Visual Resource Evaluation Report

Proposed Wireless Telecommunications Facility

New Milford Northeast
359 Litchfield Road(Route 202)
New Milford, Connecticut

Prepared for 

Prepared by *VHB*/Vanasse Hangen Brustlin, Inc.
54 Tuttle Place
Middletown, CT 06457

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Visual Resource Evaluation

Cellco Partnership (dba Verizon Wireless) seeks approval from the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the construction of a wireless telecommunications facility ("Facility") to be located on property at 359 Litchfield Road (Route 202) in the Town of New Milford, Connecticut (identified herein as the "host property"). This Visual Resource Evaluation was conducted to evaluate the visibility of the proposed Facility within a two-mile radius ("Study Area"). In addition to the Town of New Milford, portions of the neighboring Town of Washington, Connecticut are also contained within the Study Area.

Project Introduction

The proposed Facility includes the installation of a 150-foot tall monopole with associated ground equipment to be located at its base. Both the proposed monopole and ground equipment would be situated within a fence-enclosed compound. The proposed project area is located at approximately 425 feet Above Mean Sea Level (AMSL). Access to the Facility would be provided via a proposed site driveway which would extend to the proposed compound area in a westerly direction from Big Bear Hill Road.

Site Description and Setting

Identified in the Town of New Milford land records as Map 72/Lot 72, the host property consists of approximately 3.85 acres of land and is currently occupied by the Northville Volunteer Fire Department. The proposed Facility is located on an undeveloped, wooded portion of the host property, roughly 400 feet to the northwest of the existing fire department building. Attachment A includes a photograph of the proposed project area. Attachment A also contains a map that depicts the location of the proposed Facility and the limits of the Study Area. Land use within the general vicinity of the proposed Facility and host property consists of small-scale roadside commercial development along the Route 202 traffic corridor; low-density residential development to the north, east and west; and large tracts of undeveloped woodlands located just beyond the nearby areas of commercial and residential development. State numbered roadways that traverse portions of the Study Area include Route 202 and Route 109. In total, the Study Area features approximately 57 linear miles of roadways.

The topography within the Study Area is characterized by a series of tall hills that generally parallel the Route 202 traffic corridor and an extended ridgeline that runs along the eastern third of the Study Area. Ground elevations within the Study Area range from approximately 320 feet AMSL to approximately 1,260 feet AMSL. The Study Area contains approximately 31 acres of surface water, including the Ella Fohs Camp Pond and segments of the West Aspetuck River. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species interspersed with stands of mature evergreens. The tree canopy occupies approximately 6,226 acres of the 8,042-acre study area (77%). During the in-field activities associated with this analysis, an infrared laser range finder was used to accurately determine

the average tree canopy height throughout the Study Area. Numerous trees were selected for measurement and the average tree canopy was determined to be 65 feet.

■

METHODOLOGY

In order to better represent the visibility associated with the Facility, VHB uses a two-fold approach incorporating both a predictive computer model and in-field analysis. The predictive model is employed to assess potential visibility throughout the entire Study Area, including private property and/or otherwise inaccessible areas for field verification. A "balloon float" and Study Area drive-through reconnaissance are also conducted to obtain locational and height representations, back-check the initial computer model results and provide documentation from publicly accessible areas. Results of both activities are analyzed and incorporated into the final viewshed map. A description of the methodologies used in the analysis is provided below.

Visibility Analysis

Using ESRI's ArcView® Spatial Analyst, a computer modeling tool, the areas from which the top of the Facility is expected to be visible are calculated. This is based on information entered into the computer model, including Facility height, its ground elevation, the surrounding topography and existing vegetation. Data incorporated into the predictive model includes a digital elevation model (DEM) and a digital forest layer for the Study Area. The DEM was derived from the United States Geological Survey (USGS) National Elevation Dataset (NED), a seamless, publicly available elevation dataset with an approximate 30-meter resolution. The forest layer was derived through on-screen digitizing in ArcView® GIS from 2004 digital orthophotos with a 0.5-foot pixel resolution.

Once the data are entered, a series of constraints are applied to the computer model to achieve an estimate of where the Facility will be visible. Initially, only topography was used as a visual constraint; the tree canopy is omitted to evaluate all areas of potential visibility without any vegetative screening. Although this is an overly conservative prediction, the initial omission of these layers assists in the evaluation of potential seasonal visibility of the proposed Facility. A conservative tree canopy height of 50 feet is then used to prepare a preliminary viewshed map for use during the Study Area reconnaissance. The average height of the tree canopy is determined in the field using a hand-held infrared laser range finder. The average tree canopy height is incorporated into the final viewshed map; in this case, 65 feet was identified as the average tree canopy height. The forested areas within the Study Area were then overlaid on the DEM with a height of 65 feet added and the visibility calculated. As a final step, the forested areas are extracted from the areas of visibility, with the assumption that a person standing among the trees will not be able to view the Facility beyond a distance of approximately 500 feet. Depending on the density of the vegetation in these areas, it is assumed that some locations within this range will provide visibility of at

least portions of the Facility based on where one is standing. This analysis was conducted in four increments in order to provide an estimate how much of the Facility will be seen from visible areas. As such, the model calculated areas of potential tree line views and/or views of the upper 25% of the proposed monopole; locations where approximately half of the proposed structure would be visible; areas where approximately 75% of the monopole would be visible; and locations where the entire Facility would be visible. The results where then consolidated into a single thematic layer.

Also included on the map is a data layer, obtained from the Connecticut State Department of Environmental Protection ("CTDEP"), which depicts various land and water resources such as parks and forests, recreational facilities, dedicated open space, CTDEP boat launches and other categories. This layer is useful in identifying potential visibility from any sensitive receptors that may be located within the Study Area. Lastly, based on both a review of published information and discussions with municipal officials in New Milford and Washington, it was determined that there are several locally-designated scenic roadways located within the Study Area. These roadways are depicted on the viewshed map contained in Attachment B and include Crossmon Road, Old Mill Road, Sandpit Road, Walker Brook Road and Wheaton Road.

A preliminary viewshed map (using topography and a conservative tree canopy height of 50 feet) is generated for use during the in-field activity in order to confirm that no significant land use changes have occurred since the aerial photographs used in this analysis were produced and to verify the results of the model in comparison to the balloon float. Information obtained during the reconnaissance is then incorporated into the final visibility map.

Balloon Float and Study Area Reconnaissance

On November 8, 2007 Vanasse Hangen Brustlin Inc., (VHB) conducted a "balloon float" at the proposed Facility location to further evaluate the potential viewshed within the Study Area. The balloon float consisted of raising and maintaining an approximate four-foot diameter, helium-filled weather balloon at the proposed site location at a height of 150 feet. Once the balloon was secured, VHB staff conducted a drive-by reconnaissance along the roads located within the Study Area with an emphasis on nearby residential areas and other potential sensitive receptors in order to evaluate the results of the preliminary viewshed map and to verify where the balloon was, and was not, visible above and/or through the tree canopy. During the balloon float, the temperature was approximately 50 degrees Fahrenheit with calm wind conditions and mostly sunny skies.

Photographic Documentation

During the balloon float, VHB personnel drove the public road system within the Study Area to inventory those areas where the balloon was visible. The balloon was photographed from a number of different vantage points to document the actual view towards the proposed Facility. Several photographs where the balloon was not visible are also included. The locations of the photos are described below:

1. View from Route 202 north of Big Bear Hill Road.
2. View from Route 202 south of Big Bear Hill Road.
3. View from Sandpit Road adjacent to house #1.
4. View from Route 202 adjacent to house #389.
5. View from Route 202 south of Upland Road.
6. View from Upland Road east of Old Mill Road.
7. View from Old Mill Road.
8. View from Crossmon Road adjacent to house #60 - Balloon is not visible.
9. View from Upland Road adjacent to Hine-Buckingham Farms (#'s 44, 46, and 48 Upland Road) - Balloon is not visible.
10. View from Crossmon Road at Hine-Buckingham Farms (#'s 78 and 81 Crossmon Road) - Balloon is not visible.

Photographs of the balloon from the view points listed above were taken with a Nikon D-80 digital camera body and Nikon 18 to 135 mm zoom lens. For the purposes of this report, the lens was set to 50mm. "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.[1]"

The locations of the photographic points are recorded in the field using a hand held GPS receiver and are subsequently plotted on the maps contained in the attachments to this document.

Photographic Simulation

Photographic simulations were generated for the seven representative locations where the balloon was visible during the in-field activities. The photographic simulations represent a scaled depiction of the proposed Facility (a monopole) from these locations. Following the November 8th balloon float, minor grading changes were made to the project area layout resulting in a proposed ground elevation approximately 14 feet lower than the previously proposed ground elevation. As such, the height of the Facility depicted in the photographic simulations was determined by scaling down the corresponding balloon float photographs

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

by approximately 14 feet in order to accurately reflect proposed conditions at the site location. The simulations are contained in Attachment A.

CONCLUSIONS

Based on this analysis, areas from where the proposed 150-foot tall Facility would be visible above the tree canopy comprise approximately 23 acres, or less than one half of one percent of the 8,042-acre Study Area. As depicted on the viewshed map (provided in attachment B), much of the visibility associated with the proposed Facility occurs within the immediate vicinity of the host property, generally within 0.25-mile of the project area. Included within this area are select portions of Route 202, Big Bear Hill Road, Upland Road and Old Mill Road (as photo documented). Intermittent views of the proposed monopole may also be achieved from Sandpit Road east of Route 202. Overall, the steep topography that surrounds the proposed Facility would serve to limit the extent of potential year-round visibility to the previously described areas. The extensive vegetative cover contained within the Study Area, which includes stands of mature evergreen species, would also act to significantly minimize the extent of year-round visibility associated with the proposed Facility. VHB estimates that select portions of approximately ten residential properties could have at least partial year-round views of the proposed Facility. This includes four residences located along Route 202; three residences located along Upton Road; a single residence located off Old Mill Road; and two residences located off Big Bear Hill Road. As evidenced by the results of both the viewshed mapping and balloon float, such views would generally be limited to the upper portion of the monopole.

The viewshed map also depicts several additional areas where seasonal (i.e. during "leaf off" conditions) views are anticipated. These areas comprise approximately 30 acres and, similar to the anticipated year-round visibility, are mainly located within the immediate vicinity of the host property. VHB estimates that seasonal views of the proposed Facility could be achieved from portions of approximately eight additional properties within the Study Area. These properties are located off Route 202, Bitter Sweet Bluff, Big Bear Hill Road, Sandpit Road and Upton Road.

Attachment A

Project Area Photograph, Photolog Documentation Map, Balloon Float Photographs, and Photographic Simulations

Photographic Documentation

Town of
New Milford
Connecticut

PHOTO TAKEN OF PROPOSED SITE AREA

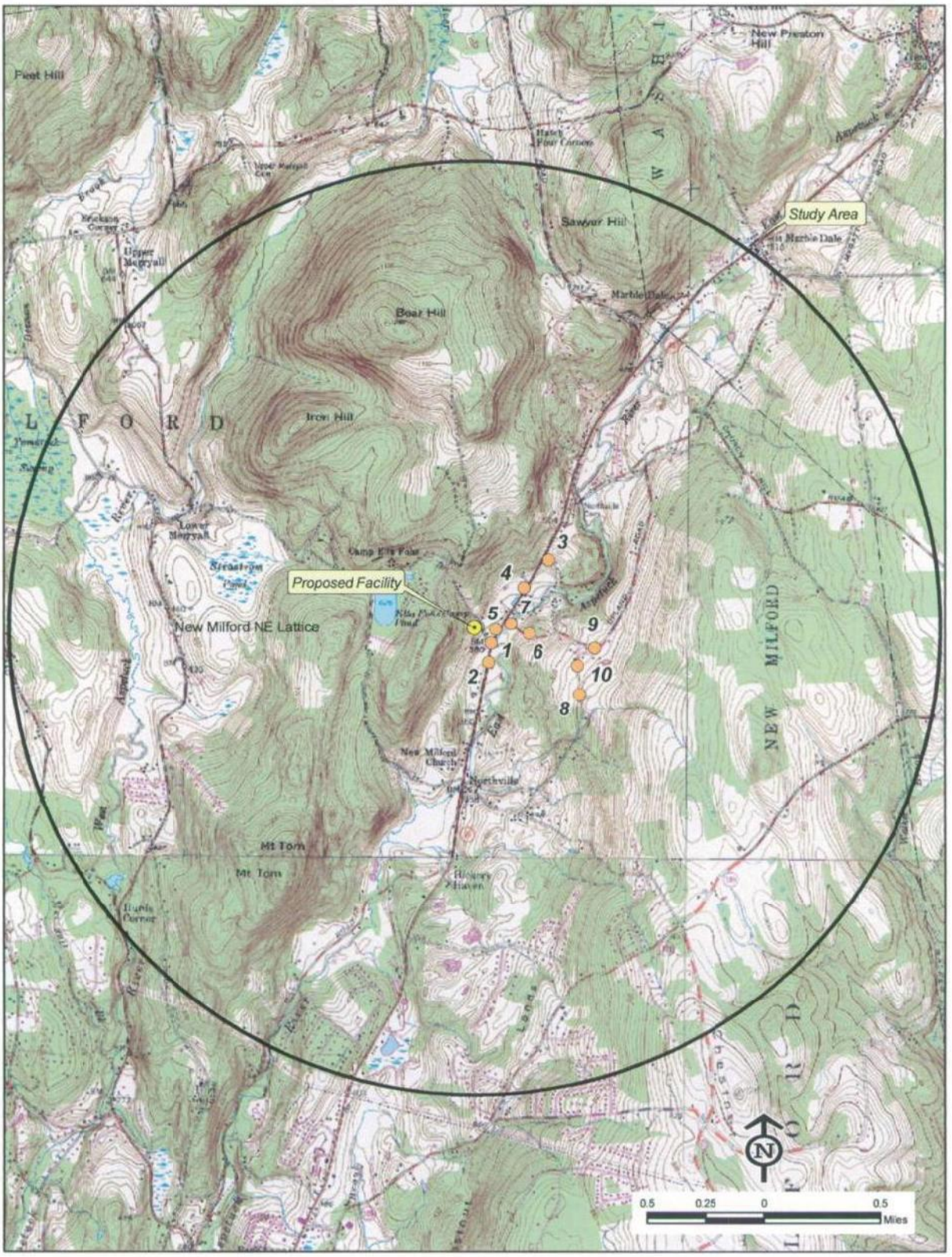
New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

Vanasse Hangen Brustlin, Inc.

Photolog Documentation

Town of
New Milford
Connecticut



Photographic Documentation and Simulation *View 1*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

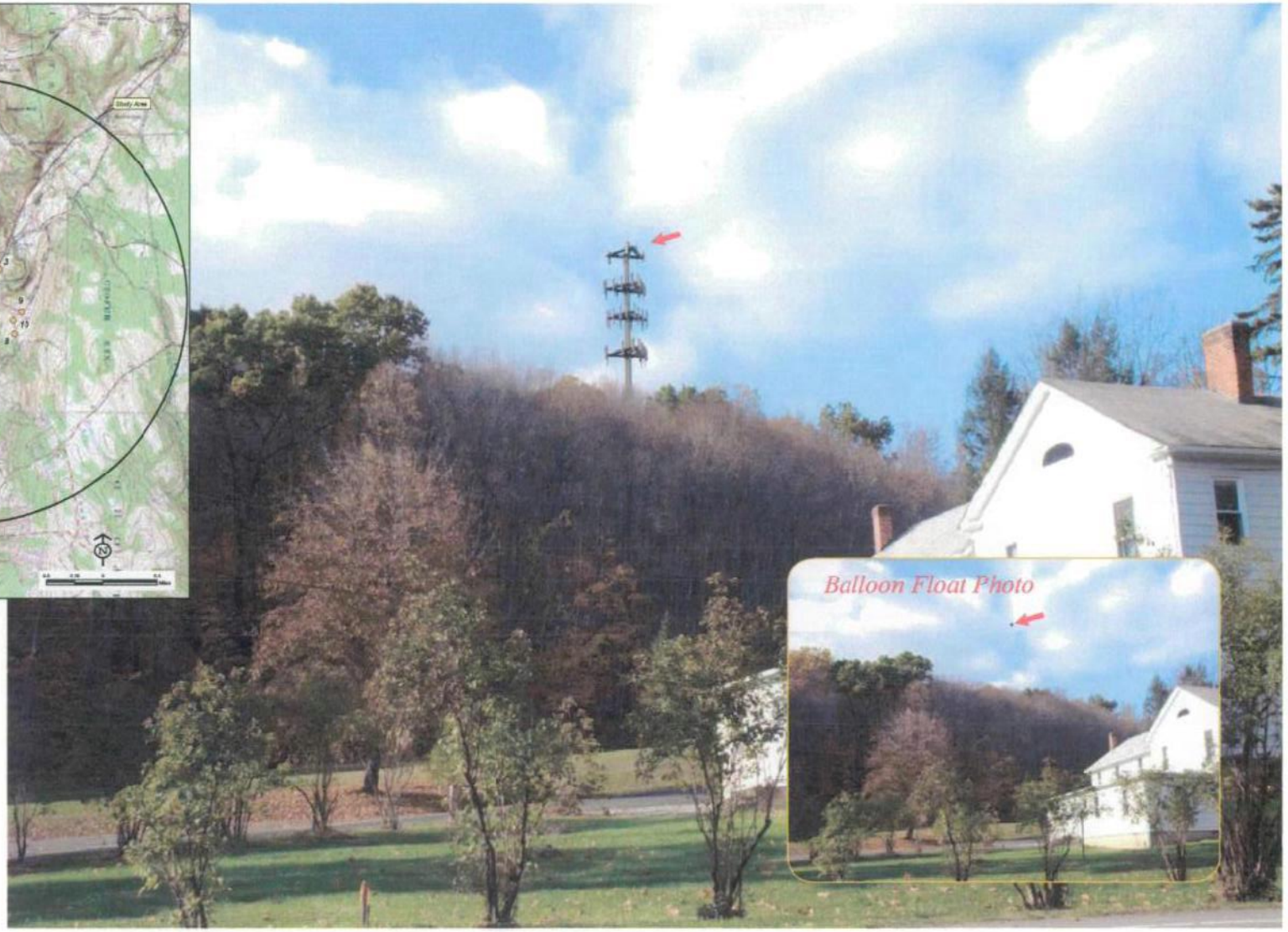


PHOTO TAKEN FROM ROUTE 202 NORTH OF BIG BEAR HILL ROAD, LOOKING NORTHWEST
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.11 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 2*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM ROUTE 202 SOUTH OF BIG BEAR HILL ROAD, LOOKING NORTHWEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.16 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 3*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM SANDPIT ROAD ADJACENT TO HOUSE # 1, LOOKING SOUTHWEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.42 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 4*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

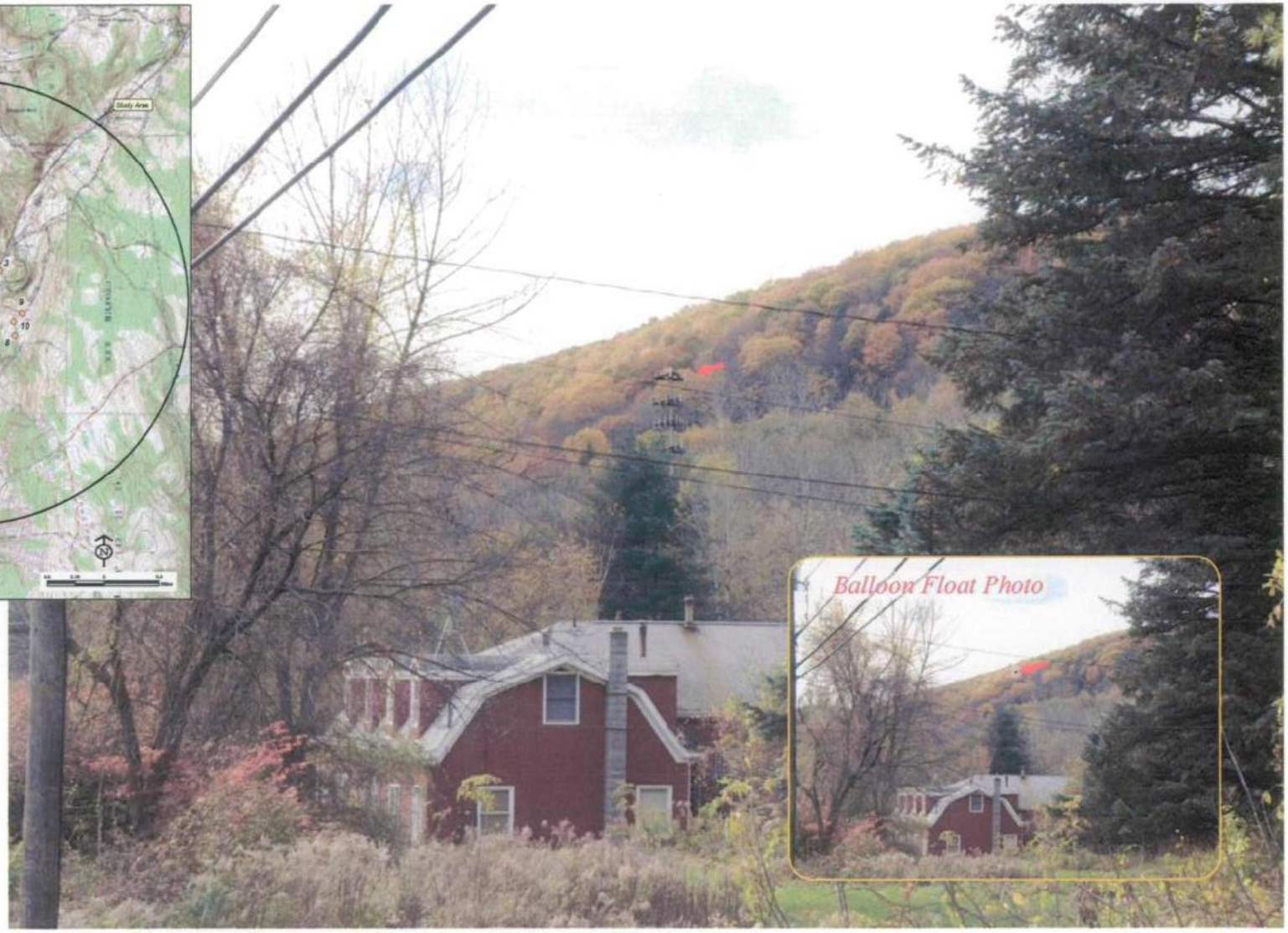


PHOTO TAKEN FROM ROUTE 202 ADJACENT TO HOUSE # 389, LOOKING SOUTHWEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.27 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 5*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

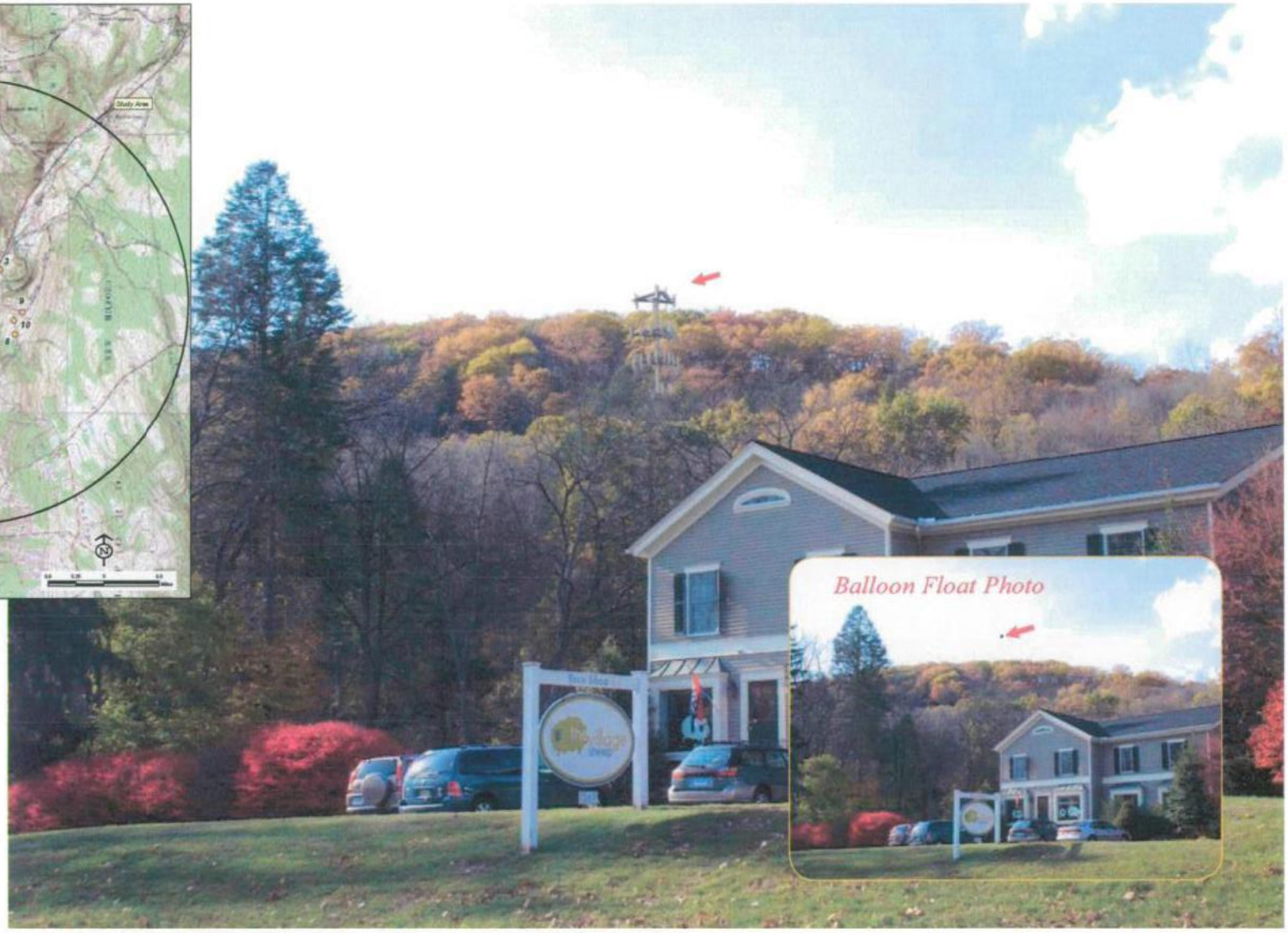


PHOTO TAKEN FROM ROUTE 202 SOUTH OF UPLAND ROAD, LOOKING WEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.10 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 6*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM UPLAND ROAD EAST OF OLD MILL ROAD, LOOKING WEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.21 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation and Simulation *View 7*

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM OLD MILL ROAD AT UPLAND ROAD, LOOKING SOUTHWEST

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.14 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation

View 8

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM CROSSMON ROAD ADJACENT TO HOUSE # 60, LOOKING NORTHWEST - BALOON IS NOT VISIBLE

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.53 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation

View 9

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM UPLAND ROAD ADJACENT TO HINE - BUCKINGHAM FARMS (#'s 44, 46, AND 48 UPLAND ROAD) LOOKING NORTHWEST - BALOON IS NOT VISIBLE

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.49 MILE +/-

Vanasse Hangen Brustlin, Inc.

Photographic Documentation

View 10

Town of
New Milford
Connecticut

New Milford Northeast
359 Litchfield Road
New Milford, CT

4 Carrier Monopole

PHOTO TAKEN FROM CROSSMON ROAD AT HINE - BUCKINGHAM FARMS (#'s 78 AND 81 CROSSMON ROAD)
LOOKING NORTHWEST - BALOON IS NOT VISIBLE

DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.46 MILE +/-

Vanasse Hangen Brustlin, Inc.

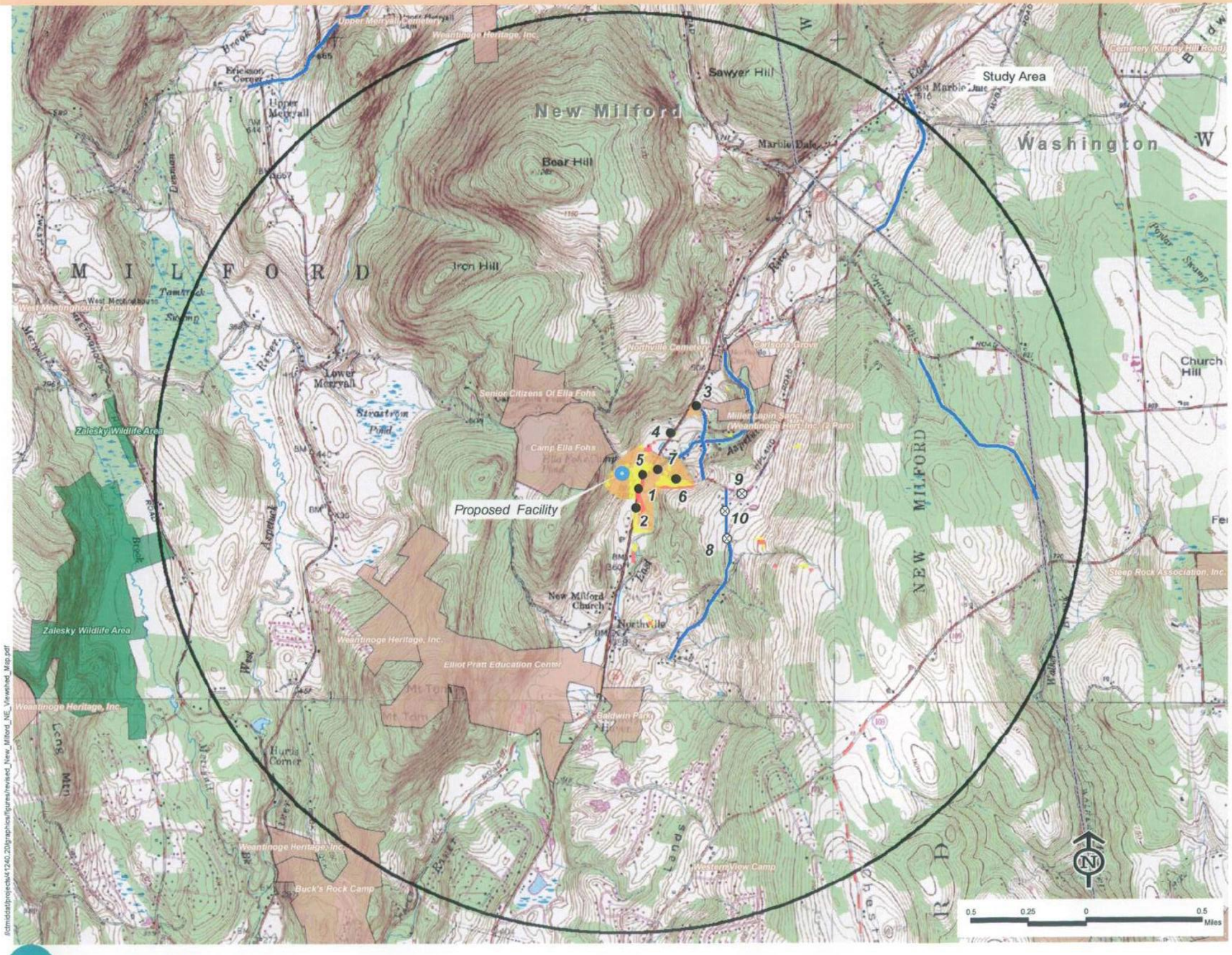
Attachment B

Viewshed Map

Viewshed Map

Topography and Forest Cover as Constraints

Town of New Milford Connecticut



/cdm/data/projects/41240_20/graphics/figures/revised_New_Milford_NE_Viewshed_Mxp.pdf

Proposed Verizon Wireless Telecommunications Facility
New Milford Northeast
359 Litchfield Road
New Milford, Connecticut

NOTE:
- Viewshed analysis conducted using ESRI's Spatial Analyst
- Proposed Facility height is 150 feet.
- Existing tree canopy height estimated at 65 feet.

DATA SOURCES:
- Digital elevation model (DEM) derived from USGS National Elevation Dataset (NED) with a resolution of one arc-second (approximately 30 meters) produced by the USGS, 1925 - 1999
- Forest areas derived from 2004 digital orthophotos with 0.5-foot pixel resolution; digitized by VHB, 2006
- Base map comprised of Kent (1971), New Milford (1984), New Preston (1984) and Roxbury (1984) USGS Quadrangle Maps
- Protected municipal and private open space properties and federal protected properties and data layers provided by CT DEP, 1997
- Protected CT DEP properties data layer provided by CTDEP, May 2007
- CT DEP boat launches data layer provided by CT DEP, 1994
- Scenic Roads layer derived from available State and Local listings.

Map Compiled November, 2007

Legend

- Proposed Monopole Location (Includes select areas of visibility approximately 500 feet around facility)

Photographs - November 8, 2007
- Balloon visible above trees
- Balloon visible through trees
- Balloon not visible

- Anticipated Seasonal Visibility (Approximately 30 Acres)

Approx. % Of Facility Visible (Year-Round)
- Tree Line View to Upper 25% - 17 Acres
- 50% - 4 Acres
- Entire Facility Visible - 2 Acres

Total Year-Round Visibility Approximately 23 Acres

- Protected Municipal and Private Open Space Properties (1997)
  - Cemetery
  - Preservation
  - Conservation
  - Existing Preserved Open Space
  - Recreation
  - General Recreation
  - School
  - Uncategorized
- CT DEP Protected Properties (2007)
  - State Forest
  - State Park
  - DEP Owned Waterbody
  - State Park Scenic Reserve
  - Historic Preserve
  - Natural Area Preserve
  - Fish Hatchery
  - Flood Control
  - Other
  - State Park Trail
  - Water Access
  - Wildlife Area
  - Wildlife Sanctuary
- Federal Protected Properties (1997)
- CT DEP Boat Launches (1994)
- Scenic Road (State and Local)
- Town Line

VHB Vanasse Hangen Brustlin, Inc.
Transportation | Land Development | Environmental Services

verizon wireless