VISUAL ASSESSMENT & PHOTO-SIMULATIONS

The United Illuminating Company

City of Milford,
Town of Orange,
City of West Haven,
City of New Haven

MILVON-WEST RIVER RAILROAD TRANSMISSION LINE 115-KV REBUILD PROJECT

October 2021

VISUAL ASSESSMENT & PHOTO-SIMULATIONS

The United Illuminating Company ("UI" or the "Company") is proposing to rebuild its two existing single-circuit 115-kilovolt (kV) overhead lines that extend approximately 9.5 miles through portions of Milford, Orange, West Haven, and New Haven (the "Project"). The existing circuits extend in a southwest-northeast direction within the Connecticut DOT ("CT DOT") railroad corridor, primarily on railroad catenary structures, between UI's Milvon Substation (located in Milford) and the West River Substation (located in New Haven). 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 Milvon-West River Project corridor is located within a densely developed portion of southern New Haven County. The general area is characterized by multiple transportation corridors, including the CT DOT/Metro-North Railroad ("MNR") corridor, Interstate 95 and Route 1. The existing UI transmission lines and supporting infrastructure occupy areas along both the north and south sides of the railroad corridor. CT DOT owns the railroad corridor, which varies in total width from 90 to 260 feet and, in the Project area includes three to four railroad tracks. The shared railroad and electrical corridor is visually distinctive as a result of the catenary structures, the UI transmission line support columns, referred to as "bonnets", located on top of the catenary structures, and the 115-kV lines themselves. In several areas, the transmission lines are attached to free-standing structures.[1] Existing structures supporting UI's infrastructure range in height from approximately 55 feet above ground level ("AGL") to approximately 140 feet AGL.[2] The existing catenary structures and UI bonnets typically rise to a height of 60 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, with residential areas interspersed, primarily in Milford and West Haven. Because it traverses a near-coastal region, the railroad corridor also extends near and (in some areas) crosses inland/tidal wetlands, marsh and waterways, including the Wepawaug, Indian, and West rivers.

The topography within the corridor and surrounding areas consists of relatively level terrain, and lacks high vantage points. Ground elevations range from approximately 5 feet above mean sea level ("AMSL") to approximately 100 feet AMSL. The maintained edges of the railroad corridor are interspersed with areas of 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.

[1] As one example, where the 115-kV lines diverge from the railroad catenary structures to span I-95.

[2] The tallest poles and infrastructure are currently and will continue to be located at the West Haven Train Station.

Project Description

UI proposes to rebuild the 115-kV lines on double-circuit monopoles, mostly along the north side of the railroad corridor. The majority of the proposed replacement structures will range from 70 feet to 170 feet AGL. 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 (such as certain legacy wood poles, steel poles, and lattice towers) will also 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" surrounding the Project corridor (in this case, one mile) 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 model, and provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Computer Modeling

To conduct this assessment, a predictive computer model was developed specifically for this project using ESRI's ArcMap GIS[3] 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 LiDAR[4] LAS[5] 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

[3] 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.

[4] Light Detection and Ranging

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

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 cells[6] 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.

[6] Each DSM cell size is 1 square meter.

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 in March, April and June 2021 to obtain an understanding of existing views of the Project area during both leaf-on and leaf-off conditions.

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 body[7] and Canon EF 24 to 105 millimeter ("mm") zoom lens.

Photographic simulations were generated to portray scaled renderings of proposed replacement transmission structures from eight (8) representative locations. 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 photograph (existing catenary structures with UI bonnets and 115-kV lines) and the corresponding simulation (the proposed 115-kV double-circuit monopoles) are proportional to their surroundings.

Photo-documentation of existing conditions and photo-simulations are presented in the attachment at the end of this report. The photo-simulations are intended to provide the reader with a general understanding of the proposed changes in view characteristics associated with development of the Project.

Photographic locations 1 through 8 in the attachments to this report provide views of existing and proposed conditions along the Project corridor. The photo-simulations depict visual representations of the rebuilt 115-kV lines from vantage points near the railroad corridor, including the train stations in Milford and West Haven, and the West River crossing. The simulations portray the proposed replacement monopoles and rebuilt 115-kV facilities, and the removal of existing UI 115-kV facilities and bonnets from MNR catenary structures.

[7] 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.

Conclusions

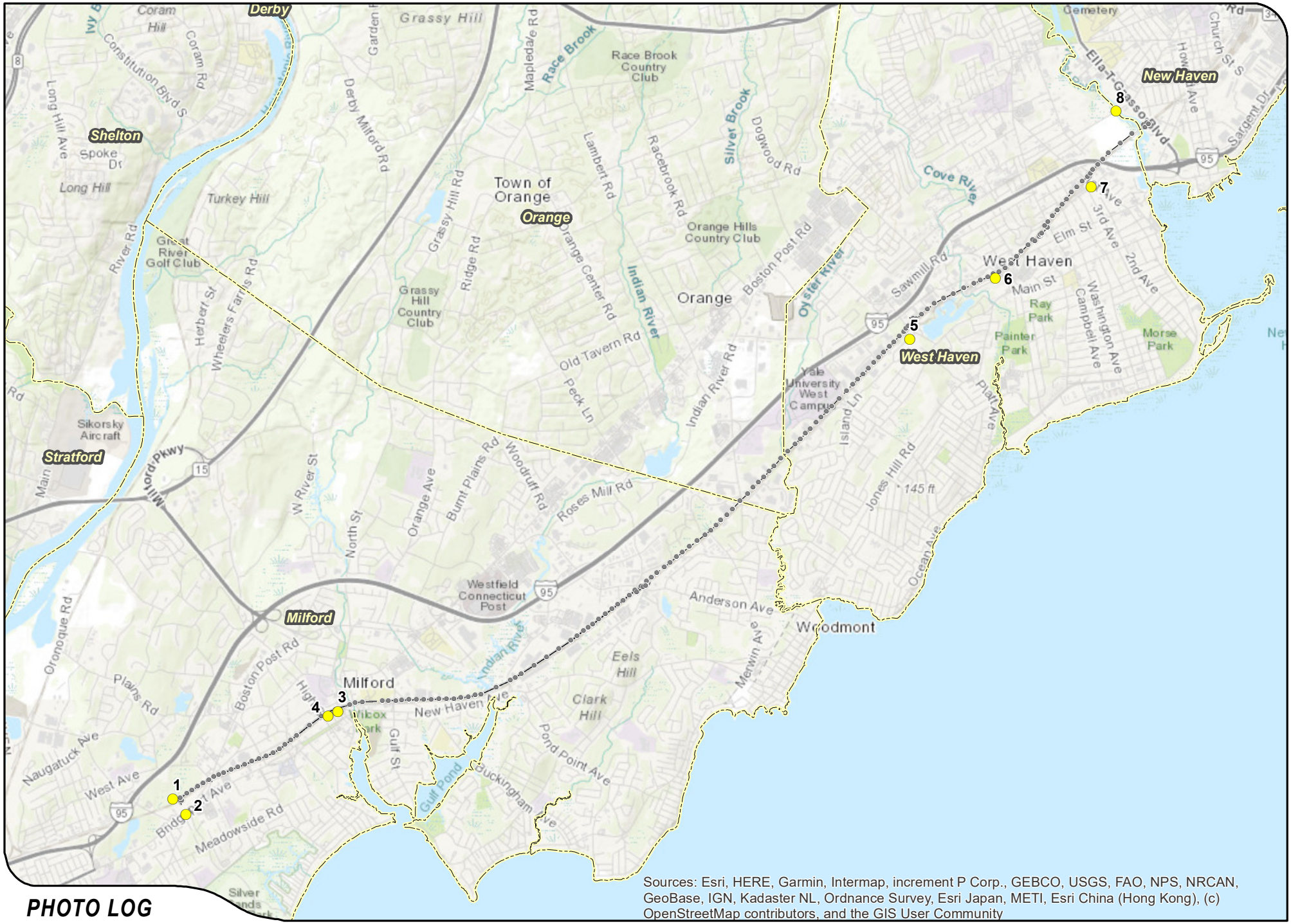
As presented on the attached viewshed map, the zone of visibility associated with the Project extends to distances of 0.5 mile and, in some areas over undeveloped, open water and marsh, approaches 0.75 mile and beyond. Although some locations will experience changes from existing conditions due to the relocation and modified heights of new structures, Project visual effects are balanced by the removal of bonnets and other supporting infrastructure, particularly along the southern side of the railroad corridor. The railroad corridor has historically been, and continues to be, an unmistakable landmark throughout the Project area. As is the case today, at distances of approximately 0.5 to 0.75 mile and beyond, the tops of the new transmission line structures and transmission circuits will not be prominent features, particularly with the amount of intervening existing infrastructure common to the area. The most substantial change from existing to proposed structure heights will occur at the West River crossing, where four (4) 120-foot-tall monopoles are required to replace the 89-foot-tall catenary bonnets, which will then be removed.

Limitations

The viewshed maps presented in the attachment to this report 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.

The photo-simulations 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.

ATTACHMENTS



Sources: Esri, HERE, Garmin, Intermap, 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

PHOTO LOG

Legend

Photographic Location · Proposed Structure — Project Transmission Line ▭ Municipal Boundary

1 inch = 5,000 feet

6,000 3,000 0 6,000 Feet

PHOTO KEY

Photo No.	Location	Existing Transmission Line Infrastructure Depicted in Photograph	Project Modifications Depicted in Simulation
1	Beaver Brook Trail - Milford; North of railroad corridor and Milvon Substation. Beaver Brook marsh walking trail loops along the edge of fresh water marsh habitat and the Beaver Brook canal, bordered by Metro North Railroad and nearby I-95.	Center of Photo: Three existing monopoles coming into Milvon Substation from the Milvon to Devon lines and three existing monopoles coming out of Milvon Substation. Left of Photo: Catenary structure with bonnets on the north and south sides and a couple wood poles behind vegetation.	Left of Photo: Catenary structure with bonnets and wood poles removed; Two new steel poles (one located on south side of tracks and one located on north side of tracks); Vegetation Removal
2	Bridgeport Road - Milford; south of Milvon Substation in a commercially developed area.	Substation and existing monopoles associated with lines coming out and coming into the station. Two bonnets to the east of the grouping of existing steel monopoles.	Bonnets will be removed. Two new steel poles to be installed (one located on south side of tracks and one located on north side of tracks)
3	Railroad Avenue - Milford; Milford Train Station, looking west.	Two existing steel poles on south side of tracks supporting UI's existing 115-kV facilities and two Metro North signal wires. Three Bonnets on top of catenary structures are located on the north side of the tracks.	Top Sections of the existing steel poles will be removed- bottom sections will remain to continue to support the two Metro North signal wires. Bonnets will be removed. Two new double circuit steel poles will be installed on north side of tracks.
4	Railroad Avenue - Milford; Milford Train Station, looking east.	One existing steel pole on south side of tracks supporting UI's existing 115-kV facilities and two Metro North signal wires. One bonnet on top of catenary bridge structure located on north side of tracks and one bonnet on top of catenary structure in photo background.	Top Section of the existing steel pole will be removed- bottom sections will remain to continue to support the two Metro North signal wires (not seen due to building in photo view). Bonnets will be removed and four additional double circuit steel poles will be installed on north side of tracks (one in foreground; three in background)
5	Island Lane - West Haven. Southwest of the Allings Crossing Road overpass in a predominantly residential area.	Four existing lattice towers (two on north side of tracks and two on south side of tracks); existing catenary structure with bonnets on the north and south sides.	The top portions of the two existing lattice towers on the north side of the tracks will be removed (the bottom section will remain to continue supporting the MNR electrical facilities). The 115-kV conductors, insulators, and arms will be removed from the two existing lattice towers on the south side of the tracks. The bonnet on the northern side will be removed in full; the 115-kV conductors and insulators will be removed from the bonnet on the southern side. Four new double circuit steel poles will be installed on the north side of the tracks. Vegetation Removal will take place on the north side of the tracks.
6	Railroad Avenue - West Haven Station.	Six existing steel poles (three on north side of tracks and three on south side of tracks- one of these three is in the far background); Multiple bonnets on top of catenary structure northern and southern sides in photo background.	All bonnets will be removed; two steel poles on south side of tracks in foreground will remain with 115-kV arms and insulators removed; steel pole on south side of tracks in background will be removed in full. Two single circuit steel poles (two in foreground) on north side of tracks will be replaced with new double circuit steel poles; the top section of the existing steel pole (in background) on north side of tracks will be removed- bottom section will remain to continue to support the Metro North electrical facilities. Multiple new double circuit steel poles on the north side of the tracks visible in background.
7	Wood Street - West Haven. West of 1st Avenue within a mixed commercial (north of Wood Street) and residential (south) area.	Multiple bonnets supporting UI's existing 115-kV facilities (three on north side of tracks and three on south side of tracks)	Bonnets and existing 115-kV facilities removed; new double circuit steel pole and conductors installed on north side of tracks.
8	Spring Street - West Haven. West River Crossing. Existing railroad and electrical corridor extends through undeveloped marsh on west side of river and commercial/industrial development on east side.	Four bonnets supporting UI's existing 115-kV facilities on top of catenary structure northern and southern sides (two bonnets on north side of tracks and two bonnets on south side of tracks); Existing abandoned steel structures on the north side of tracks.	Abandoned structures will be removed and three of four bonnets will be removed. Four new steel poles installed toward the left of this photo (eastern portion).

PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
1	**BEAVER BROOK TRAILS - MILFORD**	**SOUTHEAST**

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PROPOSED

PHOTO	LOCATION	ORIENTATION
1	**BEAVER BROOK TRAILS - MILFORD**	**SOUTHEAST**

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PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
2	**BRIDGEPORT AVENUE - MILFORD** **MILVON SUBSTATION**	**NORTH**

ALL-POINTS TECHNOLOGY CORPORATION

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PROPOSED

PHOTO	LOCATION	ORIENTATION
2	**BRIDGEPORT AVENUE - MILFORD** **MILVON SUBSTATION**	**NORTH**

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PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
3	**RAILROAD AVENUE - MILFORD STATION, MILFORD**	**WEST**

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PROPOSED

PHOTO	LOCATION	ORIENTATION
3	**RAILROAD AVENUE - MILFORD**	**WEST**

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UI

PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
4	**RAILROAD AVENUE - MILFORD STATION, MILFORD**	**EAST**

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UI

PROPOSED

PHOTO	LOCATION	ORIENTATION
4	**RAILROAD AVENUE - MILFORD STATION, MILFORD**	**EAST**

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UI

PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
5	**ISLAND LANE - WEST HAVEN** **WEST OF ALLINGS CROSSING ROAD**	**NORTHEAST**

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PROPOSED

PHOTO	LOCATION	ORIENTATION
5	**ISLAND LANE - WEST HAVEN** **WEST OF ALLINGS CROSSING ROAD**	**NORTHEAST**

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PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
6	**RAILROAD AVENUE - WEST HAVEN STATION, WEST HAVEN**	**WEST**

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Photo-Simulation Based on 50% Design Drawings

PROPOSED

PHOTO	LOCATION	ORIENTATION
6	**RAILROAD AVENUE - WEST HAVEN STATION, WEST HAVEN**	**WEST**

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PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
7	**WOOD STREET - WEST HAVEN**	**NORTH**

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PROPOSED

PHOTO	LOCATION	ORIENTATION
7	**WOOD STREET - WEST HAVEN**	**NORTH**

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UI

PHOTOGRAPHED ON 4/5/2021

EXISTING

PHOTO	LOCATION	ORIENTATION
8	**SPRING STREET - WEST HAVEN** **WEST RIVER CROSSING**	**SOUTHEAST**

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PROPOSED

PHOTO	LOCATION	ORIENTATION
8	**SPRING STREET - WEST HAVEN** **WEST RIVER CROSSING**	**SOUTHEAST**

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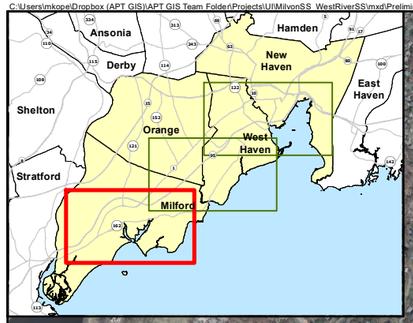

Map Sheet 2
Map Sheet 1

Woodmont Substation

Milford

Milvon Substation

City Pond

Mondo Pond

Beaver Brook Reservoir

Beaver Pond

Beaver Brook

SILVER SANDS STATE PARK

Milford Harbor

Calf Pen Meadow Creek

Eels Hill 134.48 AMSL

Clark Hill 157.44 AMSL

Burwell Hill 108.08 AMSL

Bryan Hill 134.48 AMSL

Merwin Hill 95.12' AMSL

Knobb Hill 49.2' AMSL

CONNECTICUT TURNPIKE

GOVERNOR JOHN DAVIS LODGE TURNPIKE

BOSTON POST ROAD

WEST RIVER STREET

OLD GATE LANE

WOODMONT ROAD

QUARRY ROAD

MOUNTAIN VIEW DRIVE

DEPOT ROAD

ESSEX DRIVE

ROCK LANE

QUIRK ROAD

LONDONDERRY LANE

HUNTERS RUN

ANDERSON AVENUE

HIGGINS DRIVE

EASTERN STEEL ROAD

PEPES FARM ROAD

BREWSTER ROAD

LINE ROW

LINNEY

LINDY STREET

MORRIS LANE

WAMPUS LANE

BUCKINGHAM AVENUE

NEW HAVEN AVENUE

EVERGREEN AVENUE

CINDY CIRCLE

DAVIS DRIVE

SYLVAN COURT

PARK CIRCLE

BUCKINGHAM PLACE

HARBORSIDE DRIVE

SHIPYARD LANE

FACTORY LANE

DARINA PLACE

PROSPECT STREET

RIVER STREET

CONSTITUTION DRIVE

RAILROAD AVENUE

DEPOT STREET

JEPSON DRIVE

SPRING LANE

WEST TOWN STREET

VICTORY CRES

CLARK STREET

HILL STREET

BEERS TOWN AVENUE

PEARL HILL STREET

SOUTH BROAD STREET

BROAD STREET

CENTER STREET

HIGH STREET

NELWYS STREET

LAFAYETTE STREET

NOBLE AVENUE

GOLDEN HILL STREET

FENWAY STREET

NORTH

WASHINGTON STREET

SHARON COURT

ERNA AVENUE

STRAN ROAD

WEST AVENUE

ROBERT TREAT DRIVE

DORSET LANE

SEAMANS LANE

SOUTH WASHINGTON STREET

MARION AVENUE

SILVER SANDS PARKWAY

ROBERT TREAT PARKWAY

SEASIDE AVENUE

GULF STREET

POND POINT AVENUE

BRIDGEPORT AVENUE

1

95

121

162

736

Legend

- Proposed Structure
- Project Transmission Line
- Year-Round Visibility
- Study Area (1 Mile Radius)
- Half Mile Radius
- Municipal Boundary
- Scenic Highway*
- Trail*
- DEEP Boat Launches*
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Federal*
- Land Trust*
- Municipal*
- Private*
- State*

N

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 1,4015 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

*Not all data layers appear on map sheet.
Ortho Base Map: State of Connecticut 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: September 13, 2021

Preliminary Viewshed Analysis Map - MCF
Milvon-West River Railroad Transmission Line 115-kV Rebuild Project

Milford, CT
Map Sheet 1 of 3

UI

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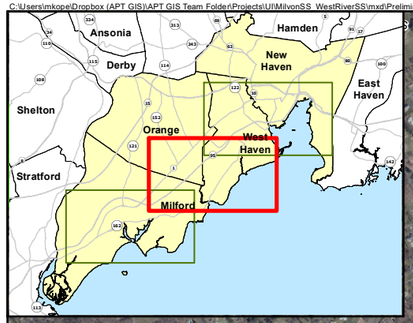

Allings Crossing Substation

Woodmont Substation

Marsh Hill 236.16 AMSL

Shingle Hill 170.56 AMSL

Jones Hill 144.92 AMSL

Map Sheet 3
Map Sheet 2
Map Sheet 1

Orange

Milford

West Haven

OLD TAVERN ROAD RECREATION AREA

RAY PARK

PAINTER PARK

MORSE PARK

WEST HAVEN HIGH SCHOOL

Lower Phipps Lake

Indian Lake

Rose Mill Pond

Clark Pond

Cove River

Oyster River

New Haven Harbor

Stark Rock
Twin Rocks

CONNECTICUT TURNPIKE

BOSTON POST ROAD

GOVERNOR JOHN DAVIS LODGE TURNPIKE

FRONTAGE ROAD

EDER ROAD

ALLINGS CROSSING ROAD

CARRIAGE DRIVE

MARYDALE ROAD

ANDREA DRIVE

SHERRY CIRCLE

MARKS DRIVE

ALEXANDER DRIVE

ISLAND LANE

DONNA LANE

HEFFERNAN DRIVE

CALLEGARI DRIVE

FRANKLIN ROAD

MILLS DRIVE

MOUNT PLEASANT ROAD

BAILEY DRIVE

MORGAN LANE

RIDGE HOLLOW ROAD

PERRY MERRILL DRIVE

DOWN DRAFT CIRCLE

ROBINSON BOULEVARD

CONNAIR ROAD

CASCADE BOULEVARD

MARSH HILL ROAD

QUARRY ROAD

BARN LANE

MARBLE LANE

TURTLE LANE

BELLA CIRCLE

MOQUIN DRIVE

CORA PLACE

SALEM ROAD

WAYNE ROAD

OXFORD ROAD

ESSEX DRIVE

DEPOT ROAD

ROCK LANE

LONDONDERRY LANE

QUIRK ROAD

HUNTERS RUN

ANDERSON AVENUE

NEW HAVEN AVENUE

BREWSTER ROAD

PEPES FARM ROAD

EASTERN STEEL ROAD

HIGGINS DRIVE

WOODMONT ROAD

OLD GATE LANE

SAW MILL ROAD

ELM ROAD

RAILROAD AVENUE

PHILLIPS TERRACE

HOOD TERRACE

WAGNER PLACE

ELM STREET

ORCHARD STREET

CANDEE AVENUE

SAVIN AVENUE

CAMPBELL AVENUE

UNION AVENUE

MAIN STREET

WOODY LANE

SHADY LANE

CEDAR LANE

PHIPPS DRIVE

FOREST TERRACE

LAKE AVENUE

WASHINGTON AVENUE

3RD AVENUE

1 114 152 162 705 95

Legend

- Proposed Structure
- Project Transmission Line
- Year-Round Visibility
- Study Area (1 Mile Radius)
- Half Mile Radius
- Municipal Boundary
- Scenic Highway*
- Trail*
- DEEP Boat Launches*
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Federal*
- Land Trust*
- Municipal*
- Private*
- State*

N

1,000 500 0 1,000 Feet

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Preliminary Viewshed Analysis Map - MCF
Milvon-West River Railroad Transmission Line 115-kV Rebuild Project

Milford, Orange, and West Haven, CT
Map Sheet 2 of 3

UI

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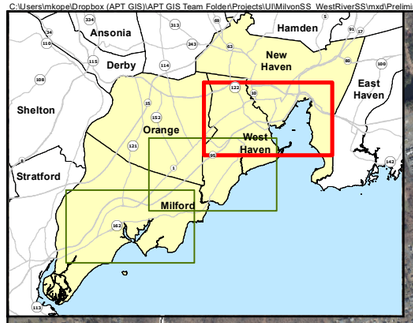

Orange
Allington Hill 301.76' AMSL
West River Memorial Park Pond
WEST RIVER MEMORIAL PARK
CENTER GREEN
RICHARD C. LEE SCHOOL
HILL K-5 SCHOOL
New Haven
West River Substation
Elmwest Substation
West Haven
Sawmill Pond
Lower Phipps Lake
Allings Crossing Substation
RAY PARK
PAINTER PARK
BAYVIEW PARK
MORSE PARK
QUINNIPIAC PARK
Quinnipiac River
Bull Island
Reservoir Hill 118.08' AMSL
FORT WOOSTER PARK
Beacon Hill 190.24' AMSL
EAST SHORE PARK
New Haven Harbor
East Haven
Chidsey Hill 104.96' AMSL
Raynham Hill 154.16' AMSL
FORT HALE PARK
Black Rock
Map Sheet 3
Map Sheet 2
GOVERNOR JOHN DAVIS LODGE TURNPIKE
CONNECTICUT TURNPIKE
MORRIS STREET
WILSON STREET
HURLBUT STREET
LAMBERTON STREET
PLYMOUTH STREET
AMHERST AVENUE
ROAD A
ELLA T GRASSO BOULEVARD
FRONT AVENUE
THILL STREET
CLINTON PLACE
MIX AVENUE
PENT ROAD
RICHARDS STREET
WOOD STREET
THOMPSON STREET
MAPLE STREET
7ST AVENUE
4TH AVENUE
BASSETT COURT
WHARTON STREET
OLIVER LANE
MYRTLE AVENUE
FERN STREET
YORK STREET
COLLIS STREET
WALES STREET
CLARK STREET
ELM STREET
WASHINGTON AVENUE
CAMPBELL AVENUE
SAVIN COURT
SAVIN AVENUE
UNION AVENUE
3RD AVENUE
HILLCREST AVENUE
WEST CLARK STREET
GOODHUE STREET
ORCHARD STREET
PHILLIPS TERRACE
LESTER ROAD
EDWARD ROAD
SAW MILL ROAD
RAILROAD AVENUE
HOOD TERRACE
WAGNER PLACE
CANDEE AVENUE
MAIN STREET
FRONTAGE ROAD
WOODY LANE
SWAMP LANE
LAKE AVENUE
CEDAR LANE
PHIPPS DRIVE
ALLINGS CROSSING ROAD
ISLAND LANE
EDGE ROAD
MORGAN LANE
1
5
10
34
91
95
122
162
337

Legend

- Proposed Structure
- Project Transmission Line
- Year-Round Visibility
- Study Area (1 Mile Radius)
- Half Mile Radius
- Municipal Boundary
- Scenic Highway*
- Trail*
- DEEP Boat Launches*
- Municipal and Private Open Space Property
- State Forest/Park

Protected Open Space Property

- Federal*
- Land Trust*
- Municipal*
- Private*
- State*

N

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 1,4015 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

*Not all data layers appear on map sheet.
Ortho Base Map: State of Connecticut 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: September 13, 2021

Preliminary Viewshed Analysis Map - MCF
Milvon-West River Railroad Transmission Line 115-kV Rebuild Project

Orange, New Haven, and West Haven, CT
Map Sheet 3 of 3

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