

Visual Assessments & Photo-Simulations

FIRST TAXING DISTRICT - NORWALK
173.5 WEST ROCKS ROAD
NORWALK, CT 06851



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VISUAL ASSESSMENT & PHOTO-SIMULATIONS

The First Taxing District of the City of Norwalk (the "District") is seeking a Certificate of Environmental Compatibility and Public Need from the Connecticut Siting Council (the "Council") for the development of a replacement wireless communications facility (the "Facility") at 173.5 West Rocks Road in Norwalk, Connecticut (the "Host Property"). At the request of the District, All-Points Technology Corporation, P.C. ("APT") completed this assessment to evaluate the potential visual effects of the proposed Facility from within a two-mile radius (the "Study Area"). The Study Area includes the neighboring municipalities of Westport (to the east), Wilton (to the north) and New Canaan (to the west).

Project Undertaking

The District plans to decommission and replace its existing water tank, which currently houses antennas and related equipment of multiple service providers ("Carriers"). The District plans to construct the proposed Facility in the western portion of the Host Property. It would include a 130-foot tall steel monopole within an irregularly shaped approximate 60-foot by 50-foot gravel base, fenced equipment compound. The base of the Facility would be constructed at an approximate elevation of 220.9 feet above mean sea level ("AMSL") and the highest antenna platform would be installed such that the tops of the panel antennas would be flush with the top of the monopole. The Facility would be designed to accommodate the Carriers that currently have equipment at the existing facility. Access would be provided over a new 12-foot wide gravel access driveway that extends eastward from the gravel access drive that will be developed for the new water tank.

Project Setting

The Host Property is located along the west side of West Rocks Road and the south side of the Merritt Parkway (Connecticut State Route 15 or the "Parkway") in the northeastern portion of Norwalk. It is owned by the District and developed with a 110-foot tall, 100,000-gallon water tank that currently supports multiple panel, dish, and whip antennas used by the Carriers. Ground mounted equipment associated with the existing telecommunications facility is located in a fenced, gravel compound at the base of the water tank. Residential properties are located east and south of the Host Property and on the other side of the Parkway to the north. Commercial development is found to the west along Main Avenue, beyond the residential properties.

The topography within the Study Area consists of generally level terrain with some rolling hills. Ground elevations range from approximately 2 feet AMSL in the southern portion of the Study Area to approximately 390 feet AMSL in the northern portion of the Study Area. Tree cover within the Study Area (consisting of predominantly mixed deciduous hardwoods) occupies approximately 2,017 acres ($\pm 25\%$) of the 8,042-acre Study Area.

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 proposed Facility on both a quantitative and qualitative basis. The predictive model provides a measurable assessment of visibility throughout the entire Study Area, including private properties and other areas inaccessible for direct observations. The in-field analyses included a balloon float and field reconnaissance of the Study Area to record existing conditions, verify results of the model, inventory seasonal and year-round view locations, and provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Preliminary Computer Modeling

To conduct this assessment, a predictive computer model was developed specifically for this project using ESRI's ArcMap GIS¹ software and available GIS data. The predictive model incorporates Project and Study Area-specific data, including the site location, its ground elevation and the proposed Facility height, as well as the surrounding topography, 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 LiDAR² LAS³ 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," 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 Facility may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells⁴ 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 an aerial photograph and topographic base map. 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

¹ 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.

² Light Detection and Ranging

³ An LAS file is an industry-standard binary format for storing airborne LiDAR data.

⁴ Each DSM cell size is 1 square meter.

the initial processing. It is recognized that these areas do not represent typical viewer locations and overstate visibility. 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 preliminary analysis are intended to provide a representation of those areas where portions of the Facility *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 Facility may not necessarily be visible from all locations within those areas identified by the predictive model, which has limitations. For instance, it is important to note that the computer model cannot account for mass density, tree diameters and branching variability of trees, or the degradation of views that occur with distance. As a result, some areas depicted on the viewshed maps as theoretically offering potential visibility of the Facility may be over-predicted because the quality of those views is not sufficient for the human eye to recognize the Facility 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 woodland 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, as introduced above, cannot be precisely modeled. Seasonal visibility is therefore estimated based on a combination of factors including the type, size, and density of trees within a given area; topographic constraints; and other visual obstructions that may be present. Taking into account these considerations, areas depicting seasonal visibility on the viewshed 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.

To refine the estimate of seasonal visibility through the trees, forested areas were manually adjusted to eliminate 500-foot wide areas of vegetation surrounding the Facility and perimeters of forested areas with otherwise unimpeded aspects toward the site. This distance, although considered conservative, is based on 20+ years of field experience and observations, and assumes that a person standing within a forested area will not be able to discern an object like the Facility beyond 500 feet. Depending on the density of the intervening tree canopy and understory of the surrounding woodlands, it is assumed that some locations (but not all) within 500 feet could provide visibility of at least a portion of the Facility during “leaf-off” conditions.

Balloon Float and Field Reconnaissance

To supplement and fine tune the results of the computer modeling efforts, APT completed in-field verification activities consisting of a balloon float, vehicular and pedestrian reconnaissance, and

photo-documentation. The balloon float and field review were completed on January 22, 2020. The balloon float consisted of raising a brightly-colored, approximately 4-foot diameter, helium-filled balloon tethered to a string height of ± 130 feet AGL⁵ at the site. Weather conditions were favorable for the in-field activity with calm winds and partly cloudy skies.

Once the balloon was secured, APT conducted a Study Area reconnaissance by driving along local and State roads and other publicly accessible locations to document and inventory where the balloon could be seen above and through the tree canopy and other visual obstructions. Visual observations from the reconnaissance were also used to evaluate the results of the preliminary visibility mapping and identify any discrepancies in the initial modeling.

Photographic Documentation and Simulations

During the Study Area reconnaissance, APT obtained photo-documentation of representative locations where the balloon was visible. 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 body⁶ and Canon EF 24 to 105 millimeter ("mm") zoom lens. APT typically uses a standard focal length of 50mm to present a consistent field of view. On occasion, photos are taken at lower focal lengths to provide a greater depth of field and to provide context to the scene by including surrounding features within the photograph. During this evaluation, four (4) photographs were taken at a shorter focal length as noted in the table (Table 1 – Photo Locations) on the following pages.

Photographic simulations were generated to portray scaled renderings of the proposed Facility from twenty-one (21) locations presented herein where the Facility may be recognizable above or through the trees. Using field data, site plan information and 3-dimensional (3D) modeling software, spatially referenced models of the site and Facility 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 Photoshop image editing software). The scale of the subjects in the photograph (the balloon) and the corresponding simulation (the Facility) is proportional to their surroundings.

For presentation purposes in this report, the photographs were produced in an approximate 7-inch by 10.5-inch format. When reproducing the images in this format size, we believe it is important to present the largest view while providing key contextual landscape elements (existing developments, street signs, utility poles, etc.) so that the viewer can determine the proportionate scale of each object within the scene.

⁵ The bottom of the balloon represented the top of the monopole and top of the antennas.

⁶ 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.

Photo-documentation of the field reconnaissance and photo-simulations of the proposed Facility are presented in the attachment at the end of this report. The field reconnaissance photos that include the balloon in the view provide visual reference points for the approximate height and location of the proposed Facility relative to the scene.

All simulations were created to represent the proposed monopole height of 130' AGL. The photo-simulations are intended to provide the reader with a general understanding of the different view characteristics associated with the Facility from various locations. Photographs were taken from publicly- accessible areas and unobstructed view lines were chosen wherever possible.

The following table summarizes the photographs and simulations presented in the attachment to this report, and includes a description of each location, view orientation, distance from where the photo was taken relative to the proposed Facility, and the general characteristics of the view. The photo locations are depicted on the photolog and viewshed maps provided as attachments to this report.

Table 1 – Photo Locations

Photo	Location	Orientation	Distance to Site	Visibility
1	Butternut Lane	Southwest	± 0.31 Mile	Not Visible
2	West Rocks Road	Southwest	± 0.19 Mile	Year Round
3	West Rocks Road	Southwest	± 0.11 Mile	Year Round
4	Midrocks Drive	West	± 0.23 Mile	Seasonal
5	Midrocks Drive at Caddy Road	West	± 0.16 Mile	Seasonal
6	Skyview Lane**	Northwest	± 302 Feet	Year Round
7	Skyview Lane*	Northeast	± 416 Feet	Year Round
8	Linden Street	Northeast	± 0.13 Mile	Year Round
9	Linden Heights at Linden Street	Northeast	± 0.18 Mile	Not Visible
10	Linden Heights	Northeast	± 0.17 Mile	Seasonal
11	Winnipauk Drive	North	± 0.20 Mile	Year Round
12	Tod Road	North	± 0.32 Mile	Not Visible
13	West Rocks Road	Northwest	± 0.34 Mile	Seasonal
14	Route 7	Northeast	± 0.85 Mile	Year Round
15	Main Avenue	Northeast	± 0.60 Mile	Not Visible
16	Main Avenue	Northeast	± 0.52 Mile	Year Round
17	Main Avenue	Northeast	± 0.41 Mile	Year Round
18	Glover Avenue	East	± 0.44 Mile	Year Round
19	Merritt Parkway	East	± 0.33 Mile	Year Round
20	Creeping Hemlock Drive	East	± 0.26 Mile	Year Round
21	Valley View Drive	Southeast	±0.31 Mile	Seasonal

Table continued on following page

Photo	Location	Orientation	Distance to Site	Visibility
19	Merritt Parkway	East	± 0.33 Mile	Year Round
20	Creeping Hemlock Drive	East	± 0.26 Mile	Year Round
21	Valley View Drive	Southeast	± 0.31 Mile	Seasonal
22	Cobblers Lane at Lakewood Drive	Southeast	± 0.25 Mile	Not Visible
23	Creeping Hemlock Drive	Southeast	± 0.10 Mile	Seasonal
24	Danbury Road	South	± 1.41 Miles	Not Visible
25	Main Avenue	Southeast	± 0.56 Mile	Not Visible
26	North Seir Hill Road	Southeast	± 0.92 Mile	Year Round
27	Silvermine Arts Center – Silvermine Road, New Canaan	Southeast	± 1.72 Miles	Not Visible
28	Comstock Hill Avenue Overpass – Merritt Parkway	Northeast	± 1.41 Miles	Year Round
29	Riverview Drive	Northeast	± 0.87 Mile	Not Visible
30	Spring Hill Avenue	Northeast	± 1.56 Miles	Year Round
31	Main Avenue*	Northeast	± 1.06 Miles	Not Visible
32	Esquire Road at West Rocks Road	Northwest	± 0.80 Mile	Not Visible
33	Norwalk Senior Center – Allen Road*	Northwest	± 0.98 Mile	Not Visible
34	Ellen Street	Southwest	± 1.06 Miles	Not Visible
35	Merritt Parkway	Southwest	± 1.62 Miles	Not Visible
*Photograph was taken at 35 mm focal length				
**Photograph was taken at 24 mm focal length				

Final Visibility Mapping

Information obtained during the field reconnaissance was incorporated into the mapping data layers, including observations of the field reconnaissance, the photograph locations, areas that experienced recent land use changes and those places where the initial model was found to over or under-predict visibility. Once the additional data was integrated into the model, APT recalculated the visibility of the proposed Facility within the Study Area.

Conclusions

As presented on the attached viewshed maps, the proposed Facility would not be highly visible beyond approximately 0.5-mile of the Site, where the most prominent views would occur. This area includes portions of Skyview Lane to the south, West Rocks Road to the east/northeast and Main Avenue to the west. See photos 7, 3, and 17, respectively, for representative views. Year-round visibility extends intermittently to areas generally west of the Site, including the Main Avenue/Merritt Parkway interchange, along Comstock Hill Avenue as it crosses the Parkway, and along Spring Hill Avenue, as represented in Photos 28 and 30.

Seasonally, when the leaves are off the deciduous trees, partially obstructed views in the immediate area of the Site would extend north of the Parkway to portions of Creeping Hemlock Drive, west of the Site in the Midrocks Drive neighborhood, and intermittently along West Rocks Road south of the Site.

Predicted year-round visibility of the proposed Facility is estimated to include approximately 19 acres ($\pm 0.24\%$ of the 8,042-acre Study Area). Predicted seasonal visibility is estimated to include an additional ± 41 acres ($\pm 0.51\%$ of the Study Area).

Proximity to Schools And Commercial Child Day Care Centers

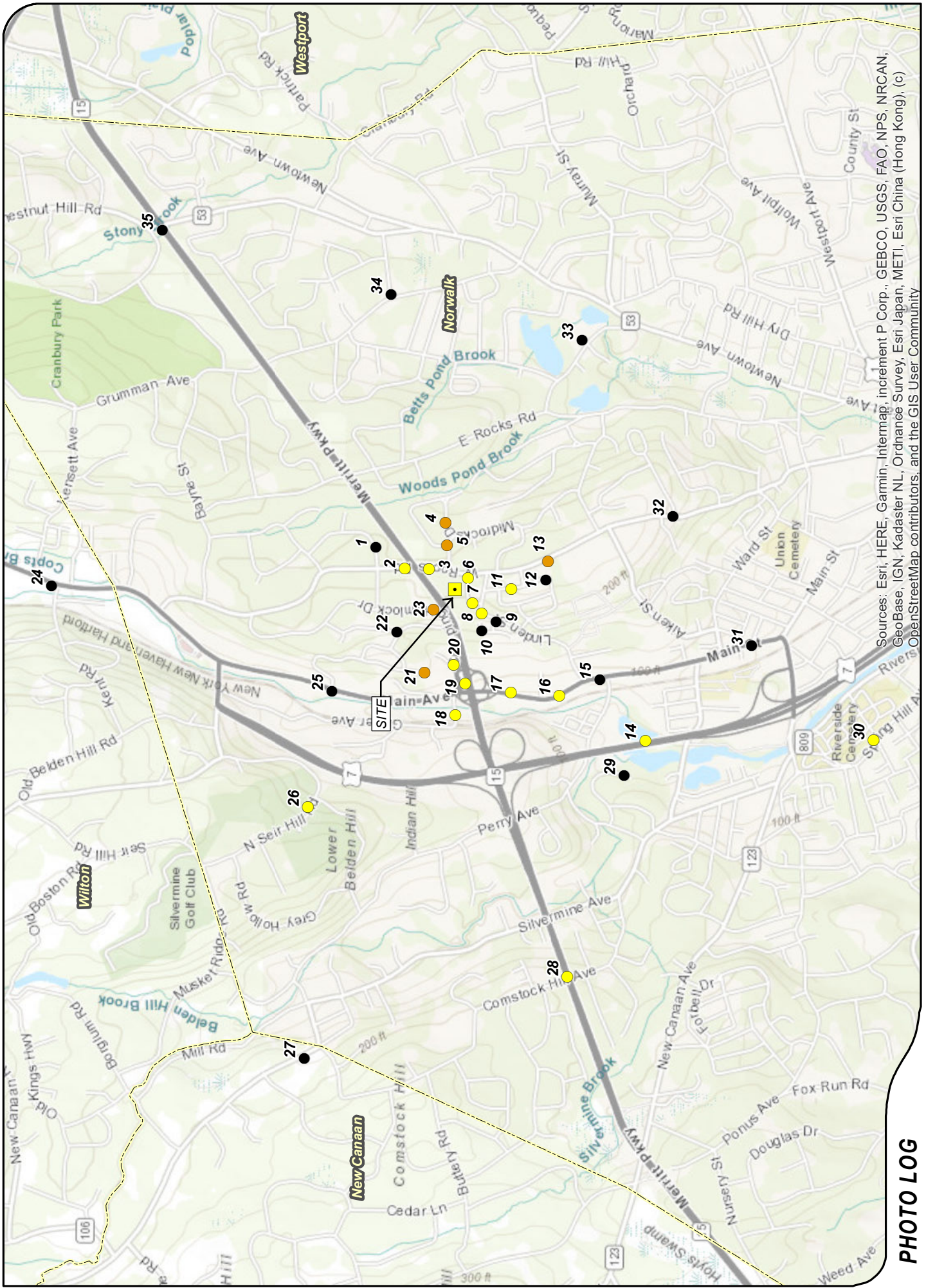
There are no schools or commercial child day care centers within 250 feet of the Host Property. The All Saints Catholic School is located approximately 0.39 mile south of the Site at 139 West Rocks Road in Norwalk. The nearest commercial child day care center, All Saints Daycare, is also located approximately 0.39 mile south of the Site at 139 West Rocks Road in Norwalk. No views of the Facility are anticipated from either location.

Limitations

The viewshed maps presented in the attachment to this report depict areas where the proposed Facility 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 intervening topography, tree canopy and structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

The photo-simulations provide a representation of the Facility under similar settings as those encountered during the field review and reconnaissance. Views of the Facility 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. Weather conditions on the day of the field review included calm winds and mostly sunny skies.

ATTACHMENTS





PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

1

LOCATION

BUTTERNUT LANE

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.31 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	WEST ROCKS ROAD	SOUTHWEST	+/- 0.19 MILE	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	WEST ROCKS ROAD	SOUTHWEST	+/- 0.19 MILE	YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

3

LOCATION

WEST ROCKS ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.11 MILE

VISIBILITY

YEAR ROUND



ALL-POINTS
TECHNOLOGY CORPORATION



PROPOSED

PHOTO

3

LOCATION

WEST ROCKS ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.11 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	MIDROCKS DRIVE	WEST	+/- 0.23 MILE	SEASONAL



PROPOSED

PHOTO

4

LOCATION

MIDROCKS DRIVE

ORIENTATION

WEST

DISTANCE TO SITE

+/- 0.23 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

5

LOCATION

MIDROCKS DRIVE AT CADDY ROAD

ORIENTATION

WEST

DISTANCE TO SITE

+/- 0.16 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	MIDROCKS DRIVE AT CADDY ROAD	WEST	+/- 0.16 MILE	SEASONAL



PHOTOGRAPHED ON 1/22/2020
24mm Focal Length

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	SKYVIEW LANE	NORTHWEST	+/- 302 FEET	YEAR ROUND



PROPOSED

PHOTO

6

LOCATION

SKYVIEW LANE

ORIENTATION

NORTHWEST

DISTANCETO SITE

+/- 302 FEET

VISIBILITY

YEAR ROUND



EXISTING

PHOTO

7

LOCATION

SKYVIEW LANE

ORIENTATION

NORTHEAST

DISTANCETO SITE

+/- 416 FEET

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

7

LOCATION

SKYVIEW LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 416 FEET

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

8

LOCATION

LINDEN STREET

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.13 MILE

VISIBILITY

YEAR ROUND



ALL-POINTS
TECHNOLOGY CORPORATION



PROPOSED

PHOTO

8

LOCATION

LINDEN STREET

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.13 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

9

LOCATION

LINDEN HEIGHTS AT LINDEN STREET

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.18 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

10

LOCATION

LINDEN HEIGHTS

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.17 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

10

LOCATION

LINDEN HEIGHTS

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.17 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

11

LOCATION

WINNIPAUK DRIVE

ORIENTATION

NORTH

DISTANCE TO SITE

+/- 0.20 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

11

LOCATION

WINNIPAUK DRIVE

ORIENTATION

NORTH

DISTANCE TO SITE

+/- 0.20 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	TOD ROAD	NORTH	+/- 0.32 MILE	NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

13

LOCATION

WEST ROCKS ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.34 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

13

LOCATION

WEST ROCKS ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.34 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

14

LOCATION

ROUTE 7

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.85 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
14	ROUTE 7	NORTHEAST	+/- 0.85 MILE	YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO 15	LOCATION MAIN AVENUE	ORIENTATION NORTHEAST	DISTANCE TO SITE +/- 0.60 MILE	VISIBILITY NOT VISIBLE
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ALL-POINTS
TECHNOLOGY CORPORATION



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

LOCATION
MAIN AVENUE

ORIENTATION
NORTHEAST

DISTANCE TO SITE
+/- 0.52 MILE

VISIBILITY
YEAR ROUND

16



ALL-POINTS
TECHNOLOGY CORPORATION



PROPOSED

PHOTO

LOCATION

MAIN AVENUE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.52 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

17

LOCATION

MAIN AVENUE

ORIENTATION

NORTHEAST

DISTANCETO SITE

+/- 0.41 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO 17	LOCATION MAIN AVENUE	ORIENTATION NORTHEAST	DISTANCE TO SITE +/- 0.41 MILE	VISIBILITY YEAR ROUND
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PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

18

LOCATION

GLOVER AVENUE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 0.44 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

18

LOCATION

GLOVER AVENUE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 0.44 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
19	MERRITT PARKWAY	EAST	+/- 0.33 MILE	YEAR ROUND



PROPOSED

PHOTO

19

LOCATION

MERRITT PARKWAY

ORIENTATION

EAST

DISTANCE TO SITE

+/- 0.33 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

20

LOCATION

CREeping HEMLOCK DRIVE

ORIENTATION

EAST

DISTANCETO SITE

+/- 0.26 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
20	CREEPING HEMLOCK DRIVE	EAST	+/- 0.26 MILE	YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

21

LOCATION

VALLEY VIEW DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.31 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

21

LOCATION

VALLEY VIEW DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.31 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

22

LOCATION

COBBLERS LANE AT LAKEWOOD DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.25 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

23

LOCATION

CREeping HEMLOCK DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.10 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

23

LOCATION

CREeping HEMLOCK DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.10 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

24

LOCATION

DANBURY ROAD

ORIENTATION

SOUTH

DISTANCE TO SITE

+/- 1.41 MILES

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

25

LOCATION

MAIN AVENUE

ORIENTATION

SOUTHEAST

DISTANCETO SITE

+/- 0.56 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

26

LOCATION

NORTH SEIR HILL ROAD

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.92 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

26

LOCATION

NORTH SEIR HILL ROAD

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.92 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
27	SILVERMINE ARTS CENTER - SILVERMINE ROAD, NEW CANAAN	SOUTHEAST	+/- 1.72 MILES	NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
28	COMSTOCK HILL AVENUE OVERPASS - MERRITT PARKWAY	NORTHEAST	+/- 1.41 MILES	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
28	COMSTOCK HILL AVENUE OVERPASS - MERRITT PARKWAY	NORTHEAST	+/- 1.41 MILES	YEAR ROUND



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

29

LOCATION

RIVERVIEW DRIVE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.87 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

30

LOCATION

SPRING HILL AVENUE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 1.56 MILES

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

30

LOCATION

SPRING HILL AVENUE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 1.56 MILES

VISIBILITY

YEAR ROUND



EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
31	MAIN STREET	NORTHEAST	+/- 1.06 MILES	NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

32

LOCATION

ESQUIRE ROAD AT WEST ROCKS ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.80 MILE

VISIBILITY

NOT VISIBLE





EXISTING

PHOTO

33

LOCATION

NORWALK SENIOR CENTER - ALLEN ROAD

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.98 MILE

VISIBILITY

NOT VISIBLE

PHOTOGRAPHED ON 1/22/2020
35mm Focal Length



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

34

LOCATION

ELLEN STREET

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 1.06 MILES

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 1/22/2020

EXISTING

PHOTO

35

LOCATION

MERRITT PARKWAY

ORIENTATION

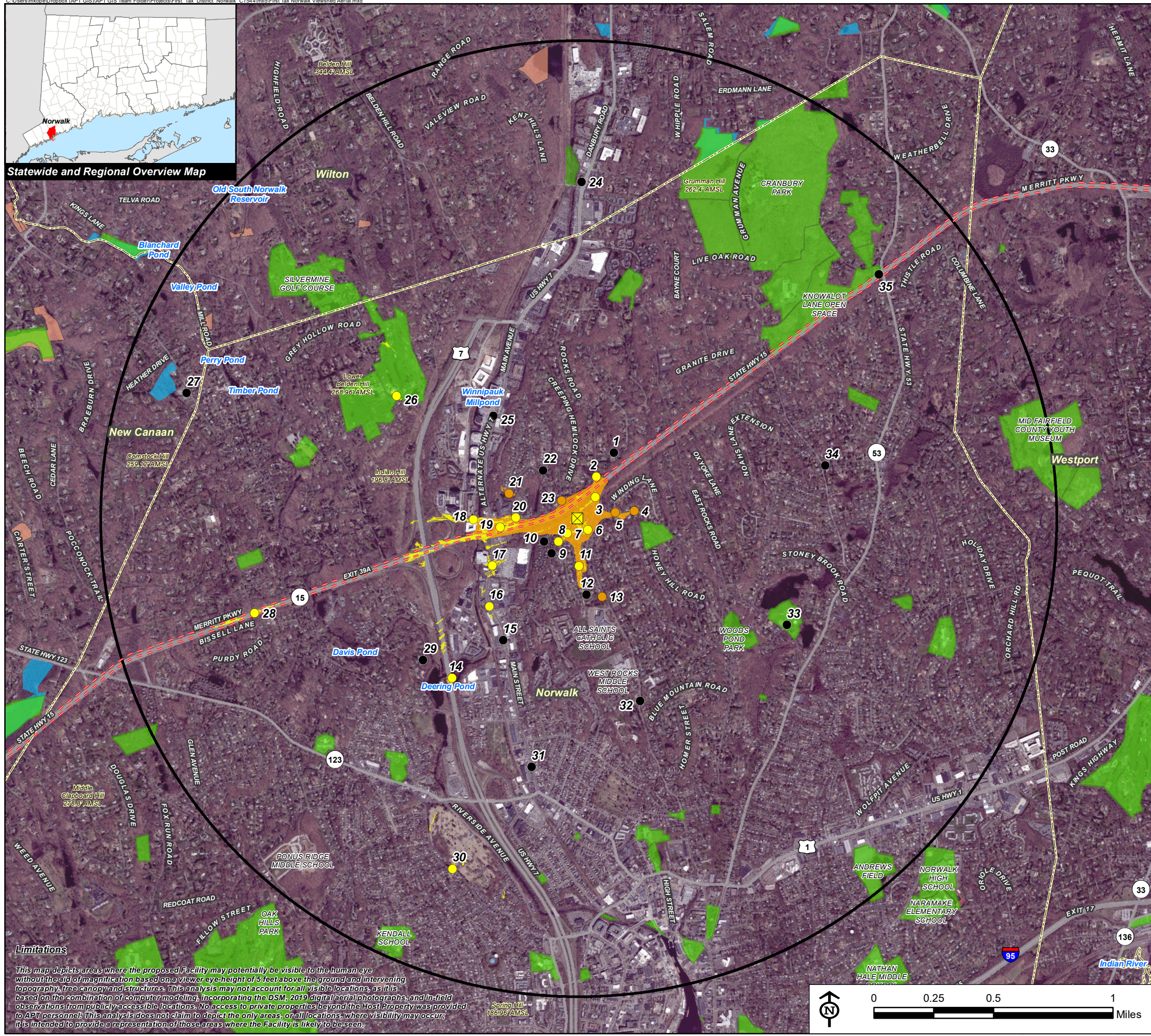
SOUTHWEST

DISTANCE TO SITE

+/- 1.62 MILES

VISIBILITY

NOT VISIBLE



Statewide and Regional Overview Map



Viewshed Analysis Map

Proposed Wireless Telecommunications Facility
 First Taxing District of The City of Norwalk
 173.5 West Rocks Road
 Norwalk, Connecticut

Proposed facility height is 130 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Map information field verified by APT on January 22, 2020
 Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Date: March 2020

Legend

- Proposed Site
- Study Area (2-Mile Radius)
- Year-Round
- Seasonal
- Not Visible
- Predicted Year-Round Visibility (19 Acres)
- Areas of Potential Seasonal Visibility (41 Acres)
- Scenic Highway
- Municipal Boundary
- Trail
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park
- Protected Open Space Property
- Federal
- Land Trust
- Municipal
- Private
- State

Data Sources:

Physical Geography / Background Data
 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.
 Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP.
 Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Dedicated Open Space & Recreation Areas
 Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007; Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)
 Connecticut Forest & Parks Association, Connecticut Walk Books East & West

Other

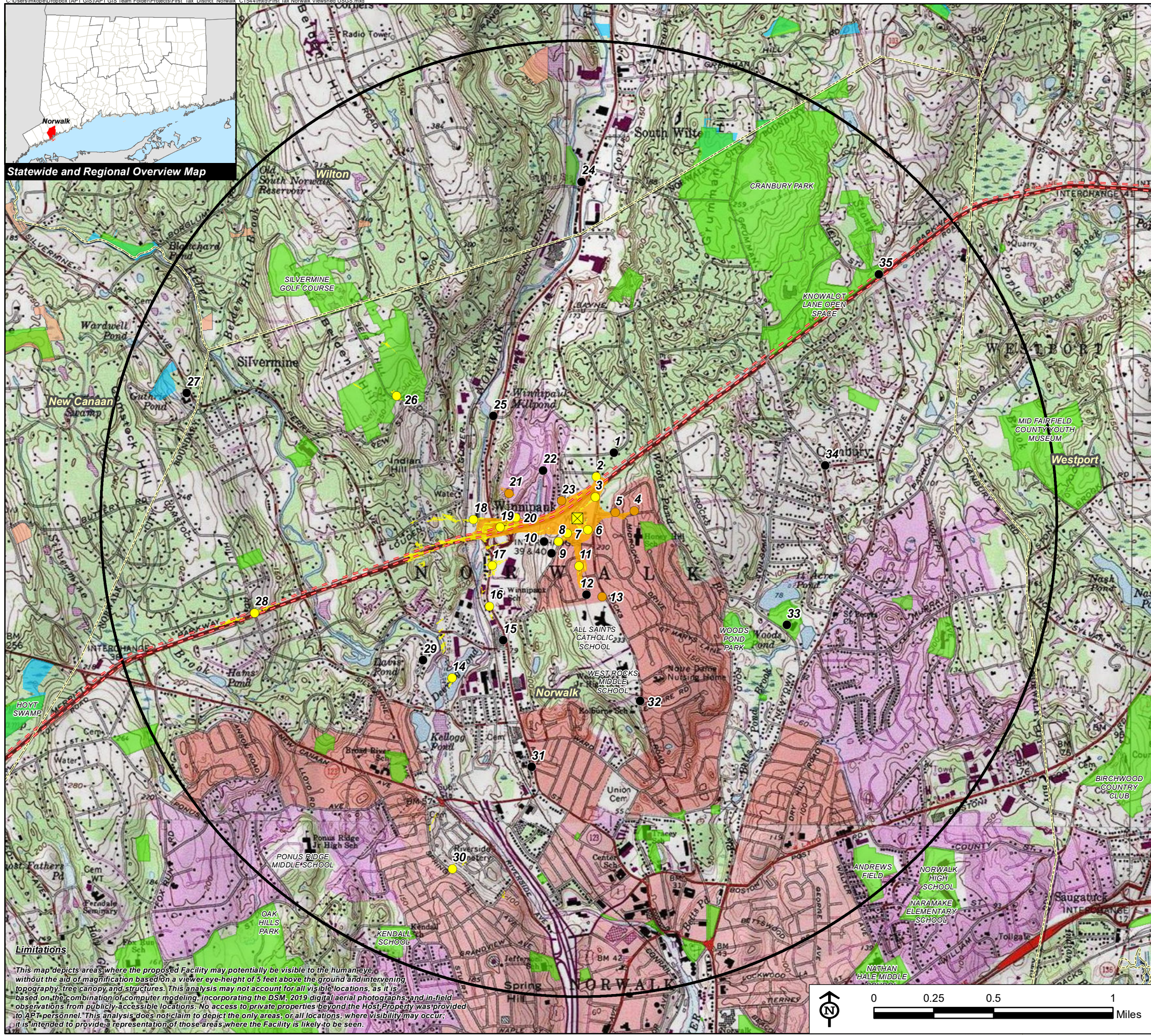
CTDOT Scenic Strips (based on Department of Transportation data)

Notes

**Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

Limitations

This map depicts areas where the proposed Facility 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 structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating the DSM, 2019 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the Host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.



Statewide and Regional Overview Map



Detail Area Inset Map
Base Map: 2019 Aerial Photograph (CTECO)

Viewshed Analysis Map

Proposed Wireless Telecommunications Facility
First Taxing District of The City of Norwalk
173.5 West Rocks Road
Norwalk, Connecticut

Proposed facility height is 130 feet AGL.
Forest canopy height is derived from LIDAR data.
Study area encompasses a two-mile radius and includes 8,042 acres.
Map information field verified by APT on January 22, 2020
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, Norwalk North, CT (1975) and Norwalk South, CT (1984)
Map Date: March 2020

Legend

Proposed Site	Trail
Study Area (2-Mile Radius)	DEEP Boat Launches
Year-Round	Municipal and Private Open Space Property
Seasonal	State Forest/Park
Not Visible	Protected Open Space Property
Predicted Year-Round Visibility (19 Acres)	Federal
Areas of Potential Seasonal Visibility (41 Acres)	Land Trust
Scenic Highway	Municipal
Municipal Boundary	Private
	State

Data Sources:
Physical Geography / Background Data
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.
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