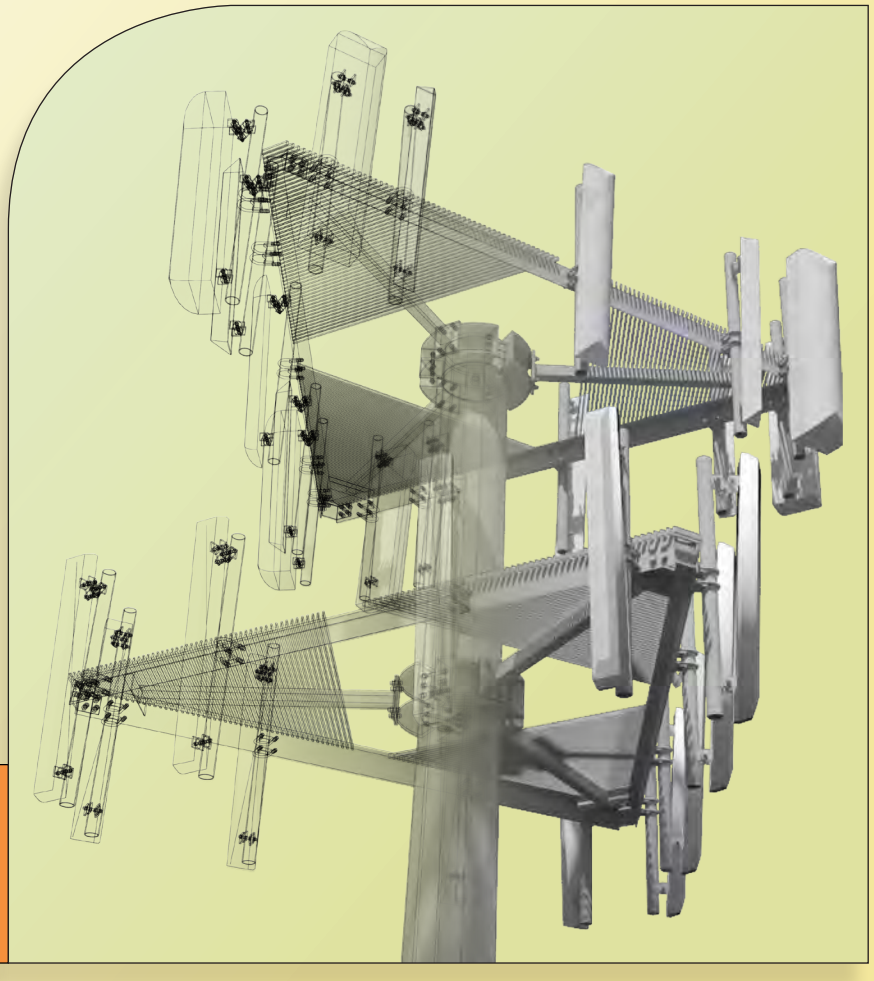
ATTACHMENT 4

Visibility Analysis

Proposed AT&T
Modified Location
Cobble Hill
8 Barnes Road
Falls Village, CT
Litchfield County



Prepared in April 2013 by:
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New Cingular Wireless PCS, LLC dba AT&T

ALL-POINTS
TECHNOLOGY CORPORATION

Project Introduction

New Cingular Wireless PCS, LLC ("AT&T") proposes to develop a wireless telecommunications facility ("Facility") on Cobble Hill in Falls Village, Connecticut to provide personal wireless services to the public. In 2010, AT&T applied for a Certificate of Environmental Compatibility and Public Need ("Certificate") from the Connecticut Siting Council ("CSC") for the construction, maintenance and operation of a Facility on property recognized as 8 Barnes Road (the "host Property"), as documented in Council Docket 409. The request for the Certificate was denied by the CSC in August 2011 and AT&T has subsequently evaluated an alternate location on the host Property. At the request of AT&T, All-Points Technology Corporation, P.C. ("APT") prepared this Visibility Analysis to evaluate the view shed associated with the modified location and demonstrate that a changed condition exists, warranting a review by the CSC as part of Docket 409A.

Site Description and Setting

The 75± acre host Property is comprised of two separate and abutting parcels owned by the Estate of Dorothy A. Forino that lie generally on the top of Cobble Hill. A small hunting lodge is located on the host Property. Land use within the vicinity of the host Property consists generally of a mix of undeveloped woodlands and marsh, low-density residential development and agricultural land. State Routes 7, 63 and 126 are the primary transportation corridors serving the general area. An existing utility right-of-way (developed with overhead transmission lines and structures) extends in an east to west direction at a lower elevation south of the host Property.

The modified tower location currently under consideration and submitted by AT&T for review (the "Modified Location") is located approximately 1,600 feet northeast of the hunting cabin, at an approximate ground elevation of 1,198 feet above mean sea level ("AMSL"). AT&T would propose a 120-foot tall monopole at this location. AT&T proposes to mount up to twelve panel antennas onto a low profile platform at a centerline height of 117 feet above grade level ("AGL") to meet its coverage objectives in this area. Associated ground equipment would include 12-foot by 20-foot equipment shelter enclosed by a 40-foot by 90-foot fenced gravel compound. Access to the Facility would be gained over an existing drive and logging trail that originates off Barnes Road and extends ultimately to the hunting cabin, with an extension required to reach the Modified Location.

The proposed Facility site presented in Docket 409 (referred to hereinafter as the "CSC Certificate Location") is located approximately 400 feet northwest of the hunting cabin, on the southwest shoulder of Cobble Hill, at a similar ground elevation. The proposed Facility at this location consisted of a 150-foot tall monopole and similar compound configuration. The CSC Certificate Location was denied and is the subject of pending litigation by AT&T.

METHODOLOGY

APT used the combination of a predictive computer model and in-field analysis to evaluate the visibility associated with the proposed Facility. The predictive model provides an assessment of potential 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 a reconnaissance of the Study Area to record existing conditions, verify results of the model, inventory visible and nonvisible locations, and to provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Preliminary Computer Modeling

Two computer modeling tools are used to calculate those areas from which at least the top of the proposed Facility is estimated to be visible: IDRISI image analysis program (developed by Clark Labs, Clark University) and ArcGIS®, developed by Environmental Systems Research Institute, Inc. Project- and Study Area-specific data were incorporated into the computer model, including the Site location, Facility height and ground elevation, as well as the surrounding topography and existing vegetation which are two primary features that can block direct lines of sight. Information used in the model included LiDAR[1]-based digital elevation data and customized land use data layers developed specifically for this analysis. The LiDAR-based Digital Elevation Model ("DEM") represents topographic information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected in the year 2000 and has a horizontal resolution of ten (10) feet. In addition, multiple land use data layers were created from National Agricultural Imagery Program (USDA) aerial photography (1-meter resolution, flown in June and July of 2011) using IDRISI image processing tools. The IDRISI tools implement light reflective classes defined by statistical analysis of individual pixels, which are then grouped based on common reflective values such that distinctions can be made automatically between deciduous and coniferous tree species, as well as grassland, impervious surface areas, water and other distinct land use features. This information is manually cross-checked with the recent USGS topographic land characteristics to quality assure the imaging analysis.

The Study Area established for this analysis measures two miles in all directions from the center of the host Property, representing approximately 8,042 acres. Topography in the Study Area is generally characterized by steep hills and north-south ridgelines with ground elevations ranging from approximately 550 feet to nearly 1700 feet ASML. The tree canopy occupies approximately 6,200 acres of the Study Area (77%).

Once the data layers were entered, image processing tools were applied and overlaid onto USGS topographic base maps and aerial photographs to achieve an estimate of locations where the Facility might be visible. First, only the topography data layer (DEM) was incorporated to evaluate potential visibility with no intervening vegetative screening. The initial omission of the forest cover data layer results in an excessive over-prediction, but provides an opportunity to identify and evaluate those areas with potentially direct sight lines toward the Facility.

[1] LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

Eliminating the tree canopy altogether, as performed in the preliminary analysis by assigning a 1-foot height value to this data layer, exaggerates areas of visibility because it assumes unobstructed sight lines everywhere but in those locations where intervening topography rises above the height of the proposed Facility. However, using this technique not only allows for an initial identification of direct sight lines, but also to gain some insight regarding seasonal views when the leaves are not on the trees[2]. This preliminary mapping is especially useful during the in-field activities (described below) to further evaluate "leaf-off" scenarios.

An average value of 65 feet AGL was assigned to the tree canopy height data layer, merged with the DEM and then added to the base ground elevations. The 65-foot tree canopy height was based on information provided in AT&T's application to the CSC under Docket 409 (see *Tab 6; Visual Resource Evaluation Report, prepared by VHB, Inc., 2010*). This information was confirmed during the in-field activities.

Additional data was reviewed and incorporated into the visibility analysis, including protected private and public open space, parks, recreational facilities, hiking trails, schools, and historic districts. Robbins Swamp Wildlife Areas, Page Street Swamp, and several unnamed swamps comprising protected open space areas are located within the Study Area. No historic districts are located within the Study Area; the Falls Village Historic District is located approximately 2.1 miles southwest of the Modified Location. Two sites listed on the National Register of Historic Places are located within the Study Area including: the South Canaan Meeting House (Congregational Church) located approximately 0.9 mile to the northwest; and, the Holabird House located approximately 1.5 miles to the west. Based on a review of publicly-available information, the portion of Route 7 that traverses the Study Area is a State-designated scenic roadway.

In-Field Activities

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

Balloon Float and Field Reconnaissance

A balloon float and field reconnaissance were conducted on Friday, March 29, 2013. The balloon float consisted of raising a four-foot diameter, helium-filled balloon tethered to a string height of 120 feet above ground level ("AGL") at the proposed Modified Location. Weather conditions were favorable for the in-field activities and included partly sunny skies and calm winds (less than 5 miles per hour for the majority of the day). Once the balloon was secured, APT conducted a Study Area reconnaissance by driving along the local and State roads and other publicly accessible locations to document and inventory where the balloon could be seen above/through the tree mast and canopy. 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.

[2] Visibility varies seasonally with increased, albeit obstructed, views occurring during "leaf-off" conditions. Each individual Study Area includes mature vegetation with a unique composition and density of woodlands, with mast or pole timber and branching providing the majority of screening in leafless conditions. Because tree spacing, dimensions and branching patterns as well as the understory differ greatly over even small areas, creating an accurate Study Area-specific "leaf-off" tree density data layer covering a two-mile radius becomes unmanageable. Considering that a given Study Area has its own discrete forest characteristics, modeling for seasonal variations of visibility is problematic and, in our experience, even when incorporating conservative constraints into the model, the results tend to over-predict visibility in "leaf-off" conditions.

During the balloon float, several trees were randomly surveyed using a hand-held infrared laser range finder and Suunto clinometer to ascertain their heights. Numerous locations were selected to obtain tree canopy heights, including along roadways, wooded lots, and high- and low-lying areas to provide for the irregularities associated with different land characteristics and uses found within the Study Area. The average canopy height was developed based on measurements and comparative observations, in this case approximately 65 feet AGL. Throughout Connecticut, the tree canopy height varies from about 55 feet to in excess of 80 feet (where eastern white pine becomes a dominant component of the forest type, average tree heights may be even slightly higher). This general uniformity is most likely the result of historic state-wide clear cutting of forests for charcoal production in the late 1800s and early 1900s. Approximately 69% of Connecticut's forests are characterized as mature[3].

Photographic Documentation

During the balloon float and field reconnaissance, APT drove the public roads within the Study Area and recorded observations, including photo-documentation, of those areas where the balloon was and was not visible. Photographs were obtained from several vantage points to document the views of a proposed Facility at the Modified Location. The geographic coordinates of the camera's position at each photo location were logged using global positioning system ("GPS") equipment technology.

Photographs were taken with a Nikon D-3000 digital camera body and Nikon 18 to 135 millimeter ("mm") zoom lens, with the lens set to 50 mm. Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. A 24 mm focal length provides a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive. When taking photographs for these analyses, APT prefers a focal length of 50 mm. Regardless of the lens setting, the scale of the subject in the photograph (the balloon) and corresponding simulation (the Facility) remains proportional to its surroundings.

> *"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm.[4]"*

The table below summarizes the photographs presented in the attachment to this report including the photo number (as it corresponds to the photolog and visibility maps), a description of each location, the view orientation, the distance from where the photo was taken relative to the proposed Facility at the Modified location, and the visibility characteristics.

[3] USDA Resource Bulletin NE-160, 2004.

[4] Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

Photo No.	Location	View Orientation	Distance to Facility	Visibility
1	Aspen Hill Drive	Northwest	± 1.93-Miles	Year-round
2	Music Mountain Road	North	± 1.70-Miles	Year-round
3	Cobble Road	Northwest	± 1.18-Miles	Year-round
4	Route 63 (Huntsville South Canaan Road)	Northwest	± 0.88-Mile	Year-round
5	Route 63 (Huntsville South Canaan Road)	Northwest	± 0.84-Mile	Year-round
6	Music Mountain Road at Route 63	North	± 0.74-Mile	Year-round
7	Music Mountain Road	North	± 0.84-Mile	Year-round
8	Route 126 (Brewster Road)	Northeast	± 0.66-Mile	Seasonal
9	South Canaan Meeting House	Southeast	± 0.90-Mile	Not Visible
10	Route 7 (South Canaan Road)	Southeast	± 1.29-Miles	Year-round
11	Under Mountain Road	Southeast	± 1.24-Miles	Year-round
12	Under Mountain Road	Southwest	± 0.91-Mile	Year-round
13	Under Mountain Road	Southwest	± 0.96-Mile	Year-round

Photographic Simulations

Simulations of the proposed Facility were generated for those photographs where the balloon was visible during the in-field activities and portray scaled renderings of the Facility from these locations. Using field data, site plan information and 3-dimensional (3D) modeling software, spatially referenced models of the Study Area 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[5]. For presentation purposes in this report, the photographs are produced in an approximate 7" by 10.5" format.

A photolog map (depicting the photo locations), photo-documentation and simulations are presented in the attachment at the end of this report. The photographs of the balloon are included to provide visual reference points for the location, height and proportions of the proposed Facility relative to the scene.

Final Visibility Mapping

Field data and observations were incorporated into the mapping data layers, including the photo locations, areas that experienced land use changes since the 2011 aerial photo flights, and those places where the initial model was found to either under or over-predict visibility.

The average tree canopy height data layer (using 65 feet AGL) was merged with the DEM and added to the base ground elevations. As a final step, forested areas were extracted from areas of potential visibility,

[5] As a final step, the accuracy and scale of select simulations are tested against photographs of existing Facilities with recorded camera position, focal length, photo location, and Facility location.

assuming that a person standing within a forest would not be able to view the Facility from beyond a certain distance due to the presence of intervening tree mast and/or understory. APT elected to use a distance of 500 feet for this analysis. Each location is dependent on the specific density and composition of the surrounding woodlands, and it is understood that some locations within this distance could provide visibility of at least portions of the Facility at any time of the year. In "leaf-on" conditions, this distance may be overly conservative as the deciduous vegetation would substantially hinder direct views in many cases at close range. However, even in "leaf off" conditions when views expand, tree mast still serves as an impediment to direct lines of sight, even at distances less than 500 feet. For purposes of this analysis, it was reasoned that contiguous forested land beyond 500 feet of the Facility would consist of light-impenetrable trees of a uniform height.

Once the additional data was integrated into the model, APT re-calculated the visibility of a Facility at each Site from within the Study Area to produce the final visibility maps.

Visibility Analysis Results

Results of this analysis are graphically displayed on the visibility analysis maps included at the end of this report. As depicted on the maps, year-round views of the proposed Facility at the proposed Modified Location appear to be limited generally to the north of Cobble Hill over open agricultural fields adjacent to Under Mountain Road and along a short portion of Barnes Road, as well as to the south along Route 63 and Music Mountain Road. Comparing the view sheds of the proposed Modified Location and the CSC Certificate Location, visibility from the south is generally similar, although the character of specific views of the Facility at the Modified Location tends to be less prominent due to a combination of both the Modified Location's physical siting and its lower height. Because of its position on the eastern shoulder of Cobble Hill, the proposed Modified Location appears to be minimally visible from locations to the west/southwest, where the CSC Certificate Location demonstrated substantially more visibility, particularly along the Route 7 corridor. Views to the east are comparable in character between the two site locations; the proposed Modified Location appears to have slightly more visibility in open fields in these directions.

We estimate that seasonal visibility associated with the Modified Location could expand during "leaf-off" conditions over a short portion of Route 126 (Brewster Road) as it approaches the intersection with Route 63 just south of Cobble Hill. An approximate one-half mile stretch of Route 7 would have intermittent views (both seasonal and year-round) of the Facility from the northwest for motorists headed southerly; as seen in photo/simulation 10, only the very top of the Facility (upper 5 to 10 feet) would eclipse the tree line. Portions of Under Mountain Road and adjacent land to the north would have obstructed views during leaf-off conditions. Comparatively, the Modified Location appears to have more seasonal variation over distant portions of Robbins Swamp (over 1.5 mile to the northwest) and to a lesser degree along Under Mountain Road to the north.

No views of the Facility at the Modified Location would be achieved from the historic properties located within the Study Area.

Based on the results of this analysis, the following conclusions may be drawn in comparing the two locations.

- Areas of year-round visibility associated with the CSC Certificate Site are substantially greater than the proposed Modified Location. On a gross quantitative level, year round views from the CSC Certificate Location may extend over an area of approximately 175 acres more than that of the pproposed Modified Location (500± acres[6] vs. 325 acres, respectively).

- In common locations where a Facility at either location may be seen, the CSC Certificate Site would typically be more prominent on the horizon, particularly when viewed from the west in Falls Village and along the Route 7 corridor.

- When the leaves are off the deciduous trees, the proposed Modified Location is estimated to have a larger seasonal geographic footprint than the CSC Certificate Location (480 acres vs. 150 acres). However, the majority of potential seasonal visibility associated with the proposed Modified Location may extend over undeveloped swamp and open agricultural fields (250± acres); it should be noted that these areas were not field-verified during the balloon float due to their inaccessibility. Another 60+ acres of seasonal visibility associated with the Modified Location occurs on the top of Cobble Hill in those areas surrounding the proposed Facility site. Most notable, the CSC Certificate Location exhibited more seasonal visibility from local and State roadways within Falls Village, areas that were confirmed during the balloon float.

- The proposed Modified Location would appear to be visible from less residential properties[7] than the CSC Certificate Location, as summarized in the table below (information from the 2010 *Visual Resource Evaluation Report* has been included in the table for comparison):

Location	***Approximate Number of Residential Properties With Potential Year-Round Visibility**		***Approximate Number of Residential Properties With Potential Seasonal Visibility**	
	MOD	**CSC**	**MOD**	**CSC**
Music Mountain Road	1	1	2	0
Route 63	1	5	2	0
Route 126 (Brewster Road)	0	4	1	0
Under Mountain Road	4	7	4	4
Page Road	0	2	0	1
TOTAL	**6**	**19**	**9**	**5**

*Indicates potential year-round or seasonal visibility from portions of "residential" properties.

MOD = proposed Modified Location

CSC = CSC Certificate Location (information based on 2010 *Visual Resource Evaluation Report* prepared by VHB)

6 Based on information in the VHB 2010 Visual Resource Evaluation Report for a tower height of 150 feet AGL (513 acres) and 484 acres for a tower height of 130 feet AGL.

7 For purposes of this analysis, the term "residential property" includes parcels with inhabited structures located thereon. Potential areas of visibility identified on a residential property does not necessarily mean that views would be achieved from within dwellings, or on exterior decks, porches or patios; several properties within the Study Area consist of large tracts of agricultural land (many being a compilation of multiple individual parcels). Further, it may be possible to view the Facility from within portions of the shaded areas indicating potential visibility on the visibility maps provided at the end of this report, but not necessarily from all locations within those shaded areas.

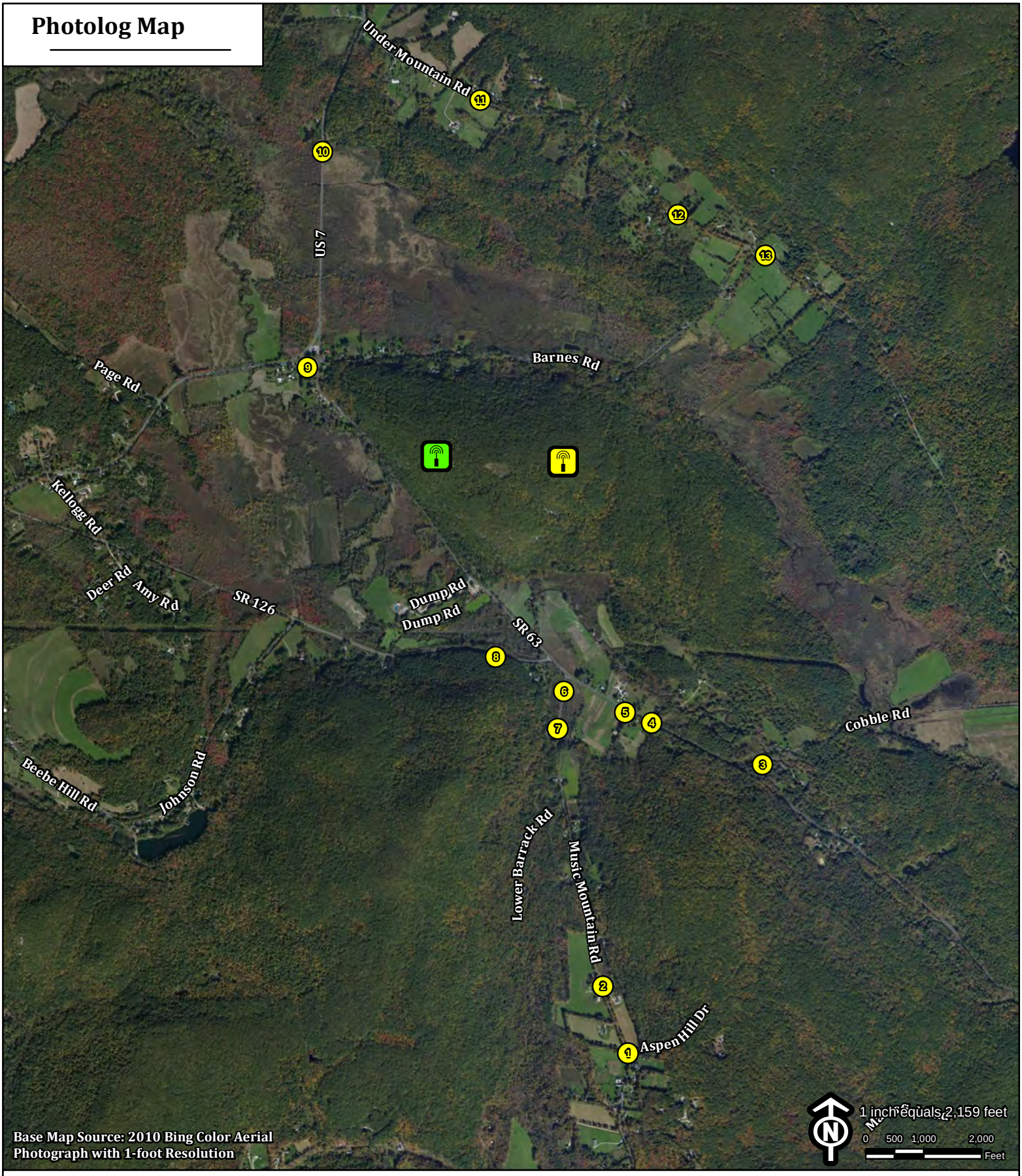
Because it achieves a substantive reduction in total year-round visibility and would be less visible from residential properties and roadways within Falls Village, the proposed Modified Location appears to represent a changed condition when compared to the original proposal and warrants a new review.

Proximity to Schools and Commercial Child Day Care Centers

No school or commercial child day care facilities are located within 250 feet of the host Property. The nearest school (Kellogg Elementary School) is located at 47 Main Street, approximately 2.05 miles to the southwest. The nearest commercial child day care center (Falls Village Day Care) is located approximately 1.95 miles to the southwest at 35 Page Road. Neither would have views of the Facility at the Modified Location.

ATTACHMENTS

Photolog Map



Legend

- Proposed Modified Location
- CSC Certificate Location
- # Photo Point (PP)

8 Barnes Road
Falls Village, Connecticut

Tuesday, April 09, 2013

at&t

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	**ASPEN HILL DRIVE**	**NORTHWEST**	**+/- 1.93 MILES**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	**ASPEN HILL DRIVE**	**NORTH**	**+/- 1.93 MILES**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	**MUSIC MOUNTAIN ROAD**	**NORTH**	**+/- 1.70 MILES**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	**MUSIC MOUNTAIN ROAD**	**NORTH**	**+/- 1.70 MILES**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	**COBBLE ROAD**	**NORTHWEST**	**+/- 1.18 MILES**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	**COBBLE ROAD**	**NORTHWEST**	**+/- 1.18 MILES**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	**ROUTE 63 (HUNTSVILLE SOUTH CANAAN ROAD)**	**NORTHWEST**	**+/- 0.88 MILE**	**YEAR ROUND**

SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	**ROUTE 63 (HUNTSVILLE SOUTH CANAAN ROAD)**	**NORTHWEST**	**+/- 0.88 MILE**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	**ROUTE 63 (HUNTSVILLE SOUTH CANAAN ROAD)**	**NORTHWEST**	**+/- 0.84 MILE**	**YEAR ROUND**

SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	**ROUTE 63 (HUNTSVILLE SOUTH CANAAN ROAD)**	**NORTHWEST**	**+/- 0.84 MILE**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	**MUSIC MOUNTAIN ROAD AT ROUTE 63**	**NORTH**	**+/- 0.74 MILE**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	**MUSIC MOUNTAIN ROAD AT ROUTE 63**	**NORTH**	**+/- 0.74 MILE**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	**MUSIC MOUNTAIN ROAD**	**NORTH**	**+/- 0.84 MILE**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	**MUSIC MOUNTAIN ROAD**	**NORTH**	**+/- 0.84 MILE**	**YEAR ROUND**

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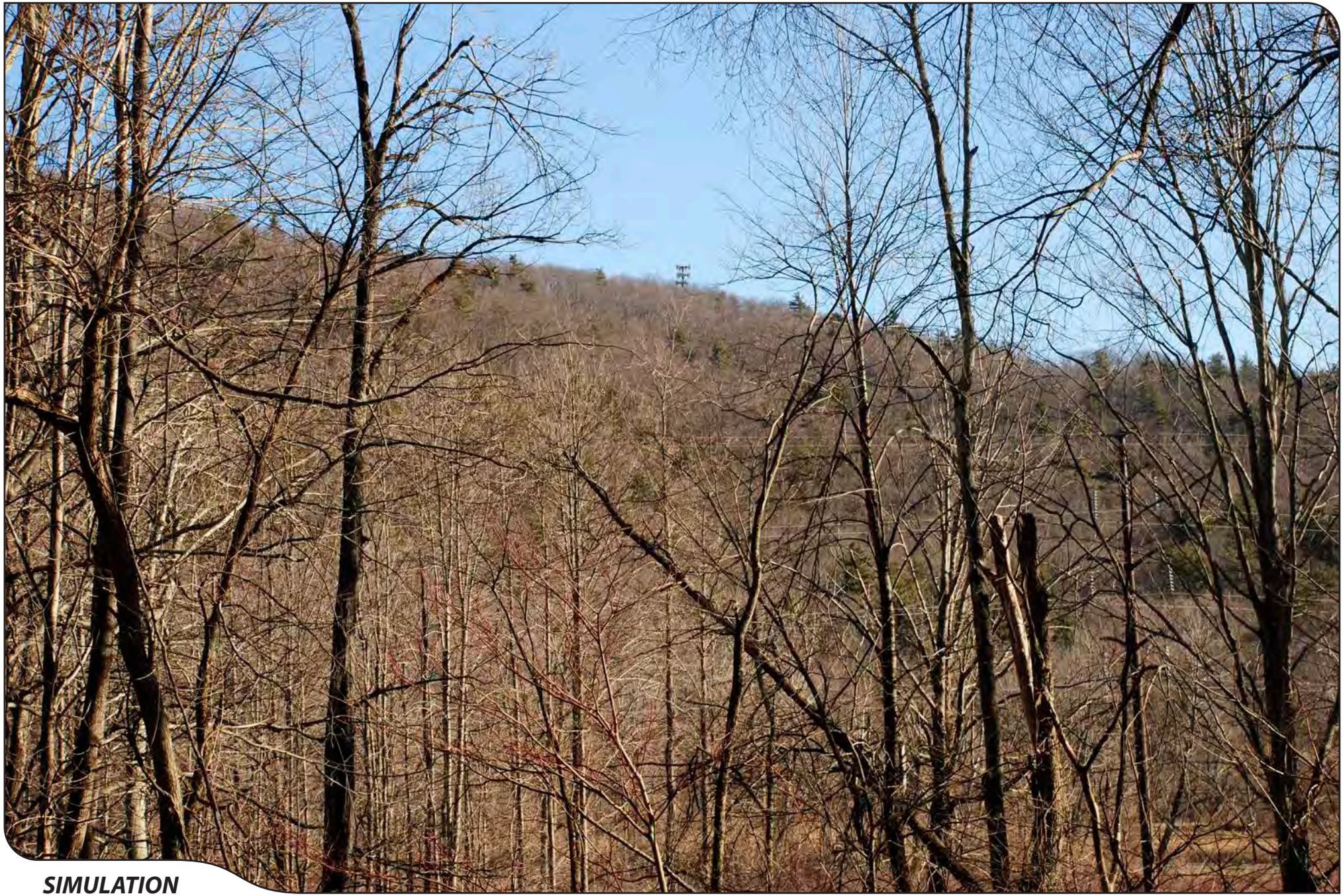
DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	**ROUTE 126 (BREWSTER ROAD)**	**NORTHEAST**	**+/- 0.66 MILE**	**YEAR ROUND**



SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	**ROUTE 126 (BREWSTER ROAD)**	**NORTHEAST**	**+/- 0.66 MILE**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
9	**SOUTH CANAAN MEETING HOUSE**	**SOUTHEAST**	**+/- 0.90 MILE**	**NOT VISIBLE**

DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	**ROUTE 7 (SOUTH CANAAN ROAD)**	**SOUTHEAST**	**+/- 1.29 MILES**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	**ROUTE 7 (SOUTH CANAAN ROAD)**	**SOUTHEAST**	**+/- 1.29 MILES**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
11	**UNDER MOUNTAIN ROAD**	**SOUTHEAST**	**+/- 1.24 MILES**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
11	**UNDER MOUNTAIN ROAD**	**SOUTHEAST**	**+/- 1.24 MILES**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	**UNDER MOUNTAIN ROAD**	**SOUTHWEST**	**+/- 0.91 MILE**	**YEAR ROUND**

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	**UNDER MOUNTAIN ROAD**	**SOUTHWEST**	**+/- 0.91 MILE**	**YEAR ROUND**

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DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
13	**UNDER MOUNTAIN ROAD**	**SOUTHWEST**	**+/- 0.96 MILE**	**YEAR ROUND**

ALL-POINTS TECHNOLOGY CORPORATION

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SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
13	**UNDER MOUNTAIN ROAD**	**SOUTHWEST**	**+/- 0.96 MILE**	**YEAR ROUND**

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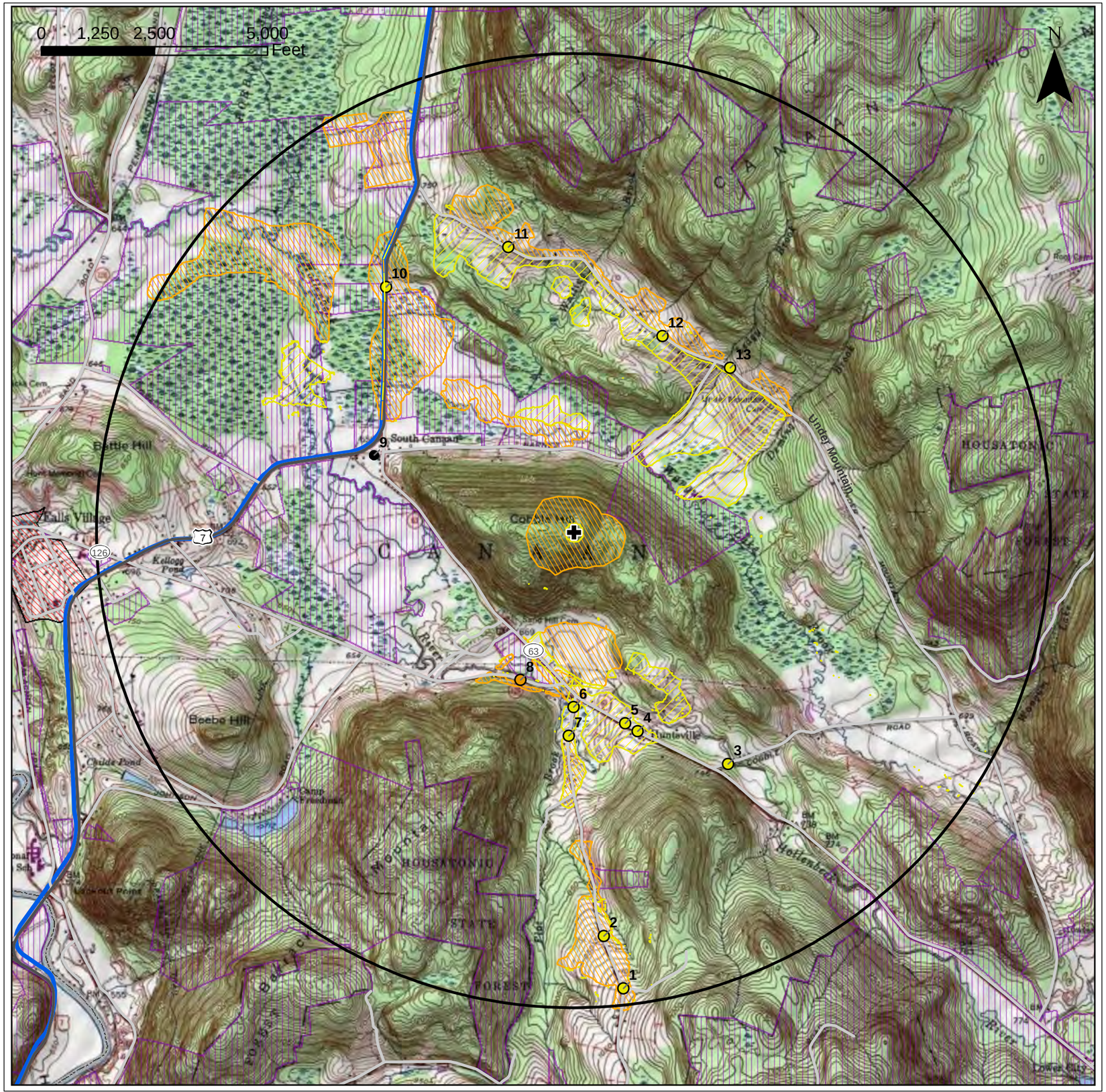

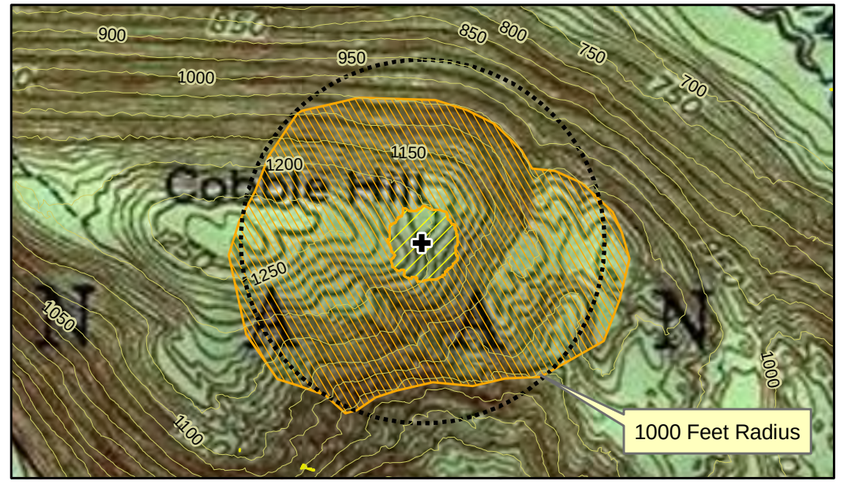

VISIBILITY ANALYSIS - TOPO BASE

Proposed Modified Location
Cobble Hill
8 Barnes Road
Falls Village, CT

Proposed facility height is 120 feet AGL
Existing tree canopy height estimated at 65 feet AGL
Study area includes 8,042 acres of land

Map compiled 4/9/2013

Map information field verified by All-Points Technology Corporation on March 29, 2013

Only those resources located within the Study Area are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

Legend

- Proposed Modified Location

Photo Locations

- No Visibility
- Seasonal
- Year-round
- 2-Mile Study Area
- Scenic Highways
- Predicted Year-Round Visibility
- Predicted Seasonal Visibility
- Protected Open Space
- National Register
- Town

Location

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www.allpointstech.com

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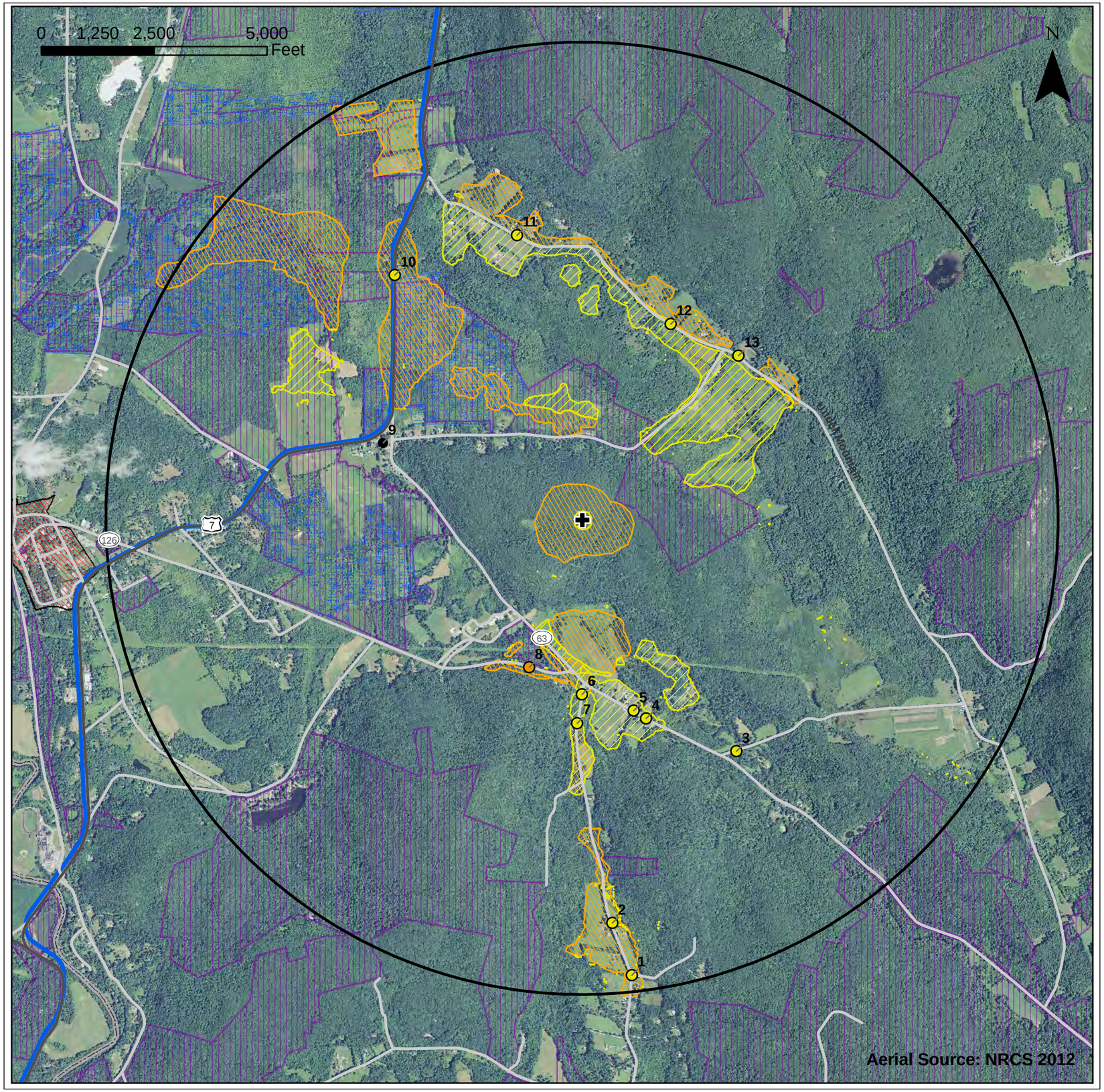
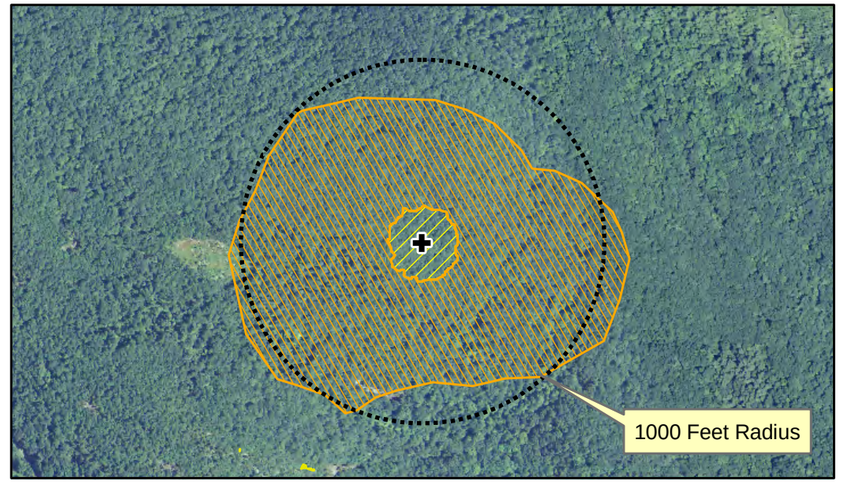




VISIBILITY ANALYSIS - AERIAL BASE

Proposed Modified Location
Cobble Hill
8 Barnes Road
Falls Village, CT

Proposed facility height is 120 feet AGL
Existing tree canopy height estimated at 65 feet AGL
Study area includes 8,042 acres of land

Map compiled 4/9/2013

Map information field verified by All-Points Technology Corporation on March 29, 2013

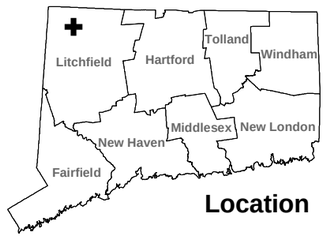
Only those resources located within the Study Area are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

Legend

- Proposed Modified Location

Photo Locations

- No Visibility
- Seasonal
- Year-round
- 2-Mile Study Area
- Scenic Highways
- Predicted Year-Round Visibility
- Predicted Seasonal Visibility
- Robbins Swamp Wildlife Area
- Protected Open Space
- National Register
- Town



Location

ALL-POINTS
TECHNOLOGY CORPORATION
3 Saddlebrook Drive Killingworth, CT 06419
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DOCUMENTATION

SOURCES CONSULTED FOR VISBILITY ANALYSIS

AT&T Proposed Modified Location
8 Barnes Road – Cobble Hill
Falls Village, CT

Physical Geography / Background Data

Center for Land Use Education and Research, University of Connecticut (http://clear.uconn.edu)
*Land Use / Land Cover (2006)
*Coniferous and Deciduous Forest (2006)
*LiDAR data – topography (2000)
United States Geological Survey
*USGS topographic quadrangle maps – Sharon and South Canaan (1984)
National Resource Conservation Service
*NAIP aerial photography (2006, 2008, 2010, 2012)
Heritage Consultants
^State Scenic Highways (based on Department of Transportation data, updated monthly)
^Municipal Scenic Roads (by website, phone and/or email/fax - current)

Cultural Resources
Heritage Consultants
^National Register
^ Local Survey Data

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 Book West – The Guide to the Blue-Blazed Hiking Trails of Eastern/Western Connecticut, 19th Editions, 2006.

Other
^ConnDOT Scenic Strips (based on Department of Transportation data)

*Available to the public in GIS-compatible format (some require fees).
^ Data not available to general public in GIS format. Reviewed independently and, where applicable, GIS data later prepared specifically for this Study Area.