



**APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED**

to the
CONNECTICUT SITING COUNCIL

for the

**FAIRFIELD TO CONGRESS RAILROAD TRANSMISSION
LINE 115-kV REBUILD PROJECT**

**Town of Fairfield and City of Bridgeport
Fairfield County, Connecticut**

VOLUME 1A: APPENDICES

PART 2: APPENDICES C, D, E, AND F

March 2023

Prepared By:

THE UNITED ILLUMINATING COMPANY

This page intentionally left blank.

TABLE OF CONTENTS**VOLUME 1A*****VOLUME 1A: PART 1***

APPENDIX A: AGENCY CORRESPONDENCE

- A.1: Connecticut State Historic Preservation Office
- A.2: Connecticut Department of Energy and Environmental Protection (CT DEEP), Natural Diversity Database (NDDB) and Department of Agriculture, Bureau of Aquaculture (DA/BA)
 - A.2.1: NDDB Request Form
 - A.2.2: NDDB Determination Letter
 - A.2.3: CT DEEP Bureau of Fisheries and DA/BA
- A.3: U.S. Fish and Wildlife Service (USFWS) Consultation
- A.4: Federal Aviation Administration (FAA)

APPENDIX B: ECOLOGICAL ASSESSMENT REPORT (WATER / BIOLOGICAL RESOURCES)

VOLUME 1A: PART 2

APPENDIX C: VISUAL ASSESSMENT AND PHOTO-SIMULATIONS

APPENDIX D: CULTURAL RESOURCES REPORTS

- D.1 Phase 1A Cultural Resources Assessment Survey
- D.2 Supplemental Viewshed Report (Supplement to the Phase 1A Cultural Resources Assessment Survey)

APPENDIX E: ELECTRIC AND MAGNETIC FIELD REPORT

APPENDIX F: FORMAL REQUIREMENTS AND CSC APPLICATION GUIDE

This page intentionally left blank.

APPENDIX C

VISUAL ASSESSMENT REPORT, INCLUDING PHOTO-SIMULATIONS

This page intentionally left blank.



VISUAL ASSESSMENT & PHOTO-SIMULATIONS



The United Illuminating Company

**Town of Fairfield,
City of Bridgeport**

BASED ON 70% DESIGN

FAIRFIELD TO CONGRESS RAILROAD TRANSMISSION LINE 115-kV REBUILD PROJECT



February 2023

VISUAL ASSESSMENT & PHOTO SIMULATIONS

The United Illuminating Company (“UI” or the “Company”) is proposing to rebuild its existing single-circuit 115-kilovolt (kV) overhead lines that extend approximately 7.6 miles¹ through Fairfield and Bridgeport (the “Project”). The existing circuits extend in a southwest-northeast direction within the Connecticut DOT (“CT DOT”) railroad corridor, primarily on railroad catenary structures, starting at catenary structure B648S, east of Sasco Creek, in Fairfield and terminating at UI’s Congress Street Substation in Bridgeport. At the request of UI, All-Points Technology Corporation, P.C. (“APT”) completed this assessment to evaluate the potential visual effects of the Project from surrounding locations.

Project Setting

The Project is located within a densely developed portion of southern Fairfield County. The general area contains multiple transportation corridors, including Interstate 95 (“I-95”), U.S. Route 1, and the CT DOT railroad utilized by Metro-North Railroad (“MNR”). The existing UI transmission lines and supporting infrastructure occupy areas along both the north and south sides² of the railroad corridor. CT DOT owns the railroad corridor, which varies in total width from 85 to 150 feet and, in the Project area, includes four railroad tracks operated by MNR. The shared railroad and electrical corridors have been a visually distinctive component within the landscape as a result of the catenary structures (circa 1912), the UI transmission line support columns (referred to as “bonnets”) located on top of the catenary structures (circa 1940s), and the 115-kV lines themselves (circa 1960s). In several areas, the transmission lines are attached to free-standing structures independent of the catenaries. Existing structures supporting UI’s infrastructure range in height from approximately 60 feet above ground level (“AGL”) to approximately 215 feet AGL, with the existing catenary structures and UI bonnets typically rising to a height of between 60 feet AGL and 80 feet AGL throughout the Project area.

The visual environment adjacent to the railroad corridor varies but is generally characterized by a mix of industrial and commercial areas. In addition to the I-95 and CT DOT corridor, the four MNR stations³, Public Service Enterprise Group’s Bridgeport Harbor Generating Station, and UI’s existing substations are examples of dominant landscape features in the Project area. Some areas along and in the vicinity of the CT DOT corridor also contain single-family residences and town house developments. Because it traverses a near-coastal region, the railroad corridor also extends near and (in some areas) crosses inland/tidal wetlands, marshes and waterways, including Ash Creek and the Mill and Pequonnock rivers.

The topography within the corridor and surrounding areas consists of relatively level terrain, and lacks high vantage points. Ground elevations range from at or near sea level to approximately 40 feet above mean sea level (“AMSL”) in the Project area. The edges of the railroad corridor are interspersed with mature mixed deciduous hardwood trees among narrow strips of primarily non-native, shrub/scrub invasive vegetation, escaped ornamentals associated with residential landscaping, and species common to freshwater and tidal wetlands.

Project Description

UI proposes to remove the existing transmission facilities from the catenary structures and rebuild the 115-kV lines parallel to the CT DOT corridor, on a combination of single- and double-circuit monopoles. With few exceptions, the proposed replacement structures will range in height from 100 feet to 135 feet AGL. The tallest structures will extend to approximately 195 feet AGL along the segment from the Pequonnock Substation to the Congress Street Substation in order to span both I-95 and portions of the west bank of the Pequonnock River. Once the transmission lines are rebuilt, most of the existing support bonnets and all of the existing 115-kV wires/infrastructure will be removed from the top of the catenaries. In addition, other electrical infrastructure that is no longer needed (e.g., certain legacy wood poles, steel poles, and lattice towers) will be removed during the construction of this Project.

Methodology

APT used the combination of a predictive computer model, in-field analysis, and a review of various data sources to evaluate the visibility associated with the Project on both a quantitative and qualitative basis. The predictive model provides a measurable assessment of visibility throughout a pre-defined “Study Area” (in this case, one mile on either side of the railroad corridor, encompassing 11,609 acres), including private properties and other areas inaccessible for direct observations. The in-field analysis consisted of a field reconnaissance throughout the Study Area to record existing conditions, evaluate results of the initial computer modeling, and compile photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

¹ 7.3 miles of the project occur along the CT DOT corridor and 0.23 mile occurs along the ROW between the CT DOT corridor and Ash Creek Substation

² UI’s 1130 Line is supported primarily on steel monopoles ranging in height from 80 to 120 feet AGL on the northern side of the railroad tracks in Fairfield and western Bridgeport. The Project does not involve any changes to the infrastructure on the northern side of the railroad tracks west of structure TP735N (I-95 crossing east of Ash Creek in Bridgeport).

³ The four MNR stations are the Southport Train Station, Fairfield Train Station, Fairfield Metro Train Station, and Bridgeport Train Station.

Computer Modeling

To conduct this assessment, a predictive computer model was developed specifically for this Project using ESRI's ArcMap GIS⁴ software and available GIS data. The predictive model incorporates Project and Study Area-specific data, including: proposed transmission structure locations, heights and ground elevations; the surrounding topography; and existing vegetation and structures (the primary features that can block direct lines of sight).

A digital surface model ("DSM"), capturing both the natural and built features on the Earth's surface, was generated for the extent of the Study Area utilizing State of Connecticut 2016 LiDAR⁵ LAS⁶ data points. LiDAR is a remote-sensing technology that develops elevation data by measuring the time it takes for laser light to return from the surface to the instrument's sensors. The varying reflectivity of objects also means that the "returns" can be classified based on the characteristics of the reflected light, normally into categories such as "bare earth," "vegetation," "road," "surface water" or "building". Derived from the 2016 LiDAR data, the LAS datasets contain the corresponding elevation point data and return classification values. The Study Area DSM incorporates the first return LAS dataset values that are associated with the highest feature in the landscape, typically a treetop, top of a building, and/or the highest point of other tall structures.

Once the DSM was generated, ESRI's Viewshed Tool was utilized to identify locations within the Study Area where the proposed transmission structures may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells⁷ within the DSM that can be seen from an observer location. Cells where visibility was indicated were extracted and converted from a raster dataset to a polygon feature which was then overlaid onto aerial photograph and topographic base maps. Since the DSM includes the highest relative feature in the landscape, isolated "visible" cells are often indicated within heavily forested areas (e.g., from the top of the highest tree) or on building rooftops during the initial processing. It is recognized that these areas do not represent typical viewer locations and overstate the potential visibility of the Project transmission structures. As such, the resulting polygon feature is further refined by extracting those areas. The viewshed results are also cross-checked against the most current aerial photographs to assess whether significant changes (a new housing development, for example) have occurred since the time the LiDAR-based LAS datasets were captured.

The results of the viewshed analysis are intended to provide a representation of those areas where at least a portion of the proposed replacement structures may potentially be visible to the human eye without the aid of magnification, based on a viewer eye-height of five (5) feet above the ground and the combination of intervening topography, trees and other vegetation, and structures. However, the Project infrastructure may not necessarily be visible from all locations within those areas identified by the predictive model, which has limitations. For instance, the computer model cannot account for mass density, tree diameters and branching variability of trees, or the fact that visibility decreases as distance increases. As a result, some areas depicted on the viewshed map as theoretically offering potential visibility of the Project may be over-predictive because the quality of those views is not sufficient for the human eye to recognize the infrastructure or discriminate it from other surrounding or intervening objects.

Seasonal Visibility

Visibility also varies seasonally with increased, albeit obstructed, views occurring during "leaf-off" conditions. Beyond the variabilities associated with density of tree stands found within any given Study Area, each individual tree also has its own unique trunk, pole timber and branching patterns that provide varying degrees of screening in leafless conditions which cannot be precisely modeled. Seasonal visibility is therefore estimated based on a combination of factors including, but not necessarily limited to, the types, sizes, and density of trees within the Study Area. Taking these factors into account, areas depicting seasonal visibility on the Viewshed Analysis maps are intended to represent locations from where there is a potential for views through intervening trees, as opposed to indicating that leaf-off views will exist from within an entire seasonally-shaded area.

Field Reconnaissance

To supplement the results of the computer modeling efforts, APT completed in-field verification activities consisting of vehicular and pedestrian reconnaissance and photo-documentation. The field reconnaissance activities were completed on multiple occasions from January through July 2022 to obtain an understanding of existing views of the Project area during both leaf-on and leaf-off conditions.

⁴ ArcMap is a Geographic Information System desktop application developed by the Environmental Systems Research Institute for creating maps, performing spatial analysis, and managing geographic data.

⁵ Light Detection and Ranging

⁶ An LAS (LASer) file is an industry-standard binary format for storing airborne LiDAR data.

⁷ Each DSM cell size is 1 square meter

Photographic Documentation and Simulations

During the Study Area reconnaissance, APT obtained photo-documentation of representative locations of existing conditions. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body⁸ and Canon EF 24 to 105 millimeter ("mm") zoom lens.

Photographic simulations were subsequently generated to portray scaled renderings of proposed replacement facilities based on current Project plans and engineering design from 22 representative locations along the Project corridor. Using field data, site plan information and 3-dimensional (3D) modeling software, spatially referenced models of the proposed infrastructure were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo-simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs, which were ultimately composited and merged with the existing conditions photographs (using Adobe Photoshop image editing software). The scale of the subjects in the photographs (e.g., existing catenary structures with UI bonnets, free-standing poles and 115-kV lines) and in the corresponding simulations depicting the Project development is proportional to the surroundings.

Photo-documentation of existing conditions and photo-simulations are presented in Attachment 1. Photographs presented in this report provide views of existing conditions and matching photo-simulations for a comparison of pre- and post-development of the Project. The photo-simulations portray the proposed replacement monopoles and lines, and the removal of existing UI 115-kV facilities and bonnets from the CT DOT railroad catenary structures, as well as the removal of other UI facilities, such as lattice steel towers.

Conclusions

The viewshed maps presented in Attachment 2 depict the current zone of visibility associated with existing Project-related infrastructure, generally extending to distances within 0.25 to 0.5 mile of the CT-DOT corridor. At the east and west ends of the Project and to the south, views are expected to extend over undeveloped, open water and marsh to beyond 1.0 mile. Of this total, current year-round visibility occurs over $\pm 2,424$ acres, with nearly half ($\pm 1,044$ acres) taking place across open water. Seasonal visibility, when leaves are off the deciduous trees, includes an additional ± 431 acres. Collectively, the visibility of the existing UI infrastructure encompasses approximately 2,855 acres (representing $\pm 25\%$ of the 11,609-acre Study Area).

Upon completion of the Project, year-round visibility of replacement facilities is predicted to increase by approximately 419 acres. Seasonal visibility is estimated to increase by an additional 256 acres. Combined, visibility associated with the Project is estimated to extend over 3,530 acres ($\pm 30\%$ of the Study Area); an increase of 675 acres. While there is a predicted increase in total visibility throughout the Study Area of about 5%, there does not appear to be a substantive expansion of the existing viewshed footprint. Approximately 53% (± 220 acres) of the increased year-round visibility occurs over open water. The 1130 Line monopoles and other existing structures located within/adjacent to portions of the railroad corridor currently rise to heights comparable to the proposed replacement structures.

Urban commercial development, transportation and electrical infrastructure, and open water/marshes are the dominant characteristics of the Project area. As is the case today, at distances beyond 0.5 mile from the Project area, the tops of the new transmission structures and circuits will not be prominent features, particularly in light of the amount of intervening existing development and infrastructure within and adjacent to the Project area. In those locations where residences are in close proximity to the railroad corridor, at least partial views of railroad and electrical infrastructure exist today.

Although some near-view locations will experience changes from existing conditions due to the relocation and modified heights of new structures, in many locations the visual effects resulting from the Project are balanced by the removal of bonnets and other supporting infrastructure, particularly along the southern side of the railroad corridor. A total of 200 transmission line support structures will be removed or (in one instance) significantly lowered as part of the Project and replaced with 103 new transmission line poles. Although the new poles will be substantially taller than the existing bonnets, the increased heights allow for longer spans between poles, thus reducing UI's total infrastructure along the Project corridor. Generally, UI's removal of bonnets from catenary structures along the railroad corridor will decrease the existing heights by approximately 15 to 20 feet. In some locations where direct lines of sight exist at close distances, the new poles may become more prominent features of the landscape. However, given the significant reduction in catenary bonnets and longer distances between UI support structures, several other locations will have less infrastructure in the viewshed.

Numerous historic resources listed on the National Register of Historic Places ("NRHP") and the State Register of Historic Places ("SRHP") are located in the vicinity of the Project area. At the request of UI, Heritage Consultants, LLC ("Heritage") performed various cultural and historic resource assessments to evaluate the visual impact of the Project on these resources. During its consultation with the State Historic Preservation Office (the "SHPO"), cultural and historic resources were evaluated within a 0.5-mile radius of the Project area.

⁸ The Canon EOS 6D is a full-framed camera which includes a lens receptor of the same size as the film used in 35mm cameras.

As such, the images produced are comparable to those taken with a conventional 35mm camera.

It was determined that a total of 19 NRHP/SRHP Historic Districts and their contributing resources, 17 individually listed NRHP/SRHP properties, including one (1) National Historic Landmark, and two (2) Local Historic Districts may be affected by the Project. An additional two (2) NRHP/SRHP Historic Districts and six (6) individually listed NRHP/SRHP properties are present within the Project area. While the proposed Project may alter views from many of these historic resources, the majority of locations currently have views of the existing Project infrastructure being replaced, as well as additional existing railroad corridor infrastructure. See the Heritage report dated February 2023, and provided under separate cover, for additional information regarding these historic resources.

Limitations

The photo-simulations in Attachment 1 provide a representation of potential views after the Project is developed, under similar settings as those encountered during the field reconnaissance. Views can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location.

The viewshed maps presented in Attachment 2 depict areas where portions of the Project may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of five (5) feet above the ground and taking into consideration intervening topography, tree canopy, and existing development.

ATTACHMENT 1

**PHOTO KEY, LOGS &
SIMULATIONS**

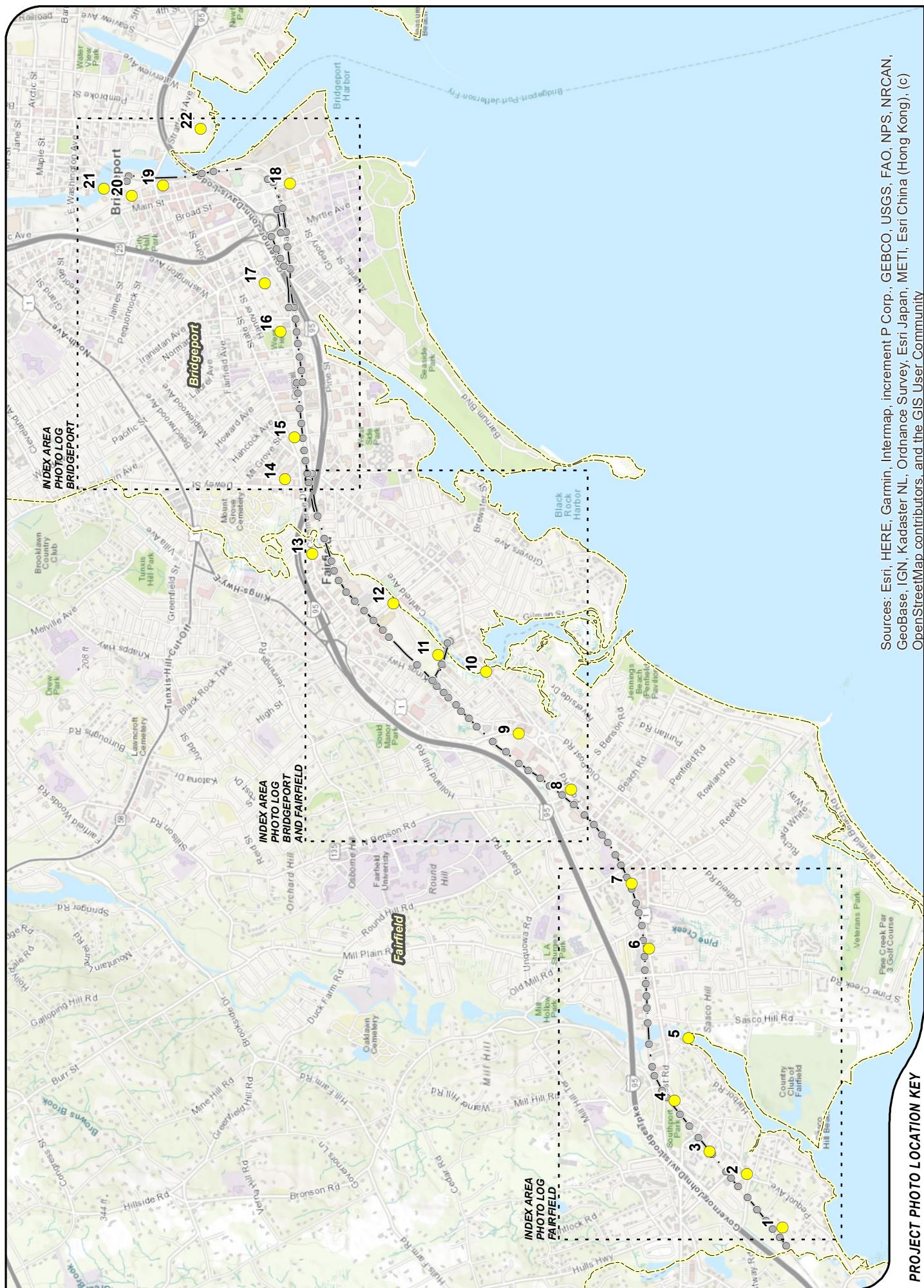
PHOTO KEY

Photo No.	Location	Existing Transmission Line Infrastructure Depicted in Photograph	Project Modifications Depicted in Simulation
1	South Gate Lane - Fairfield; south of railroad corridor in a residentially developed area.	Center of Photo: Monopole structure on the north side of railroad tracks Right of Photo: Two catenary structures with bennets on the south side of railroad tracks; and one monopole structure on the north side of railroad tracks.	Bonnets and existing southern 115-kV facilities removed; two new steel poles located on south side of railroad tracks to be installed. P651S in center of photo; P652AS behind evergreen on right side of photo.
2	Pequot Avenue - Southport; south of railroad corridor within Southport Historic District.	Left of Photo: One catenary structure with bonnet on the south side of railroad tracks. Center of Photo: Three (one is not visible due to tree blocking view) catenary structures with bennets on the south side of railroad tracks; one catenary structure with bonnet and one monopole structure on the north side of railroad tracks. Right of Photo: One catenary structure with bonnet on the south side of railroad tracks.	Five bennets on the south side of railroad tracks and existing southern 115-kV facilities removed; one new steel pole located on south side of railroad tracks to be installed.
3	Station Street - Southport; Southport Railroad Station parking lot looking northeast.	Catenary structure with bonnet on south side of railroad tracks and a steel pole on north side of railroad tracks.	Bonnets and existing southern 115-kV facilities removed; two new steel poles located on south side of railroad tracks to be installed.
4	Pequot Avenue - Southport; south of railroad corridor; Post Road (Route 1) to the north, residentially developed area.	Two catenary structures with bennets on south side and north side of railroad tracks. One steel monopole on north side of tracks.	Two bennets on the south side of the railroad tracks and existing southern 115-kV facilities will be removed along with vegetation clearing. Two new steel poles to be installed on the south side of railroad tracks.
5	Harbor Road - Southport; south of railroad corridor on bridge looking north.	Left of Photo: One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks. Center of Photo: Top of one catenary structure with bonnet and one monopole structure, above building rooftop. Right of Photo: One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks.	Three bennets on the south side of the railroad tracks and existing southern 115-kV facilities will be removed. Two new steel poles located on the south side of railroad tracks to be installed.
6	Post Road - Fairfield; south of railroad corridor in a commercially developed area.	Catenary structures with bennets on the south side of the railroad tracks. Five existing monopole structures on north side of the railroad tracks.	Bonnets and existing southern 115-kV facilities will be removed. Five new steel poles to be installed on the south side of railroad tracks.
7	Carter Henry Drive at Miller Street - Fairfield; south of railroad corridor in a MNR parking lot looking northeast.	Four catenary structures with bennets on the south side of railroad tracks; two monopole structures on north side of the railroad tracks.	Bonnets and existing southern 115-kV facilities will be removed. Two new steel poles will be installed on the south side of railroad tracks.
8	Post Road at South Benson Road - Fairfield; south/east of railroad corridor looking north.	Two catenary structures with bennets on the south side of the railroad tracks; two monopole structures on the north side of the railroad tracks.	Bonnets and existing southern 115-kV facilities will be removed. Two new steel poles will be installed on the south side of railroad tracks.
8A	Post Road at South Benson Road - Fairfield; south/east of railroad corridor looking west.	Right of Photo: One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks.	Bonnets and existing southern 115-kV facility will be removed along with vegetation clearing. One new steel pole to be installed on the south side of railroad tracks.

PHOTO KEY (continued)

Photo No.	Location	Existing Transmission Line Infrastructure Depicted in Photograph	Project Modifications Depicted in Simulation
9	Kings Highway Cutoff - Fairfield; east of railroad corridor looking west.	Left of Photo: One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks. Center of Photo: One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks.	Bonnet and existing southern 115-kV facility will be removed. One new steel pole to be installed on the south side of railroad tracks.
10	Fairfield Avenue - Fairfield; south of railroad corridor and UI ROW to Ash Creek Substation.	Double Circuit Lattice Tower approach Ash Creek Substation in foreground; three monopoles and one catenary structure with bonnet along railroad tracks.	Double Circuit Lattice Tower and bonnet with existing southern 115-kV facility will be removed. Three new steel poles to be installed.
11	Fairfield Metro Conservation Area - Fairfield; south of railroad corridor looking southeast towards Ash Creek Substation.	Double Circuit Lattice Tower approaching Ash Creek Substation.	Double Circuit Lattice Tower removed. Two new single circuit steel poles will be installed.
12	Ash Creek Boulevard - Fairfield; south of railroad corridor in a commercially developed area.	Four catenary structures with bonnets on the south side of the railroad tracks; two monopole structures on the north side of the railroad tracks.	Bonnets and existing southern 115-kV facilities will be removed. One new steel pole will be installed on the south side of railroad tracks.
13	Commerce Drive - Fairfield; north of railroad corridor in a commercially developed area.	One catenary structure with bonnet on the south side of railroad tracks; one monopole structure on the north side of railroad tracks.	Bonnet and existing southern 115-kV facility will be removed. One new steel pole to be installed on the south side of railroad tracks.
14	Ash Street at Bedford Avenue - Bridgeport; north of railroad corridor in a mixed residential/industrial area.	One catenary structure with bonnet on the south side of the railroad tracks; one monopole structure on the north side of the railroad tracks.	Bonnet, top of monopole, and existing 115-kV facilities will be removed. One new steel pole to be installed.
15	Bostwick Avenue - Bridgeport; north of railroad corridor in industrially developed area.	Catenary structures with bonnets on the north and south sides of railroad tracks.	Bonnets and existing 115-kV facilities will be removed. Five new steel poles to be installed.
16	Norman Street - Bridgeport; north of railroad corridor in a densely residentially developed area adjacent to Went Field.	Catenary structures with bonnets on the north and south sides of railroad tracks.	Bonnets and existing 115-kV facilities will be removed. Four new steel poles to be installed on the south side of railroad tracks.
17	Black Rock Avenue - Bridgeport; north of railroad corridor in dense residentially developed area.	Catenary structures with bonnets on the north and south sides of railroad tracks (beyond I-95 overpass in this photo); two existing monopoles south of I-95.	Bonnets and existing 115-kV facilities will be removed. Two new steel poles to be installed.
18	Whiting Street - Bridgeport; south of railroad corridor in a dense residential/industrial area.	Foreground: Catenary structures with bonnets on the north and south sides of railroad tracks. Background (right): lattice tower near Bridgeport Metro North Train Station.	Bonnets, lattice tower, and existing 115-kV facilities will be removed. Two new steel poles to be installed (one will be installed as part of UI's New Pequonnock Substation Project)
19	Water Street - Bridgeport; west of railroad corridor adjacent to Bridgeport Metro North Train Station.	Three catenary structures with bonnets on the north and south sides of railroad tracks; lattice tower on north side of railroad tracks.	Bonnets, lattice tower, and existing 115-kV facilities will be removed. One new steel pole to be installed.
20	Water Street - Bridgeport; west of railroad corridor in downtown/transit area of Bridgeport.	Eleven catenary structures with bonnets on the north and south sides of railroad tracks.	Bonnets and existing 115-kV facilities will be removed. One new steel pole will be installed on the south side of tracks.
21	Congress Street Bridge - Bridgeport; north of railroad corridor and Congress Substation.	Catenary structures with bonnets on the north and south sides of railroad tracks; one existing dual circuit monopole; one lattice tower.	Bonnets, lattice tower, and existing 115-kV facilities will be removed. Three new steel poles will be installed.
22	East Main Street - Bridgeport; west of Pequonnock River looking west towards downtown Bridgeport.	Monopole and lattice tower on north and south side of I-95, respectively.	Monopole and lattice tower and 115-kV facilities will be removed. One steel pole will be installed on the south side of I-95.

THIS PAGE INTENTIONALLY LEFT BLANK



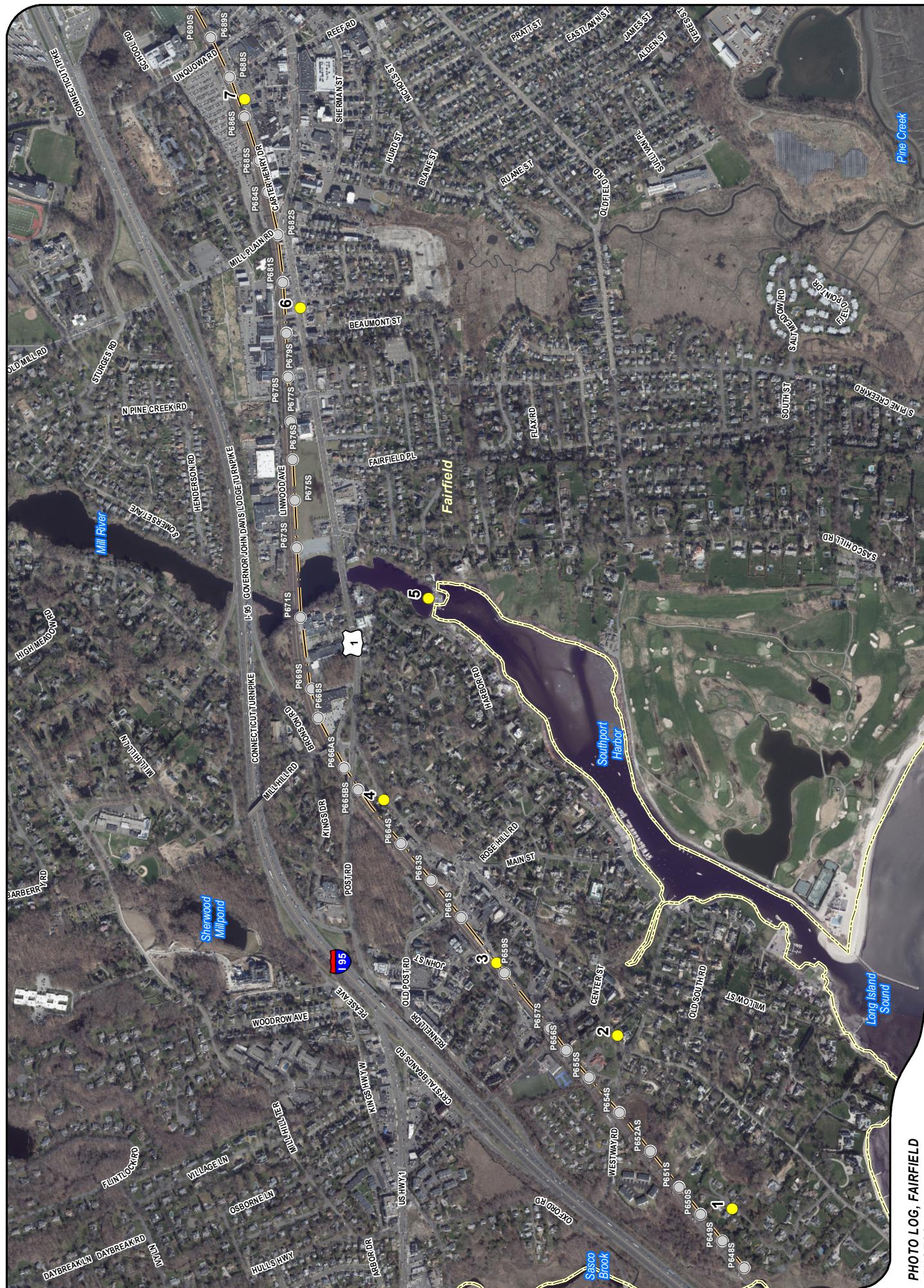
Sources: Esri, HERE, Garmin, Intermapper, increment P Corp., GEBCO, USGS, FAO, NPS, NRCan, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Legend

Legend

THIS PAGE INTENTIONALLY LEFT BLANK



ORIENTATION
NORTHLOCATION
SOUTH GATE LANE - FAIRFIELDPHOTO
1

EXISTING





PROPOSED

PHOTO

1

LOCATION

SOUTH GATE LANE - FAIRFIELD

ORIENTATION

NORTH

ORIENTATION
NORTHWESTLOCATION
PEQUOT AVENUE - SOUTHPORT

EXISTING

PHOTO
2



PROPOSED

PHOTO

2

**Photo-Simulation Based
on 70% Design Drawings**

LOCATION

PEQUOT AVENUE - SOUTHPORT

PHOTO

NORTHWEST



ORIENTATION
NORTHEAST



LOCATION
STATION STREET - SOUTHPORT TRAIN STATION

PHOTO
3



ORIENTATION
NORTHEAST

LOCATION
STATION STREET - SOUTHPORT TRAIN STATION

PROPOSED
PHOTO

3



Photo-Simulation Based
on 70% Design Drawings



ORIENTATION
NORTHEASTLOCATION
PEQUOT AVENUE - SOUTHPORTPHOTO
4

NORTHEAST

LOCATION
PEQUOT AVENUE - SOUTHPORT

PROPOSED

PHOTO

4

Photo-Simulation Based
on 70% Design Drawings

LOCATION
HARBOR ROAD - SOUTHPORT



PHOTO

5

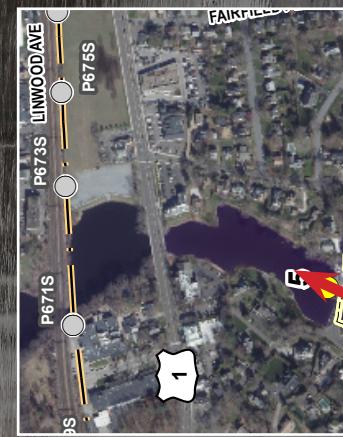
EXISTING

LOCATION

HARBOR ROAD - SOUTHPORT

ORIENTATION

NORTHEAST



ORIENTATION
NORTHEAST

LOCATION
HARBOR ROAD - SOUTHPORT

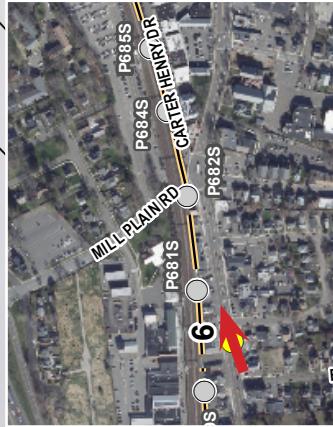
PROPOSED

PHOTO

5



*Photo-Simulation Based
on 70% Design Drawings*



PHOTO

6

EXISTING

LOCATION
POST ROAD - FAIRFIELDORIENTATION
NORTHEAST



PROPOSED

PHOTO

POST ROAD - FAIRFIELD

LOCATION

ORIENTATION

NORTHEAST

6



**Photo-Simulation Based
on 70% Design Drawings**

ORIENTATION
NORTHEAST



LOCATION

CARTER HENRY DRIVE AT MILLER STREET - FAIRFIELD TRAIN STATION

EXISTING

PHOTO

7



NORTHEAST

LOCATION

CARTER HENRY DRIVE AT MILLER STREET - FAIRFIELD TRAIN STATION

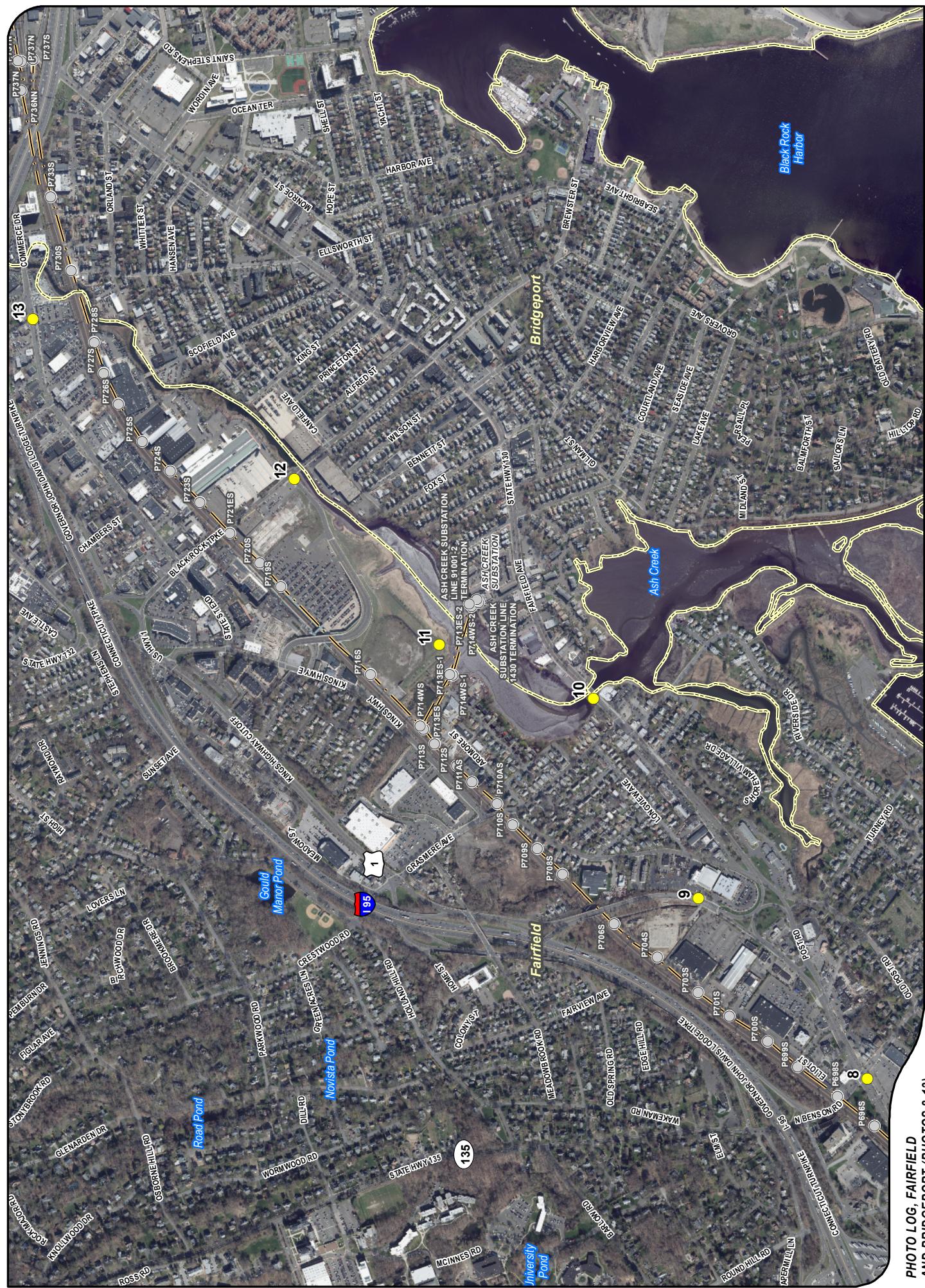
PROPOSED

PHOTO

7

*Photo-Simulation Based
on 70% Design Drawings*

THIS PAGE INTENTIONALLY LEFT BLANK



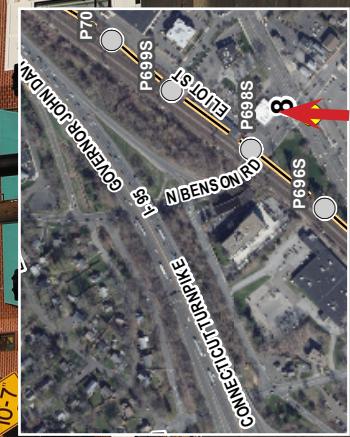
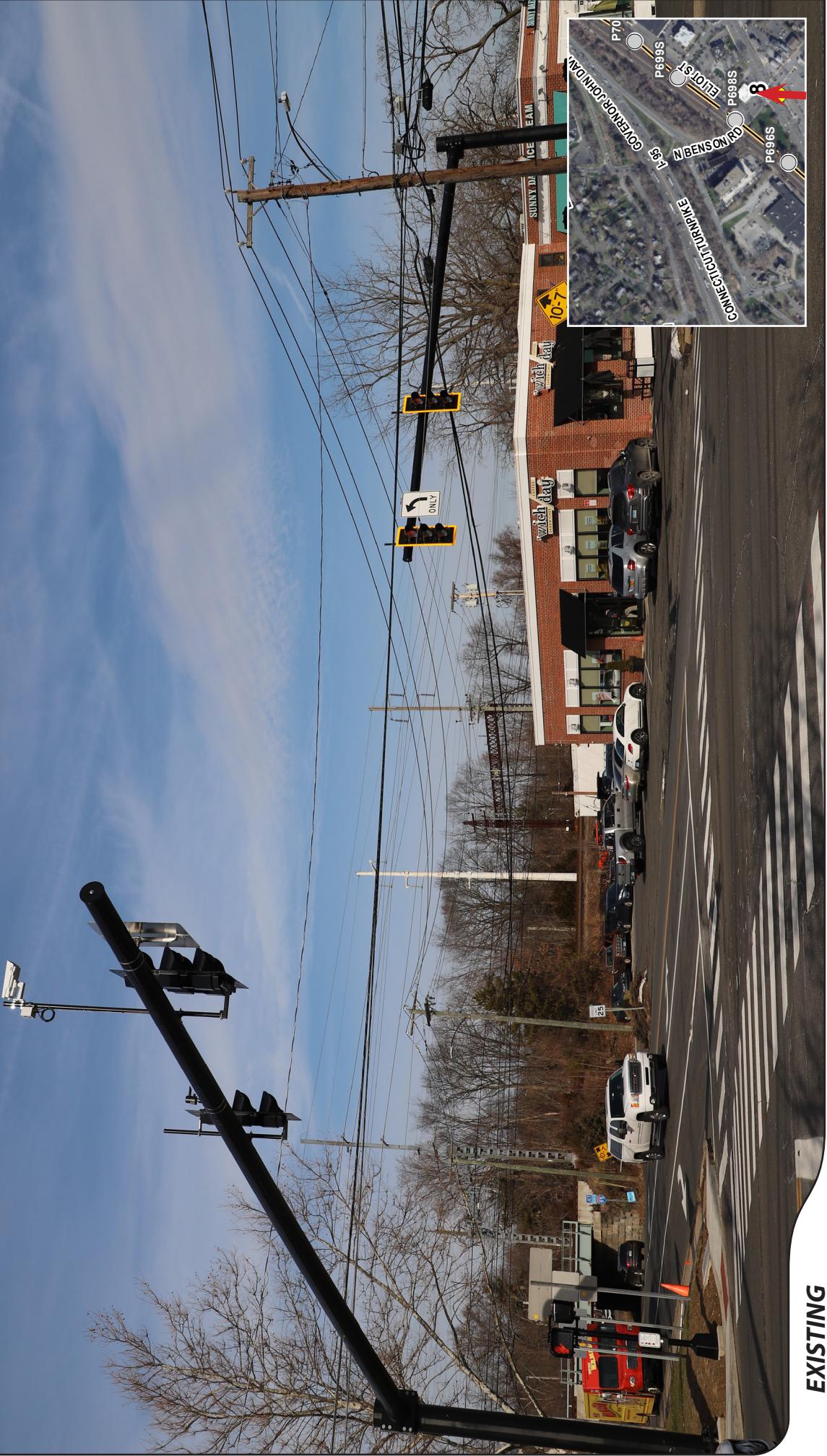
ORIENTATION
NORTH



LOCATION
POST ROAD AT SOUTH BENSON ROAD - FAIRFIELD

EXISTING
PHOTO

8



ORIENTATION
NORTH

LOCATION
POST ROAD AT SOUTH BENSON ROAD - FAIRFIELD

PHOTO
PROPOSED
8

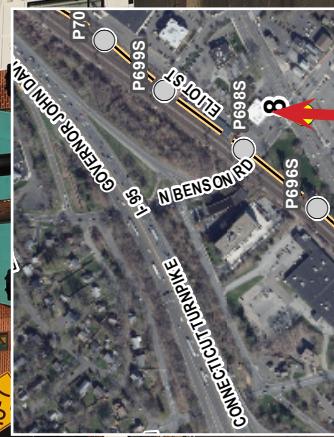


Photo-Simulation Based
on 70% Design Drawings



LOCATION

POST ROAD AT SOUTH BENSON ROAD - FAIRFIELD

PHOTO

8A

ORIENTATION

WEST





PROPOSED

**Photo-Simulation Based
on 70% Design Drawings**

PHOTO

8A

LOCATION

POST ROAD AT SOUTH BENSON ROAD - FAIRFIELD

ORIENTATION

WEST



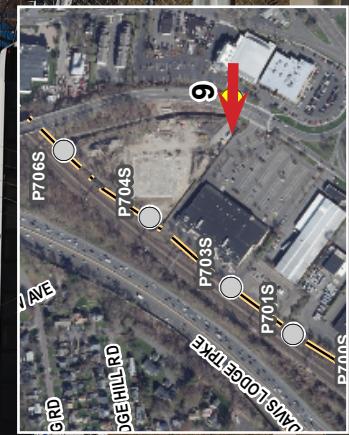
- 1 -

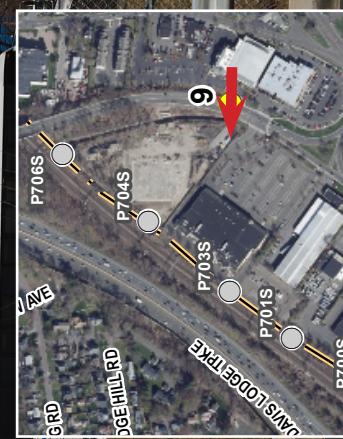
LOCATION

KINGS HIGHWAY CLITOFF - EAIBEIEI D

ORIENTATION

WEST





ORIENTATION
NORTHEAST



LOCATION
FAIRFIELD AVENUE - FAIRFIELD

EXISTING
PHOTO

10



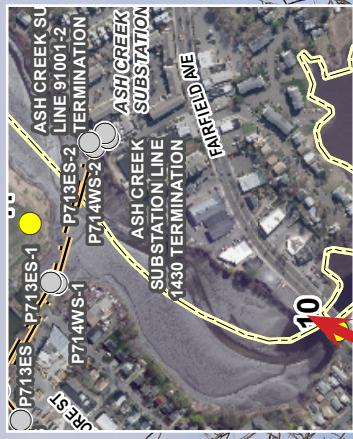
NORTHEAST

FAIRFIELD AVENUE - FAIRFIELD

PROPOSED

PHOTO

10

*Photo-Simulation Based
on 70% Design Drawings*

NORTHEAST

FAIRFIELD AVENUE - FAIRFIELD

PROPOSED

PHOTO

10

ORIENTATION
SOUTHEAST



LOCATION

FAIRFIELD METRO CONSERVATION AREA - FAIRFIELD

EXISTING

PHOTO

11





**Photo-Simulation Based
on 70% Design Drawings**

PROPOSED

PHOTO

11

LOCATION

FAIRFIELD METRO CONSERVATION AREA - FAIRFIELD

ORIENTATION

SOUTHEAST

ORIENTATION
NORTHWEST



LOCATION
ASH CREEK BOULEVARD - FAIRFIELD

EXISTING
PHOTO

12



ORIENTATION
NORTHWEST

LOCATION
ASH CREEK BOULEVARD - FAIRFIELD

PROPOSED
PHOTO

12

*Photo-Simulation Based
on 70% Design Drawings*

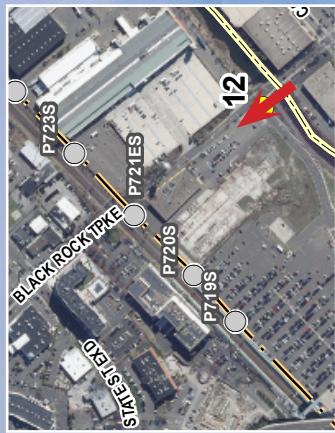


PHOTO
EXISTING
LOCATION
COMMERCE DRIVE - FAIRFIELD
ORIENTATION
SOUTH



ALL-POINTS
TECHNOLOGY CORPORATION

PHOTO
13
EXISTING
LOCATION
COMMERCE DRIVE - FAIRFIELD
ORIENTATION
SOUTH



ORIENTATION
SOUTH

LOCATION
COMMERCEDR - FAIRFIELD

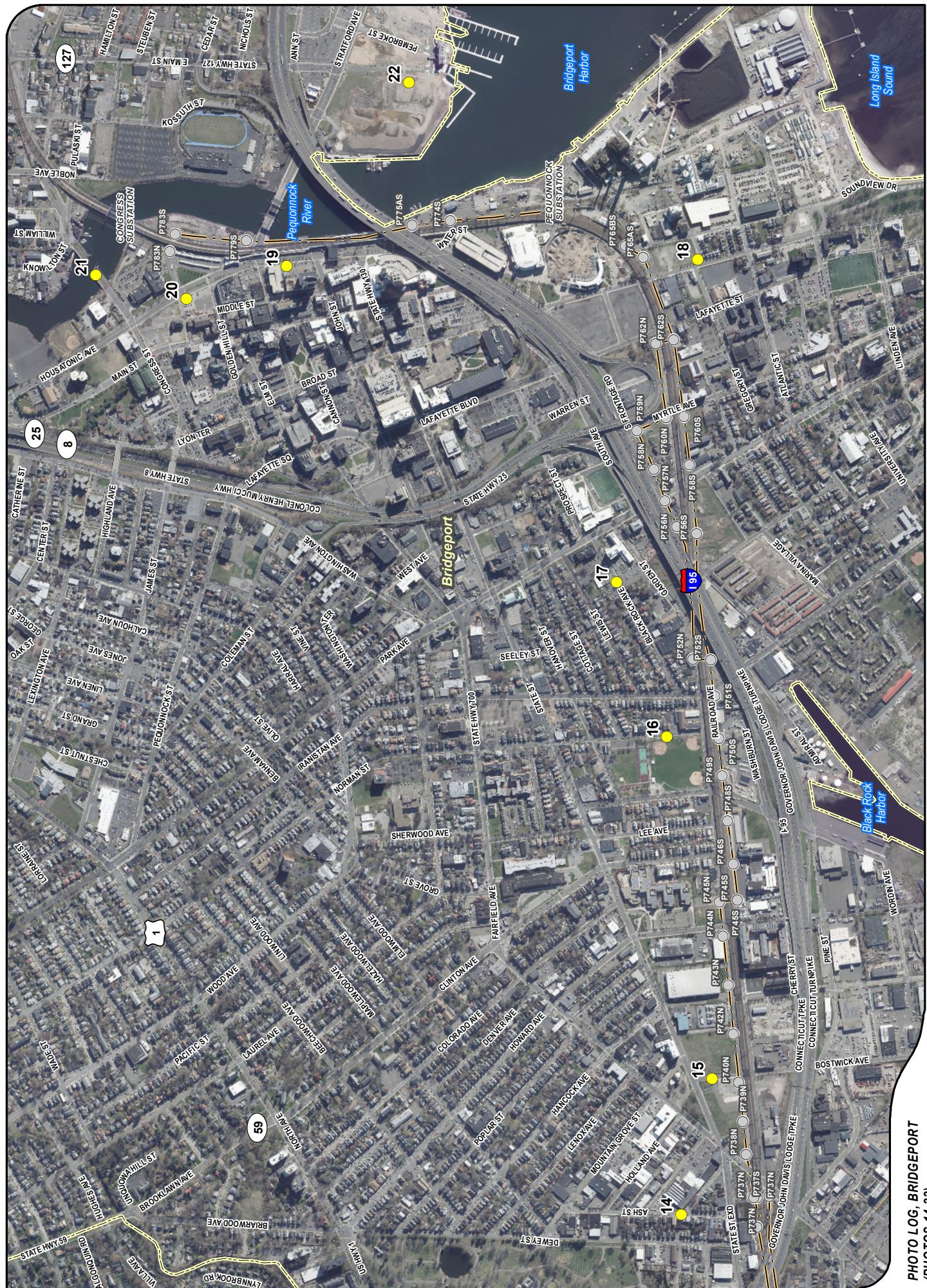
PROPOSED
PHOTO

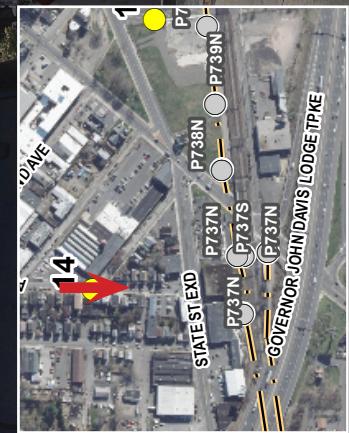
13

*Photo-Simulation Based
on 70% Design Drawings*



THIS PAGE INTENTIONALLY LEFT BLANK





LOCATION

ASH STREET AT BEDFORD AVENUE - BRIDGEPORT

ORIENTATION

SOUTH





PHOTO

PROPOSED

LOCATION

ORIENTATION

ASH STREET AT BEDFORD AVENUE - BRIDGEPORT

SOUTH

14

PHOTO
LOCATION
15
ORIENTATION
SOUTHEAST



EXISTING
PHOTO
LOCATION
15
ORIENTATION
SOUTHEAST



ORIENTATION
SOUTHEAST

LOCATION
BOSTWICK AVENUE - BRIDGEPORT

PROPOSED

PHOTO

15

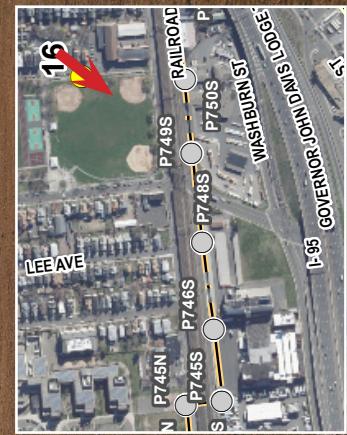


Photo-Simulation Based
on 70% Design Drawings

LOCATION
NORMAN STREET - BRIDGEPORT
ORIENTATION
SOUTHWEST



EXISTING
PHOTO
16
NORMAN STREET - BRIDGEPORT
LOCATION
ORIENTATION
SOUTHWEST



PROPOSED

PHOTO

LOCATION

ORIENTATION
SOUTHWEST

**Photo-Simulation Based
on 70% Design Drawings**



16

ORIENTATION
SOUTHEAST



LOCATION
BLACK ROCK AVENUE - BRIDGEPORT

PHOTO
17

EXISTING





PROPOSED

PHOTO

LOCATION

BLACK ROCK AVENUE - BRIDGEPORT

ORIENTATION

SOUTHEAST

PHOTO	EXISTING	LOCATION	ORIENTATION	NORTH
18		WHITING STREET - BRIDGE REPORT		

PROPOSED

PHOTO

18

LOCATION

WHITING STREET - BRIDGEPORT

ORIENTATION

NORTH



ORIENTATION

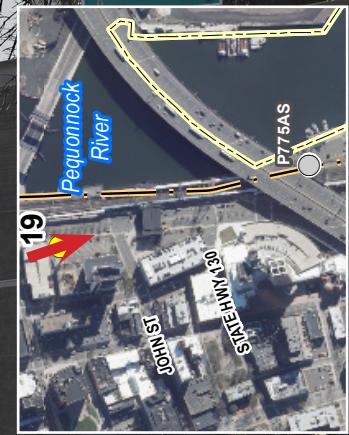
SOUTH



LOCATION

WATER STREET - BBIDGEPORT

PHOTO

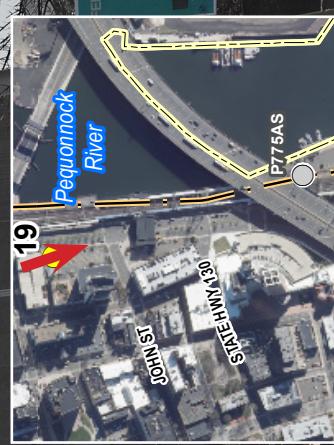


ORIENTATION
SOUTH

LOCATION
WATER STREET - BRIDGEPORT

PROPOSED
PHOTO

19



ORIENTATION
SOUTHEAST

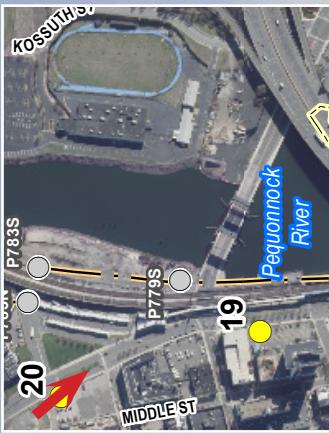


LOCATION
WATER STREET - BRIDGEPORT

EXISTING

PHOTO

20



ORIENTATION
SOUTHEAST

LOCATION
WATER STREET - BRIDGEPORT

PROPOSED
PHOTO

20

Photo-Simulation Based
on 70% Design Drawings

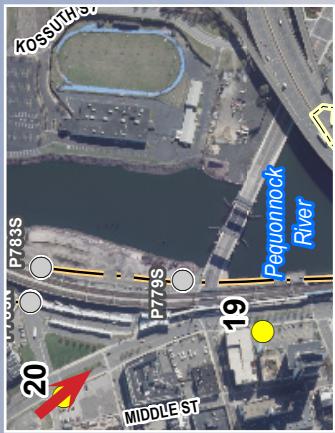


PHOTO
LOCATION
ORIENTATION
SOUTH



CONGRESS STREET BRIDGE - BRIDGEPORT
PHOTO
LOCATION

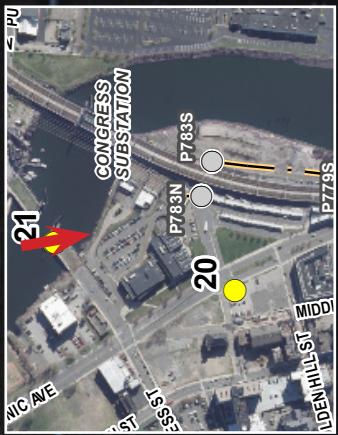
EXISTING
PHOTO

21



LOCATION
SOUTHCONGRESS STREET BRIDGE - BRIDGEPORT
PHOTO

PROPOSED

PHOTO
21

*Photo-Simulation Based
on 70% Design Drawings*

PHOTO
LOCATION
WEST



EXISTING
PHOTO
22
EAST MAIN STREET - BRIDGEPORT



PROPOSED

PHOTO

22

LOCATION

EAST MAIN STREET - BRIDGEPORT

ORIENTATION

WEST

Photo-Simulation Based
on 70% Design Drawings



THIS PAGE INTENTIONALLY LEFT BLANK

ATTACHMENT 2
VIEWSHED ANALYSIS MAPPING

THIS PAGE INTENTIONALLY LEFT BLANK



Legend

- Existing Structure
- Project Transmission Line
- Year-Round Visibility (2,424 Acres; +/- 1,044 Acres occur over open water)
- Areas of Potential Seasonal Visibility (+/- 431 Acres)
- Study Area (1 Mile Radius)
- Half Mile Radius
- Municipal Boundary
- Scenic Highway
- Trail
- DEEP Boat Launches
- Municipal
- Private
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Land Trust
- Municipal
- Private
- Municipal and Private Open Space Property
- State Forest/Park



N

E

S

W

1,000 500 0 1,000

Feet

Limitations

This map depicts areas where existing infrastructure may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy, and existing structures. This analysis is based on a combination of computer modeling, incorporating the DSM, and 2019 digital aerial photographs. This analysis does not necessarily depict all locations where views may occur. It is intended to provide a representation of those areas where at least a portion of the existing infrastructure may be seen, but may actually over-predict visibility in some locations.

Physical Geography / Background Data

Study area encompasses a 1-mile radius surrounding the existing structures and includes 11,609 acres. A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.

Forest canopy height derived from LiDAR data.

Map Sources

- *Note: Not all data layers appear on map sheet.
- Ortho Base Map: State of Connecticut 2016 (coast) and 2019 aerial imagery (CTECO Map Service)
- CTDEEP's data library (<http://www.ct.gov/deep>)
- Data layers are maintained and updated by CTDEEP and represent the most recent publications.
- Scenic Roads: CTDOT State Scenic Highways (2015)
- Connecticut Forest and Parks Association, Connecticut Walk Books East and West

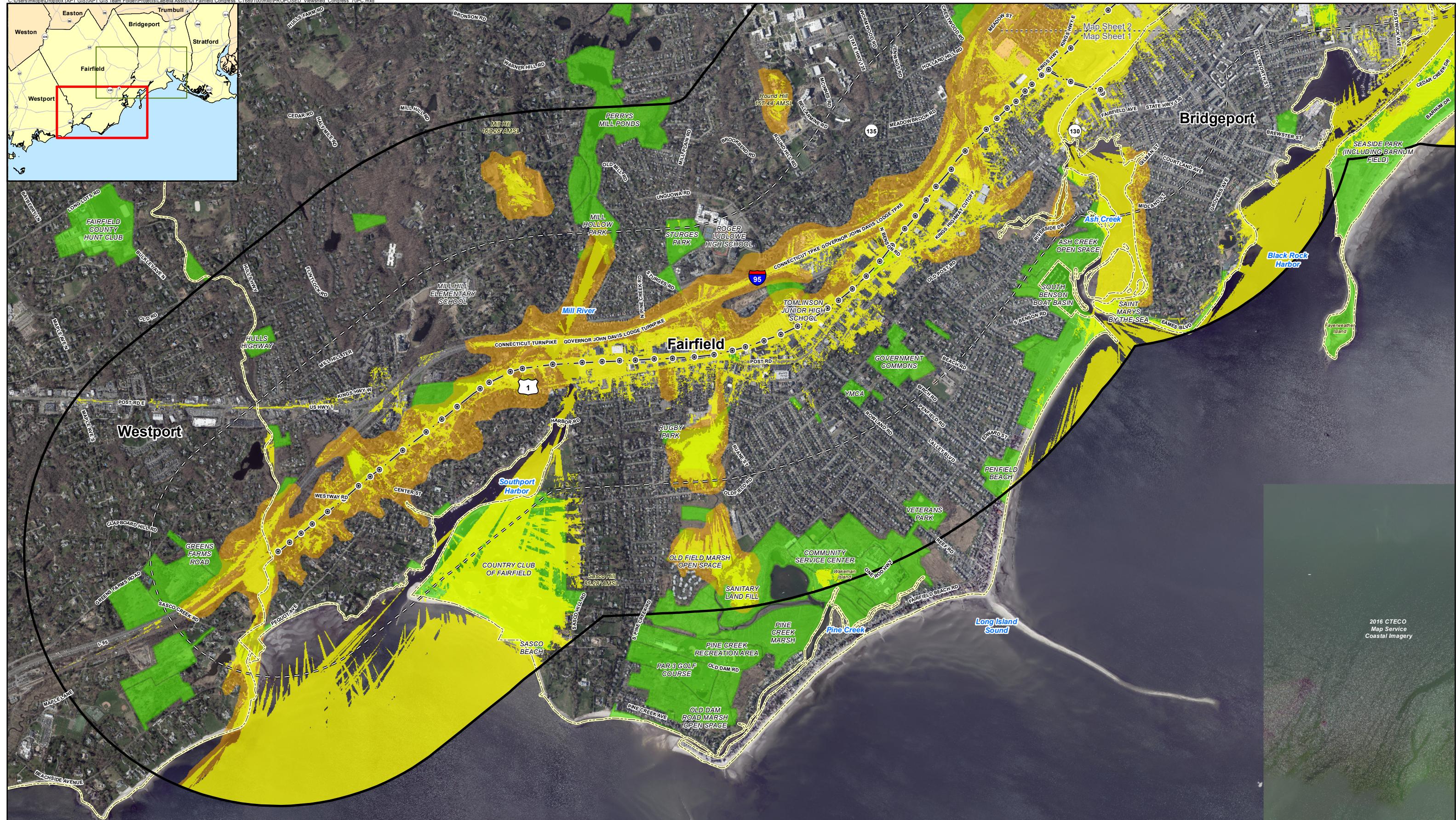
Existing Conditions Viewshed Analysis Map

Railroad 115-kV Transmission Line Upgrade Project

Fairfield to Congress Street Substation

Bridgeport, Fairfield, and Westport, CT
Map Sheet 1 of 2



**Legend**

- Proposed Structure
- Project Transmission Line
- Year-Round Visibility (2,843 Acres; +/- 1,267 Acres occur over open water)
- Areas of Potential Seasonal Visibility (+/- 687 Acres)
- Study Area (1 Mile)
- Half Mile Radius

- Municipal Boundary
- Scenic Highway
- Trail
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Land Trust
- Municipal
- Private
- Municipal and Private Open Space Property
- State Forest/Park

1,000 500 0 1,000
Feet

Limitations

This map depicts areas where proposed infrastructure may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy, and existing structures. This analysis is based on a combination of computer modeling, incorporating the DSM, and 2019 digital aerial photographs. This analysis does not necessarily depict all locations where views may occur. It is intended to provide a representation of those areas where at least a portion of the new facilities may be seen, but may actually over-predict visibility in some locations.

Physical Geography / Background Data
Study area encompasses a 1-mile radius surrounding the proposed structures and includes 11,609 acres. A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR LAS data points. The DSM captures the natural and built features on the Earth's surface. Forest canopy height derived from LiDAR data.

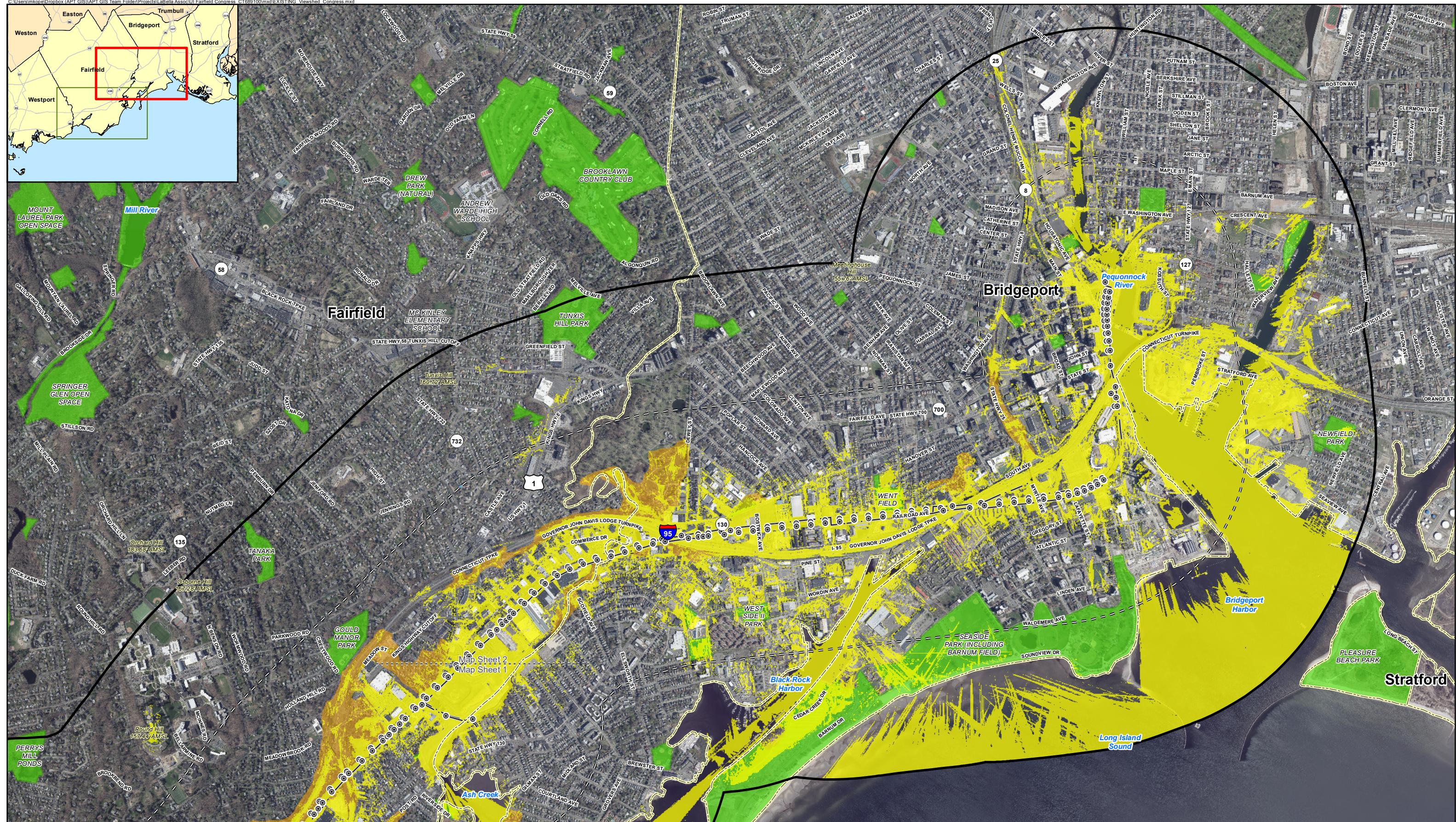
Map Sources
*Note: Not all data layers appear on map sheet.
Ortho Base Map: State of Connecticut 2016 (coast) and 2019 aerial imagery (CTECO Map Service)
CTDEEP's data library (<http://www.ct.gov/deep>)
Data layers are maintained and updated by CTDEEP and represent the most recent publications.
Scenic Roads: CTDOT State Scenic Highways (2015)
Connecticut Forest and Parks Association, Connecticut Walk Books East and West

Map Date: February 03, 2023

Proposed Conditions Viewshed Analysis Map
Railroad 115-kV Transmission Line Upgrade Project
Fairfield to Congress Street Substation

Bridgeport, Fairfield, and Westport, CT
Map Sheet 1 of 2



**Legend**

- Existing Structure
- Project Transmission Line
- Year-Round Visibility (2,424 Acres; +/- 1,044 Acres occur over open water)
- Areas of Potential Seasonal Visibility (+/- 431 Acres)
- Study Area (1 Mile Radius)
- Half Mile Radius
- Municipal Boundary
- Scenic Highway
- Trail
- DEEP Boat Launches
- Municipal
- Private
- Municipal and Private Open Space Property
- State

■ Municipal Boundary
 — Scenic Highway
 — Trail
 ■ DEEP Boat Launches
 ■ Municipal
 ■ Private
 ■ Municipal and Private Open Space Property
 ■ State

Protected Open Space Property

- Land Trust
- Municipal
- Private
- Municipal and Private Open Space Property
- State Forest/Park

1,000 500 0 1,000

Feet

Limitations

This map depicts areas where existing infrastructure may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy, and existing structures. This analysis is based on a combination of computer modeling, incorporating the DSM, and 2019 digital aerial photographs. This analysis does not necessarily depict all locations where views may occur. It is intended to provide a representation of those areas where at least a portion of the existing infrastructure may be seen, but may actually over-predict visibility in some locations.

Physical Geography / Background Data
 Study area encompasses a 1-mile radius surrounding the existing structures and includes 11,609 acres. A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR data points. The DSM captures the natural and built features on the Earth's surface. Forest canopy height derived from LiDAR data.

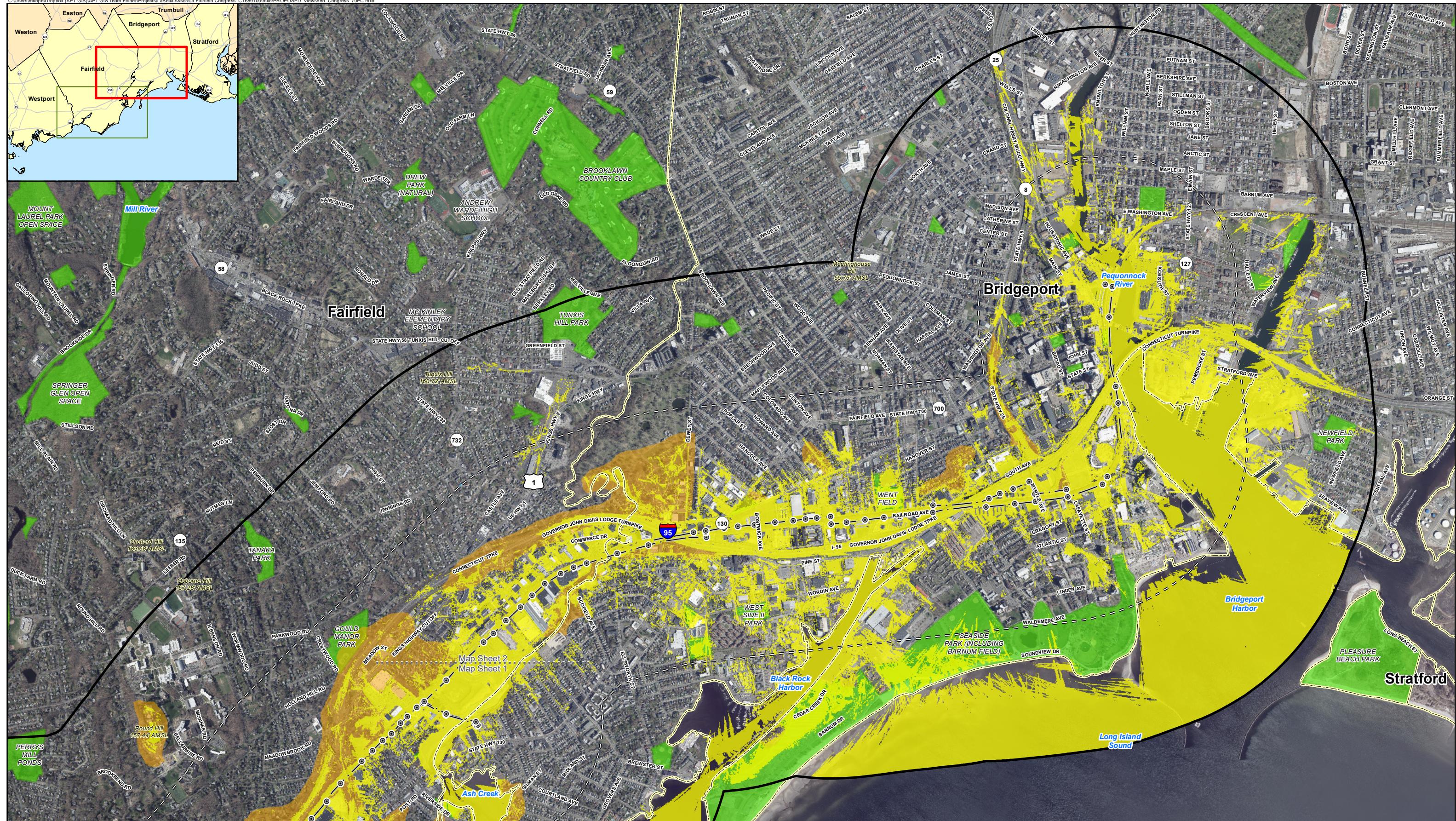
Map Sources
 *Note: Not all data layers appear on map sheet.
 Ortho Base Map: State of Connecticut 2016 (coast) and 2019 aerial imagery (CTECO Map Service)
 CTDEEP's data library (<http://www.ct.gov/deep>)
 Data layers are maintained and updated by CTDEEP and represent the most recent publications.
 Scenic Roads: CT DOT State Scenic Highways (2015)
 Connecticut Forest and Parks Association, Connecticut Walk Books East and West

Map Date: February 03, 2023

Existing Conditions Viewshed Analysis Map
Railroad 115-kV Transmission Line Upgrade Project
Fairfield to Congress Street Substation

Bridgeport, Fairfield, and Stratford, CT
 Map Sheet 2 of 2





Legend

- Proposed Structure
- Project Transmission Line
- Year-Round Visibility (2,843 Acres; +/- 1,267 Acres occur over open water)
- Areas of Potential Seasonal Visibility (+/- 687 Acres)
- Study Area (1 Mile)
- Half Mile Radius

- Municipal Boundary
- Scenic Highway
- Trail
- DEEP Boat Launches
- Ortho Base Map:
- Map Sources:

- Land Trust
- Municipal
- Private
- Municipal and Private Open Space Property
- State Forest/Park

1,000 500 0 1,000
Feet

Limitations

This map depicts areas where proposed infrastructure may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy, and existing structures. This analysis is based on a combination of computer modeling, incorporating the DSM, and 2019 digital aerial photographs. This analysis does not necessarily depict all locations where views may occur. It is intended to provide a representation of those areas where at least a portion of the new facilities may be seen, but may actually over-predict visibility in some locations.

Physical Geography / Background Data

Study area encompasses a 1-mile radius surrounding the proposed structures and includes 11,609 acres. A digital surface model (DSM) was created from the State of Connecticut 2016 LiDAR LAS data points.

The DSM captures the natural and built features on the Earth's surface.

Forest canopy height derived from LiDAR data.

Proposed Conditions Viewshed Analysis Map

Railroad 115-kV Transmission Line Upgrade Project
Fairfield to Congress Street Substation

Bridgeport, Fairfield, and Stratford, CT
Map Sheet 2 of 2

