

Visual Assessment & Photo-Simulations

**CT402
HADDAM NORTH
124 AGUE SPRING ROAD
HADDAM, CT 06424**

Prepared For:

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VISUAL ASSESSMENT & PHOTO-SIMULATIONS

Homeland Towers, LLC ("Homeland") is seeking approval for the development of a new wireless communications facility (the "Facility") at 124 Ague Spring Road in Haddam, Connecticut (the "Host Property"). 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 portions of the neighboring municipalities of East Hampton to the north and East Haddam to the east.

Project Setting

The Host Property is a ±13.14-acre residential parcel developed with numerous outbuildings and the remnants of a former lookout structure. Land use within the immediate area is a mix of residential development, wooded areas, and agricultural fields. The Connecticut River is located approximately one-half mile to the south of the Host Property, which is located within the Town of Haddam's Gateway Zone¹.

The topography within the Study Area consists of rolling terrain. Ground elevations range from approximately sea level along the Connecticut River south and southwest of the Site to 485 feet above mean sea level ("AMSL") in the northwest portion of the Study Area. Tree cover (consisting primarily of mixed deciduous hardwoods with interspersed stands of conifers) occupies approximately 6,006 acres of the 8,042-acre Study Area (±75%). Open water within the Study Area occupies ±722 acres (±9%), with approximately 616 acres over the Connecticut River. Collectively, tree cover and open water account for approximately 84% of the Study Area.

Project Undertaking

Based on information contained in CT Siting Council Tech Report Drawings (prepared by APT, dated July 27, 2023), the proposed Facility would be located at a ground elevation of approximately 403 feet AMSL in the northwestern portion of the Host Property ("Site"). A 150-foot tall monopole and associated ground-mounted equipment would be placed within a 40' by 70' gravel based fenced compound surrounded by an 8-foot high chain link fence. Cellco Partnership, d/b/a Verizon Wireless would install antennas at a centerline of 146' above ground level ("AGL"). The Facility has been designed to accommodate multiple service providers. Access to the Site would be gained from Ague Spring Road over an existing paved drive before transitioning to a new gravel access drive.

¹ Part of the Connecticut River Gateway Commission's Conservation Zone.

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 analysis consisted of a crane test 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 GIS² 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 LiDAR³ LAS⁴ 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 Facility may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells⁵ within the DSM that can be seen from an observer location. Cells

² 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.

³ Light Detection and Ranging

⁴ An LAS file is an industry-standard binary format for storing airborne LiDAR data.

⁵ Each DSM cell size is 1 square meter.

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 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 its limitations. For instance, the computer model cannot account for mass density, tree diameters and branching variability of trees, or the degradation of views that occurs with distance. As a result, some areas depicted on the viewshed maps as theoretically offering potential visibility of the Facility may be over-predictive 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. Considering these dynamics, 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.

Crane Test and Field Reconnaissance

To supplement and fine tune the results of the computer modeling efforts, APT completed in-field verification activities consisting of a crane test, vehicular and pedestrian reconnaissance, and photo-documentation. The crane test and field reconnaissance were completed on March 9,

2023. The crane test consisted of positioning a crane at the proposed Facility location and extending the crane boom with a brightly-colored (red) flag to the top height of the tower (± 150 feet AGL). This provided a fixed object unaffected by wind. Weather conditions were favorable for the in-field activities, with partly cloudy skies. APT conducted a Study Area reconnaissance by driving along the roads and accessing other publicly accessible locations to document and inventory where the boom/flag could be seen above and through the tree canopy and other visual obstructions.

Photographic Documentation and Simulations

Visual observations from the reconnaissance were used to evaluate the results of the preliminary visibility mapping, including identifying any discrepancies in the initial modeling, and to obtain photo-documentation from representative locations within the Study Area. Photographs were taken with a Canon EOS 6D digital camera body⁶ and Canon EF 24 to 105 millimeter ("mm") zoom lens. The coordinates of the boom/flag (i.e., the proposed tower location) were entered as a "waypoint" into a handheld global positioning system ("GPS") device, with the "find" tool on the GPS unit then used to provide the distance and orientation to the boom/flag position. The geographic coordinates of each photo location were recorded as meta data using GPS technology internal to the camera.

APT typically uses a standard focal length of 50 mm 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, two (2) photographs presented in the attached photo-documentation were taken at a 35 mm focal length, as shown in the Photo Locations table attached to this report.

Photographic simulations were generated to portray scaled renderings of the proposed Facility from 25 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 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 Adobe Photoshop image editing software). The scale of the subjects in the photograph (the boom/flag) and the corresponding simulation (the Facility) is proportional to their surroundings.

⁶ The Canon EOS 6D is a full-framed camera which includes a lens receptor of the same size as the film used in 35 mm cameras. As such, the images produced are comparable to those taken with a conventional 35 mm camera.

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. 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 boom/flag in the view provide visual reference points for the approximate height and location of the proposed monopole relative to the scene. The corresponding photo-simulations provide scaled representations of the Facility from various locations. Photographs were taken from publicly accessible areas and unobstructed view lines were chosen wherever possible.

A summary of the photographs and simulations, including a description of each location, view orientation, distance from where the photo was taken relative to the Site, and the general characteristics of the view is provided as an attachment to this report. The photo locations are depicted on the photolog and viewshed maps provided as attachments to this report.

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

Given the heavy tree cover throughout the Study Area, terrestrial views are limited to areas on and in the immediate area of the Host Property, as well as select locations along the Connecticut River shoreline. As presented on the attached viewshed maps, visibility of the Facility occurs primarily over open water along the Connecticut River. A summary of visibility within the Study Area is provided below.

Summary of Visibility within Study Area

Visibility	Total Acres	% Visibility	Acres over Water	% Visibility over Water
Year-Round	432	±5.37%	365	±84.49%
Seasonal	255	±3.17%	81	±31.76%
Total	687	±8.54%	446	±64.92%

Year-round views proximate to the Host Property are represented in Photos 4, 5 and 6. Examples of year-round views of the Facility from locations proximate to the Connecticut River are presented in Photos 28, 31, 38, and 46. The nearest views along the Connecticut River are over 0.5 mile from the Site.

Seasonal views are anticipated throughout the Study Area generally in areas surrounding predicted year-round visibility. Near seasonal views (within ±0.5-mile of the Site) are represented in photo-simulations 3, 9, 10, 13, and 15. Some seasonal visibility would be highly obstructed and the Facility would not likely be discernable through the trees, as depicted in photos 7, 12, 14, and 17. Seasonal visibility will also extend approximately 1.5-miles south and southwest of the Site as shown in photos 35 and 39.

Proximity to Schools And Commercial Child Day Care Centers

No schools or commercial child day care centers are located within 250 feet of the proposed Facility. The Nathan Hale-Ray High School is approximately 3.66 miles east/southeast of the Site at 15 School Road in the Moodus section of East Haddam. The Haddam Cooperative Nursery School is located approximately 1.67 miles south of the Site at 905 Saybrook Road in Haddam. The Facility will not be visible 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. 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 partly cloudy skies.

ATTACHMENTS

Photo Locations

Photo	Location	Orientation	Distance	Visibility
1	AGUE SPRING ROAD AT ROCK LANDING ROAD	SE	+/- 0.47 MILE	NOT VISIBLE
2	AGUE SPRING ROAD AT SELDEN ROAD	SE	+/- 0.30 MILE	NOT VISIBLE
3	AGUE SPRING ROAD	SE	+/- 0.13 MILE	SEASONAL
4	AGUE SPRING ROAD*	ESE	+/- 310 FEET	YEAR ROUND
5	AGUE SPRING ROAD*	NNW	+/- 323 FEET	YEAR ROUND
6	AGUE SPRING ROAD	NNW	+/- 0.13 MILE	YEAR ROUND
7	AGUE SPRING ROAD	NNW	+/- 0.16 MILE	OBSCURED
8	AGUE SPRING ROAD	NNW	+/- 0.18 MILE	NOT VISIBLE
9	SCHOOL HOUSE HILL ROAD	NW	+/- 0.26 MILE	SEASONAL
10	QUARRY HILL ROAD	NW	+/- 0.38 MILE	SEASONAL
11	QUARRY HILL ROAD	NW	+/- 0.41 MILE	NOT VISIBLE
12	CROWS NEST LANE	WNW	+/- 0.52 MILE	OBSCURED
13	SCHOOL HOUSE HILL ROAD	WNW	+/- 0.37 MILE	SEASONAL
14	SCHOOL HOUSE HILL ROAD	WNW	+/- 0.47 MILE	OBSCURED
15	QUARRY HILL ROAD	W	+/- 0.40 MILE	SEASONAL
16	QUARRY HILL ROAD	WSW	+/- 0.34 MILE	NOT VISIBLE
17	QUARRY HILL ROAD	SSW	+/- 0.37 MILE	OBSCURED
18	ROCK LANDING ROAD	SSE	+/- 0.53 MILE	NOT VISIBLE
19	HURD PARK ROAD	SE	+/- 1.29 MILES	NOT VISIBLE
20	HADDAM NECK ROAD	S	+/- 0.83 MILE	NOT VISIBLE
21	MOODUS ROAD	SW	+/- 1.50 MILES	NOT VISIBLE
22	INJUN HOLLOW ROAD	NNW	+/- 1.16 MILES	NOT VISIBLE
23	INJUN HOLLOW ROAD	NNW	+/- 0.65 MILE	NOT VISIBLE

** Photograph was taken at 35 mm focal length.*

Photo Locations Continued

Photo	Location	Orientation	Distance	Visibility
24	COLLINS LANE	N	+/- 0.36 MILE	NOT VISIBLE
25	INJUN HOLLOW ROAD	NE	+/- 0.25 MILE	NOT VISIBLE
26	ROCK LANDING LANE AT ROCK LANDING ROAD	E	+/- 0.40 MILE	NOT VISIBLE
27	ROCK LANDING ROAD AT BASKET SHOP ROAD	ENE	+/- 0.41 MILE	YEAR ROUND
28	NEW ROCK LANDING CEMETERY	NE	+/- 0.53 MILE	YEAR ROUND
29	ROCK LANDING ROAD	NE	+/- 0.52 MILE	SEASONAL
30	ROCK LANDING ROAD	NE	+/- 0.54 MILE	NOT VISIBLE
31	HADDAM MEADOWS STATE PARK - BOAT LAUNCH	NNW	+/- 1.60 MILES	YEAR ROUND
32	HADDAM MEADOWS STATE PARK	N	+/- 1.68 MILES	YEAR ROUND
33	HADDAM MEADOWS STATE PARK	N	+/- 1.23 MILES	YEAR ROUND
34	ISLAND DOCK ROAD	N	+/- 1.29 MILES	YEAR ROUND
35	ISLAND DOCK ROAD	N	+/- 1.40 MILES	SEASONAL
36	SAYBROOK ROAD AT HIGH MEADOW PLACE	NNE	+/- 1.06 MILES	NOT VISIBLE
37	SAYBROOK ROAD	NNE	+/- 1.03 MILES	SEASONAL
38	SAYBROOK ROAD	NE	+/- 0.99 MILE	YEAR ROUND
39	WALKLEY HILL ROAD	NE	+/- 1.30 MILES	SEASONAL
40	SAYBROOK ROAD	NE	+/- 1.02 MILES	SEASONAL
41	SAYBROOK ROAD	ENE	+/- 1.21 MILES	YEAR ROUND
42	WALKLEY HILL ROAD	ENE	+/- 1.43 MILES	YEAR ROUND
43	SAYBROOK ROAD	ENE	+/- 1.64 MILES	NOT VISIBLE
44	SAYBROOK ROAD	E	+/- 1.79 MILES	YEAR ROUND
45	SAYBROOK ROAD	E	+/- 1.83 MILES	YEAR ROUND
46	HIGGANUM COVE	E	+/- 2.03 MILES	YEAR ROUND

** Photograph was taken at 35 mm focal length.*

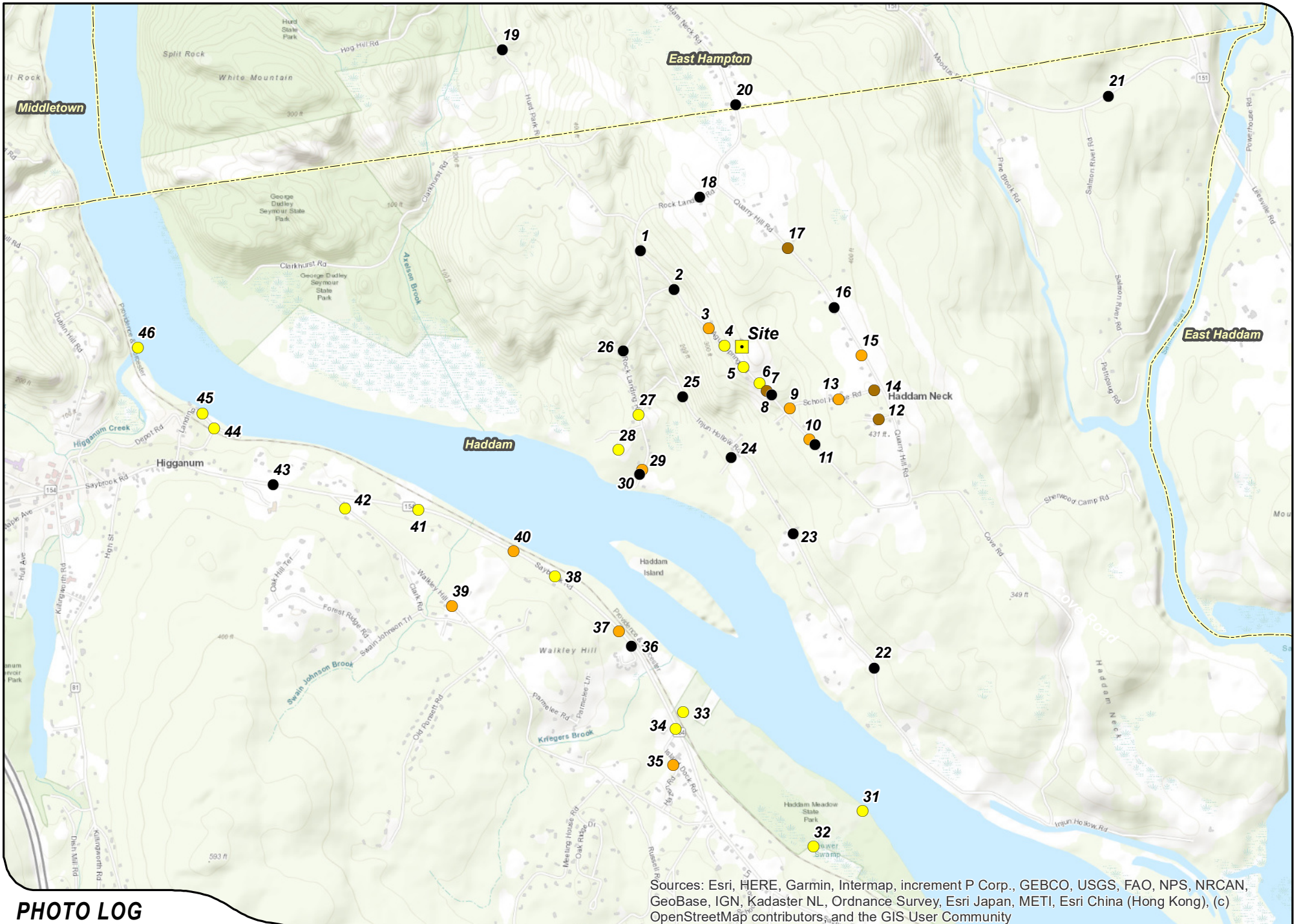
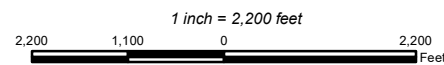


PHOTO LOG

Legend

- Site
- Seasonal
- Year-Round
- Not Visible
- Obscured
- Municipal Boundary





PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	AGUE SPRING ROAD AT ROCK LANDING ROAD	SE	+/- 0.47 MILE	NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	AGUE SPRING ROAD AT SELDEN ROAD	SE	+/- 0.30 MILE	NOT VISIBLE



PHOTOGRAPHED ON 3.09.2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	AGUE SPRING ROAD	SE	+/- 0.13 MILE	SEASONAL



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	AGUE SPRING ROAD	SE	+/- 0.13 MILE	SEASONAL



35mm focal length
PHOTOGRAPHED ON 3/29/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	AGUE SPRING ROAD	ESE	+/- 310 FEET	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	AGUE SPRING ROAD	ESE	+/- 310 FEET	YEAR ROUND



35mm focal length
PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

5

LOCATION

AGUE SPRING ROAD

ORIENTATION

NNW

DISTANCE TO SITE

+/- 323 FEET

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	AGUE SPRING ROAD	NNW	+/- 323 FEET	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	AGUE SPRING ROAD	NNW	+/- 0.13 MILE	YEAR ROUND



PROPOSED

PHOTO

6

LOCATION

AGUE SPRING ROAD

ORIENTATION

NNW

DISTANCE TO SITE

+/- 0.13 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

7

LOCATION

AGUE SPRING ROAD

ORIENTATION

NNW

DISTANCE TO SITE

+/- 0.16 MILE

VISIBILITY

OBSCURED



PHOTOGRAPHED ON 3/20/23

EXISTING

PHOTO

8

LOCATION

AGUE SPRING ROAD

ORIENTATION

NNW

DISTANCE TO SITE

+/- 0.18 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

9

LOCATION

SCHOOL HOUSE HILL ROAD

ORIENTATION

NW

DISTANCE TO SITE

+/- 0.26 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

9

LOCATION

SCHOOL HOUSE HILL ROAD

ORIENTATION

NW

DISTANCE TO SITE

+/- 0.26 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

10

LOCATION

QUARRY HILL ROAD

ORIENTATION

NW

DISTANCE TO SITE

+/- 0.38 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	QUARRY HILL ROAD	NW	+/- 0.38 MILE	SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

11

LOCATION

QUARRY HILL ROAD

ORIENTATION

NW

DISTANCE TO SITE

+/- 0.41 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	CROWS NEST LANE	WNW	+/- 0.52 MILE	OBSCURED



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

13

LOCATION

SCHOOL HOUSE HILL ROAD

ORIENTATION

WNW

DISTANCE TO SITE

+/- 0.37 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO

13

LOCATION

SCHOOL HOUSE HILL ROAD

ORIENTATION

WNW

DISTANCE TO SITE

+/- 0.37 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3.09.2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
14	SCHOOL HOUSE HILL ROAD	WNW	+/- 0.47 MILE	OBSCURED



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
15	QUARRY HILL ROAD	W	+/- 0.40 MILE	SEASONAL



PROPOSED

PHOTO

15

LOCATION

QUARRY HILL ROAD

ORIENTATION

W

DISTANCE TO SITE

+/- 0.40 MILE

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

16

LOCATION

QUARRY HILL ROAD

ORIENTATION

WSW

DISTANCE TO SITE

+/- 0.34 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3.09.2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
17	QUARRY HILL ROAD	SSW	+/- 0.37 MILE	OBSCURED



PHOTOGRAPHED ON 3/29/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
18	ROCK LANDING ROAD	SSE	+/- 0.53 MILE	NOT VISIBLE



PHOTOGRAPHED ON 3.09.2023

EXISTING

PHOTO

19

LOCATION

HURD PARK ROAD

ORIENTATION

SE

DISTANCE TO SITE

+/- 1.29 MILES

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/27/2023

EXISTING

PHOTO

20

LOCATION

HADDAM NECK ROAD

ORIENTATION

S

DISTANCE TO SITE

+/- 0.83 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
21	MOODUS ROAD	SW	+/- 1.50 MILES	NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

22

LOCATION

INJUN HOLLOW ROAD

ORIENTATION

NNW

DISTANCE TO SITE

+/- 1.16 MILES

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
23	INJUN HOLLOW ROAD	NNW	+/- 0.65 MILE	NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

24

LOCATION

COLLINS LANE

ORIENTATION

N

DISTANCE TO SITE

+/- 0.36 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
25	INJUN HOLLOW ROAD	NE	+/- 0.25 MILE	NOT VISIBLE



PHOTOGRAPHED ON 3/20/23

EXISTING

PHOTO

26

LOCATION

ROCK LANDING LANE AT ROCK LANDING ROAD

ORIENTATION

E

DISTANCE TO SITE

+/- 0.40 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/20/23

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
27	ROCK LANDING ROAD AT BASKET SHOP ROAD	ENE	+/- 0.41 MILE	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
27	ROCK LANDING ROAD AT BASKET SHOP ROAD	ENE	+/- 0.41 MILE	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

28

LOCATION

NEW ROCK LANDING CEMETERY

ORIENTATION

NE

DISTANCE TO SITE

+/- 0.53 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
28	NEW ROCK LANDING CEMETERY	NE	+/- 0.53 MILE	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

29

LOCATION

ROCK LANDING ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 0.52 MILE

VISIBILITY

SEASONAL



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
29	ROCK LANDING ROAD	NE	+/- 0.52 MILE	SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

30

LOCATION

ROCK LANDING ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 0.54 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
31	HADDAM MEADOWS STATE PARK - BOAT LAUNCH	NNW	+/- 1.60 MILES	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
31	HADDAM MEADOWS STATE PARK - BOAT LAUNCH	NNW	+/- 1.60 MILES	YEAR ROUND



PHOTOGRAPHED ON 3.09.2023

EXISTING

PHOTO

32

LOCATION

HADDAM MEADOWS STATE PARK

ORIENTATION

N

DISTANCE TO SITE

+/- 1.68 MILES

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
32	HADDAM MEADOWS STATE PARK	N	+/- 1.68 MILES	YEAR ROUND



PHOTOGRAPHED ON 3/27/23

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
33	HADDAM MEADOWS STATE PARK	N	+/- 1.23 MILES	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
33	HADDAM MEADOWS STATE PARK	N	+/- 1.23 MILES	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
34	ISLAND DOCK ROAD	N	+/- 1.29 MILES	YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
34	ISLAND DOCK ROAD	N	+/- 1.29 MILES	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

35

LOCATION

ISLAND DOCK ROAD

ORIENTATION

N

DISTANCE TO SITE

+/- 1.40 MILES

VISIBILITY

SEASONAL



PROPOSED

PHOTO

35

LOCATION

ISLAND DOCK ROAD

ORIENTATION

N

DISTANCE TO SITE

+/- 1.40 MILES

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
36	SAYBROOK ROAD AT HIGH MEADOW PLACE	NNE	+/- 1.06 MILES	NOT VISIBLE



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

37

LOCATION

SAYBROOK ROAD

ORIENTATION

NNE

DISTANCE TO SITE

+/- 1.03 MILES

VISIBILITY

SEASONAL



PROPOSED

PHOTO

37

LOCATION

SAYBROOK ROAD

ORIENTATION

NNE

DISTANCE TO SITE

+/- 1.03 MILES

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

38

LOCATION

SAYBROOK ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 0.99 MILE

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

38

LOCATION

SAYBROOK ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 0.99 MILE

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 3/29/23

EXISTING

PHOTO

39

LOCATION

WALKLEY HILL ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 1.30 MILES

VISIBILITY

SEASONAL



PROPOSED

PHOTO

39

LOCATION

WALKLEY HILL ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 1.30 MILES

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/29/2023

EXISTING

PHOTO

40

LOCATION

SAYBROOK ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 1.02 MILES

VISIBILITY

SEASONAL



PROPOSED

PHOTO

40

LOCATION

SAYBROOK ROAD

ORIENTATION

NE

DISTANCE TO SITE

+/- 1.02 MILES

VISIBILITY

SEASONAL



PHOTOGRAPHED ON 3/27/23

EXISTING

PHOTO

41

LOCATION

SAYBROOK ROAD

ORIENTATION

ENE

DISTANCE TO SITE

+/- 1.21 MILES

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
41	SAYBROOK ROAD	ENE	+/- 1.21 MILES	YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
42	WALKLEY HILL ROAD	ENE	+/- 1.43 MILES	YEAR ROUND



PROPOSED

PHOTO

42

LOCATION

WALKLEY HILL ROAD

ORIENTATION

ENE

DISTANCE TO SITE

+/- 1.43 MILES

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

43

LOCATION

SAYBROOK ROAD

ORIENTATION

ENE

DISTANCE TO SITE

+/- 1.64 MILES

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 3/27/2023

EXISTING

PHOTO

44

LOCATION

SAYBROOK ROAD

ORIENTATION

E

DISTANCE TO SITE

+/- 1.79 MILES

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

44

LOCATION

SAYBROOK ROAD

ORIENTATION

E

DISTANCE TO SITE

+/- 1.79 MILES

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 3/20/23

EXISTING

PHOTO

45

LOCATION

SAYBROOK ROAD

ORIENTATION

E

DISTANCE TO SITE

+/- 1.83 MILES

VISIBILITY

YEAR ROUND



PROPOSED

PHOTO

45

LOCATION

SAYBROOK ROAD

ORIENTATION

E

DISTANCE TO SITE

+/- 1.83 MILES

VISIBILITY

YEAR ROUND



PHOTOGRAPHED ON 3/9/2023

EXISTING

PHOTO

46

LOCATION

HIGGANUM COVE

ORIENTATION

E

DISTANCE TO SITE

+/- 2.03 MILES

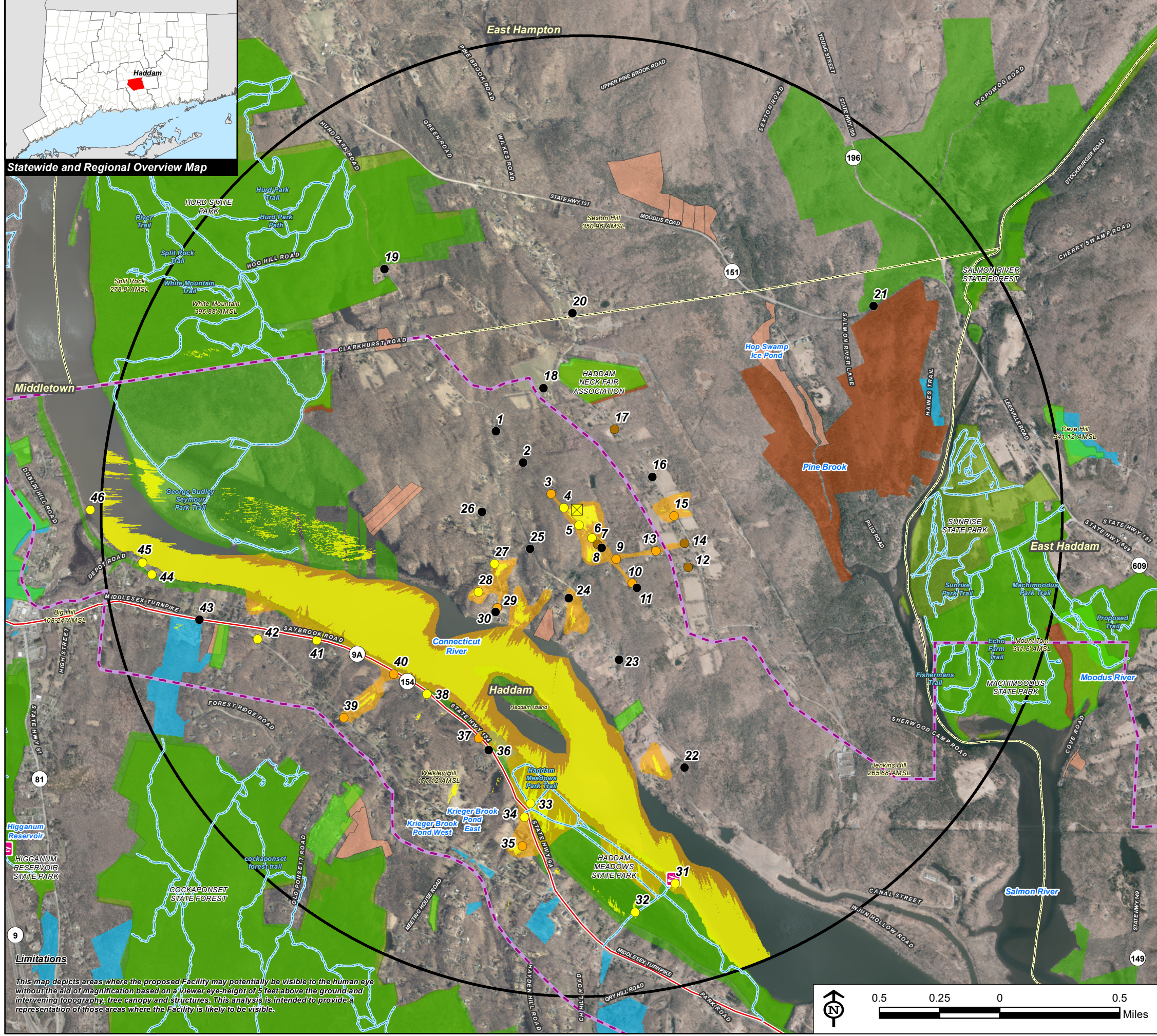
VISIBILITY

YEAR ROUND

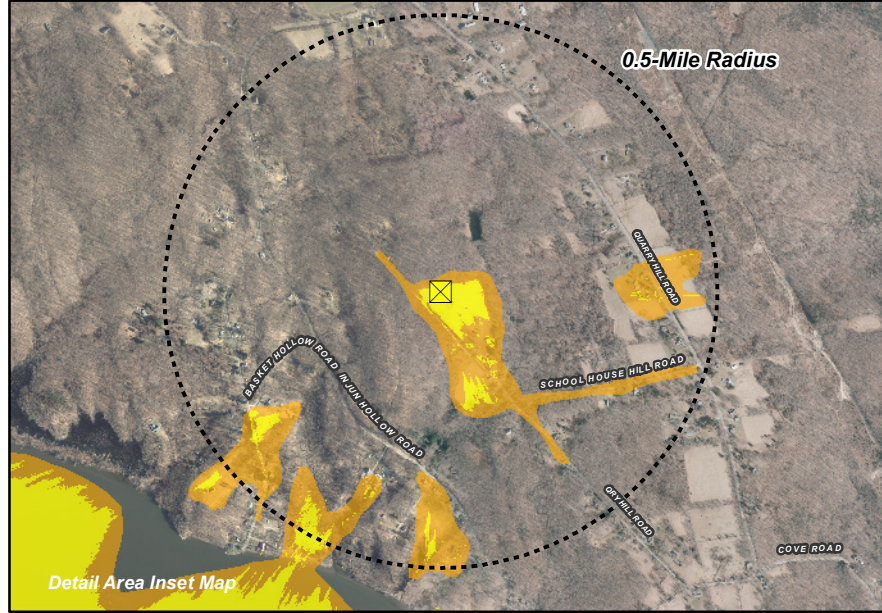


PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
46	HIGGANUM COVE	E	+/- 2.03 MILES	YEAR ROUND



Statewide and Regional Overview Map



Viewshed Analysis Map
 Proposed Wireless Telecommunications Facility
 Haddam North (CT402)
 124 Ague Spring Road
 Haddam, Connecticut

Proposed facility height is 150 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Existing conditions field verified by APT on March 09, 2023
 Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Date: August 2023

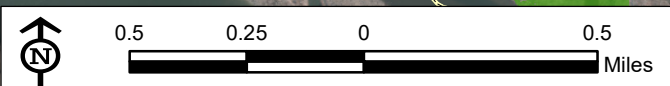
Legend

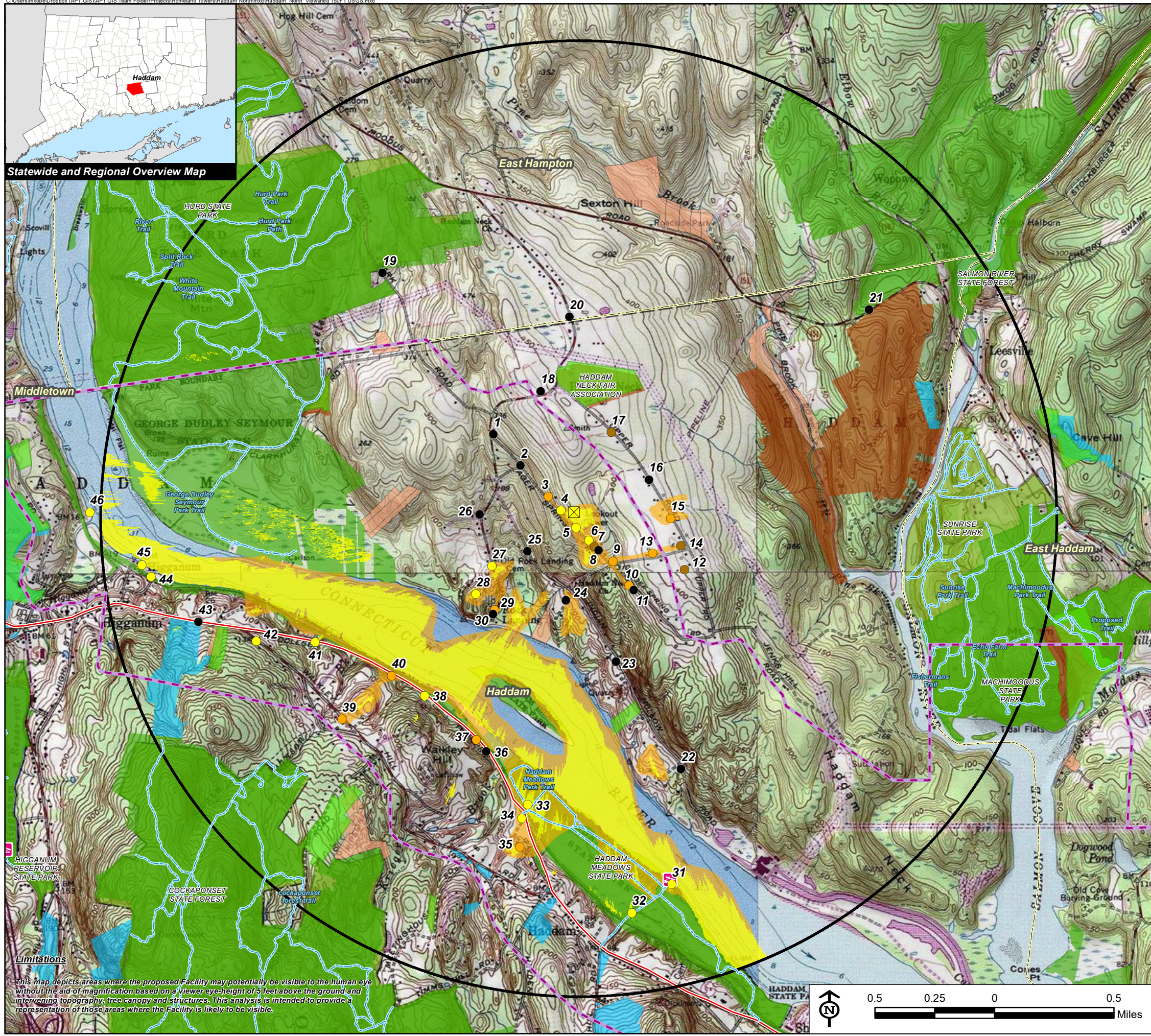
- Proposed Site
- Study Area (2-Mile Radius)
- Photo Locations (March 09, 2023)
 - Not Visible
 - Seasonal
 - Obscured
 - Year-Round
- Predicted Year-Round Visibility (432 Acres)
- Areas of Potential Seasonal Visibility (255 Acres)
- Municipal Boundary
- Haddam Gateway Zone
- Trail
- Scenic Highway
- 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.

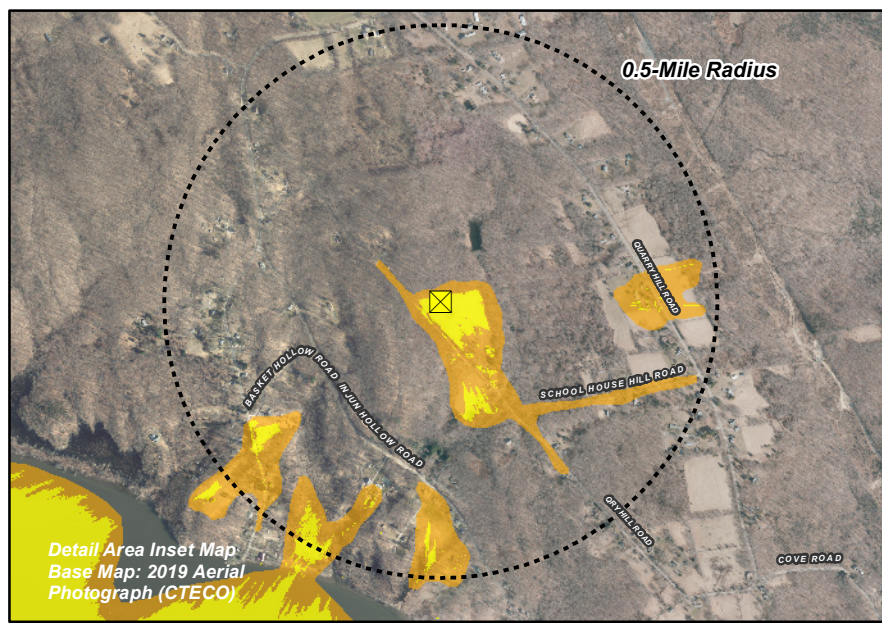
Limitations
 This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis is intended to provide a representation of those areas where the Facility is likely to be visible.





Statewide and Regional Overview Map

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 is intended to provide a representation of those areas where the Facility is likely to be visible.



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

Viewshed Analysis Map

Proposed Wireless Telecommunications Facility
 Haddam North (CT402)
 124 Ague Spring Road
 Haddam, Connecticut

Proposed facility height is 150 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Existing conditions field verified by APT on March 09, 2023
 Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, Deep River, CT (1971), Haddam, CT (1971), Middle Haddam, CT (1984), and Moodus, CT (1973)
 Map Date: August 2023

Legend

- Proposed Site
- Study Area (2-Mile Radius)
- Photo Locations (March 09, 2023)**
 - Not Visible
 - Seasonal
 - Obscured
 - Year-Round
 - Predicted Year-Round Visibility (432 Acres)
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Data Sources:

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Connecticut Forest & Parks Association, Connecticut Walk Books East & West

Other

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