



The United Illuminating Company

Baird Substation Site Selection Study

Stratford, Connecticut

July 2015



TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1. INTRODUCTION 3

 1.1 SUMMARY OF PROJECT NEED 3

 1.2 OBJECTIVES OF THE SUBSTATION SITE SELECTION STUDY 5

2. SUBSTATION SITE IDENTIFICATION AND SELECTION CRITERIA 6

 2.1 STANDARDS AND GUIDELINES 6

 2.2 DISTRIBUTION SYSTEM CONSIDERATIONS IN THE STRATFORD AREA 7

3. GEOGRAPHICAL SITING REGION AND INITIAL SITE IDENTIFICATION 9

 3.1 GEOGRAPHIC SITING AREA BOUNDARIES 9

 3.2 IDENTIFICATION AND SCREENING OF POTENTIAL SITES 9

4. DETAILED EVALUATION OF ALTERNATIVE SUBSTATION SITES 12

 4.1 DETAILED SITE EVALUATION CRITERIA 12

 4.2 BRUCE STREET SITE: ELIMINATED FROM CONSIDERATION 13

 4.3 WEST BROAD STREET SUBSTATION: SITE ALTERNATIVE 14

 4.4 PREFERRED SITE: BAIRD ANNEX 18

5. CONCLUSIONS 22

LIST OF TABLES

1 West Broad Street Evaluation Summary 17

2 Baird Annex Site Evaluation Summary 21

LIST OF FIGURES

1 Location of Proposed and Alternative Sites 2

2 Location of Three Alternative Sites 11

3 Bruce Street 14

4 West Broad Street 16

5 Baird Annex 20

APPENDICES

A *UI Transmission and Distribution Guideline for Substation Site Selection (TDG 002) 2013*

B Review of Substation Sites and Site Screening
(MAP POCKET: General Locations of Sites Screened)

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EXECUTIVE SUMMARY

In order to address several compliance and aging infrastructure needs at the existing Baird substation, The United Illuminating Company (UI) proposes to construct and operate a new distribution substation adjacent to the existing in the Town of Stratford (Town), Connecticut. The planned substation will provide both a new interconnection to the existing 115-kilovolt (kV) electric transmission grid and a new location at which the high voltage power from the transmission system will be “stepped down” (i.e., the voltage will be decreased and current increased) for distribution to residential, commercial, and industrial customers currently served by the existing substation.

The proposed substation will replace the existing Baird substation. After the new substation is placed in service and all circuits are cutover to the new substation, the existing Baird substation will be removed from service. This will address the transmission capacity, distribution voltage regulation, and aging infrastructure needs of the existing Baird substation.

To select feasible alternative sites for the development of the new substation, and from among these to choose a proposed site, UI used an iterative process whereby potential locations were first identified and screened in accordance with UI’s standard objectives for substation siting. These standard criteria, which are detailed in UI’s *Transmission and Distribution Guideline for Substation Site Selection* (2007), include the following guiding principles:

- 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.

Applying these siting criteria and then consulting with Town officials and performing baseline field reconnaissance, UI initially identified 12 potential sites. UI then performed screening analyses of the sites, followed by more detailed evaluations of sites that appeared potentially feasible for the location of the proposed new distribution substation facilities.

Key considerations in the site evaluation process were the locations of the potential sites in relation to the existing substation and to the existing transmission lines that traverse Stratford along the Metro North Railroad Corridor that feed directly adjacent substations to the east and west serving areas of Bridgeport and Stratford. In addition, the length of new transmission and distribution lines that

would have to be developed to effectively interconnect the new substation to the transmission network and to UI's distribution system were considered.

This alternative evaluation process led to the selection of the proposed substation site as well as one primary alternative site¹, as follows:

- **The proposed substation site – Baird Annex.** This preferred site is located on land presently owned by UI that is directly adjacent the existing substation. The site was purchased by UI in 2010 and was formerly used as a parking area for the Baird Corporation. The remaining Baird Corporation property and land including the building, is now owned by the Two Roads Brewing Company.
- **Alternate site – West Broad Street.** The alternate site, which could be developed for the new substation, is the West Broad Street property. This site is a former industrial facility that is a potential brownfield site, located approximately ½ mile away from the Baird substation.

Figure 1 identifies the locations of the proposed and alternative substation sites.

Figure 1
Location of Proposed and Alternative Sites



Source: Google Earth, May 2015

¹ A third potential site, Bruce Street, was suggested by the Town of Stratford and considered in some detail but ultimately eliminated due to the physical constraints of the property.

1. INTRODUCTION

1.1 SUMMARY OF PROJECT NEED

The existing Baird substation was constructed in the 1960's and requires major modifications to meet several compliance and aging infrastructure needs. UI conducted both a Needs Assessment identifying the needs and a Solution Study which identified the preferred solution to address the identified needs. Based on the conclusions of the Solution Study, it was determined that a new substation should be constructed to replace the existing Baird substation.

The existing Baird substation requires major modifications due to five primary needs outlined as follows:

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

The Baird substation is part of UI's 115kV bulk transmission system and by extension, the bulk transmission system of New England. The substation is fed from (4) 115kV transmission circuits that carry electricity through the substation along UI's transmission corridor which follows the Metro North Railroad Corridor. These circuits were identified as requiring significant capacity upgrades in the Southwest Connecticut Needs Assessment due to projected load growth, generation and system topology changes. In addition, this assessment identified that the Baird transmission bus would be substantially overloaded under contingency conditions. These overloads range in severity from 144.2% to 158.4% 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 is also structurally at risk 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 system which in turn would lead to an extended duration outage for the customers

Baird Substation Site Selection Study

The United Illuminating Company

fed from the substation. This kind of extended duration outage could have significant negative impacts on customer satisfaction and the economic vitality of the region.

Electricity is delivered from the Baird substation to UI's residential, commercial and industrial customers through a series of 13.8kV distribution circuits. The Baird substation utilizes (2) 115kV/13.8kV transformers to transform (step down) the electric power carried by the railroad corridor transmission circuits. 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 seen by customers should not fall below .916 per unit or .947 per unit on the distribution circuit. UI's System Integrity Department completed a formal report on the Baird substations 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 the Connecticut Public Utilities Regulatory Agency (PURA) of .95 per unit to 1.03 per unit.

The distribution circuits fed from Baird are controlled by ITE switchgear manufactured over 50 years ago, which is reaching the end of its useful operating life. This equipment will need to be replaced in the near future. This equipment can be kept in service, likely with increased maintenance, custom fabrication of replacement components and harvesting parts from spare switchgear on UI's system, however, 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 adjacent substation will require modification of the protection and control systems at 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 exceedingly difficult to implement.

All of the aforementioned needs as well as several additional less critical needs were evaluated and thoroughly documented in the formal Baird Substation Needs Assessment.

Due to the extensive modifications and significant investment required to address the many needs of the Baird substation, UI undertook an extensive Solution Study to evaluate potential alternatives. The results of the Baird Substation Solution Study were that a new substation should be constructed on property owned by UI to the east of the existing Baird substation.

1.2 OBJECTIVES OF THE SUBSTATION SITE SELECTION STUDY

After determining that a new substation would be required to meet compliance and aging infrastructure needs at the Baird substation, UI identified and evaluated alternative substation configurations and sites that would meet distribution system needs and provide a cost-effective solution for interconnecting to the existing transmission and distribution network. The primary objectives of the alternatives evaluation, which was performed in accordance with the requirements of the Connecticut Siting Council's *Application Guide: Electric Substation Facility* (April 2010), were to:

- a) Identify and assess potential substation sites that would meet 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 projected load centers in Stratford.
- b) 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).
- c) Select from among the locations identified in (a) and (b), potential sites that could be feasibly developed for a distribution substation to meet the overall demands for electricity in Stratford, taking into consideration UI's site selection guidelines.

This *Site Selection Report* describes the approach that was used to apply the site selection guidelines in order to:

- Identify potential candidate sites for the new substations;
- Conduct screening level analyses to review the sites, based on engineering and environmental factors, to identify locations that would address the distribution requirements; and
- Identify a proposed site for the new substation, as well as an alternate site, that would address the compliance and aging infrastructure concerns of the existing Baird substation.

2. SUBSTATION SITE IDENTIFICATION AND SELECTION CRITERIA

2.1 STANDARDS AND GUIDELINES

To identify and evaluate alternative sites for a new substation, UI followed its *Transmission and Distribution Guideline for Substation Site Selection (Guideline)*. This *Guideline* describes the standard procedures and criteria to be used in the substation site selection process. Key factors considered in the site selection process include:

- 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.

To conduct the alternative siting analyses, UI assembled a multi-disciplinary team comprised of personnel with expertise in electrical distribution and transmission system planning, design, and construction; environmental science; and real estate. The team followed a step-by-step process, whereby potential distribution 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 team took into consideration the following guiding 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.

2.2 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, and 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 substation sites:

- *Location of potential sites in relation to the existing electric distribution network.* For distribution interconnections, sites are preferred that are near existing distribution infrastructure or in areas where new distribution infrastructure could be economically developed to reach load centers. For replacement of an existing substation, distance of the new replacement substation from the existing is particularly considered as the distribution infrastructure required to serve the electric load areas collectively terminate at the existing station. Location of a replacement substation in close proximity to the existing substation to be replaced limits conflicts with physical encumbrances, presence of other utilities, and cost associated with the installation of additional distribution infrastructure.
- *Availability of land for development of a distribution substation.* The minimum required area for a “distribution only” open air 115/13.8 kV substation of this type, meaning a 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 owned 115 kV transmission lines extend east to west along the Metro North Railroad corridor and are located adjacent to UI’s existing Baird Substation. These



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four transmission lines are interconnected to several distribution and transmission substations in UI's territory. The distribution substations each feed independent electric load centers, both to the east and west of the existing Baird Substation in Bridgeport and Stratford.

3. GEOGRAPHICAL SITING REGION AND INITIAL SITE IDENTIFICATION

3.1 GEOGRAPHIC SITING AREA BOUNDARIES

Taking into consideration the overall substation siting *Guidelines*, proximity to the existing Baird substation and transmission corridor, and distribution system needs, UI defined the preferred geographic location area for the substation as within an approximately 1,000 foot wide corridor along the existing Metro North Railroad corridor between 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 new substation would serve.

3.2 IDENTIFICATION AND SCREENING OF POTENTIAL SITES

Within the defined geographic siting region, UI applied the siting criteria and conducted baseline research, performed field reconnaissance, and consulted with municipal officials. As a result of this process, UI identified 12 potential sites for initial consideration for the development of the new substation. These potential sites were identified based on the UI *Guidelines* and the existing distribution and transmission considerations specific to the Stratford area.

The potential sites then were screened using the following primary 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 UI 115 kV transmission 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, under-developed (e.g. formerly developed properties that are available for reuse), or otherwise undeveloped.

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

- Environmental – Environmental issues, including site character, present and past land uses of the property, cultural resources, threatened and endangered species, tidal or inland wetlands, ponds, aquifers, watercourses, public watersheds and floodplains, potential need for environmental remediation (for previously developed sites) and encumbrances.
- Surroundings – Zoning and description of surrounding area, including 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 and 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 initially identified potential sites were found to be impractical for the development of the new substation and were eliminated from further consideration. The reasons for eliminating a particular site varied, and ranged 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.

However, based on the screening analyses, UI identified three sites that initially appear feasible for the development of the new substation:

- Bruce Street
- West Broad Street
- Baird Annex (UI Property)

Figure 3-1 illustrates the locations of these three sites.

Figure 2
Location of Three Alternative Sites



Source: Google Earth, May 2015

4. DETAILED EVALUATION OF ALTERNATIVE SUBSTATION SITES

4.1 DETAILED SITE EVALUATION CRITERIA

For each of the three² alternative sites, UI conducted more detailed evaluations, considering substation layouts and estimated costs and assessing each site based on the following, more specific siting criteria:

- Property / land issues (e.g., available useable and buffer acreage, site acquisition costs, existing and former land uses).
- Environmental and social/cultural resource factors (e.g., proximity to wetlands and watercourses, vegetative communities, wildlife resources, species of concern, visual resources, archaeological and historic resources, recreational and public resources, among others).
- Surrounding land uses (e.g., distance to the nearest residence and abutting property line, potential visibility of the substation, effect on public health and safety, consistency with local, state, and regional land use plans and future development, effects on transportation and access).
- Electric transmission and distribution system considerations (e.g., length of distribution and / or transmission system interconnections that would be required, consistency with long-range plan for the expansion of UI's electric power system
- Construction costs.
- Permitability (e.g., identification of any issues that could affect the ability to obtain approvals for substation site development).

UI determined that the development of the new substation at the Baird Annex site would best meet the project objectives, based on environmental, technical, and economic considerations. The West Broad Street site, although less preferable based on cost and environmental consideration, offers a second siting option. In contrast, the Bruce Street site was found to be impractical for the development of the new distribution substation.

² A detailed evaluation was performed for the Bruce Street alternative; however it was not reviewed to the same level of detail as the West Broad Street or Baird Annex alternatives. An initial detailed review showed that the property was insufficiently large to accommodate the necessary substation equipment while maintaining industry standard electrical clearances and maintenance access requirements. Further review of the property was not performed.

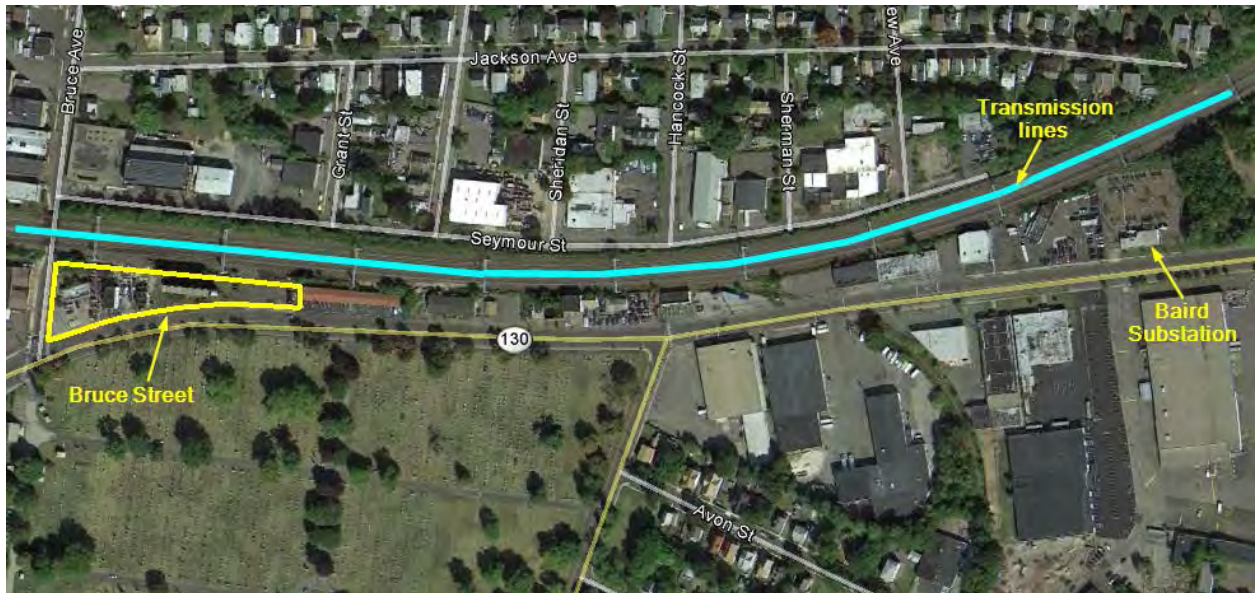
4.2 BRUCE STREET SITE: ELIMINATED FROM CONSIDERATION

This 1.23 acre site was recommended as a potential alternative site by the Town of Stratford in preliminary discussions with UI regarding site selection for the new substation. 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 substation. All three of the separate properties are currently occupied by structures of varying commercial/industrial uses. The site is located directly adjacent the Metro North Railroad 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 existing Baird substation is located approximately ½ mile to the east of the Bruce St. site along Stratford Avenue. The site's relative close proximity to the existing Baird substation provides for the opportunity to minimize costs associated with new underground distribution infrastructure required to interconnect the new substation to existing infrastructure.

However, upon further review of the feasibility of this site, it was identified that there is insufficient space to accommodate the new substation. An engineering review of conceptual arrangement plans for the necessary equipment revealed that electrical clearances would be violated from energized equipment to the necessary 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 is brought to the site if one of the substation transformers must be removed from service for an extended period of time.

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

Figure 3
Bruce Street



Source: Google Earth, May 2015

4.3 WEST BROAD STREET SUBSTATION: SITE ALTERNATIVE

This site is located to the east of the existing Baird substation, between the Metro North Railroad Corridor and Interstate 95 at 1297 West Broad Street in Stratford. UI's two 115 kV transmission lines run along its northern border. The site is a former industrial facility with several structures demolished while some remain. 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 across the Metro North Railroad Corridor and commercial/industrial facilities are residential neighborhoods along Knowlton Street. Interstate 95 borders the site to the south.

The development of the new substation at the West Broad Street site would have a number of desirable attributes, including general geographic proximity to the existing Baird substation. Other benefits would include the repurposing and re-use of a potential brownfield site, adjacency to the existing 115 kV transmission lines, the commercial/industrial land use

characteristics of the surrounding area and the large amount of property available for future facility expansion.

However, the siting of the new substation at the West Broad Street property is constrained from interconnection to the existing Baird substation's distribution infrastructure along Stratford Avenue. To utilize the site for the new Baird substation would require the interconnection of new distribution circuits to their termination point in front of the existing Baird substation. However, there is no direct road access between the existing Baird substation and the West Broad Street site, necessitating a longer access route utilizing Beardsley Avenue. No underground distribution infrastructure currently exists on the necessary portions of Beardsley Avenue or West Broad Street. In addition, the existing underground infrastructure on Stratford Avenue would not be sufficient to support the number of circuits required. As a result, new underground infrastructure would be required over a distance of approximately 1 mile with two crossings under Interstate 95. The cost for this distribution infrastructure is estimated to be \$17 million.

Further, the site is a potential brownfield site and will likely require extensive remediation of contaminated soils during construction. In addition, 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 getaways and grounding for the new substation.

Figure 4
West Broad Street



Source: Google Earth, May 2015

Table 1
West Broad Street Site Evaluation Summary

CRITERIA	KEY CHARACTERISTICS
Costs, including Substation, Transmission and Distribution	<p><u>Estimated costs (\$ millions)</u></p> <ul style="list-style-type: none"> • Substation \$37.5 • Overhead transmission lines \$0.0 • <u>Distribution circuits</u> \$17 • Total \$54.5
Site layout	<ul style="list-style-type: none"> • Sufficiently large to accommodate future expansion • Direct interconnection to UI transmission lines
Environment	<ul style="list-style-type: none"> • Potential brownfield site • Over 2500 feet to nearest NDDDB area • 400 feet to freshwater forested/shrub wetland • Significant portion of site falls into 100 year flood plain
Surroundings	<ul style="list-style-type: none"> • Commercial/industrial uses on four sides • Residential area to north screened by commercial buildings • UI transmission corridor along northern boundary • 320 feet to residence north on Knowlton Street • 645 feet to residence south on Beardsley Avenue • Sufficient land area to provide screening • Property is underutilized and prioritized for redevelopment
Transmission system	<ul style="list-style-type: none"> • Adjacent to existing UI transmission corridor • No transmission line ROW acquisition required for interconnection
Distribution system	<ul style="list-style-type: none"> • This site is geographically located approximately ½ mile from the existing Baird substation; however the sites do not share the same road access. To navigate between the two sites, an alternate route must be taken with an approximate distance of 1 mile. This path requires traversing West Broad St., Beardsley Ave., and Stratford Avenue. West Broad St. and Beardsley Ave. have no existing UG infrastructure to support the necessary routing of UG distribution circuits from the new substation location to the existing. This represents a substantial increase in cost, construction time, utility coordination, circuit relocation and risk of UG conflicts over sites located in closer proximity to the existing substation.
Land	<ul style="list-style-type: none"> • 4 acres, excluding factory building, areas in 100 year flood plain. • Site zoned for industrial use

4.4 PREFERRED SITE: BAIRD ANNEX

This UI owned site, which encompasses approximately 1.8 acres, was formerly used for parking for the adjacent industrial complex, previously owned by the Baird Corporation. UI acquired the property in 2010 from the Baird Corporation and currently uses portions of the site as a material laydown area. The industrial building was subsequently purchased by the Two Roads Brewing Company. UI has a License Agreement with the Two Roads Brewing Company to allow the site to be used for overflow parking 5 days per week.

Pursuant to its former use as a parking area for the Baird Corporation, and present parking area for the Two Roads Brewing Company, the site is fairly level and is predominantly covered in a mix of asphalt and compacted soils. The northern most portion of the site is covered in low lying vegetation with some sparse tree coverage. The site previously accommodated a railroad spur from the Metro North Railroad that traverses the site west to east along the north side of the property. Portions of the concrete foundation and tracks remain in place today, but are abandoned.

UI's 115 kV transmission lines are located in the Metro North Railroad Corridor, directly adjacent and to the north of the site. Overall, the property is bordered to the north by the Metro North Railroad Corridor, to the east by the Two Roads Brewing Company, to the west by a wooded area also owned by UI and the existing Baird substation, and to the south by Stratford Avenue. Extensive commercial developments are located to the south, east and west of the site along Stratford Avenue. Residential neighborhoods are located to the north of the site across the Metro North Railroad Corridor and UI's existing 115 kV transmission lines.

The development of a 115/13.8 kV distribution substation at this site would be consistent with the former use of the property for industrial purposes. The site size and location adjacent to the existing Baird substation and UI's existing 115 kV transmission lines would allow for the development of a cost-effective open air substation design. Further, the site is immediately adjacent the existing substation minimizing the costs and impacts of

interconnecting to the existing distribution circuits. Investigations into the feasibility of adding additional distribution infrastructure on Stratford Avenue to tie the existing Baird substation to the new site show that there are no congestion issues.

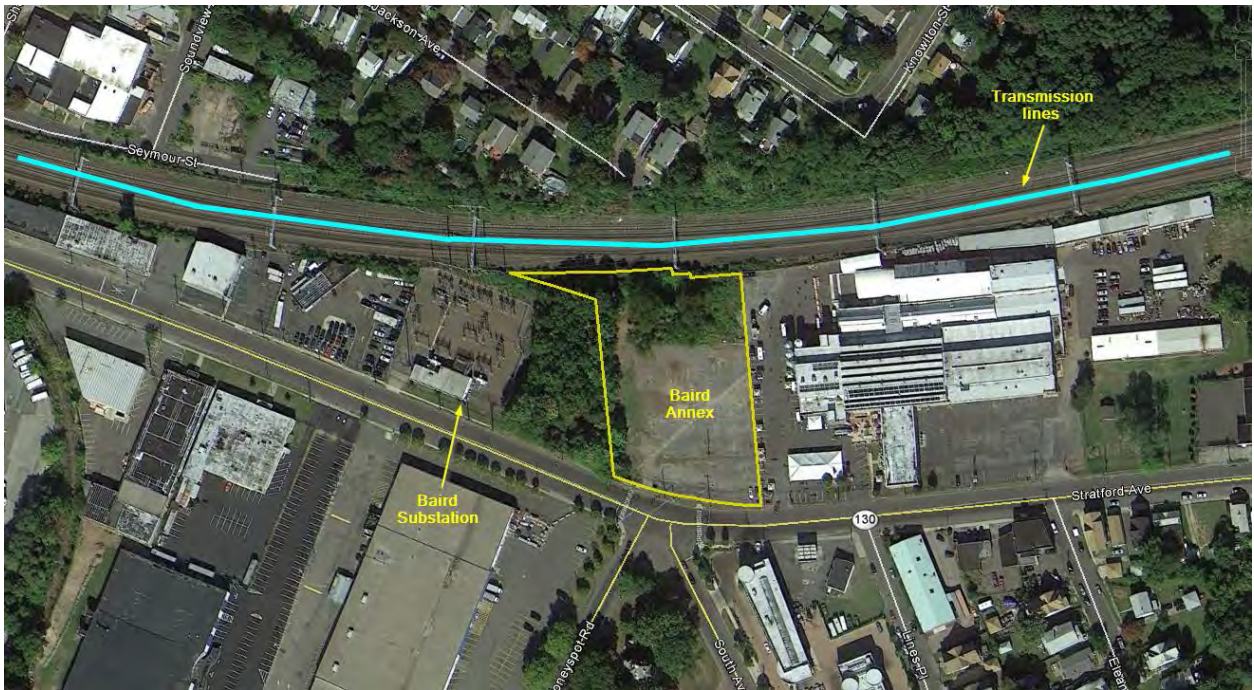
In addition, the Town of Stratford's plans for street beautification and addition of a roundabout at the intersection of Stratford Avenue, Honeyspot Road and South Avenue require modification to UI's existing overhead and underground distribution infrastructure in the immediate vicinity of the site. The current planned modification of underground infrastructure directly adjacent to the site significantly reduces the costs for distribution interconnection of the proposed substation.

UI selected the Baird Annex property as the preferred site for the new substation due primarily to the following factors:

- The site provides the lowest evaluated cost option.
- The site is located immediately adjacent the existing substation decreasing the impacts and costs of new infrastructure to interconnect new distribution circuits to existing.
- The site is consistent with the industrial/commercial land uses of the surrounding area.
- The site is located directly adjacent UI's existing 115 kV transmission lines on the Metro North Railroad Corridor.
- The proposed Town of Stratford roundabout requires modifications to UI's existing overhead and underground distribution infrastructure directly adjacent 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.

Table 4-2 summarizes the characteristics of the substation development at the Baird Annex Site.

Figure 5
Baird Annex



Source: Google Earth, May 2015

Table 2
Baird Annex Site Evaluation Summary

CRITERIA	KEY CHARACTERISTICS
Costs, including Substation, Transmission and Distribution	<p><u>Estimated costs (\$ millions)</u></p> <ul style="list-style-type: none"> • Substation with two transformers \$32 • Overhead transmission lines \$0 • <u>Distribution circuits</u> \$3.3 • Total \$35.3
Site layout	<ul style="list-style-type: none"> • Supports open air substation design. • Direct interconnection to UI transmission corridor. • Directly adjacent existing Baird substation.
Environment	<ul style="list-style-type: none"> • Potential for environmental contamination due to proximity to former industrial facility • 95 feet to nearest NDDB area • 400 feet to nearest 100 year flood plain.
Surroundings	<ul style="list-style-type: none"> • Commercial and industrial area • Residential area across transmission corridor to the north • Baird substation directly adjacent to west • Commercial properties to south and east
Transmission system	<ul style="list-style-type: none"> • Adjacent to existing 115-kV railroad corridor.
Distribution system	<ul style="list-style-type: none"> • Directly adjacent existing substation • The minimum costs required to relocate distribution circuits due to proximity to existing substation
Land	<ul style="list-style-type: none"> • Approximately 1.8 acres • UI owned property • Adjacent property is also UI owned

5. CONCLUSIONS

UI conducted a comprehensive alternatives evaluation process first to identify potential sites for the new distribution substation in the project area and then to assess each site based on established site selection criteria. As a result of these alternatives analyses, the Baird Annex site was selected as the preferred site for the new 115/13.8 kV Substation in the Stratford area.

The Baird Annex site represents the least-cost option for the development of the new substation. The UI-owned site is located directly adjacent the existing substation to be replaced, and is optimally located directly along the existing UI 115-kV transmission line ROW.

The West Broad Street represents a feasible, but less preferable, alternative to the Baird Annex site. Although also adjacent to the 115-kV transmission line, the West Broad Street site would be more costly to develop and would require much longer distribution lines to interconnect to the existing distribution infrastructure that terminates at the existing Baird substation. The site is a potential brownfield site which would require substantial environmental remediation to make the site viable for the substation. In addition, the existing abandoned factory building would need to be demolished. The foundations from the previously demolished portions of the factory building also remain, increasing the costs for site preparation significantly.



APPENDIX A

Transmission and Distribution Guideline for Substation Site Selection (TDG 002)

Transmission & Distribution Guideline

for

Substation Site Selection

TDG 002

Transmission and Substation Engineering Department

The United Illuminating Company

March 7, 2013

Revision 2

SUBSTATION SITE SELECTION GUIDELINE

I GENERAL

This guideline applies to The United Illuminating Company's internal procedures for identification, evaluation, and selection of proposed and alternative sites for substations. The process of identifying, evaluating, and ultimately selecting a substation site should be project-specific, with appropriate input and participation by a team of participants representing Transmission and Substation Engineering, System Integrity, Transmission Asset Planning, Real Estate, Electric System Operations, System Maintenance, Construction Management and Environmental Services (Siting Team). In addition to the company's internal procedures, public and agency input on potentially feasible sites also is solicited through the Connecticut Siting Council's (CSC's) municipal consultation and application processes.

This guideline, which addresses the company's internal substation siting procedures, defines the preferred process through which site selection is made, and the criteria upon which site selection is based. The site selection criteria includes, among other topics: distance to load centers, distance to interconnecting transmission lines, description of surrounding areas, site size requirements, site terrain, environmental and land use compatibility, substation construction, transmission and distribution line construction, access, and costs. This guideline is intended as a summary of the preferred process for identifying and analyzing sites for new substations and is intended for use in assisting the preparation of requisite documentation for the Connecticut Siting Council application process, including municipal consultation and other potential regulatory siting reviews as may be applicable. Specific project requirements or constraints may dictate that alternate or modified methods be used for certain substation siting projects.

II GUIDING PRINCIPALS

UI is committed to maintaining or improving the reliability and operability of the electric system while recognizing its responsibility to locate, construct and operate its facilities in an environmentally responsible manner consistent with the spirit, as well as the express provisions of all applicable regulations. Therefore, UI has developed and endorses the following guiding principals for siting its facilities:

- i. Minimize the need to acquire residences and viable commercial/industrial uses to accommodate substation development
- ii. Maintain consistency/compatibility with existing land uses and land use plans to the extent possible
- iii. Minimize adverse effects on sensitive environmental resources and the social environment
- iv. Maintain public health and safety

- v. Demonstrate cost-effectiveness, while adhering to good engineering and sound environmental planning practices.
- vi. Present the public with a clear and well documented methodology for the identification of the proposed and alternate sites.

II SITE SELECTION PROCESS OVERVIEW

A summary of the site selection process is shown in Figure 1 and described in the following sections.

Task 1 - Define Substation Need – The Statement of Need for the substation provides the basis for the site selection process and is the foundation document for the development, design and presentation of any substation project. Need is determined by system analyses and can be due to numerous electrical system issues but is typically based on requirements associated with system reliability, load growth and/or aging infrastructure. The Statement of Need, along with a description of the analyses conducted and the system alternatives considered that led to the determination that a substation is the preferred solution, is typically summarized in a separate document that is suitable for inclusion in CSC submissions.

The Statement of Need should define the geographical region (“Siting Region”) where a substation is required. The Siting Region is determined by proximity to the load that is intended to be served, existing or planned transmission and distribution lines, system access considerations and cost. UI System Integrity should begin this process by identifying one or more general geographical areas within which the new substation can provide the necessary system support. Multiple Siting Regions may be used to focus substation siting around a particular load center. Where more than one Siting Region is designated, the evaluation of transmission costs and access considerations should permit the identification of a single, preferred Siting Region. The weight of transmission costs and access considerations may also result in the adjustment of the size and shape of the Siting Region identified by System Integrity. If changes are made, the resulting Siting Region(s) should be reviewed with System Integrity prior to proceeding with the identification of possible sites.

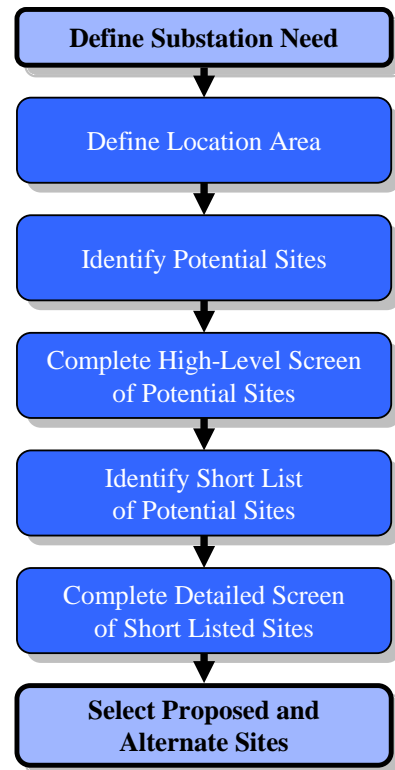


Figure 1
Site Selection Process

Task 2 - Define Location Area – The substation location must be located within reasonable proximity to the distribution load center identified in the Statement of Need and, preferably, adjacent to a transmission line. Increased distance from the interconnections typically has the detrimental impacts of: increased costs (due to the cost of constructing a tie-line), increased environmental impact (from visual, land and other impacts associated with the tie-lines, even if the line is underground), and reduced reliability and increased maintenance costs (due to increased length of line exposed to failures and damage). Figure 2 provides a representation of a potential Substation Location Area within a Siting Region (cross-hatched area on either side of the transmission line and surrounding the load center).

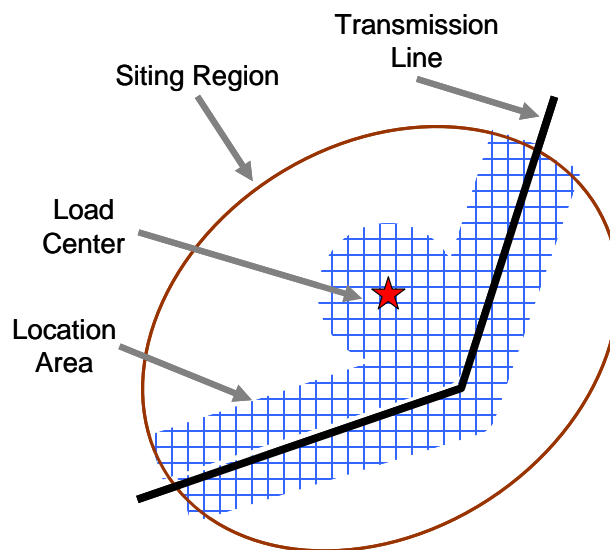


Figure 2
Location Area

The desirability of locating a substation near a transmission line must be balanced against locational impacts associated with the other substation siting criteria. The width of the Location Area is determined on a project-specific basis, taking into consideration factors such as environmental constraints, land availability, development, and similar factors that may affect the identification of potential candidate sites. An initial Location Area is typically identified on either side of the transmission line and around the load center. However, this may be modified during the siting process, depending on the number of potential sites initially identified or anticipated to be available within the Location Area. In addition, sites adjacent to and beyond the Location Area may be considered in the process, depending on the beneficial characteristics of these sites relative to other sites identified within the Location Area.

Task 3 - Identify Potential Sites – The identification of potential sites within the Location Area should follow a three-step, sub-process:

i. Define Substation Land Area (acreage) Requirements

The anticipated amount of land (acreage) required for the substation must be defined. The substation land area used in the site selection process and may reflect any future plans for substation expansion. A one-line diagram indicating the anticipated design of the substation should be developed by UI Transmission and Substation Engineering. The diagram should include the possible future addition of transformers, 13.8-kV buses, 115-kV bus and breakers, transmission and substation capacitors,

transmission line terminations, etc. The one-line diagram should be reviewed and approved by, Transmission and Substation Engineering, Transmission Asset Planning, System Integrity, Electric System Operations, System Maintenance and Construction Operations. From this approved one-line diagram, one or more preliminary substation layouts should be developed and provided to aid in the identification of possible sites. The substation layouts should reflect the minimum required property for access, maintenance, replacement of equipment, and mobile transformer transport and connection. The required land area should consider sufficient land to allow vegetative screening of the substation. The specific physical characteristics of the site, access considerations and property line setbacks required by zoning may increase substation land requirements on a site-specific basis. Zoning setback requirements within each portion of the geographical site selection area may be determined from applicable town/city planning and zoning documents. Though UI is not required to adhere to local zoning requirements, UI prefers to accommodate local zoning ordinances when practicable, consistent with the guiding principals.

ii. Create Composite Map

To aid in the identification of a range of potential sites, a composite map of the Siting Region should be prepared, using available town/city maps, which delineate the boundaries of all land parcels within the Location Area. Also, to aid in the identification and evaluation of possible sites, the following features should be superimposed on this composite map: storm surge and tidal impact area, tidal and inland wetlands, ponds, lakes, watercourses, large hills, ridges and other significant topographical features, flood plains and land use zones from town/city zoning regulations. This information is available from various town/city, state and federal government sources. The identification of land use areas, such as industrial sites, business parks, shopping centers, schools, parks, playgrounds, hospitals, nursery schools, day-camps, churches, designated open space, residential neighborhoods, and condominiums/apartment complexes, would also be advantageous. Large scale aerial photographs and topographic maps of the site selection area also facilitate the potential site identification process.

iii. Identification of Potential Sites

Potential sites should be identified using the information from the composite map, region and site inspections and, suitable reductions of possible substation layouts. The Siting Team should identify one or more contiguous parcels of land which provide the designated site size located within the Siting Region, which are vacant or otherwise not presently being utilized. Because of the large land area of some sites identified in this manner, and the varying economic and other factors related to specific location within these sites, the proposed and alternate substation locations within these larger sites should also be identified for evaluation. The possible effect of town/city zoning property line setbacks may also be considered in the potential site identification process.

Based on the analysis of the composite map, a list of possible alternative site locations, sizes and property owners should be prepared. The number of potential sites identified may vary from project to project.

iv. Third Party Input

Though the local municipality will have an opportunity to review and comment on UI's proposed and alternate sites during the formal municipal consultation period preceding the filing of an application to the CSC, local input from the municipality should be sought in order to further refine the list of potential sites. This step benefits the site selection process in two ways 1) by possibly alerting the site selection team to unknown potential sites, or 2) giving the site selection team a leading indication of sites or areas that the municipality would want removed from consideration. **NOTE:** no input from the municipality should take place unless or until the senior elected official of the municipality, or their representative, has been briefed by UI, following approval of the UI Project Executive Sponsor(s).

Task 4 – Complete High-Level Screen of Potential Sites – A high-level qualitative evaluation of the significant considerations for each potential site should be performed. Consideration should be given to evaluating each of the following criteria; additional or alternative criteria may also be used:

For this preliminary screening step, a high-level, qualitative evaluation should be completed for each criterion and for each site using the guidelines below. The Property Site Evaluation Template is attached hereto as Exhibit A.

1.0 Environmental

1.1 Ecology - Wildlife and Habitat

Definition: Sites will be scored based on the professional judgment of the evaluator using criteria such as the diversity and quality of wildlife cover types onsite and in the site vicinity, the potential number of listed species for the vicinity, and other information.

Data Source: Agency websites, atlas maps, and in-house files.

<u>Score</u>	<u>Criteria</u>
5	Low potential for protected species/habitat; no significant habitat disruption
3	Moderate potential for protected species; and/or moderate habitat disruption
1	High potential for protected species and/or significant habitat disruption

1.2 Ecology - Wetlands and Water Bodies

Definition: Sites will be scored based on the professional judgment of the evaluator using criteria such as the diversity and quality of wetlands and water bodies on or adjacent to the site, and other information.

Data Source: Agency websites, NWI maps, atlas maps, and in-house files.

<u>Score</u>	<u>Criteria</u>
5	No wetlands/water bodies on or adjacent to site
3	Some wetlands/water bodies on or adjacent to site
1	Significant quantity of and/or high quality wetlands/water bodies on or adjacent to site

1.3 Existing Ownership

Definition: Property owned or leased by UI or others.

Data Source: Online agency sources; atlases, information provided by UI real estate consultant; local town or city offices.

<u>Score</u>	<u>Criteria</u>
5	UI ownership/lease.
3	Not held by UI; currently available for sale or lease
1	Not held by UI; currently unavailable for sale or lease, or unknown

1.4 Land Use and Zoning Compatibility

Definition: Existing or planned type of land use and zoning onsite and in the site vicinity.

Data Source: Online agency sources; atlases.

<u>Score</u>	<u>Criteria</u>
5	Industrial or multiple use and/or zoning.
3	Large acreage residential and/or zoned residential.
1	Green space, open space, school, park, developing residential.

1.5 Flood Potential

Definition: Potential for floods onsite.

Data Sources: Agency websites, maps, in-house files.

<u>Score</u>	<u>Criteria</u>
5	Site is outside the 100 year floodplain and/or storm surge tidal impact area at high elevation in reference to nearest surface water.
3	Site is outside the 100 year floodplain and/or storm surge tidal impact area at moderate elevation in reference to nearest surface water.
1	Site is at or below elevation of nearest surface water or is in 100 year floodplain and/or or storm surge tidal impact area.

1.6 Buffer between Substation and Receptors

Definition: The distance between and type of buffer between the substation and nearby sensitive receptors (residences, schools, hospitals nursing homes, parks and natural areas, etc.).

Data Sources: Online maps and hard copy maps.

<u>Score</u>	<u>Criteria</u>
5	Wide buffer area that will greatly diminish noticeable effects of substation on surrounding area.
3	Moderate buffer area that will lessen effects, with some effects noticeable at nearby receptors.
1	No buffer or minimal buffer area.

1.7 Cultural Resources

Definition: Historic sites listed in the National or State Register of Historic Places as well as resources that are eligible for listing. Sites will be scored according to the proximity of the site to known archaeologically significant areas or historic sites.

Data Source: Online sources (SHPO and NPS websites) and in-house files.

<u>Score</u>	<u>Criteria</u>
5	No listed resources within 0.25 mile of site.
3	Listed resources adjacent to site.
1	Listed resources onsite.

1.8 Visual Impact

Definition: Visual effect of site development on the surrounding area.

Scoring: Sites will be scored according to the potential visual impact of site development on receptors in the vicinity as well as the potential visibility of the transmission tie-in, in the professional judgment of the siting specialist.

Data Source: Online sources, atlas maps, and in-house files.

<u>Score</u>	<u>Criteria</u>
5	Low potential for visual impact
3	Moderate potential for visual impact
1	High potential for visual impact

1.9 Noise Impacts

Definition: The impacts of increased noise levels resulting from the operation of the proposed substation on nearby residences, facilities (including buildings), and population centers.

Data Source: Online sources, maps, and in-house files.

<u>Score</u>	<u>Criteria</u>
5	No residences or facilities within 0.25 mile of the site.
3	One to five residences or facilities within 0.25 mile of the site.
1	More than five residences or facilities within 0.25 mile of the site.

2.0 Technical

2.1 Site Topography

Definition: Terrain and elevation range on and near the site.

Data Source: Onsite investigations, maps, agency websites, in-house files.

<u>Score</u>	<u>Criteria</u>
5	Site relatively flat.

- 3 Site has moderate variations in topography.
- 1 Major topographic features onsite.

2.2 *Site Foundation and Earthwork Conditions*

Definition: Degree that conditions onsite could accommodate construction and installation work.

Data Source: Onsite investigation including possible sub-ground site survey.

<u>Score</u>	<u>Criteria</u>
5	Conditions favorable to foundation and earthwork.
3	Moderate challenges for foundation and earthwork with possibility of signs of existence of rocks/boulders or sand soils.
1	Site poses significant challenges to foundation and earthwork with obvious signs of existence of rocks/boulders or sandy soils.

2.3 *Structure or Utility Displacement/Replacement*

Definition: Possibility that existing structures or utilities would need relocation or replacement to accommodate site development.

Data Source: In-house files; maps.

<u>Score</u>	<u>Criteria</u>
5	No existing structures or utilities would be displaced and/or need replacement.
3	Some replacement and/or displacement would be required.
1	Significant disruption of existing structures or utilities would be required.

2.4 *Distance from Transmission*

Definition: Based on estimated length of lines from the substation to the nearest transmission line.

Scoring: Sites are ranked according to estimated length of line.

Data Source: In-house files, online resources, maps.

<u>Score</u>	<u>Criteria</u>
5	Site is immediately adjacent to transmission line.
3	Site is within 0.25 mile of transmission line.
1	Site is more than 0.25 mile from transmission line.

2.5 *Distance from Load Center*

Definition: This will be based on estimated distance from the substation to the nearest load center.

Scoring: Sites are ranked according to distance.

Data Source: In-house files; atlas maps.

<u>Score</u>	<u>Criteria</u>
5	Site is immediately adjacent to load center.
3	Site is within 2 miles of load center.
1	Site is greater than 2 miles and less than 5 miles from load center.

2.6 Road Access

Definition: Proximity of site to nearest road suitable for use by construction and maintenance vehicles and equipment.

<u>Score</u>	<u>Criteria</u>
5	Suitable road adjacent to site.
3	Suitable road within 0.25 mile of site.
1	Suitable road is more than 0.25 mile from site.

2.7 Development Costs

Definition: Development costs include land purchase costs plus site development costs.

<u>Score</u>	<u>Criteria</u>
5	Low development costs.
3	Moderate development costs.
1	High development costs.

2.8 OH or UG Transmission Line

Definition: Viability of overhead or underground transmission line interconnection.

<u>Score</u>	<u>Criteria</u>
5	High potential for OH interconnection.
3	Moderate potential for OH interconnection.
1	Low potential for OH interconnection; or only UG interconnection is possible.

Task 5 – Identify Short List of Potential Sites – Using the results of the High-Level Screen in Task 4 and the Evaluation Matrix, the Siting Team should identify potentially feasible sites for the more detailed review described in Task 6. The primary factors that eliminate the non-short-listed sites from further consideration should be summarized and documented. The evaluation matrix of Task 4 is a tool used to assist in the organization and evaluation of broad and varied data. The results of the evaluation matrix should be used as an input to the ultimate selection of the proposed and alternate site and not be considered as the definitive selection.

Task 6 – Complete Detailed Evaluation of Short-Listed Sites – The detailed evaluation of the short-listed sites should follow a two-step, sub-process:

i. Estimate Site Layouts and Costs

To facilitate a more detailed evaluation of each of the short-listed sites, a general drawing, of suitable scale showing the proposed substation should be prepared for each identified site and alternate location identified within that site. Preferred or existing Substation access right-of-way for vehicles, transmission, and distribution should be shown. All identified site factors affecting permitting, temporary construction access, permanent access and site purchase should also be clearly indicated on the drawing. The costs for substation construction and

vehicular access associated with site size, shape, access, topography, site preparation, anticipated soil conditions, potential environmental remediation and known encumbrances should be derived for each site with the assistance of members of the Siting Team, as appropriate. Significant qualitative factors pertaining to substation construction and site access should be identified. To facilitate a comparison of the costs associated with individual sites, one substation site should be chosen as a reference site, and differential costs relative to that site developed for the remaining sites.

ii. Evaluate Detailed Siting Criteria

In this detailed analysis of the short-listed sites, consideration should be given to evaluating each of the following criteria; additional or alternative criteria may also be used:

A. Environmental Concerns

- a. Federal and state jurisdictional wetlands and other water resources and public drinking water supply areas
- b. Plant communities/vegetation
- c. Wildlife and aquatic resources
- d. Threatened, endangered and other species of concern
- e. Recreational and public resources (e.g., forests, parks, public lands, hunting and wildlife management areas)
- f. Visual resources
- g. Archaeological or geological areas of interest
- h. Noise
- i. Floodplains
- j. Water quality and storm water
- k. Historic areas
- l. Proximity to areas regulated under the Coastal Zone Management Act or Tidal Wetlands Act

B. Surroundings

- a. Distance to nearest residence and nearest abutting property line
- b. Visibility of substation
- c. Distance to residential areas, private or public schools, licensed day care facilities, licensed youth camps or public playgrounds or other potential sensitive receptors
- d. Effect on cultural and historic resources
- e. Effect on public health and safety
- f. Effect on local, state, federal land use plans, including existing and future development
- g. Effect on roads (e.g., traffic patterns, access for construction and maintenance)

- C. System
 - a. Length of interconnection to transmission
 - b. Length of interconnection to distribution
 - c. How does the facility conform to the long-range plan for the expansion of the electric power grid serving the state and interconnected utility systems to meet the public need for adequate, reliable, economic service?
 - d. How is the proposal consistent with the Siting Council's annual forecast reports and life-cycle cost analysis?

- D. Construction
 - a. Comparative construction costs of alternatives considered

- E. Land
 - a. Available usable acreage
 - b. Available buffer acreage
 - c. Cost of site
 - d. Cost of rights-of-way and access-way
 - e. Current land use of site and surrounding area
 - f. Zoning
 - g. Available easements
 - h. Former land use

- F. Permitability (i.e., are there red flags or fatal flaws associated with the anticipated ability to permit the site?)

For this step, an evaluation should be considered for all the criteria elements listed above for each site. A Property Site Evaluation Template should be completed for each site. An attempt should be made to evaluate each criterion using quantitative metrics where they are appropriate and can be estimated. A suggested rating scale to summarize the conclusions of the site evaluations is shown below.

5 = Favorable Evaluation

3 = Neutral or average evaluation

1 = Unfavorable evaluation

Task 7 – Select Proposed and Alternate Sites – The proposed site and an alternate site should be selected based on the results of the detailed analysis and the decision matrix completed in Task 6. The evaluation tool of Task 6 is used to assist in the organization and evaluation of broad and varied data. The results of the evaluation matrix should be used as an input to the selection of the proposed and alternate sites and not be considered as the definitive selection, though the Siting Team should be mindful that the selection of the proposed and alternate sites must adhere to Connecticut Siting Council (CSC)

requirement that UI justify its proposed site through “a comparison with alternative sites which are environmentally, technically, and economically practicable.” Should the Siting Team recommend a proposed and/or alternate site that did not rank as favorably as other potential sites using this method, there must be a compelling and defensible reason for this recommendation.

Task 8 – Document Site Selection Study in a Report - A written report documenting the site selection process and the justification for the proposed and alternate sites should be prepared for the review and approval of the Siting Team. The report should provide a list and an estimated schedule for securing the expected Federal, State and local permits needed for the project. The site selection report documenting this analysis will form a portion of the CSC application and will also be provided to the municipality during the municipal consultation phase.

Prepared By:

Transmission and Substation Engineering

Approved By:

Vice President, E S Operations

Assoc. Vice President, Transmission Business

Vice President, EPE

Director, Transmission Asset Planning

Director, Environmental Services

Senior Director, System Integrity

Senior Director, Engineering & Strategic Planning



APPENDIX B

REVIEW OF SUBSTATION SITES AND SITE SCREENING

Screening Criteria Summary

To evaluate the feasibility of developing the substation at each of the 12 sites initially identified (refer to list in Table B-1 and to the map in the Map Pocket that shows general site locations), UI performed a high-level, qualitative screening of each property. The high-level screening consisted of first assessing each site to determine whether any characteristics posed constraints that would immediately eliminate the location from consideration for the development of the substation. Such constraints included, among others:

- Lack of adequate developable land (e.g., due to the presence of steep slopes, rock outcrops, or wetlands, which limited the amount of land available for development within a parcel).
- Sale of the site for other uses during the course of the study
- Privately-owned land that could not be acquired.

The screening consisted of reviewing each site based on constructability (including land availability, lot size and shape, topography and access); ability to meet UI's transmission and distribution system objectives; and potential for minimizing adverse environmental and social effects related to the site and its surroundings. If the screening analyses revealed a fatal flaw, the site was eliminated from further consideration for the development of the substation.



Site No.*	Site Name	Site Address
1	West Broad Street	1297 West Broad Street, Stratford
2	Rachel Drive	1255 West Broad Street, Stratford
3	Stratford Avenue North East	1526 Stratford Avenue, Stratford
4	Baird Annex	1770 Stratford Avenue, Stratford
5	Barnum	812 Barnum Avenue, Bridgeport
6	Hallett	252 Hallett Street, Bridgeport
7	East Washington	867 East Washington Avenue, Bridgeport
8	Crescent / Seaview East	1564 Seaview Avenue, Bridgeport
9	Crescent / Seaview West	640 Crescent Avenue, Bridgeport**
10	Bishop	1255 Connecticut Avenue, Bridgeport**
11	Stratford Avenue South East	1525 Stratford Avenue, Stratford
12	Bruce Street	2370 Stratford Avenue, Stratford**

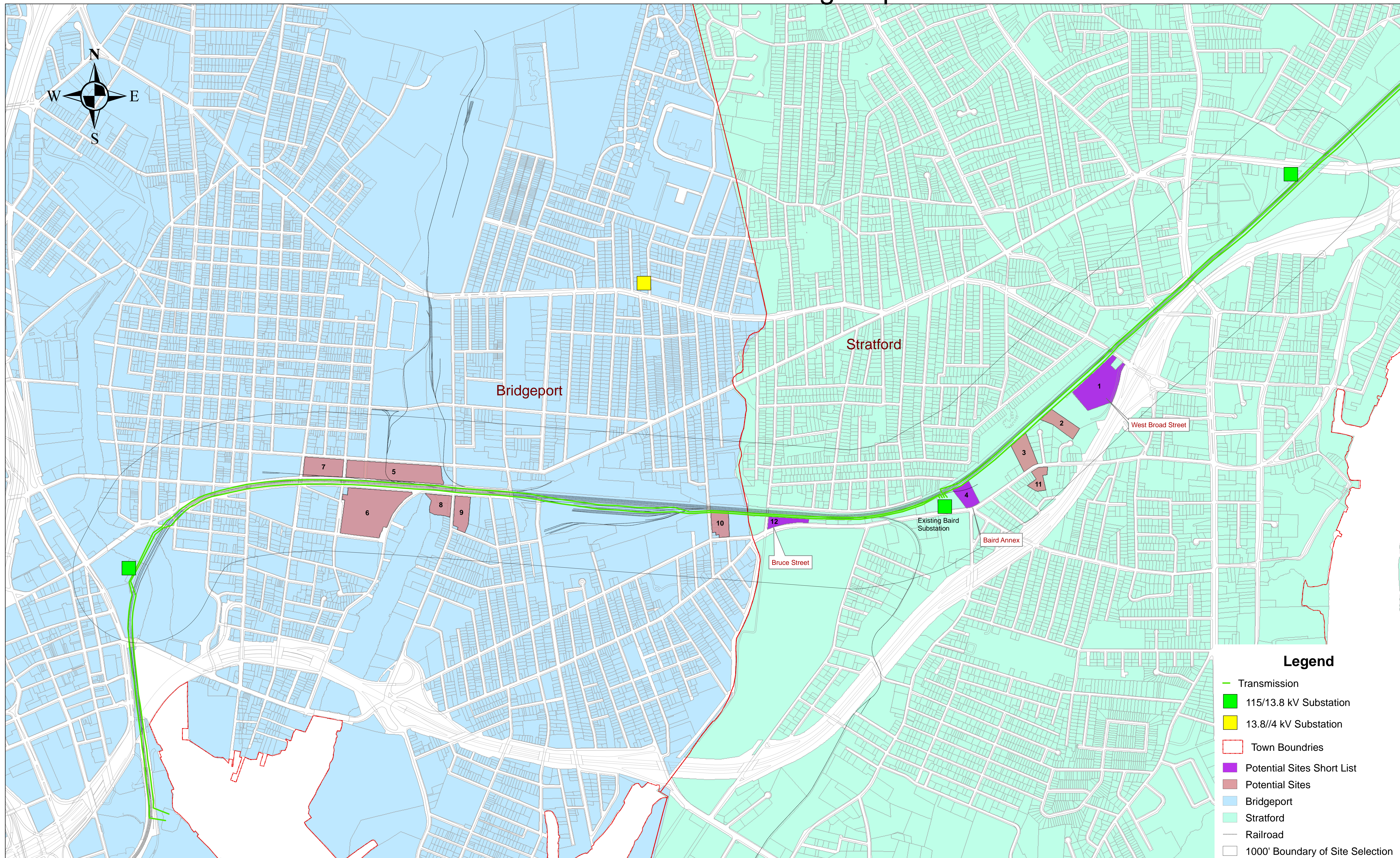
B - 1 List of Potential Substation Sites, by Name and Address

*Refers to site number assigned on map of sites initially reviewed (see map pocket).

**Site evaluated as assemblage of more than one property with multiple addresses.

Baird Substation Siting Map

Appendix F Baird Substation Site Selection Study



Legend

- Transmission
- 115/13.8 kV Substation
- 13.8/4 kV Substation
- Town Boundaries
- Potential Sites Short List
- Potential Sites
- Bridgeport
- Stratford
- Railroad
- 1000' Boundary of Site Selection

0 420 840 1,680 2,520 3,360
 Feet 1 in = 0.1 miles