development of the Baird substation will involve the removal of all existing vegetation in and around the footprint of the proposed substation facilities and the northern portion of the 110-foot buffer area. The current vegetation communities that characterizes the north and west sides of the Site will need to be removed in order to meet certain clearance requirements. There are approximately 150 trees over three inches in diameter that will be removed, with any species localized to the Site being displaced. Based on the historic and current use of the CDOT ROW and a review of the Project area, there will be impacts to the vegetative screening on the north side of the CDOT ROW. Presently, both CDOT/Metro-North Railroad and UI maintain the ROW by applying their respective vegetation management practices, removing any low-growth vegetation, and removing or trimming any large-growing trees invasive to the clearance requirements, in order to meet federal and state standards. Additionally, vegetation and tree clearing will be required for temporary access drives (see Appendix A, Drawing 25253-006A). For areas outside of the CDOT ROW, vegetation restoration would be provided and coordinated with the immediate abutters.

Biological Habitats

Based on a review of CT DEEP's NDDDB Program database, in March 2015 UI submitted a "Project Review Form" to CT DEEP due to the presence of a polygon/shaded area indicating that a listed species may be present. On April 14, 2015, a letter was received by UI from CT DEEP stating that no state-listed species reside within the Project area.

In addition to the CT DEEP – NDDDB review and based on a change in the regulations under the Endangered Species Act, Section 7, for federally funded or permitted projects regarding the degradation of the NLEB population, UI performed a Site assessment to determine if a sustainable habitat is present for the NLEB at the Baird Annex property. Based on the report generated by GHD (see Appendix K), the Baird Annex Site does not provide a sustainable habitat due to the smooth bark trees present and heavily urbanized area.

Therefore, UI's construction activities will not result in any adverse effects on state or federally listed species.

VIII.D LAND USE, ZONING, LAND USE PLANS AND RECREATION

The proposed substation will result in the conversion of the existing vacant parking lot to productive utility use. The substation will also be consistent with the industrial historical use of the Site, as well as with existing zoning and state, regional and local land use plans.

Due to its location in close proximity to MNR, UI's overhead 115 kV transmission lines and the existing Baird substation, the new Baird substation will be consistent with other utilities in the area.

The proposed substation will not affect any designated or planned recreational uses. The Site is owned by UI, was previously used for industrial purposes and is presently fenced and gated. Stratford has plans to reconstruct the intersection of Stratford Avenue, Honeyspot Road and South Avenue, including a new roundabout and streetscaping, to improve a gateway to Stratford. UI has met with Stratford to coordinate the intersection design and has reconfigured the positioning of the substation to accommodate this roundabout and streetscaping, including shifting the substation to the north away from Stratford Avenue. Thus the new substation will not affect the redevelopment of this area.

VIII.E VISUAL AND AESTHETIC CHARACTERISTICS

The proposed substation will represent a change in the current visual environment. To evaluate potential views associated with the proposed substation, UI retained All-Points Technology Corporation, P.C. ("APT") to conduct a visibility analysis. This analysis, which is provided in Appendix E, included a combination of predictive computer modeling and field evaluations. Visual simulations of the proposed substation under "leaf off" (winter-type) conditions also were performed.

The visibility analysis determined that year-round views of the substation would be limited to a modest geographic footprint due to the relatively short height of the majority of the infrastructure, the intervening development and existing vegetation. Year-round views would be confined to locations on and within the immediate vicinity of the Site and would extend approximately 0.3 miles south and 0.75 miles east and west along Stratford Avenue. To the north, views would be more limited because of intervening structures and vegetation. The Site is

in a relatively industrial/commercial area and located directly adjacent to the existing substation with similar visual characteristics. In general, views of the proposed equipment would be similar to what exists today and would not have a substantial adverse visual effect on the surrounding equipment.

VIII.F TRANSPORTATION AND UTILITIES

The construction and operation of the proposed Project Site will not result in any significant adverse effects on transportation or utility systems. The proposed Site is readily accessible from the local and regional highway network and is adjacent to UI's 115 kV overhead transmission lines and MNR. The development of the substation will improve UI's transmission system capacity and improve distribution voltage regulation, as well as replace aging and antiquated equipment, thereby affording UI customers more reliable electric service. The Project will not affect any above-grade existing municipal utilities. The operation of the substation will not require full-time on-site personnel and thus will not result in any long-term effects on traffic.

The construction of the proposed substation may have a minor and short-term effect on vehicular traffic on the local roads leading to the Site, particularly Stratford Avenue. At times, localized traffic congestion may occur when heavy construction equipment or large components are transported to the Site, as well as when construction workers travel to and from the Site. However, these effects, if any, will be limited to the immediate vicinity of the Site and relatively minor.

UI expects to locate the parking and laydown areas in support of the construction activities in the 110-foot buffer area located on the east side of the Project Site. This area will be secured with a temporary eight-foot-high chain link fence with one foot (three strands) of barbed wire. To utilize this area during construction, UI must suspend the existing license agreement for overflow parking between UI and Two Roads Brewing Company. Access to this area will be achieved both through the substation perimeter via a temporary drive gate and from Stratford Avenue. Access to Stratford Avenue will be achieved through a new temporary access road entering the eastern edge of the 110-foot buffer area. This temporary access drive will limit construction traffic to UI-owned property, as well as direct traffic outside the limits of the proposed roundabout. Overall, due to the Site's proximity to multi-lane major transportation routes (i.e.,

near Interstate 95 Exit 31), UI expects that the effects on local traffic congestion will be insignificant. Details of the proposed laydown area and temporary access road can be found on the Construction Facilities Plan (Drawing # 25253-805) included in Appendix A.

To accommodate Stratford's proposed roundabout, UI designed the proposed substation access road to avoid direct egress to the roundabout due to safety, traffic and large equipment access considerations. To ensure unimpeded access to and from the proposed substation with minimal disruption to local traffic, the proposed access drive will enter Stratford Avenue approximately 300 feet to the west of the roundabout edge. The security gates will be located off the property line and street, allowing vehicles to park on the access drive while unlocking the security gates.

VIII.G CULTURAL (ARCHAEOLOGICAL AND HISTORIC) RESOURCES

No cultural resource sites (archaeological or historical) or standing historic structures are known to exist on or in the immediate vicinity of the proposed substation Site. Construction activities associated with the proposed substation will be in areas where soils were previously disturbed and historically used for industrial purposes. As a result, the potential for encountering intact, previously unrecorded, significant archaeological resources is negligible, and no adverse effects on cultural resources are expected to occur. Based on a letter received by UI from the CT SHPO, dated May 14, 2015, and a report generated by Heritage Consultants (see Appendix B), no cultural resource sites (archaeological or historical) or standing historic structures are known to occur on or in the immediate vicinity of the proposed substation Site. Therefore, the Project will not have any significant adverse effects on cultural resources.

VIII.H Air Quality, Noise and Lighting

The development of the proposed substation will result in short-term and localized effects on air quality as a result of emissions from construction equipment and related vehicles. Localized noise impacts as a result of construction equipment movements and general construction activities may occur. In addition, some modifications to the ambient sound environment will occur as a result of the operation of the substation.

AIR QUALITY

The construction of the substation will require the movement of construction equipment, as well as Site preparation activities (e.g., grading, filling), that will create vehicular air emissions and dust. UI will minimize emissions from construction equipment and vehicles through proper maintenance and by limiting unnecessary idling per CT DEEP's Anti-Idling Program. UI will additionally avoid mass startups of vehicles and construction equipment. Finally, UI's below-grade contractor will be responsible for controlling dust emissions by applying water or equivalent substances to exposed soils on the Site, as necessary, per guidance through UI's SWPCP.

NOISE

As a result of the movement of construction vehicles, the operation of construction equipment and the performance of construction activities, the development of the proposed facilities will cause temporary increases in the sound levels in the vicinity of the Project. However, because the proposed Project is located adjacent to a major interstate (I-95) and the Metro-North Railroad, these temporary daytime increases will generally be consistent with the existing ambient conditions.

After the substation is placed in service, infrequent impulse noise will be generated by the operation of equipment. The impulse noise levels and steady-state transformer noise levels are not expected to exceed the levels permitted by Stratford's noise regulations. Based on the results of the noise study (refer to Appendix D), the Project's sound pressure levels along the adjacent residential and commercial zoning boundaries will be below 45 dBA and 62 dBA, respectively. As such, the Project is expected to comply with the noise regulations promulgated by Stratford and the State of Connecticut.

LIGHTING

A portion of the existing parking lot lighting, as well as commercial and industrial lighting along Stratford Avenue, will remain intact during and after completion of the Project.

During operation, the substation will have low-level lighting for safety and security purposes. The illumination from these lights will be visible in the immediate vicinity of the substation. UI will employ additional lighting only for work at night under abnormal or emergency conditions.

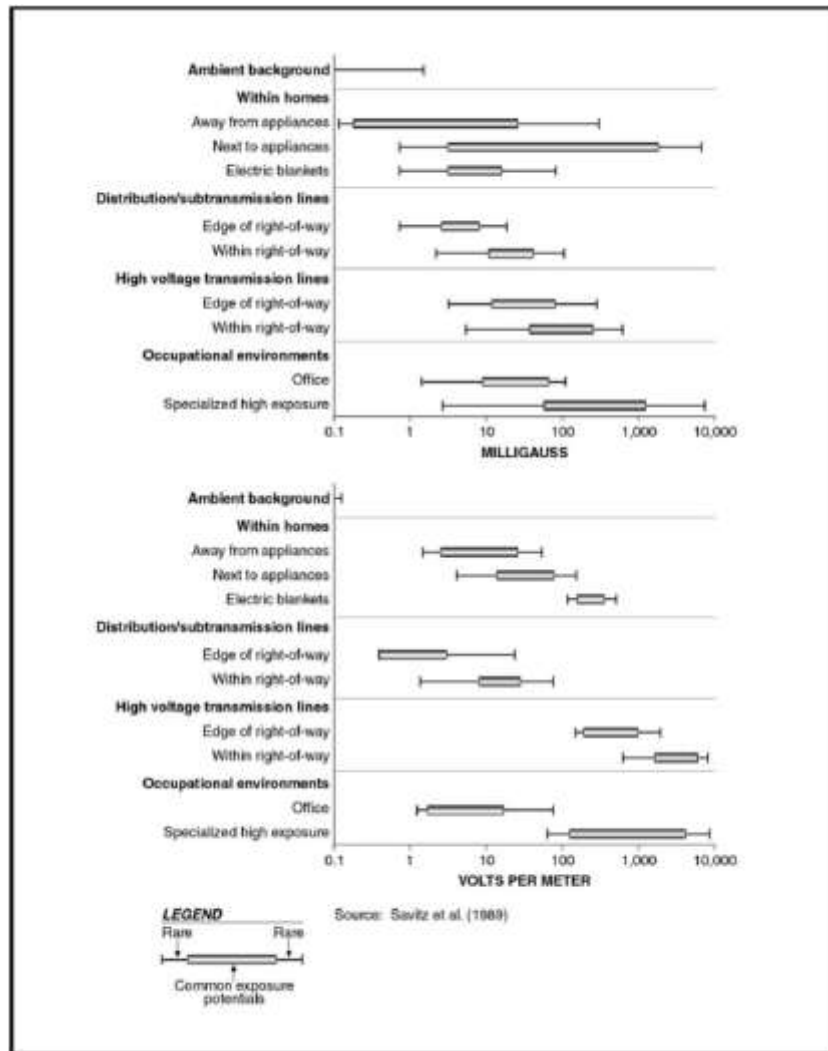
UI's standard lighting design for illumination of substation yards includes the use of high mast lights mounted on the same masts used for lightning protection. However, in consideration of the surrounding landscape of the proposed substation, UI will utilize alternative low-level LED lighting to achieve the necessary illumination levels while minimizing light dissipation to adjacent properties.

IX. ELECTRIC AND MAGNETIC FIELD CONSIDERATIONS

Introduction

Electric and Magnetic Fields surround anything that generates, transmits or uses electricity. EMF is present in nearly every place we encounter daily, including our schools, workplaces and homes. Typical sources of EMF in these locations include appliances, nearby electric distribution and transmission lines, wiring and electric current flowing on conductive water pipes. Figure IX-1 depicts typical magnetic field levels measured in residential and occupational environments, compared to levels measured on or at the edge of transmission line ROW.

Figure IX-1: Electric and Magnetic Field Levels in the Environment



Magnetic Fields: The current flowing in the conductors of a substation bus-line or an overhead transmission line generates a magnetic field near the conductors. The strength of Project-related magnetic fields described herein is expressed as magnetic flux density in units of milligauss (mG) where 1 Gauss = 1,000 mG. In the case of alternating current (“AC”) transmission lines, these currents (and thus magnetic fields) vary in direction and magnitude with a 60-Hertz (Hz) cycle. Since load current, expressed in units of amperes (A), generates magnetic fields around the conductors, measurements or calculations of the magnetic field present a “snapshot” for the load conditions at only one moment in time. On a given day, throughout a week or over the course of months and years, the magnetic field level can change depending upon the patterns of power demand on the bulk transmission system.

Electric Fields: The voltage on the conductors of transmission lines generates an electric field in the space between the conductors and the ground. Many objects are conductive, including fences, shrubbery and buildings, and thus shield electric fields. Electric fields within the Baird substation, therefore, are not calculated since they are likely to be blocked by the substation fence. In addition, the buried distribution lines will not be a source of 60-Hz electric fields above ground, since electric fields are confined by the cables’ conductive sheath and armor, as well as blocked by the surrounding soil and duct bank. Electric field levels were calculated beneath the transmission lines and are expressed in units of kilovolts per meter (“kV/m”); 1 kV/m is equal to 1,000 volts per meter (“V/m”).

Assessment of EMF for the Baird Substation

Substations are less common EMF sources than distribution lines. Nevertheless, substations of varying sizes can be found in many communities. For this Project, UI proposes to construct a new substation adjacent to an existing substation that will take electricity from two existing, adjacent 115 kV transmission lines and convert it to 13.8 kV for distribution in the surrounding Stratford area.

An EMF assessment of the potential effects of the Baird substation was performed by Exponent. Exponent’s Electric and Magnetic Field Assessment: The Baird Substation Rebuild Project report is provided in Appendix G, including EMF measurements of the existing electrical

facilities at the proposed Site, as well as modeling of the proposed substation itself and adjacent transmission lines. The results of these analyses are summarized below.

EMF Measurements and Modeling

Measurements of EMF levels from existing sources, including the existing Baird substation, UI-owned overhead 115 kV transmission lines and MNR power and signal wires, were taken to assess pre-Project conditions. Magnetic and electric field measurements were performed on June 4, 2015, and are discussed in greater depth in the full EMF report in Appendix G. As described above, measurements of the electric and magnetic fields present a “snapshot” for the load conditions at only one moment in time and do not necessarily represent the peak. To calculate peak and average field levels, simulated load cases were developed in accordance with the Council’s EMF Best Management Practices (BMP).¹² Calculated EMF values for peak load and projected seasonal maximum 24-hour average load were calculated for pre-Project conditions and used as the baseline for comparison of post-Project conditions. The highest calculated magnetic field level for pre-Project conditions was 137.2 mG at the substation fence underneath the incoming 115 kV transmission lines, decreasing to 12.4 mG at a distance of 150 feet.

Post-Project conditions were calculated for the proposed substation and associated transmission line interconnection operating under peak and average load scenarios. The results of these analyses are presented as magnetic field profiles around the perimeter and perpendicular profiles extending outward from the substation fence. The profiles are based on information regarding the types of substation equipment, as well as the locations of the 115 kV transmission line interconnections and 13.8 kV duct lines. The highest calculated magnetic field levels around the perimeter of the substation were found under the transmission lines entering the substation, with the highest post-Project levels found to be 40% lower than the highest pre-Project levels. Figures depicting the full magnetic field perimeter profiles can be found in Exponent’s complete report provided in Appendix G.

¹² Connecticut Siting Council. Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut, February 20, 2014, available at http://www.ct.gov/csc/lib/csc/emf_bmp/revisions_updates/754bmpfinal.pdf.

In addition to calculations of magnetic fields around the perimeter of the Project, eight profiles perpendicular to the perimeter fence were calculated as shown in Figure IX-2. These profiles extend outward onto adjoining properties and depict the decrease in magnetic field levels as distance to electrical equipment is increased. The calculations for Profiles #6 and #7 are discussed below; full details from these two sections as well as those from the remaining six sections can be found in Appendix G. Figure IX-3 shows the magnetic field Profile #6 extending from the proposed substation fence eastward toward the Two Roads Brewing Company. The brewery resides at a minimum distance of approximately 185 feet from the substation fence with a calculated magnetic field of less than 13 mG for post-Project conditions. Figure IX-4 shows the magnetic field Profile #7 extending north from the substation fence across the Metro-North Railroad toward Jackson Avenue. The nearest residential dwelling from the substation fence is approximately 170 feet to the north with a calculated magnetic field of approximately 18 mG for post-Project conditions. At the locations of both the nearest residence and the Two Roads Brewing Company, the calculated magnetic field level is less than 1% of that recommended for the general public by international health-based standards (discussed in greater detail below).

Figure IX-2: Perpendicular Profiles Extending from the Perimeter of the Existing and Proposed Baird Substation

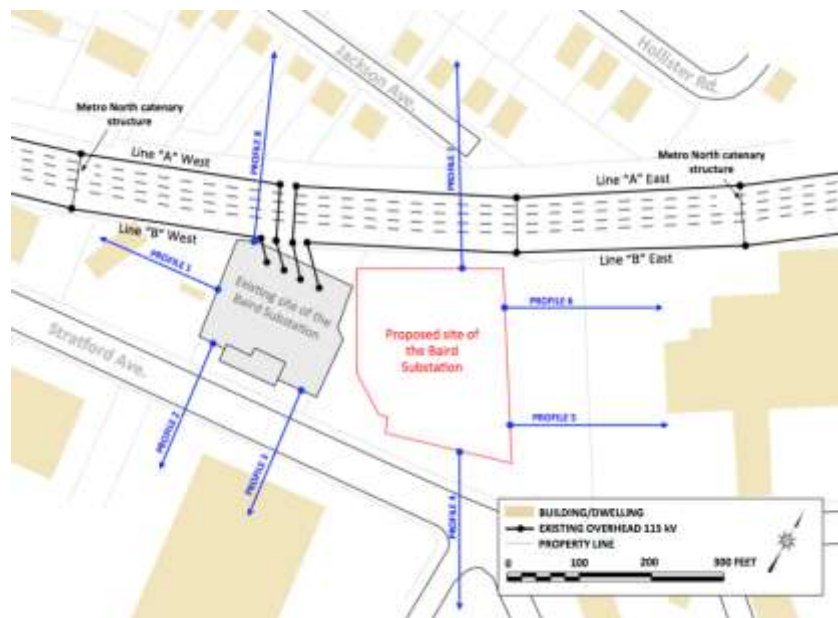


Figure IX-3: Perpendicular Profile #6 Extending from the Eastern Perimeter toward the Two Roads Brewing Company

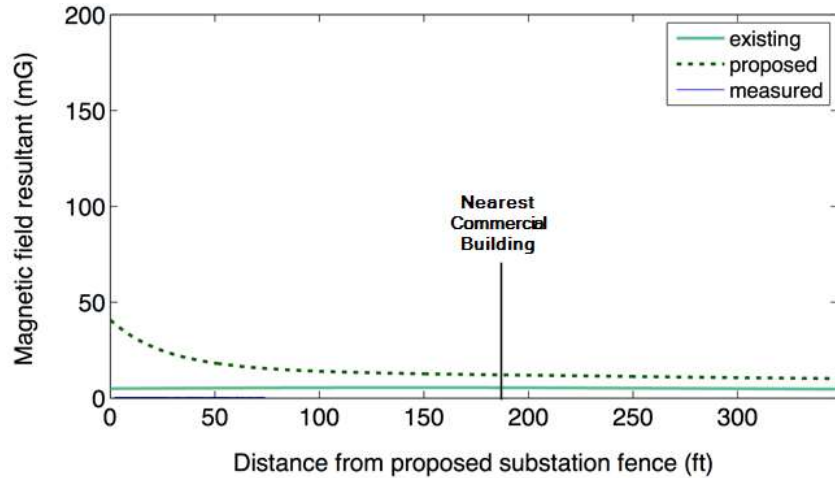
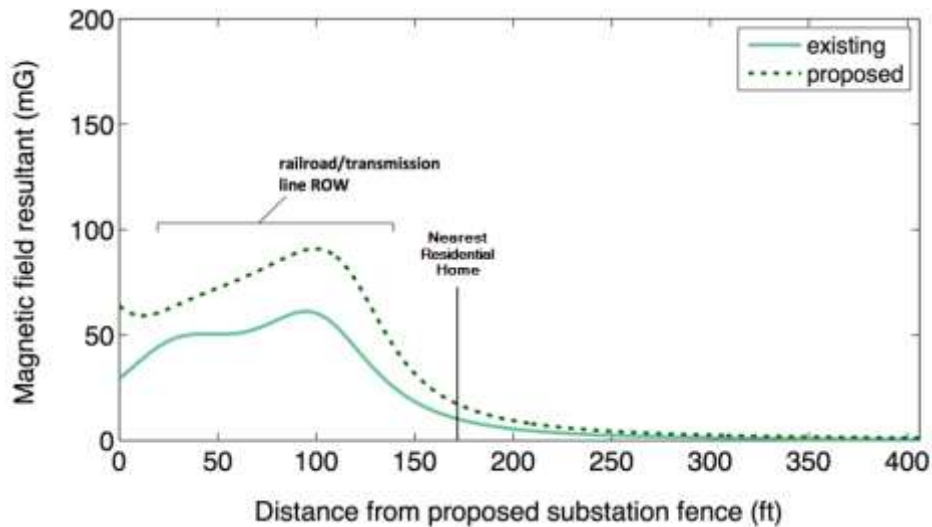


Figure IX-4: Perpendicular Profile #7 Extending from the Northern Perimeter toward Jackson Avenue



Consistency with Connecticut Siting Council Policies

Neither the federal government nor Connecticut has enacted standards for magnetic fields or electric fields from power lines or other sources at power frequencies. Several other states have statutes or guidelines that apply to fields produced by new transmission lines, but these guidelines are not health based. For example, New York and Florida have limits on EMF that were designed to limit fields from new transmission lines to levels characteristic of the fields from existing transmission lines.

More relevant EMF assessment criteria include the exposure limits recommended by scientific organizations. These exposure limits are included in guidelines developed to protect health and safety and are based upon reviews and evaluations of relevant health research. These guidelines include exposure limits for the general public recommended by the International Committee on Electromagnetic Safety (“ICES”) and the International Commission on Non-Ionizing Radiation Protection (“ICNIRP”) to address health and safety issues (ICES, 2002; ICNIRP, 2010).

In a June 2007 Fact Sheet, the World Health Organization included recommendations that policymakers should adopt international exposure limit guidelines, such as those from ICNIRP or ICES (Table IX-1), for occupational and public exposure to EMF.

Table IX-1: ICNIRP and ICES Guidelines for EMF Exposure

	Exposure (60 Hz)	
	Electric Field	Magnetic Field
ICNIRP		
Occupational	8.3 kV/m	10 G (10,000 mG)
General Public	4.2 kV/m	2 G (2,000 mG)
ICES		
Occupational	20 kV/m	27.1 G (27,100 mG)
General Public	5 kV/m*	9.040 G (9,040 mG)

*Within power line ROWs, the guideline is 10 kV/m under normal load conditions.

The Siting Council has published a guide for applications for Certificates of Environmental Compatibility and Public Need for electric substations that addresses EMF (2010). The guide calls for information to be provided on a number of topics, including public health and safety in Section I.1 and on EMF specifically in Section L, where information supporting the consistency of the proposed facility with the Siting Council’s EMF BMPs for transmission lines (2014) is to be provided.

Interdisciplinary panels of scientists formed by national and international scientific agencies are good sources of information and guidance for governmental agencies and the public; these panels have evaluated the scientific research related to health and power-frequency EMF.

Research on this topic varies widely in its approach, but the general scientific consensus of the health agencies reviewing this research is that at levels associated with the operation of the proposed substation, associated lines or other common sources of EMF in our environment, the weight of the scientific evidence does not confirm that EMF causes any long-term adverse health effects.

While neither the Council nor the above cited national and international health and scientific agencies have concluded that electric or magnetic fields pose a health hazard, the Council has embraced policies that would tend to minimize public exposure to ensure that a “proposed facility would not pose an undue safety or health hazard”¹³ and have advocated for “the use of effective no-cost and low-cost technologies and management techniques on a project-specific basis to reduce MF [magnetic field] exposure to the public while allowing for the development of efficient and cost-effective electrical transmission projects.”¹⁴

The EMF assessment for this Project was conducted in accordance with the Council’s *Application Guide for an Electric Substation Facility* and, as summarized below, fulfills requirements of the Siting Council’s *EMF Best Management Practices (“BMP”) for the Construction of Electric Transmission Lines in Connecticut (EMF BMP)*.

The design of the substation has incorporated reasonable measures to minimize EMF consistent with the Council’s recommendations for transmission lines, including:

- The proposed location of the substation has been shifted to the west by approximately 100 feet to create a buffer area between the substation and the closest abutting property owner, the Two Roads Brewing Company.
- The substation and related construction are to be designed to meet or exceed the requirements of the National Electric Safety Code (“NESC”).

¹³ Connecticut Siting Council. Application Guide for an Electric Substation Facility, April 2010, available at http://www.ct.gov/csc/lib/csc/guides/guides2015/elec_sub_application_guide_410.pdf#55846.

¹⁴ Connecticut Siting Council. Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut, February 20, 2014, available at http://www.ct.gov/csc/lib/csc/emf_bmp/revisions_updates/754bmpfinal.pdf.

- The proposed Site does not abut statutory facilities defined in Public Act No. 04-246, and no additional buffer beyond that called for by the NESC and standard utility design and practice is required.
- The substation is located adjacent to the existing 115 kV transmission line ROW on the MNR corridor, and the length of the transmission line interconnection is very short.
- The new substation will be located directly adjacent to the existing energized substation to be replaced, with magnetic field magnitudes similar to or lower than existing conditions, but shifted eastward with the proposed equipment.
- While the substation will be an additional source of EMF, the field levels produced will be consistent with the range of EMF associated with the existing sources (e.g., the existing substation, the adjacent overhead transmission and distribution lines, MNR power and signal feeders) and will decrease rapidly with distance. At commercial buildings adjacent to the Site to the east and residential areas to the north, the magnetic field levels will be less than 1% of that recommended for the general public by international health-based standards (ICES and ICNIRP).
- The new 13.8 kV distribution circuits will exit the substation in an underground duct bank. The close proximity of the conductors within this duct bank will help to minimize the magnetic field above ground and totally shield the electric field as compared to an above-ground line.
- The four incoming transmission towers have been designed for a height of 85 feet, reducing the post-Project magnetic field levels in this vicinity by 40% as compared to pre-Project levels for this same area (i.e., under the incoming transmission lines).

Comparing Figure IX-1 to the results discussed above, the calculated magnetic field levels in the vicinity of the new substation will be comparable to the existing conditions and similar in magnitude to the magnetic field levels encountered in the vicinity of typical distribution lines and in homes and workplaces.

The highest calculated magnetic field level at the perimeter of the proposed Baird substation fence is less than 6% of that recommended for the general public by international health-based standards (CES and ICNIRP) and is comparable to fields that may be found in homes near major appliances.

X. ALTERNATIVES CONSIDERED

After determining that UI's distribution network required the construction of a new facility to replace the existing Baird substation, UI identified and evaluated alternative substation sites that would meet distribution and transmission system needs as well as provide a cost-effective approach for interconnecting to the existing electric transmission and distribution network. The objectives of this alternatives evaluation process were to:

- Identify and assess potential substation sites that would meet existing distribution system needs, including distribution substation requirements (size, design), as well as the new or upgraded distribution lines that would be required to interconnect any new substation site to the existing distribution infrastructure and the load centers in Stratford.
- Evaluate potential substation sites based on engineering, constructability, environmental, social and cost considerations, applying in particular the criteria contained in UI's *Transmission and Distribution Guideline for Substation Site Selection* (TDG 002; March 2013).
- Select, from among the locations identified in the first two objectives, potential sites that could be feasibly developed for a distribution substation to meet the overall demands for electricity in the Stratford area, taking into consideration UI's site selection guidelines.

Using this analysis process, the Baird Substation Site Selection Study (Appendix F) identified 12 sites, three of which were potentially viable. These three potentially feasible sites for the new substation were subsequently evaluated in greater detail, taking into consideration engineering design, construction, environmental and cost factors (Baird, West Broad Street, Bruce Street). As a result of these evaluations, UI selected the Baird Annex property as the preferred Site. Due to the exponential costs and environmental effects associated with the other two sites, UI is not proposing an alternative site for the Council's consideration. For the preferred Baird Annex Site, UI also investigated alternative substation configurations, including the shifted arrangement proposed after discussions with Stratford and neighboring property abutters.

The following subsections:

- Summarize the step-by-step alternative site selection evaluation process that UI used to identify the Baird Annex property as the preferred Site for the new substation.

-
- Describe the characteristics of the West Broad Street site.
 - Review the substation configuration options considered for the preferred Baird Annex Site.

X.A UI SITE SELECTION CRITERIA

GENERAL CRITERIA

UI followed the procedures contained in the *Transmission and Distribution Guideline for Substation Site Selection* (“*Guideline*”), which describes the standard procedures and criteria used to identify and evaluate a location for the determination of a substation site. The key factors considered in the selection of the Site included the following:

- Distance to the existing Baird substation and to existing electric transmission lines
- Site size requirements
- Site terrain
- Environmental and land use compatibility
- Substation construction issues
- Transmission and distribution line construction requirements
- Accessibility
- Cost

UI assembled a multidisciplinary team comprised of personnel with expertise in electrical distribution and transmission system planning, design, construction, environmental science and real estate to conduct an analysis of the alternative sites. This team followed a step-by-step process, whereby potential substation locations were first identified and screened in accordance with UI’s standard objectives for substation siting. In addition to the factors listed above, the UI team considered the following principles, as detailed in the *Guideline*:

- Minimize the need to acquire residences and viable commercial/industrial uses to accommodate substation development.

- Maintain consistency/compatibility with existing land uses and land use plans to the extent possible.
- Minimize adverse effects on sensitive environmental resources and the social environment.
- Maintain public health and safety.
- Demonstrate cost-effectiveness, while adhering to good engineering and sound environmental planning practices.
- Present the public with a clear and well-documented methodology for the identification of the proposed and alternative sites.

DISTRIBUTION SYSTEM CONSIDERATIONS IN THE STRATFORD AREA

To meet the distribution capacity needs of the Stratford area, UI determined that any new substation that would replace the existing Baird substation should be located to facilitate interconnections to the existing electrical transmission and distribution systems, particularly to allow cost-effective interconnections to the existing and projected electric load areas. The following primary factors were considered when identifying and assessing potential sites:

- *Location of potential sites in relation to the existing electric distribution network.* For distribution interconnections, preferred sites are near existing distribution infrastructure or in areas where new distribution infrastructure could be economically developed to reach load centers. The distance of the Project is a primary consideration, as the distribution infrastructure required to serve the electric load areas collectively terminates at the existing substation. Location of the proposed Project in close proximity to the existing substation limits conflicts with physical encumbrances, the presence of other utilities and costs associated with the installation of additional distribution infrastructure.
- *Availability of land for development of a distribution substation.* The minimum required area for the proposed Project, a “distribution only” open-air 115/13.8 kV substation supplied by four transmission lines with two transmission circuit breakers, no expansion capability on the transmission side and appropriate buffers and setbacks, is 1.5 acres.
- *Location of sites in relation to existing transmission lines (possible interconnections).* Four UI 115 kV transmission lines extend east to west along the MNR corridor and are located adjacent to UI’s existing Baird substation. These four transmission lines are interconnected to several distribution and transmission substations in UI’s territory. These distribution substations each feed independent electric load centers, both to the east and west of the existing Baird substation in Bridgeport and Stratford.

After taking these factors into consideration, UI defined the preferred geographic location of the proposed Site for the Project as an approximately 1,000-foot-wide corridor along the existing MNR corridor bounded by the two existing distribution substations to the east and west of the existing Baird substation. This siting region was selected because of the existing Stratford electric load area the Project would serve.

X.B IDENTIFICATION AND SCREENING OF POTENTIAL SITES

OVERVIEW OF THE SITE SCREENING PROCESS

UI applied the siting criteria within the preferred geographic siting region and conducted baseline research, performed field reconnaissance and consulted with municipal officials to evaluate potential site locations. As a result of this process, UI identified 12 potential sites for initial consideration of the Project. These potential sites were identified based on the *Guideline* and the existing distribution and transmission considerations specific to the Stratford area.

The 12 identified sites were screened using the following preliminary criteria:

- Greater than or equal to 1.5 acres of developable land (the estimated minimum size for the development of an open-air distribution substation of this type)
- Sites with at least one of the following characteristics:
 - Land adjacent to the MNR corridor between the distribution substations directly to the east and west of the existing Baird substation
 - Land owned by UI
 - Land that is vacant, available for sale, underdeveloped (e.g., formerly developed properties that are available for reuse) or otherwise undeveloped

Sites that appeared, based on the initial evaluation, to meet at least some of the preliminary siting criteria were then qualitatively evaluated using the following factors:

- Environmental – Environmental issues, including site characteristics, present and past land uses, cultural resources, threatened and endangered species, tidal or inland wetlands, ponds, aquifers, watercourses, public watersheds and floodplains, the potential need for environmental remediation (for previously developed sites) and encumbrances
- Surroundings – Zoning and description of the surrounding area, including the site's proximity to statutory facilities (schools, playgrounds, daycares, nursery schools, day camps and residential neighborhoods)

-
- Transmission and Distribution System – System transmission and distribution interconnection costs and other considerations, including system impacts, accessibility and right-of-way requirements
 - Construction – Substation construction, vehicular access costs and other related considerations, including the effects of site size, shape and subsurface topographical conditions
 - Acreage Available – Property availability, additional land for buffer or expansion, expected cost and availability of easements
 - Permitability – Anticipated ability to obtain all the required siting, land use, environmental and construction permits

Using this process, most of the potential sites initially identified were found to be impractical for the development of the proposed Project and were eliminated from further consideration. The reasons for eliminating a particular site varied, ranging from environmental issues (e.g., presence of wetlands, rock, insufficient developable area, incompatible land uses) to the identification of new information regarding the future development plans for vacant property.

When the screening analysis was completed, UI identified three sites that appeared to be feasible for the development of the proposed Project:

- Bruce Street
- West Broad Street
- Baird Annex (UI property)¹⁵

Figure X.B-1 illustrates the locations of these three sites.

UI conducted a more detailed evaluation of each of these three sites. As discussed in the following subsections, of the three alternative sites, UI determined that the development of the Baird Annex Site would best meet the Project objectives, based on environmental, technical and

¹⁵ The Baird Annex site was evaluated as a standalone site using criteria outlined in UI's *Transmission and Distribution Guideline for Substation Site Selection*. The incorporation of the adjacent UI-owned parcel to the west (on which the existing Baird substation resides) to accommodate the shift of the substation to the west occurred after the completion of the Baird Substation Site Selection Study.

cost considerations. The West Broad Street site is viable, but UI does not propose it as an alternative Site based on cost and environmental considerations. In contrast, the Bruce Street site was found to be impractical for the development of the proposed Project.

Figure X.B-1: Alternate Sites Evaluated



Source: Google Earth, May 2015

BRUCE STREET

This 1.23-acre site was recommended as a potential alternative site by Stratford in preliminary discussions with UI. It is comprised of three separate properties that were assumed to be assembled into one property for evaluation as an alternative site for the proposed Project. All three of the separate properties are currently occupied by structures of varying commercial/industrial uses. The site is located directly adjacent to the MNR corridor and UI's existing 115 kV transmission lines that run along its northern border. It is bordered to the west and south by Bruce Street and Stratford Avenue, respectively, and to the east by the Stratford Motor Inn. The Bruce Street site is located approximately one half mile west of the existing Baird substation. The site's relatively close proximity to the existing Baird substation provides the opportunity to minimize costs associated with new underground distribution infrastructure that would be required to interconnect the proposed Project to the existing distribution infrastructure.

Upon further review of the feasibility of this site, it was determined that there is insufficient space to accommodate the proposed Project. An engineering review of conceptual arrangement plans for the necessary equipment revealed that electrical clearances would be violated from energized equipment to the perimeter fence. In addition, the narrow nature of the parcel results in insufficient maintenance access around critical pieces of equipment that would need to be located on the eastern portion of the site. There would also be inadequate space for UI's mobile transformer, which would be brought to the site if one of the station transformers is removed from service for an extended period of time.

Although the Bruce Street site is physically located close to the existing Baird substation and shares Stratford Avenue as an access road, the parcel is not sufficiently large enough for the proposed Project. Additionally, the existing structures would need to be demolished and the foundations removed prior to construction of the Project. This would result in a significant increase in site preparation costs over a greenfield site. These factors contributed to UI's determination that the Bruce Street site would not be feasible or cost-effective for a new 115/13.8 kV distribution substation.

WEST BROAD STREET

This site is located to the east of the existing Baird substation, between the MNR corridor and Interstate 95, at 1297 West Broad Street. UI's two 115 kV transmission lines run along its northern border. The site is the former location of an industrial facility that had several structures demolished, but still has several remaining. Abutting the property to the west along a joint access road is the MLI Redemption Services bottle and can redemption center.

In the general vicinity of the site, industrial and commercial buildings border West Broad Street and also characterize areas to the north of the site. Farther to the north, beyond the MNR corridor and commercial/industrial facilities, are residential neighborhoods along Knowlton Street.

The siting of the new substation at the West Broad Street site is constrained from interconnecting to the existing Baird substation's distribution infrastructure along Stratford Avenue. Utilization of this site for the proposed Project would require the interconnection of new distribution circuits to their collective termination point in front of the existing Baird substation. Since there is no

direct road access between the existing Baird substation and the West Broad Street site on Stratford Avenue, it would require a longer access route using Beardsley Avenue. No underground distribution infrastructure currently exists on the necessary portions of Beardsley Avenue or West Broad Street. Additionally, the existing underground infrastructure on the necessary portions of Stratford Avenue would not be sufficient to support the number of circuits that would be required. As a result, new underground infrastructure would be required over a distance of approximately one mile with two crossings under Interstate 95.

The site is also a brownfield and would likely require considerable remediation of contaminated soils during construction. While portions of the previous manufacturing facility have been demolished, a large building remains and is abandoned. The foundations from the demolished portions of the facility remain on site and would require removal to accommodate the necessary site grading, equipment foundations, duct lines for distribution get-aways and grounding for the new substation.

BAIRD ANNEX

UI selected the Baird Annex property as the preferred Site for the proposed Project due primarily to the following factors:

- The Site is consistent with the industrial/commercial land uses of the surrounding area.
- The Site is located directly along UI's existing 115 kV transmission lines adjacent to the MNR corridor,
- The proposed Town of Stratford roundabout requires modifications to UI's existing overhead and underground distribution infrastructure directly adjacent to the Site. With modifications to underground infrastructure already required, the costs and impacts of interconnecting the new substation distribution circuits to existing infrastructure are decreased.
- The Site is located immediately adjacent to the existing substation property, decreasing the impacts and costs of new infrastructure to interconnect the proposed Project's distribution circuits to the existing infrastructure.
- The Site provides the lowest evaluated cost option.

After discussions with Stratford and neighboring property abutters, UI reevaluated the positioning of the substation on the Baird Annex property to better utilize the adjacent UI-owned property to the west. The proposed substation position utilizes both the aforementioned Baird Annex property and the UI-owned property directly to the west.

SUMMARY OF SITE SELECTION PROCESS

In summary, the Baird Annex Site is the optimal site for the development of the new Baird substation. After closely examining the three potential options, UI decided against proposing the West Broad Street and Bruce Street locations as they contain significant compliance, engineering, and cost impediments.

The construction of a substation at the Baird Site is consistent with the land uses of the surrounding area, particularly the immediately adjacent existing Baird substation, as well as the historic uses of the Site itself. The Baird Annex Site's close proximity to the existing substation that it will replace makes it best suited for interconnection to existing distribution infrastructure. In addition, the Site's abutment of the MNR corridor provides direct access to UI's 115 kV transmission lines. All of these factors, amongst others, make the Baird Site the least cost option.

Furthermore, the planned modification of UI's overhead and underground infrastructure along Stratford Avenue to accommodate Stratford's proposed roundabout provides a unique opportunity to interconnect the new substation's distribution circuits to infrastructure required for modification.

Finally, UI was able to secure Project support from Stratford and a major industrial abutter at the proposed Site after modifying the original design. This shifted arrangement efficiently utilizes the Baird Annex property, as well as the adjacent UI-owned property on which the existing substation resides.

XI. PROJECT SCHEDULE

Construction is expected to begin in the fourth quarter of 2016, with the substation scheduled to go into service in the first quarter of 2018.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Condition Assessment	█										
Design Adequacy		█	█								
Needs Assessment			█	█	█						
Property Acquisition				█	█						
Solution Study					█	█	█				
Preliminary Engineering							█	█			
Permitting								█	█		
Detailed Engineering									█	█	
Procurement										█	█
Construction										█	█
Operation											█

XII. PROJECT PERMITS, APPROVALS AND CONSULTATIONS

During the planning of the proposed Baird Substation Project, UI has coordinated with representatives of the Town of Stratford, as well as with the public, Two Roads Brewing Company, the Army Corps of Engineers, and other regulatory agencies. UI expects to continue to consult with the involved federal, state, and local agencies as the planning for and development of the Project continues.

XII.A FEDERAL AND STATE AGENCY APPROVALS REQUIRED AND CONSULTATIONS

During the planning of the proposed Baird substation Project, UI has coordinated with representatives of the Town of Stratford and the City of Bridgeport, as well as with the public, the ACOE, CT DEEP, CT SHPO, U.S. Fish and Wildlife, and other regulatory agencies. UI expects to continue to consult with the involved federal, state and local agencies as the planning for and development of the Project continues.

In addition to the Certificate of Environmental Compatibility and Public Need from the Siting Council, the Project will require a General Permit (Category I per Section 404 of the Clean Water Act) from the ACOE. Certain approvals also may be required from the CT DEEP. Table XII-1 summarizes the permits and approvals required for the Project and the consultations that UI has held to date with involved federal and state agencies.

Table XII-1: Permits and Approvals Applicable to the Baird Substation Project

Agency	Permit/Approval Required	Application Submitted or Consultation (Date)	Status
U.S. Army Corps of Engineers, New England District – Connecticut Division	General Permit (Category I, CF per Section 404 of the Clean Water Act)	Permit application expected to be filed end of the first quarter 2016	Pending
Connecticut Siting Council	Certificate of Environmental Compatibility and Public Need under Connecticut General Statutes § 16-50/(a)(1)	December 2015	Pending
CT DEEP	401 Water Quality Certification	Permit application expected to be filed end of the first quarter 2016	Pending
CT DEEP – NDDB	Threatened and endangered species review	Final determination received April 2015 for listed species; NLEB review submitted to CT DEEP/USFW October 2015	Complete
CT DEEP	General Permit	CT DEEP General Permit DEEP-WPED-GP-015 expected to be filed first quarter of 2016; SWPCP will also be submitted with the CT General Permit registration	Pending
CT SHPO	Cultural Resource Consultation under Connecticut General Statutes § 16-50/(e)	Signoff from CT SHPO received in May 2015	Complete
Town of Stratford	MCF	August 14, 2015	Complete
MetroNorth Railroad	Entry Permit – MetroNorth Railroad	Permit application expected to be submitted second quarter of 2016	Pending
Town of Stratford – Inland Wetlands and Watercourse Commission	Application - Town of Stratford Inland Wetlands and Watercourses Regulations	Permit application expected to be submitted first quarter of 2016	Pending

XII.B MUNICIPAL CONSULTATION FILING AND OUTREACH

As a primary mechanism both for informing the public about the Project and for soliciting comments on the Project from local leadership and the public, UI conducted municipal consultations in accordance with the Council’s Municipal Consultation Filing (“MCF”) requirements.

The MCF, which is a key component of the Council’s application process, requires applicants intending to apply for a Council Certificate of Environmental Compatibility and Public Need to consult with potentially affected municipalities at least 60 days prior to the Application filing date. The pre-application consultation must include, but not be limited to, good faith efforts to meet with the chief elected official of each potentially affected municipality and to provide technical reports concerning the public need, site selection process and environmental effects of the proposed facilities.

In August of 2015, UI submitted an MCF for the Project. This MCF was duly noted and provided to Stratford, the municipality in which the proposed Project may be constructed.

During the municipal consultation period, UI offered to meet with the chief executive officer of Stratford to review the MCF in more detail in order to present an overview of the Project and the siting process and to review the methods available for the town to provide input to the Project's siting process. UI has met with Mayor Harkins of Stratford on several occasions, and has gained input regarding concerns and special considerations associated with the proposed Site in Stratford. UI has also had multiple meetings with the owners of the Two Roads Brewery Company to review the proposed Project and discuss potential impacts to their property and business. UI has incorporated concerns raised by the Town of Stratford as well as by the owners of the Two Roads Brewing Company into its final site plans for the Project, including moving the new substation further away from the brewery to provide a larger buffer and accommodate customer parking for Two Roads Brewing Company. The brewery has offered to sponsor the landscaping at the substation in areas that will face the street.

On May 27, 2015, prior to the municipal filing, UI held a public "open house" meeting at Two Roads Brewing Company to discuss the Project with members of the public and to obtain comments regarding the proposed Project. Members of the UI Project Team and subject matter experts were available at the open house to provide information and to answer specific questions. There were a total of five attendees, two from the Town of Stratford, the owner of Two Roads Brewing Company and two residents of Stratford.

The overall objective of the municipal consultation process was to obtain input regarding the proposed Project from representatives of the municipality potentially affected by the proposed Project, as well as from the interested public. In accordance with the Council's requirements and Connecticut General Statutes § 16-50l(e), within 15 days of filing the Application, UI will supply to the Council all materials provided to the municipalities and a summary of the consultations with the towns, including any comments or recommendations issued by the municipalities, as well as copies of comments received from the public.

Table XII-2 summarizes UI's public outreach efforts to date.

Table XII-2: Summary of Outreach Efforts

DATE	STAKEHOLDER GROUP	PURPOSE OF MEETING
2/24/2015	Town of Stratford: Mayor's Office	Discussed upcoming projects with Mayor Harkins, including Baird Substation
2/26/2015	Town of Stratford: Mayor's Office	Requested an update meeting with Mayor Harkins
3/3/2015	Town of Stratford: Mayor's Office	Requested an update meeting to discuss the Project
3/6/2015	Town of Stratford: Mayor's Office	Requested an update meeting with the Mayor's office
3/25/2015	Town of Stratford: Mayor's Office	UI Project team discussed Two Roads parking, solar panels, and Baird distribution with Mayor Harkins
3/27/2015	Two Roads Brewery	Met with Brad Hittle and Peter Doering of Two Roads to discuss the Proposed Project
4/28/2015	Town of Stratford: Mayor's Office	Sent out invitations to the Open House being held at Two Roads Brewery on 5/27/15
4/28/2015	Town of Stratford: Project Abutters	Sent out invitations to the Open House scheduled for 5/27/2015
5/18/2015	Town of Stratford: Project Site	Installed Open House banner at the site of the current Baird Substation
5/21/2015	Town of Stratford: Mayor's Office, Two Roads Brewery	Met with Mayor Harkins and Two Roads Brewery regarding economic development, Two Roads parking, and location of the substation
5/27/2015	Town of Stratford	Held an Open House at Two Roads Brewery in Stratford
6/1/2015	Town of Stratford: Mayor's Office	Requested meeting with the Mayor to discuss the 'shifting' of the substation
6/15/2015	Town of Stratford: Mayor's Office, Two Roads Brewery	Discuss shifting of substation to allow for parking at Two Roads with Mayor Harkins and the owners of Two Roads Brewery
6/19/2015	Town of Stratford: Christina Batoh – Inland Wetlands	Notified Inland Wetlands department of UI's upcoming Baird Substation Project and reviewed the scope.
6/25/2015	Town of Stratford: Mayor's Office, Two Roads Brewery	Requested endorsement letters from the Town of Stratford and Two Roads
7/7/2015	Two Roads Brewery	Received endorsement letter from Two Roads Brewery
7/13/2015	Town of Stratford: Mayor's Office	Received endorsement letter from the Mayor's Office

7/27/2015	Town of Stratford: Mayor's Office	Notified the Mayor's Office of upcoming submission of the Municipal Consultation Filing and asked if any Town Officials should receive the information.
8/14/2015	Town of Stratford: Mayor's Office	Sent Municipal Consultation Filing to Mayor Harkins, Karen Kaiser and Amy Knorr
8/27/2015	Town of Stratford: Mayor's Office	Notified the Mayor's Office of the review period for the Municipal Filing, and inquired if the Town would like to meet again to review the document.
11/5/2015	Town of Stratford: All Customers	Ran Legal Notification in The Stratford Star and The Connecticut Post
11/12/2015	Town of Stratford: All Customers	Ran Legal Notification in The Stratford Star and The Connecticut Post
11/19/2015	UI Customers Louis and Marie Pierro, Town of Stratford: Karen Kaiser – Economic Development	Reviewed areas of required access at the base of Jackson and Hollister Streets. Discussed access agreements and next steps.
12/1/2015	Town of Stratford: Karen Kaiser, Amy Knorr – Economic Development	Discussed clearing of the Town property at the end of Hollister Street in Stratford. K. Kaiser advised that she would rather us discuss with John Casey - Town Engineer.
12/2/2015	Town of Stratford: John Casey - Engineering	Discussed required steps to obtain access to the MNR ROW through Town property at the end of Hollister Street in Stratford.
12/3/2015	Town of Stratford: Christina Batoh – Inland Wetlands	Discussed UI's Proposed Project and confirmed that Inland Wetlands is in support of the Project. Discussed the municipal wetland/resource fund that UI will be donating to.
12/7/2015	Town of Stratford: Gary Lorentson - Planning & Zoning	Discussed P&Z's role in the siting process, advised of the Municipal Filing document, invited to meet or discuss further if necessary.
12/9/2015	Town of Stratford: Marc Dillon - Chief of Staff	Coordinating efforts to obtain access agreement from Town for Hollister Street
12/9/2015	Town of Stratford	Delivered 3 additional copies of the Municipal filing to K. Kaiser, A. Knorr and G. Lorentson
12/10/2015	Proposed Project Abutters	Mailed notification letters to all property abutters
12/10/2015	Town of Stratford: All Customers	Ran Legal Notification in The Connecticut Post and The Stratford Star
12/17/2015	Town of Stratford: All Customers	Ran Legal Notification in The Connecticut Post and The Stratford Star

XIV. BULK FILING OF MUNICIPAL DOCUMENTS

As applicable, bulk filing of the municipal zoning, planning, planning and zoning, conservation (including any plans of conservation and development and open space plans), and inland wetland regulations and bylaws of the Town of Stratford will be provided to the Council by a separate filing.

XV. APPLICATION FILING FEE

The filing fee for this Application is determined by the Council's filing fee schedule set forth in RCSA § 16-50v-1a and based on the estimated construction cost for the substation. Pursuant to RCSA § 16-50v-4 and Conn. Gen. Stat. § 16-50bb, the Company also encloses a separate check in the amount of \$25,000 payable to the Council for the Municipal Participation Fee.

XVI. CONCLUSION

This Application and the accompanying materials and documentation clearly demonstrate that a public need for the Project exists. The Company respectfully submits that the public need for the Project outweighs any limited potential environmental effects from the development of a new substation in Stratford. The United Illuminating Company respectfully requests that the Council grant a Certificate of Environmental Compatibility and Public Need for this Project.

Respectfully submitted,

THE UNITED ILLUMINATING COMPANY

By: _____

Richard J. Reed, PMP

APPENDICES

APPENDIX A

MAPS AND DRAWINGS

- DR.1 U.S.G.S. Topographic Quadrangle Map: Proposed Project Location**
- DR.2 Proposed Substation Location within the Town of Stratford**
- DR.3 Site Plan**
- DR.4 Substation Drawings**
- DR.5 Existing and Historic Aerial Photographs of the Project Site**
- DR.6 Public Facilities and Resources (Map and Table)**

APPENDIX B
AGENCY CORRESPONDENCE

APPENDIX C
WETLAND DELINEATION REPORT

APPENDIX D

NOISE ASSESSMENT

APPENDIX E

VISIBILITY ANALYSIS

APPENDIX F

SITE SELECTION STUDY

APPENDIX G
ELECTRIC AND MAGNETIC FIELD (EMF)
ASSESSMENT

APPENDIX H

BAIRD SUBSTATION CONDITION ASSESSMENT

DISTRIBUTION CAPACITY AND VOLTAGE

REGULATION

APPENDIX I

BASELINE ENVIRONMENTAL ASSESSMENT:

BAIRD SUBSTATION

APPENDIX J
CULTURAL RESOURCE REVIEW

APPENDIX K

**HABITAT ASSESSMENT FOR NORTHERN LONG
EARED BAT**

APPENDIX L

FORMAL REQUIREMENTS