

EXHIBIT J

Wind Colebrook North

Wind Colebrook North
Winsted-Norfolk Road and
Rock Hall Road
Colebrook, Connecticut

Prepared for



Prepared by

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Visual Resource Evaluation

BNE Energy Inc. (“BNE”) seeks to construct a wind generation project (“Wind Colebrook North” or the “Project”) on property at the intersection of Winsted-Norfolk Road (Route 44) and Rock Hall Road (referred to herein as the “Property” or “Site”) in the Town of Colebrook, Connecticut. This Visual Resource Evaluation was conducted to evaluate the potential visibility of the Project within a five-mile radius of the proposed Property (“Study Area”). The Study Area also includes land located within the neighboring municipalities of Norfolk, Goshen, and Winchester. Figure 1 (*Property Location Map*) depicts the proposed location of the Project and the limits of the Study Area.

Project Introduction

BNE proposes to install three General Electric (“GE”) 1.6 megawatt (“MW”) wind turbines at the Property, two in the eastern portion of the Property and one in the western portion of the Property. The hub height of the GE turbines would be 100 meters (328 feet). The blade diameter of the GE turbines would be 82 meters (269 feet), up to a maximum of 100 meters (328 feet) if an alternative model turbine is installed. Aviation lighting in the form of a low intensity red strobe would be required for illumination at night on the hub of each of the turbines. In addition to the three turbines, the Project would include associated ground equipment consisting of an electrical collector yard and associated utility infrastructure so that the turbines can be interconnected to the electrical grid. The turbines would be located at ground elevations of approximately 1265 feet Above Mean Sea Level (“AMSL”) for the western turbine, 1360 feet ASML for the northeastern turbine, and 1322 feet ASML for the southeastern turbine.

Site Description and Setting

Identified in the Town of Colebrook land records as Map 7, Lot 4, the Property consists of approximately 125 acres, most of which is undeveloped, forested land. The western edge of the Property is cleared and used as golf driving range. The Property is surrounded by undeveloped woodlands. Winsted-Norfolk Road abuts a portion of the Property to the west and Rock Hall Road adjoins the northwest Property boundary. Land use within the vicinity of the Property is comprised of sparse residential development.

The topography within the Study Area is generally characterized by gently rolling to steep hills with ground elevations that range from approximately 519 feet AMSL to approximately 1720 feet AMSL. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species, with some stands of intermixed conifers that occupy approximately 44,487 acres of the 53,332-acre study area (83%). The average tree canopy height throughout the Study Area was conservatively estimated to be approximately 65 feet.



METHODOLOGY

To evaluate the visibility associated with the proposed Project, VHB used a predictive computer model that provides an assessment of potential visibility throughout the entire Study Area. A description of the procedures used in the analysis is provided below.

VHB uses ArcGIS® Spatial Analyst, a computer modeling tool developed by Environmental Systems Research Institute, Inc., to calculate the areas from which at least the tops of the turbines (hub height) and the blades, respectively, are estimated to be visible. Project- and Study Area-specific data were incorporated into the computer model, including turbine and blade heights, turbine locations and ground elevations, underlying and surrounding topography and existing vegetation. Information used in the model included Connecticut LiDAR¹-based digital elevation data and model and a digital forest (or tree canopy) layer developed for the Study Area. The LiDAR-based Digital Elevation Model (DEM) represents ten-foot spatial resolution elevation 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. The data was edited in 2007 and made available by the University of Connecticut through its Center for Land Use Education and Research (CLEAR). To create the forest layer, mature trees and woodland areas depicted on aerial photographs (ranging in dates from 2004 to 2008) were manually digitized (hand traced) in ArcGIS®, creating a geographic data layer for inclusion in the computer model. The black and white, digital aerial photographs, obtained from the Connecticut Department of Transportation, were flown in the spring of 2004 and selected for use in this analysis because of their image quality and depiction of pre-leaf emergence (i.e., “leaf-off”) conditions. These photographs are half-foot pixel resolution. The more recent aerial photographs (2006 and 2008) were overlaid and evaluated to identify any new development resulting in the removal of trees.

Once the specific data layers were entered, the ArcGIS® Spatial Analyst Viewshed tool was applied to achieve an estimate of locations where the Project could be visible. First, only topography was used as a possible visual constraint; the tree canopy was omitted to evaluate potential visibility with no intervening vegetative screening. The initial omission of this data layer resulted in an excessively conservative prediction, but it provided an opportunity to identify areas within potential direct lines of sight of the Project.

The average tree canopy height within the Study Area, in this case 65 feet, was determined based on information collected in the field using a combination of a hand-held laser range finder, clinometer and comparative observations. The 65-foot forest data layer was merged with the DEM to establish intervening vegetation, with a height of 65 feet added to the base elevation, and the viewshed model recalculated within the Study Area.

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.

As a final step, the forested areas were extracted from the areas of potential visibility, using a conservative assumption that a person standing within the forest will not be able to view the Project beyond a distance of approximately 500 feet. Depending on the density of the intervening tree canopy and understory of the surrounding woodlands, it is assumed that some locations within this distance could provide visibility of at least portions of the Project at any time of the year. In “leaf-on” conditions, this distance may be overly conservative for most locations. However, for purposes of this analysis, it was reasoned that forested land beyond 500 feet of the Project would consist of light-impenetrable trees of a uniform height.

Visibility varies seasonally, primarily with increased views occurring through the leafless trees and understory. During “leaf-off” conditions, mast or pole timber and branching provide the majority of screening. Because each site has distinctive forest characteristics, modeling for seasonal variations of visibility becomes problematic. In our experience, even when incorporating conservative constraints into the model, the results over predict seasonal visibility. Because each Study Area includes mature vegetation with unique and variable tree spacing, dimensions and branching patterns, creating a realistic, Study Area-specific “leaf-off” tree density data layer is not possible. Eliminating the tree canopy altogether, as performed in our initial analysis described above, exaggerates areas of visibility because it assumes unobstructed sight lines from numerous areas. For example, some locations at similar ground elevation as that of the Project and separated from the project site by 500 or more feet of intervening forest or woodland vegetation, could likely be obstructed by the combined mass of variable tree trunk and limb patterns. To provide an estimate of seasonal visibility through the trees, the forest data layer was manipulated to eliminate a 500-foot wide perimeter of vegetation. Using this approach, potential seasonal visibility could occur from some (but not all) locations within this presumed leafless corridor.

Also included on the viewshed mapping is a data layer, obtained from the State of Connecticut Department of Environmental Protection (“CTDEP”), which depicts various land and water resources such as parks and forests, recreational facilities, dedicated open space, schools and other categories. Lastly, based on a review of published information, it was determined that portions of two State-designated scenic roadways are present within the Study Area, including Route 183 to the northeast in Colebrook and Route 272 to the west in Norfolk. A portion of Winchester Road in Norfolk is designated as a local scenic road. No additional locally-designated scenic roads are located in the Study Area.

BNE intends to install three turbines at heights of 100 meters with blade lengths of 41 meters. However, there is the potential for 50-meter blades to be installed should an alternative turbine model be selected. For purposes of this analysis, the 50-meter blade length was used to present the highest potential scenario. Three viewshed maps were created for purposes of analyzing the potential visibility of the Project and are included as attachments to this report, including:

- Figure 2 (*Year-Round Visibility*) depicts the potential year-round (leaf-on) visibility of the Project, including separate estimates of both the turbine hub heights (100 meters/328 feet) and combined turbine and blade apex heights of 150 meters (492

feet), based on a 100-meter blade rotor diameter (50-meter/164-foot length), within the Study Area;

- Figure 3 (*Hub Height Visibility*) depicts the potential year-round (leaf-on) and seasonal (leaf-off) visibility of the turbine hub heights within the Study Area; and,
- Figure 4 (*Visibility Within One Mile*) depicts the potential year-round visibility of the turbine hub and hub plus blade apex heights, and the seasonal visibility of the hub height, within one (1) mile of the Property.

Photographic Simulations

Photographic simulations were generated at select locations where the Project could be visible. The photographic simulations portray a scaled rendering of the Project from representative locations within the Study Area. Using field data, site plan information and 3-dimension (3D) modeling software, a spatially referenced model of the site area was generated. At each location, information was collected including the geographic coordinates (latitude and longitude) of the camera's position, angle of camera view, height of camera, weather and time of day, and logged using a combination of Trimble and Mobile GIS (ArcPad) field equipment utilizing global positioning system [GPS] technology.

The photographs used in the simulations are depicted on Figures 1 and 3 and were obtained from the following areas:

- View 1: U.S Route 44 Adjacent to Proposed Project Area (Colebrook)
- View 2: U.S Route 44 (Colebrook)
- View 3: Adjacent to #42 Stillman Hill Road (Colebrook)
- View 4: Old Colebrook Road (Colebrook)
- View 5: Lookout Tower at Haystack Mountain (Norfolk)
- View 6: Lookout Tower at Soldiers' Memorial Park (Winsted)

Photographs were taken with a Nikon D-80 digital camera body and Nikon 18 to 135 mm zoom lens. For views 2, 4 and 6, 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."² The photographs taken to produce the simulations provided in views 1, 3 and 5 were created using a 24mm focal length in order to provide a greater depth of field for presentation in this report.

Preparation of the photographic simulations began with the creation of a spatially-referenced 3D computer model of the proposed project area which includes the proposed turbines, surrounding land formations, and any structures that assist in linking the project photography with the 3D computer model such as existing telephone/electric distribution poles, communication towers and/or existing buildings/homes in cases where their global position can be verified. As one example, in view 5, an existing telecommunications facility

² Warren, Bruce. *Photography*, West Publishing Company, Eagan, MN, c. 1993, (page 70).

(the Winchester “monopine”) is visible and was used to further ensure accuracy of the simulation. The information recorded by the photographer was used to set up a virtual camera within the 3D computer model replicating the exact position of the camera when in the field. Photo simulations were then created using a combination of renderings generated in the 3D model and photo rendering software programs. As a final step, the accuracy and scale of the simulation is tested against photographs of existing wind turbines with recorded camera position, focal lengths, photographic locations, and site locations.

Please note that the photographs/simulations where the Project is either not visible or partially obstructed by intervening topography and/or trees include additional information, presented in green outline. Specifically, a green outline of the proposed turbines and a green line representing the intervening topography (that would otherwise break the viewer’s line of sight were it to be visible from that spot) are provided to depict the approximate turbine positions (to scale) from each of the photograph locations.

CONCLUSIONS

The results of this analysis indicate that a total of 175± acres within the Study Area would have some visibility of the turbine hub above the tree canopy year-round (that is, during “leaf-on” conditions). This represents less than one-half of one percent of the 53,332-acre Study Area. At its apex, the blade(s) may be visible above the tree canopy from approximately 329 acres (less than one percent of the Study Area). The majority of potential year-round views of the turbine hub would occur in close proximity to the Property, primarily from within low-lying areas associated with open water bodies and swamps. Select locations along Route 44, Rock Hall Road, and Stillman Road (Route 182) would also have brief views, as would outlying areas at higher elevations with open fields. Generally, views would be limited by the steep topography associated with the significant ridgelines within the Study Area. We estimate approximately 64 residential properties located within the Study Area could have at least partial views of the Project’s turbine(s) hub(s) year-round (during “leaf-on” conditions). This total includes approximately 15 residential properties within one mile of the Property. An additional 9± residential properties within one mile could have views of the blade(s) at its apex above the trees.

We estimate that approximately 1,389 acres (representing approximately 2.6% of the Study Area) have the potential to offer some views of the turbine hubs through the trees during “leaf-off” conditions. Nearly 88% of the potential seasonal visibility (1,216 acres) occurs on and within approximately one mile of the Property. Approximately 56 residential properties within one mile of the Project site could have at least partial views of the turbine(s) hub(s) through the intervening trees during “leaf-off” conditions. It must be noted that the conservative methodology used to predict seasonal visibility represents an over-prediction of the total acreage that would likely encounter views once the Project is constructed. The results are based on the assumptions discussed previously and should be interpreted as representing gross areas where a potential exists for visibility through the trees during leaf-off conditions. That is, it may be possible to view the Project from within portions of the shaded areas indicating seasonal visibility, but not necessarily from all locations within those shaded areas.

The table below presents an inventory of residential properties within one mile of the Property that have the potential for views of the Project.

Height	Approx. Residential Properties With Potential Year-Round Views Within 1-Mile By Street		Approx. Residential Properties With Potential Leaf-Off Views Within 1-Mile By Street*	
	100-Meter Hub Height	Greenwoods Turnpike	3	Flagg Hill Road
	Pinney Street	3	Greenwoods Turnpike	5
	Rock Hall Road	7	Pinney Street	20
	Stillman Hill Road	1	Rock Hall Road	2
	Winsted-Norfolk Road	1	Stillman Hill Road	12
			Winsted-Norfolk Road	5
	TOTAL:	15	TOTAL:	56*
100-Meter Hub Height Plus 50-Meter Blade Height	Greenwoods Road E	1		
	Greenwoods Turnpike	1		
	Pinney Street	1		
	Rock Hall Road	2		
	Stillman Hill Road	3		
	Winsted-Norfolk Road	1		
	TOTAL:	9*		

* Denotes residential properties in addition to those with potential year-round views of 100-meter hub height.

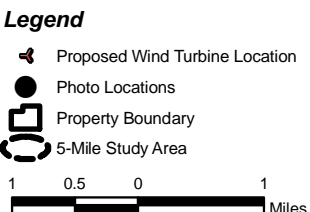
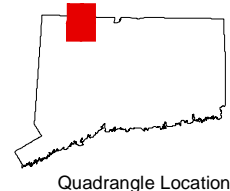
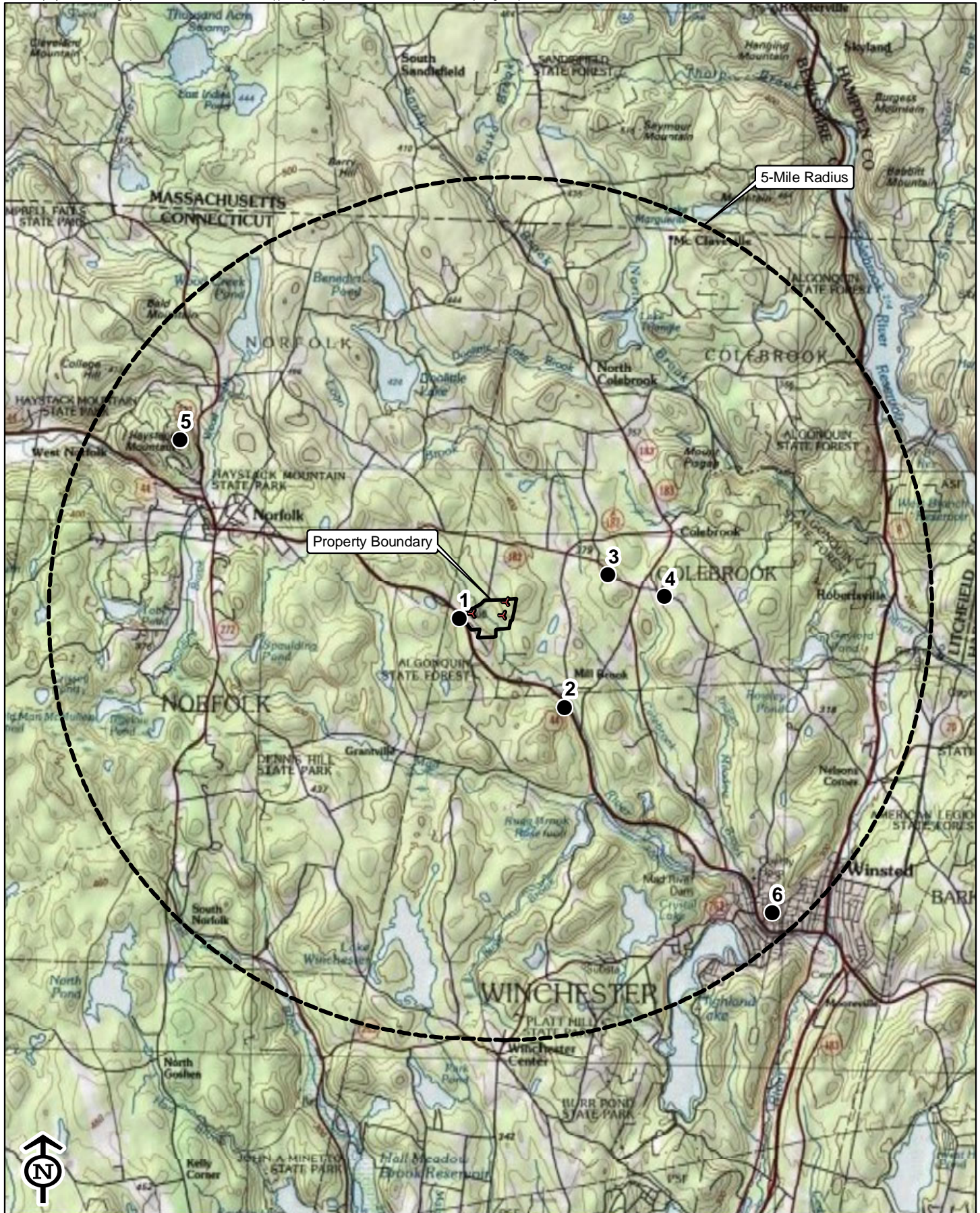
The table below summarizes the amount of residential properties within the remainder of the Study Area that could have at least partial views of the Project.

Height	Approx. Residential Properties With Potential Year-Round Views Within The Study Area	
100-Meter Hub Height	0 to 1 Mile	15
	1 to 2 Miles	34
	2 to 3 Miles	9
	3 to 4 Miles	4
	4 to 5 Miles	2
	TOTAL:	64

The Project requires aviation lighting that would be mounted to the top of the turbine hubs at 100 meters. A red strobe would be activated during night hours only. It stands to reason that those areas where the turbine hub(s) can be seen would also offer views of the strobe at night.

Attachments

Study Area Map, Photographic Simulations, and View Shed Maps



Vanasse Hangen Brustlin, Inc.

Figure 1 Property Location Map
Wind Colebrook North
BNE Energy, Inc.
Winsted-Norfolk Road
Colebrook, Connecticut





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VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
1	U.S. ROUTE 44 ADJACENT TO PROPOSED PROJECT AREA (24mm focal length)	COLEBROOK	NORTHEAST	0.18 MILE +/-



Seasonal Visibility: Green outlines represent approximate location of the turbines and intervening topography that would break the viewer's line of sight

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VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
2	U.S. ROUTE 44 (50mm focal length)	COLEBROOK	NORTHWEST	1.47 MILES +/-



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Seasonal Visibility

VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
3	ADJACENT TO #42 STILLMAN HILL ROAD (24mm focal length)	COLEBROOK	SOUTHWEST	1.40 MILES +/-



Seasonal Visibility: Green outlines represent approximate location of the turbines and intervening topography that would break the viewer's line of sight

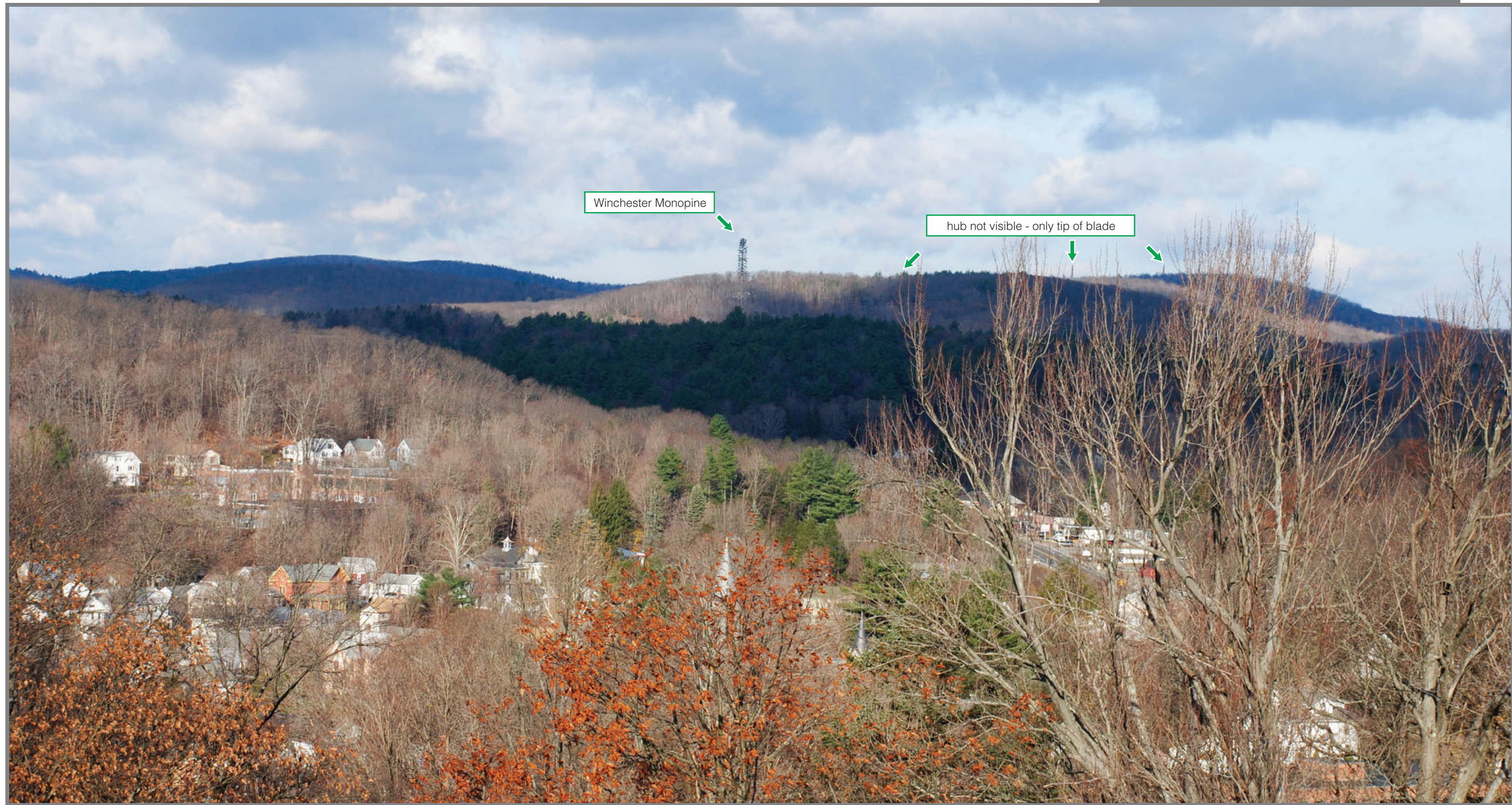
VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
4	OLD COLEBROOK ROAD (50mm focal length)	COLEBROOK	SOUTHWEST	2.05 MILES +/-

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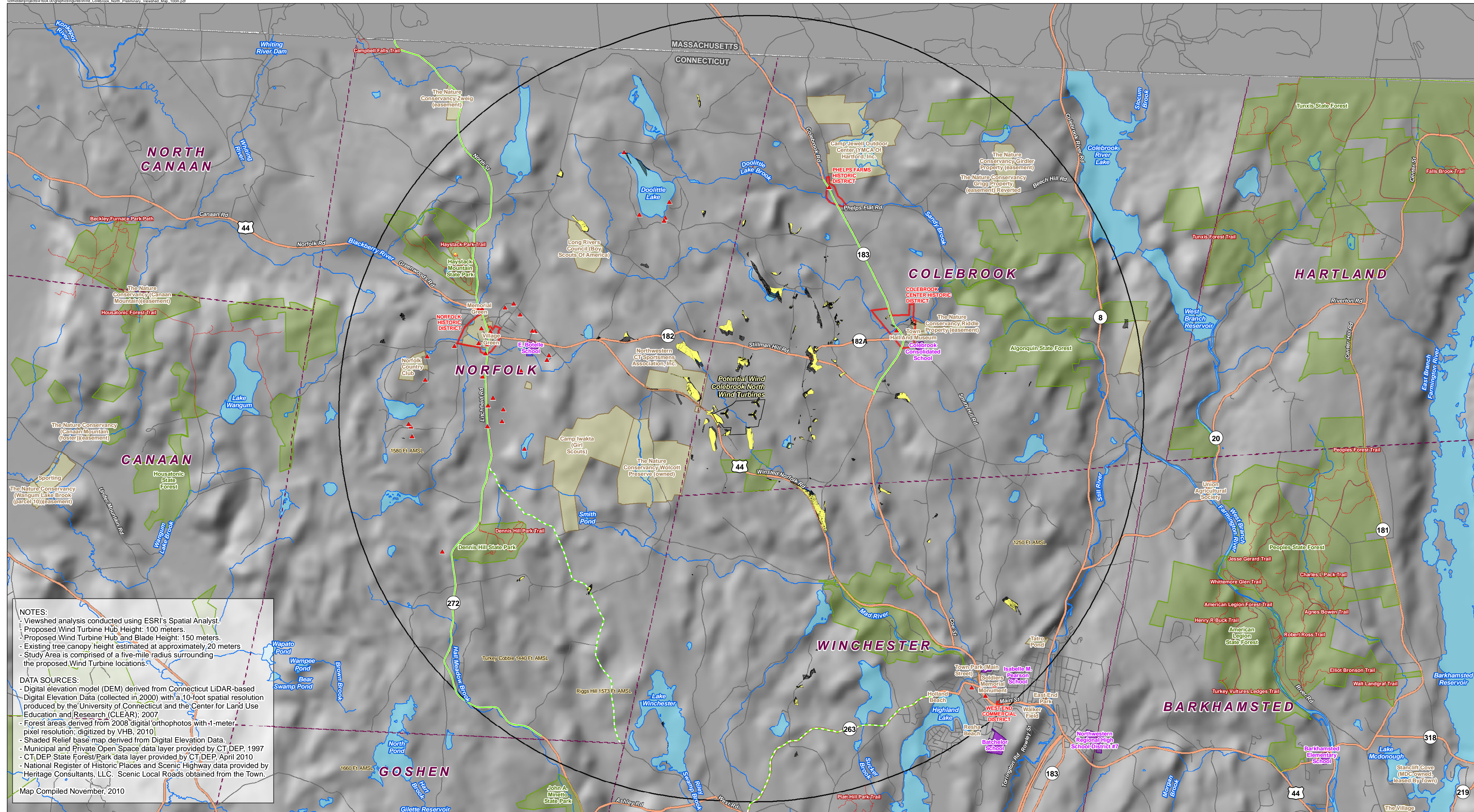
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VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
5	LOOKOUT TOWER AT HAYSTACK MOUNTAIN (24mm focal length)	NORFOLK	SOUTHEAST	4.17 MILES +/-



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VIEW	DESCRIPTION	CITY/TOWN	ORIENTATION	DISTANCE TO SITE AREA
6	LOOKOUT TOWER AT SOLDIERS' MEMORIAL PARK (50mm focal length)	WINSTED	NORTHWEST	4.81 MILES +/-



NOTES:
 - Viewshed analysis conducted using ESRI's Spatial Analyst.
 - Proposed Wind Turbine Hub Height: 100 meters.
 - Proposed Wind Turbine Hub and Blade Height: 150 meters.
 - Existing tree canopy height estimated at approximately 20 meters
 - Study Area is comprised of a five-mile radius surrounding the proposed Wind Turbine locations.

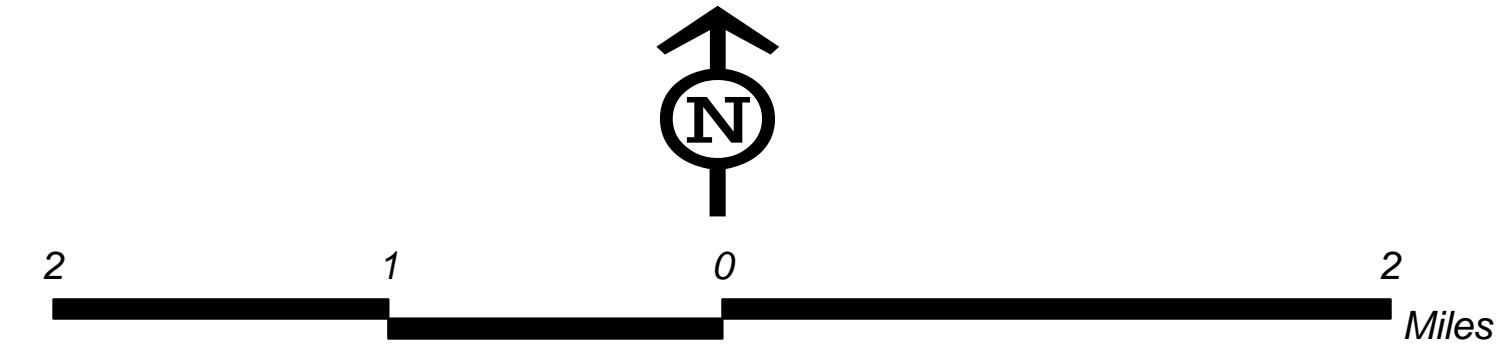
DATA SOURCES:
 - Digital elevation model (DEM) derived from Connecticut LiDAR-based Digital Elevation Data (collected in 2000) with a 10-foot spatial resolution produced by the University of Connecticut and the Center for Land Use Education and Research (CLEAR); 2007
 - Forest areas derived from 2008 digital orthophotos with 1-meter pixel resolution; digitized by VHB, 2010
 - Shaded Relief base map derived from Digital Elevation Data.
 - Municipal and Private Open Space data layer provided by CT DEP, 1997
 - CT DEP State Forest/Park data layer provided by CT DEP, April 2010
 - National Register of Historic Places and Scenic Highway data provided by Heritage Consultants, LLC. Scenic Local Roads obtained from the Town.

Map Compiled November, 2010

Legend	
	Proposed Wind Turbine Location
	Wind Turbine 100 Meter Hub Height Year-Round Visibility (+/- 176 acres)
	5-Mile Study Area
	Property Boundary
	National Register Listed Historic Site
	National Register Listed Historic District
	Scenic Highway
	Scenic Local Road
	Trails
	Wind Turbine 150 Meter Hub and Blade Height Year-Round Visibility (+/- 329 acres)
	Municipal & Private Open Space
	School
	State Forests/Park
	Open Water
	Town Line

**Figure 2 - Year-Round Visibility
 Wind Colebrook North Viewshed Analysis**

BNE Energy, Inc.
 Winsted-Norfolk Road
 Colebrook, Connecticut





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- Forest areas derived from 2008 digital orthophotos with 1-meter pixel resolution; digitized by VHB, 2010.
- National Geographic Topographic base map provided by ESRI's online mapping resources.
- National Register of Historic Places and Scenic Highway data provided by Heritage Consultants, LLC. Scenic Local Roads obtained from the Town.

Map Compiled November, 2010

Legend

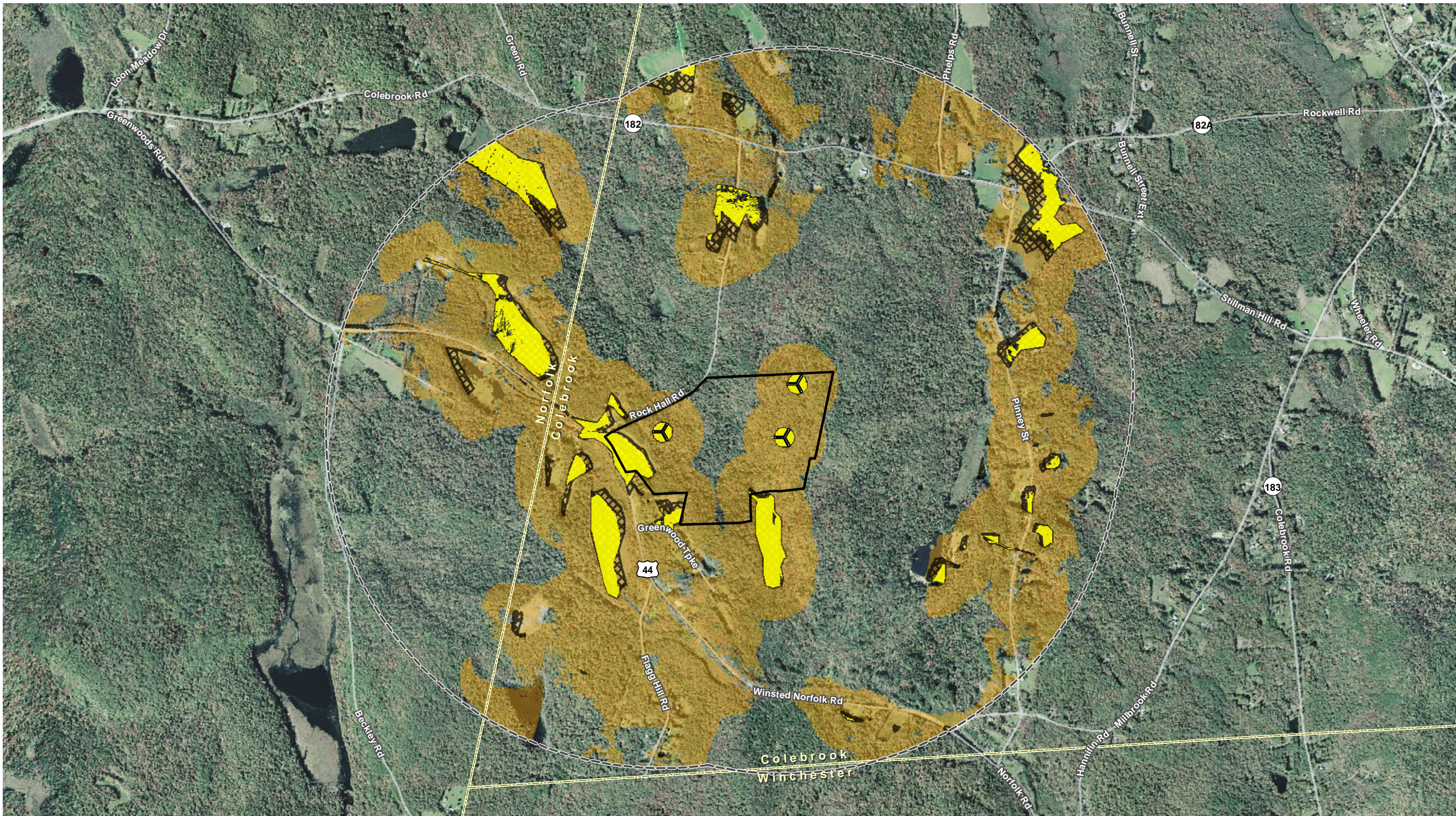
- Proposed Wind Turbine Location
- Photo Locations
- 5-Mile Study Area
- Property Boundary
- National Register Listed Historic Site
- National Register Listed Historic District
- Town Line
- Wind Turbine 100 Meter Hub Height Year-Round Visibility (+/- 176 acres)
- Wind Turbine 100 Meter Hub Height Seasonal Visibility (+/- 1,397 acres)
- Scenic Highway
- Scenic Local Road
- Trails

**Figure 3 - Hub Height Visibility
Wind Colebrook North Viewshed Analysis**

BNE Energy, Inc.
Winsted-Norfolk Road
Colebrook, Connecticut

Scale bar: 2 1 0 2 Miles

North arrow pointing up.



Legend	
	Proposed Wind Turbine Location
	1-Mile Radius from Wind Turbines
	Property Boundary
	Town Boundary
	Wind Turbine 100 Meter Hub Height Year-Round Visibility (+/- 92 acres)
	Wind Turbine 150 Meter Hub and Blade Height Year-Round Visibility (+/- 146 acres)
	Wind Turbine 100 Meter Hub Height Seasonal Visibility (+/- 1,216 acres)

Figure 4 - Visibility Within One Mile
Wind Colebrook North Viewshed Analysis
 BNE Energy, Inc.
 Winsted-Norfolk Road
 Colebrook, Connecticut

0.5 0.25 0 0.5
 Miles