

Wild Meadows Wind Project Danbury and Alexandria, New Hampshire

Visual Impact Assessment

Prepared for:

Alantic Wind, LLC

P.O.Box 326

Concord, New Hampshire 03302

Prepared by:

EDR Environmental Services, LLC

217 Montgomery Street, Suite 1000 Syracuse, New York 13202

P. 315.417.0688

F. 315.471.1061

 $\textbf{E.} \ \ \text{syr@edrcompanies.com}$





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Executive Summary

Atlantic Wind, LLC is proposing a 75.9-Megawatt (MW), 23-turbine wind power project in the Town Alexandria in Grafton County, and the Town of Danbury in Merrimack County, New Hampshire. Atlantic Wind retained EDR Environmental Services, LLC (EDR) to prepare this Visual Impact Assessment (VIA) for the Project. Based on established precedent in the State, a 10 mile radius around the proposed turbines was defined as the visual study area. Within this area EDR described existing landscape character, viewer groups, and potentially significant public resources (historic sites, parks, trails, forests, etc.). Potential Project visibility and visual impact were evaluated through viewshed analysis, field review, preparation of visual simulations, and evaluation of visual contrast by a panel of registered landscape architects.

Viewshed analyses were conducted to identify those areas within the study area where an unobstructed line of sight is potentially available between a viewer and any portion of one or more of the proposed turbines. Topographic viewshed analysis indicates that approximately 53.4% of the 10-mile radius study area surrounding the proposed turbine sites will be screened from view of the Project by topography alone. However, since the visual study area is 85% forested, areas with potential visibility of the proposed Project will be much more limited. When also considering the screening provided by mapped forest vegetation, viewshed analysis indicates that no turbines should be visible in 96.2% of the study area. In addition, views of the Project are likely to be fully screened from approximately half of the identified historic sites, state parks, state forest, designated scenic areas, and other public resources of potential state or local significance within the 10-mile radius study area. Because forest land is the dominant land use within the study area, the Project's viewshed is largely restricted to areas within or directly adjacent to water bodies, agricultural fields and other clearings (e.g., yards, utility corridors) that provide the opportunity for unscreened views. Newfound Lake (approximately 3.8 miles to the northeast) and its eastern shoreline, as well as some scattered higher elevation openings and larger open fields in valleys to the south and east of the proposed Project, are the areas most likely to have views that include the majority of the proposed turbines.

Field review conducted during September 2012 and September 2013 revealed that Project visibility is likely to be much more limited than suggested by topographic viewshed mapping. This is due to the fact that screening provided by buildings is significant in more developed areas, and trees within rural portions of the study area typically limit long distance views. The field review confirmed that the vegetation viewshed analysis more accurately predicts locations where Project visibility is most likely to occur. Consistent with the results of that analysis, large portions of the visual study area were found to be screened from view of the Project by forest vegetation. Open views toward the Project were concentrated to the south and east of the site, and were largely restricted to open fields, water bodies, road corridors, and cleared residential yards where lack of foreground trees allowed for unscreened views. Of the 126

most significant public resources within the study area, viewshed analysis and field review suggest that 86 (68%) will be completely screened from view of the Project, and an additional 27 (21%) will have partially screened views. However, open views will be available from several public resources of potential statewide significance, including portions of Mount Cardigan, Newfound Lake, the Murray Hill Historic District, Canaan Street Historic District and Paradise Point Nature Center.

To evaluate the visual impact of the proposed Project, computer-assisted visual simulations were prepared from 21 selected viewpoints within the 10-mile radius study area. These viewpoints were selected because they provide open views toward the Project site that will be available to representative viewer/user groups from selected public resources and representative landscape settings within the study area. Daytime simulations of the proposed Project are based on turbine specifications, dimensions, and coordinates provided by the Project sponsor. They illustrate views of different numbers of turbines, from a variety of viewer distances, and under different lighting conditions, to illustrate the range of visual change that could occur with the Project in place. As shown in the simulations, in most cases where open views are available, the Project will be viewed on a forested background ridge. In many of the views featured in the simulations, the Project resulted in the addition of man-made features to a primarily undeveloped view. This change resulted in perceived contrast with land use and viewer activity in forested and residential settings, but appeared compatible with working agricultural landscapes.

A panel of three registered landscape architects evaluated the visual impact of the project by reviewing photos of the existing view and simulations of the proposed Project from each of the 21 selected viewpoints. Visual contrast was evaluated for each viewpoint using a simple evaluation form designed to provide a consistent and objective means of evaluating the Project's contrast with the existing landscape. Results of the contrast evaluation conducted by the rating panel indicated that the Project's overall contrast with the visual/aesthetic character of the area will be highly variable. Composite contrast ratings for individual daytime viewpoints ranged from 0.3 to 3.3 on the scale of 0 (insignificant) to 4 (strong), and averaged 2.3 (moderate). This likely reflects the variety of circumstances under which the Project will be viewed, and the differing perspectives of the individual rating panel members. However, appreciable contrast (scores of 2.5 to 3.5) was noted for nine of the 20 daytime viewpoints. In general, the highest contrast scores were received by views where the turbines were relatively close to the viewer, were completely or substantially unscreened, occupied a significant portion of the view, and/or presented substantial contrast with the landscape features or viewer activities occurring at the site. For those viewpoints with the highest contrast rating, rating panel comments indicated that the Project presented appreciable to strong contrast with multiple features of the existing landscape, in particular land use and viewer activity.

To evaluate potential nighttime impacts, nighttime simulations were prepared for three of the selected viewpoints. These specific viewpoints were selected to show variety in 1) sky conditions, (i.e., the degree of darkness), 2) the number of lighted turbines that could be seen in the view, and 3) the abundance of other lights in the landscape. The simulations are based on proposed lighting specifications and Federal Aviation Administration (FAA) guidance which suggest that approximately 13 of the proposed turbines will be equipped with FAA obstruction warning lights. Based upon rating panel review of nighttime simulations, the turbines and FAA warning lights could result in a nighttime visual impact on certain viewers. Composite contrast rating scores for nighttime simulations ranged from 1.4 to 3.0. This range of contrast was related to how many lighted turbines were visible, what other sources of lighting were present in the view, the extent of screening provided by structures and trees, and nighttime viewer activity/sensitivity. While night lighting will likely be perceived negatively by rural residents and vacationers in locations where they currently experience dark nighttime skies, nighttime visibility/visual impact will be limited due to the abundance of mature trees that screen the Project from many homes, and the concentration of residences in village and hamlet areas, and along highways, where existing lights already compromise dark skies and compete for viewer attention.

While the contrast presented by the proposed Project may be considered to represent an adverse impact on scenic quality in some locations, this impact is not considered to be unreasonably adverse. What constitutes an unreasonable adverse impact is not defined in New Hampshire siting regulations or well established through previous Site Evaluation Committee (SEC) rulings. However, guidance from other states suggests that an unreasonable adverse impact would occur if the Project clearly interfered with the public's continued use and enjoyment of important aesthetic resources. In Vermont, this would be the case if a Project 1) violated a written community standard intended to protect scenic resources, 2) so significantly diminished scenic quality as to be offensive or shocking to the average person, or 3) did not incorporate generally available mitigation measures that could reduce its visual impact. In regard to the first criterion, review of local Town Master Plans, and other relevant regional and statewide land use plans, did not identify any clear written standards to protect scenic quality that would be violated by the proposed Project. In regard to the second criterion, the proposed turbines are not likely to offend the sensibilities of the average viewer. Based on rating panel comments, recreational user surveys from other sites, and experience with currently operating wind power projects elsewhere, public reaction to the Project is likely to be variable depending on proximity to the turbines, the affected landscape, the activity in which the viewer is engaged, and the viewer's personal attitude regarding wind power. Recreational surveys conducted for wind power projects in Maine consistently indicate that the projects may result in a perceived decrease in scenic quality, but are unlikely to diminish the recreational experience for most users, or reduce the likelihood of their returning to the area in the future. Surveys from other locations with operating wind projects generally indicate strong public support for the projects. This may reflect the fact that wind turbines are not, in and of themselves, unattractive and have a positive

connotation for many viewers. As Stanton (1996) notes, although a wind power project is a man-made facility, what it represents "may be seen as a positive addition" to the landscape.

Finally, the Project sponsor has undertaken various mitigation measures designed to reduce potential adverse visual impacts. Given the nature of wind power projects and their siting criteria (tall structures located on elevated sites) some level of visual impact is unavoidable. However, several measures that help mitigate visual impact have been incorporated into the design of the Wild Meadows Wind Project. These include the following:

- The initial Project design, including 37 turbines, was reduced to 23 turbines (a 38% reduction).
- The turbines eliminated from the original Project design were those proposed to be closest to Mount Cardigan.
- The Project will be located in a forested area that essentially eliminates the opportunity for foreground views from public vantage points, and limits potential Project visibility to a small portion of the surrounding area.
- New access road construction will be minimized by utilizing existing logging roads whenever possible, and forest clearing along the proposed access roads and at turbine sites will be minimized to the extent practicable.
- The placement of manufacturer's logos or other markings on the turbines will be prohibited.
- The proposed substations will be located at least 350 feet off of the nearest public road and will be well screened by surrounding forest vegetation. The stations will also be located adjacent to an existing high voltage transmission corridor. These project components are well removed from any significant public resources and should present little if any adverse visual impact
- The proposed Operations and Maintenance facility will be located approximately 1,800 feet from the nearest public road and will be well screened by forest vegetation. It therefore will present little if any adverse visual impact.
- The Project will use the minimum number of aviation warning lights (currently assumed to be 13 of the 23 turbines), and longest permissible off cycle allowed by FAA guidance.
- The Project will be decommissioned and removed at the end of its operational life.

In addition, the following recommendations are provided:

 Explore the feasibility of utilizing radar-activated FAA warning lights that would only go on only when an airplane is actually approaching the Project. While such systems are not currently approved by the FAA,

- they may be in the future, and if employed on the Project, could substantially reduce nighttime visual impacts.
- 2. Evaluate construction techniques that could further reduce the extent of tree clearing required, and allow revegetation of trees wherever they would not interfere with Project operations and safety.

In summary, based on the results of this VIA, it can be concluded that: 1) the project will have very limited visibility from most locations within the 10-mile radius study area (including the majority of public resources of potential statewide significance), 2) although presenting appreciable visual contrast from some viewpoints, the Project will not violate a clear written community standard intended to preserve scenic resources, nor will it offend the sensibilities of an average viewer, 3) the Project is unlikely to substantially diminish the enjoyment of viewers engaged in recreational activities, or their likelihood of returning to the area, and 4) the Project sponsor has committed to feasible and appropriate mitigation measures that improve the harmony of the proposed Project with its surroundings. Based on these findings, and in consideration of existing literature and prior SEC decisions, it can be concluded that the Wild Meadows Wind Project will not have an unreasonable adverse visual impact.

1.0 Introduction

EDR Environmental Services, LLC (EDR) was retained by Atlantic Wind, LLC, ("Project Sponsor") to prepare a Visual Impact Assessment (VIA) for the proposed Wild Meadows Wind Project (the Project) located in the Towns of Danbury and Alexandria, New Hampshire. The purpose of this VIA is to:

- Describe the appearance of the visible components of the proposed Project.
- Define the visual character of the Project study area.
- Inventory and evaluate existing aesthetic/public resources and viewer groups.
- Evaluate potential Project visibility within the study area.
- Identify key views for visual assessment.
- Assess the visual impacts associated with the proposed Project.

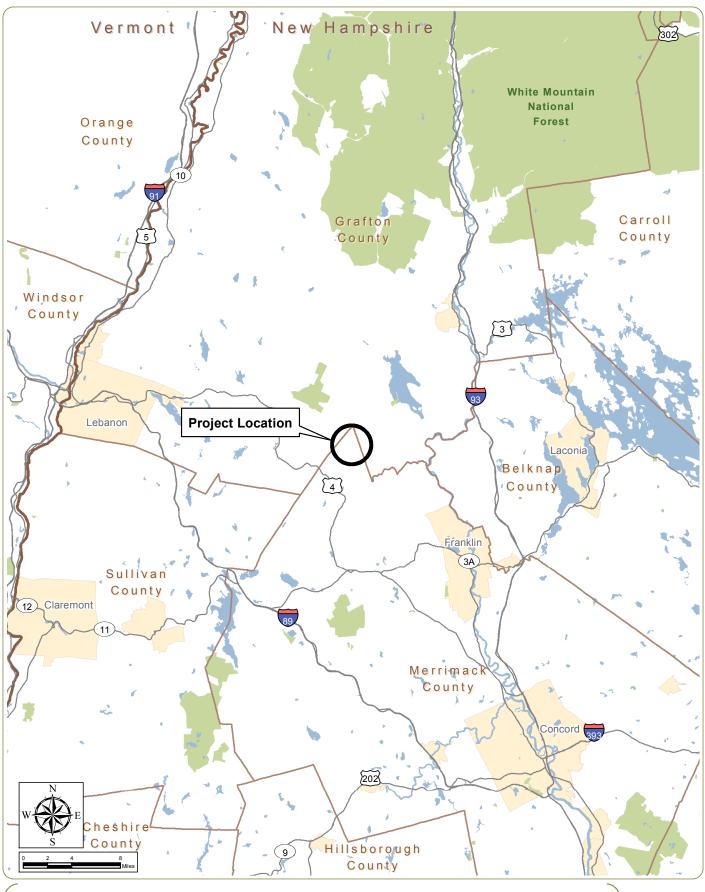
This VIA was prepared with input provided by registered landscape architects experienced in the preparation of visual impact assessments. It is also consistent with the policies, procedures, and guidelines contained in established visual impact assessment methodologies (see Literature Cited/References section).

2.0 Project Description

2.1 Project Site

The Project site is located in central New Hampshire, approximately 13.4 miles southwest of the village/downtown area of Plymouth and 4.5 miles west of the village/downtown area of Bristol (Figure 1). It includes approximately 5,000 acres of leased private land in the Town of Alexandria in Grafton County and the Town of Danbury in Merrimack County. Turbines are proposed to be located on two parallel ridges located south of Washburn Road in the Town of Alexandria, east of Wild Meadows Road in the Town of Grafton, west of Cass Mill Road in Alexandria, and north of Bohonnon and Taylor Hill Roads in the Town of Danbury and State Route 104 in Alexandria (see Figure 2). The Project site is approximately 2 miles north of U.S. Route 4, 2 miles north of State Route 104, and 9 miles east of Interstate Route 93 (as measured to the nearest proposed turbine).

The Project site is located in an area characterized by mountainous topography with elevations ranging from approximately 600 to 2,300 feet above mean sea level (amsl). Vegetation on the site is characterized by a mix of northern hardwoods and white pine that are under active forest management (i.e., regular logging/harvesting). Land use adjacent to the Project site includes private forest land with widely-scattered single-family rural residences.



Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of
Danbury, Merrimack County - New Hampshire

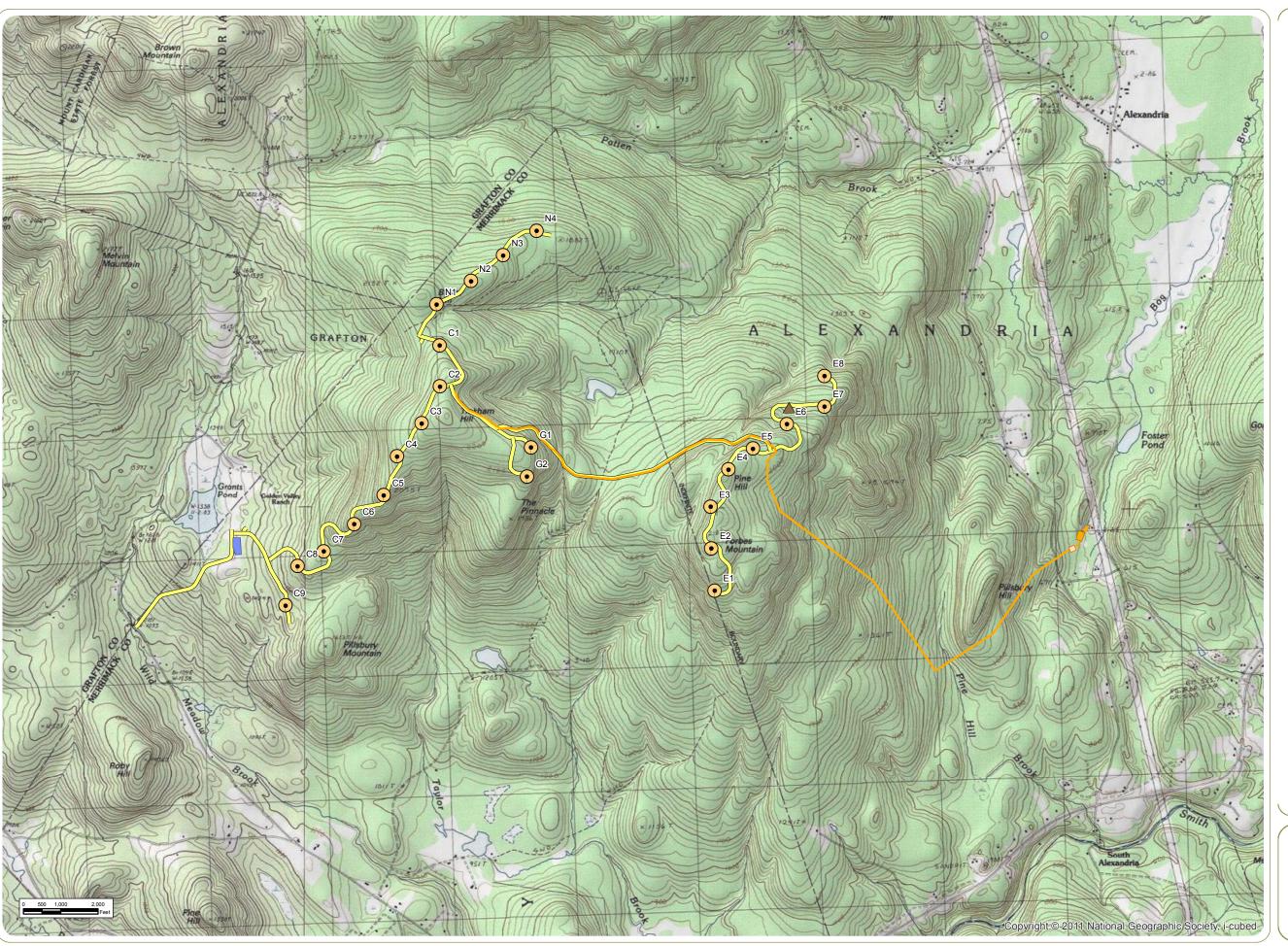
Figure 1: Regional Project Location

November 2013

Notes: Basemap: ESRI StreetMap North America, 2012.







Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 2: Proposed Project Layout

November 2013



Wind Turbine



Notes: Project layout version F14. Basemap: USA Topo Maps ESRI Map



2.2 Proposed Project

The proposed Project is a wind-powered electric generating facility, with a total generating capacity of 75.9 megawatts (MW). The Project as currently proposed includes 23 turbines (which represents a 38% reduction from the 37 turbines initially proposed by the Project sponsor at this site). Along with the turbines, the Project will also include associated support facilities, such as access roads, overhead/buried electrical lines, a permanent meteorological tower, a collector substation, a point of interconnection substation, and an operations and maintenance (O&M) building. Project configuration/layout is illustrated in Figure 2. The major components of the proposed Project are described below:

2.2.1 Wind Turbines

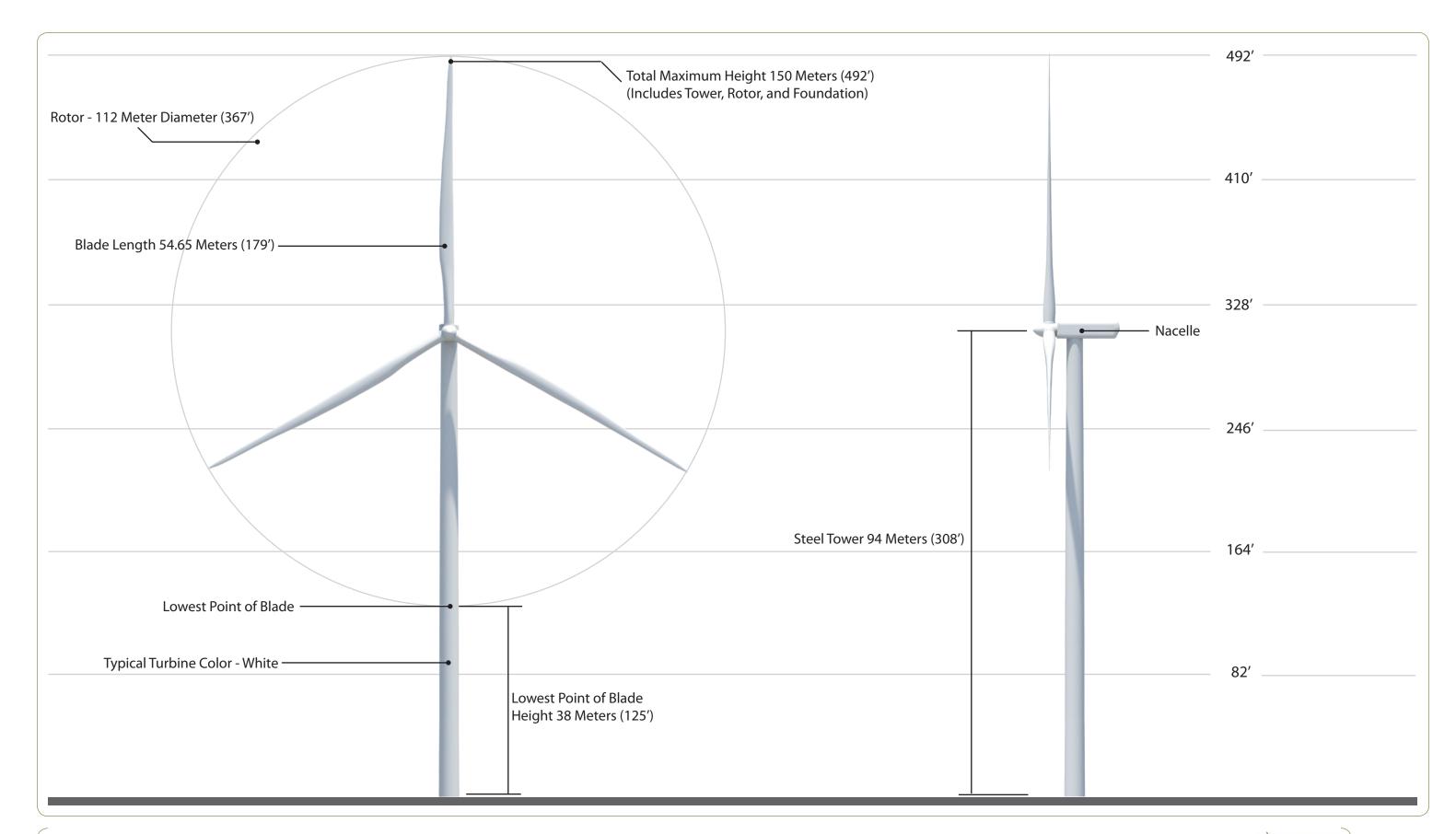
Twenty one of the proposed wind turbines will be arranged in two main strings along the crest of two separate ridges. Thirteen turbines (C1-9 and N1-4) will be located on the western ridge, and eight turbines (E1-8) will be located on the eastern ridge. An additional two turbines (G1 and G2) will be located on a smaller perpendicular ridge between the two main ridges (see Figure 2). For the purpose of the VIA, it was assumed that the Vestas V-112 3.3 MW turbine, or equivalent, will be utilized on this Project. Each wind turbine consists of three major components; the tower, the nacelle, and the rotor, all of which will be white or off-white in color. The height of the tower, or "hub height" (height from foundation to the center of the rotor) will be approximately 308 feet (94 m). The nacelle sits atop the tower, and the rotor hub is mounted to the nacelle. Assuming a 367-foot (112 m) rotor diameter, the total turbine height (i.e., height at the highest blade tip position) will be approximately 492 feet (150 m). A computer model illustrating the appearance of the proposed turbine is shown in Figure 3. Descriptions of each of the turbine components are provided below.

Tower: The towers used for this Project are conical steel structures manufactured in multiple sections. The towers have a base diameter of approximately 13.6 feet and a top diameter of approximately 10.8 feet. Each tower will have a ground-level entrance door and an internal safety ladder to access the nacelle.

Nacelle: The main mechanical components of the wind turbine are housed in the nacelle. These components include the drive train, gearbox, and generator. The nacelle has maximum dimensions of approximately 42 feet long, 11 feet tall, and 13 feet wide. Per specifications of the Federal Aviation Administration (FAA), a single aviation warning light is anticipated to be mounted on approximately 13 of the turbines. These will be medium intensity pulsing red lights (L864) that are mounted on top of the nacelles,

and operated only at night. In accordance with FAA guidance, the turbines' white color precludes the need for daytime aviation warning lights. For the purposes of this study, it is assumed that the nacelle will not include any obvious lettering, logo, or other exterior markings.

Rotor: A rotor assembly is mounted to the nacelle to operate upwind of the tower. Each rotor consists of three composite blades, each approximately 179 feet (54.5 m) in length (total rotor diameter = 367 feet or 112 m). The rotor blades are rotated along their axis or "pitched" to enable them to operate efficiently at varying speeds. Also, the rotor can spin at varying speeds (up to 18 revolutions per minute) to operate more efficiently at lower wind speeds.

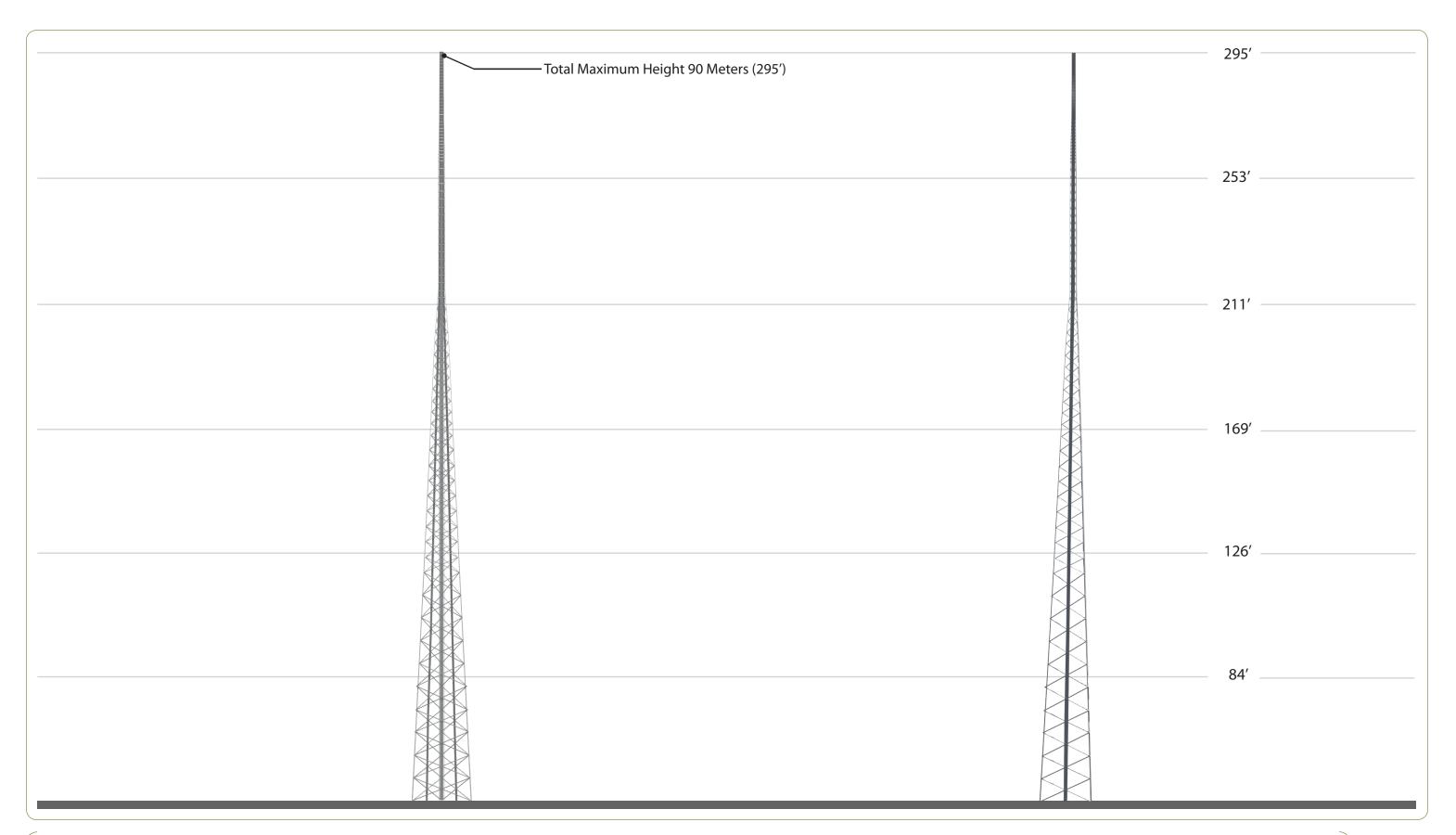




Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 3: Computer Model of Proposed Project Facilities







Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 3: Computer Model of Proposed Project Facilities





2.2.2 Electrical System

The proposed Project will have an electrical system that consists of 1) a system of buried and above-ground 34.5 kilovolt (kV) cables that will collect power from each wind turbine, 2) a collector substation that collects power generated by the Project and 3) a new point of interconnection substation that connects to the regional power grid via an existing overhead 230 kV transmission line. Within the generating facility, the collection lines will run along the proposed access roads and will require no additional clearing (beyond that necessary to accommodate the roads and turbines). Power from the generating site will be carried by a 2.3 mile long overhead line to the proposed collector substation located approximately 450 feet east of Bog Road in the Town of Alexandria. The cleared corridor for this line will be approximately 75 feet wide, but the location and design of individual poles has yet to be finalized. Other than the crossing of Bog Road, the above-ground collection lines are sited in a remote forested location and poles (ranging from 35-65 feet tall) will be similar in height to the surrounding trees. Consequently, this component of the Project is not anticipated to be highly visible. However, clearing to accommodate the collection lines is shown in any simulations where it would be visible. Both the collector and point of interconnection substations will be located east of Bog Road, in the vicinity of the existing transmission line corridor. The main functions of the substations are to step up the voltage, to switch and meter the electricity delivered, and to protect the system (the wind turbines, the collection lines, and the power grid) so that the electricity can be reliably interconnected to the existing 230 kV transmission line. Each station will be less than an acre in size. The stations will include a control house, power transformers, outdoor medium-voltage and high-voltage breakers, relaying and protection equipment, high-voltage bus work, steel support structures, overhead lightning suppression conductors, and dead end steel support structures. Because the collector station and point of interconnection station will be located in a wooded area, approximately 720 feet and 350 feet off of Bog Road, respectively, they are not anticipated to be highly visible. For this reason, and because they will occur next to an existing high voltage transmission line, the visibility and visual impact of the collector and point of interconnection substations were not evaluated in this study.

2.2.3 Access Roads

Access to the proposed turbines will be provided by a system of gravel access roads originating off of Wild Meadows Road in the Town of Danbury. During construction, these roads will be either 40 feet wide or 22 feet wide, depending on the type of construction equipment they need to accommodate. Cleared corridors, ranging in width from 40 to 300 feet, will be created to accommodate these roads (and associated grading). Following the completion of construction, Project access roads will be reduced to approximately 16 feet in width, and the majority of the cleared corridors adjacent to the roads will be allowed to revegetate. Because of the remote, elevated location and forested

setting of the Project site, access roads will generally not be visible to the public. Consequently, the visual impact of Project access roads is anticipated to be minimal. However, the effect of tree clearing associated with the roads is illustrated in any simulation where it would be visible.

2.2.4 Meteorological Tower

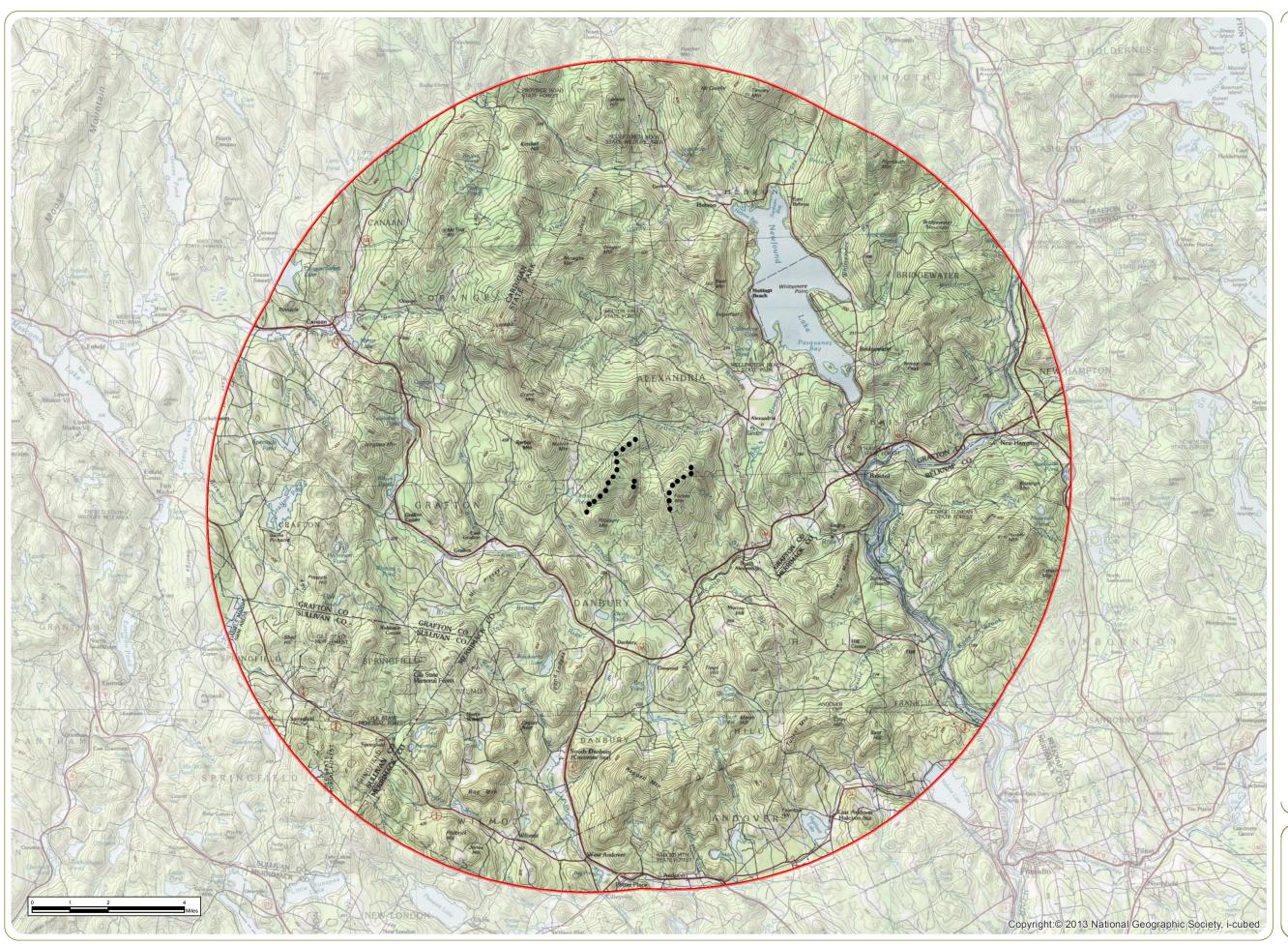
One 295 foot (90 m) permanent meteorological tower will be installed on the Project site's eastern ridge (between turbines E6 and E7) to collect wind data and support performance testing of the turbines. Atlantic Wind anticipates that this tower will be a self-supporting, steel lattice structure. A red aviation warning light may be mounted at the top of the meteorological tower, if required by the FAA. Although meteorological towers typically have very limited visibility and visual impact, a three-sided, galvanized steel, meteorological tower was included in any simulation in which it would be visible.

2.2.5 Operations and Maintenance Facility

An operations and maintenance (O&M) building, and associated storage yard, will be constructed approximately 1,800 feet off of Wild Meadows Road. It will house the command center of the Project's supervisory control and data acquisition (SCADA) system. The O&M building is anticipated to be a single story prefabricated building with two garages. The proposed location of the O&M building and yard is in a remote clearing that is well screened from Wild Meadows Road and other nearby public vantage points by surrounding forest (see Figure 2). Consequently, the O&M facility should be largely hidden from view, and therefore is not evaluated as part of this study.

3.0 Existing Visual Character

Based on established methodology (USDA Forest Service, 1973; NYSDEC, 2000; APA, not dated) the study area for a visual impact assessment is typically defined as the area within a 5-mile radius of the proposed project. However, based on the precedent established on other utility-scale wind projects in New Hampshire, the visual study area for the Wild Meadows Wind Project was expanded to include the area within a 10-mile radius of each of the proposed turbines. This study area totals approximately 391.3 square miles in Grafton, Merrimack, Sullivan and Belknap Counties, and includes all or portions of the Towns of Meredith, New Hampton, Sanbornton, Dorchester, Groton, Plymouth, Canaan, Hebron, Bridgewater, Orange, Alexandria, Bristol, Enfield, Grafton, Danbury, Hill, Wilmot, Franklin, Andover, New London, and Springfield. The location of the visual study area is illustrated in Figure 4.



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 4: Visual Study Area

November 2013

Wind Turbine

10-Mile Study Area



Notes: Basemap: USA Topo Maps ESRI Map Service.



3.1 Physiographic/Visual Setting

3.1.1 <u>Landform and Vegetation</u>

The visual study area lies within the New England Upland section of the New England Province of the Appalachian Highlands Physiographic Region. The New England Upland section covers most of southern and central New Hampshire, and is characterized by rolling hills and plateaus. Elevations generally range between 500 and 1,500 feet (150 to 450 m), increasing toward the west, with numerous isolated mountains called monadnocks rising even higher. The irregular, steep topography tends to limit long distance views from valley areas, but can provide expansive views from elevated slopes and hill tops.

Vegetation in the study area is characterized by second growth forest dominated by eastern hemlock, northern hardwoods (primarily sugar maple, yellow birch, American beech, and white ash), and white pine. These forested areas have typically been subject to repeated timber harvest, which has resulted in stands of trees of varying age and species composition. However, except for the very youngest of these stands, and occasional natural and manmade clearings, these areas are characterized by a fairly dense, generally unbroken, overstory tree canopy that restricts outward views. Some lower elevation portions of the study area include active and reverting agricultural fields and wetlands. These plant communities include planted crop fields, mowed hayfields, successional old fields, successional shrubland, emergent marshes, and scrub-shrub wetlands. Although relatively minor components of the study area, these more open vegetative communities offer the best opportunities for long-distance views of the surrounding landscape.

3.1.2 Land Use

As stated above, land use within the 10-mile radius visual study area is dominated by forest land, much of which is subject to regular logging/timber harvest. In many areas the forest is interspersed with rural residences along the frontage of public roads. Farms and agricultural land occur primarily in valley areas along Routes 4 and 104, and are concentrated in the eastern portion of Alexandria, the central portion of Danbury, the southern portion of Bristol and outside the hamlet areas of Hebron and Canaan. However, small farms and open fields are scattered throughout the visual study area. Higher density residential and commercial development is concentrated in the village/downtown area of Bristol, around Newfound Lake, and in smaller settlements, such as the hamlet areas of Alexandria, Hebron, Danbury, Canaan, and New Hampton. The village area of Bristol is characterized by a main street business district, surrounded by traditional residential neighborhoods, with some commercial frontage development along the outskirts.

The hamlet areas are generally characterized by clusters of residential buildings, principally single-family dwellings (often with an associated church and municipal buildings) within a primarily rural landscape.

3.1.3 Water Features

The study area includes several significant water bodies. Major water features within a 10-mile radius of the Project site include Newfound Lake, Grafton Pond, Canaan Street Lake, Crystal Lake, Webster Lake, Highland Lake, Spectacle Pond, and the Pemigewasset River. The river is characterized by steep wooded banks that enclose the channel and screen outward views. The river in this area is impounded as a result of hydroelectric development. The lakes are characterized by broad expanses of open water that provide open views to the surrounding landscape. Shorelines of most water bodies within the study area are typically wooded, but in many places are interspersed with seasonal and year-round residences. These water bodies receive recreational use in the form of swimming, boating, and/or fishing. Most of the smaller tributary streams within the study area are narrow and occur within densely forested valleys. As such, they are not major visual components of the landscape.

3.1.4 Weather Conditions

Weather conditions also influence the aesthetic character and degree of visibility within the study area. Sky conditions and precipitation vary substantially on a daily and seasonal basis. Winters in central New Hampshire are typically cold and snowy, while summers are moderately warm. The NOAA Comparative Climate Data Report for the nearest U.S. Weather Service Station in Grafton, New Hampshire (approximately 3.5 miles west of the Project site) indicates that precipitation totals are highest during the month of October (4.49 inches) and lowest during the month of February (2.59 inches). Precipitation falls mainly in the form of snow from December through March, and averages 78.7 inches annually (http://www.ncdc.noaa.gov/land-based-station-data/climate-normals/1981-2010-normals-data). The U.S. Weather Service classifies days as either clear (0-30% cloud cover), partly cloudy (40-70% cloud cover), or cloudy (80-100% cloud cover). The nearest weather station that tabulates this data on an annual basis is located in Concord, New Hampshire, approximately 40 miles south of the Project site. Data from the Concord Station indicates that November is typically the cloudiest month, while September and October have the highest number of clear days (http://www1.ncdc.noaa.gov/pub/data/ccd-data/clpcdy12.txt). Based on long-term averages through 2012, the majority of the days throughout the entire year (daylight hours only) are either cloudy (average 166 days, 45.5% of the year) or partly cloudy (109 days, 29.9% of the year). On average, only 90 days each year (24.7%) are categorized as clear (http://www1.ncdc.noaa.gov/pub/data/ccd-data/clpcdy12.txt). In addition,

an average of 48 days per year are indicated as having heavy fog, where visibility is ¼ mile or less at the Concord Station (http://www.ncdc.noaa.gov/IPS/lcd/lcd.html).

3.2 Landscape Similarity Zones

The definition of landscape types found in a given study area provides a useful framework for the analysis of available visual resources and viewer circumstances. These landscape types, referred to in this report as Landscape Similarity Zones (LSZs), are defined based on the similarity of features such as landform, vegetation, water, and land use patterns. EDR defined 14 distinct LSZs within the visual study area of the Wild Meadows Wind Project. These generally homogeneous character zones were identified in accordance with established visual assessment methodologies (Smardon et al., 1987; USDA Forest Service, 1995; USDOT Federal Highway Administration, 1981; USDOI Bureau of Land Management, 1980). The U.S. Geological Survey (USGS) 2006 National Land Cover Dataset (NLCD) used to help define the location of these zones is illustrated in Figure 5 (Sheet 1), along with representative photos of each LSZ (Sheets 2-15). The general landscape character, land use, and types of views available from each of the LSZs that occur within the study area are described below.

3.2.1 Zone 1. Forest Zone

The Forest LSZ is the dominant landscape type, and occurs throughout the visual study area. According to NLCD mapping, approximately 85% of the study area is forested. Within this zone, the landscape is characterized by hilly to mountainous topography with a dominance of mature forest vegetation. Forest vegetation typically includes a mix of a deciduous and coniferous species. Rugged mountainous topography creates a dramatic background and typically frames any open views within this zone. Human activity includes recreational land use (hunting, hiking, etc.) but relatively few man-made structures. Occasional open fields/forest clearings offer long distance views, but in most areas open views are generally restricted to areas where road cuts and yards provide breaks in the tree canopy. These open views are typically of short duration, limited distance, and/or tightly framed by trees and adjacent slopes. Forested portions of the study area are primarily private lands with limited public access. However, forested public lands, including Cardigan Mountain State Forest, and several other State Forests are also included within this zone.

3.2.2 Zone 2. Rural Residential Zone

This LSZ occurs primarily along the frontage of rural roads throughout the study area. It is characterized by low density residential development in a largely forested setting. Frontage development along the roads typically includes single family homes that vary widely in age, condition, and architectural style (from modern modular homes

and trailers to large contemporary houses and historic colonial era structures). The majority of these homes are closely surrounded by mature trees that generally screen or tightly frame outward views. However, in some locations the homes are situated within or adjacent to open fields, and in some higher elevation settings many of the homes appear to have been sited, and/or yards cleared, to take advantage of long distance views. Scenic quality within this LSZ is therefore highly variable. Rural subdivisions also occur within the study area. Like the rural frontage development, the subdivisions are carved out of the surrounding forest, which limits the extent of outward views. Subdivision homes are all relatively new, and often have porches, decks and yards designed to take in views of the surrounding landscape. In higher elevation areas open, long-distance views of the surrounding mountains are available from many of these homes. There are numerous, relatively new, homes located on the rural roads (and culde-sac spurs off of those roads), on the west-facing slopes overlooking Newfound Lake in the Towns of Bridgewater and Bristol (e.g., Dick Brown Road, John Smith Hill Road, Ridgeview Drive, Ledgewood Terrace, Hundred Acres Wood Road, and Overlook Drive).

3.2.3 Zone 3. Village Zone

This LSZ is characterized by high to moderate-density residential and commercial development and includes the village/downtown areas of Bristol, New Hampton, and Canaan. Vegetation, in the form of street trees and yard trees, contribute to visual character in the village, but within the majority of this zone, buildings (typically 2-3 stories tall) and other man-made features dominate the landscape. Buildings within the village core include churches, town halls, libraries, and commercial blocks. Residential structures surround the village core. Village buildings tend to be traditional in architectural style and arranged in an organized pattern that generally focus views along the streets and block long distance outward views. In many areas, street and yard trees also help to enclose and screen views within this zone. Any long-distance, outward views that are available will generally be in outskirt areas of the village, and at least partially screened by existing structures, mature street trees, and/or the rolling forested hills that surround the village.

3.2.4 Zone 4. Hamlet Zone

This LSZ includes hamlets such as Alexandria, Hebron, and Danbury. These areas are characterized by nodes of low to medium density residential development, typically located at the intersection of two or more major roads. Residential development in this zone is more widely spaced than in a village setting, and tends to be a mix of traditional and more modern architectural styles. Homes also tend to have larger, more open yards. Land use within the Hamlet zone is largely residential, although churches, municipal buildings, and a few small-scale commercial

buildings (e.g., general store) may also be present. Open views of the surrounding landscape are most likely from open yards, road corridors, and open fields at the edges of the Hamlet zone, where screening from structures and/or vegetation is reduced.

3.2.5 Zone 5. Water/Waterfront Zone

This zone includes areas of open water and shorelines within the study area. Water bodies make up approximately 3% of the study area, and include Newfound Lake, Canaan Street Lake, Grafton Pond, and the Pemigewasset River, among others. These water bodies are highly variable, but the character-defining component of this LSZ is the presence of open water as a dominant foreground element in the view. In the case of the lakes, an open expanse of flat water is typically enclosed by a vegetated shoreline. The shorelines are dominated by deciduous and/or coniferous trees but in many locations are interrupted by man-made features such as seasonal homes, boathouses and docks. Human activity on some lakes and shorelines can be fairly intense, and will include boating, fishing, swimming, water skiing and other water sports. Forested mountains and hills define the background in most views from the lakes. The Pemig ewasset River is the only major river within the study area. Due to the presence of hydroelectric dams, it has a gentle gradient and lacks rapids or perceptible current. Trees typically border the river shore, and steep banks limit outward views. Landform surrounding water bodies within the study area is generally level to gently rolling in the foreground, but hills or mountains define the limits of long distance views in the midground and background. This combination of landscape features generally results in relatively high scenic quality.

3.2.6 Zone 6. Commercial Zone

This LSZ generally consists of isolated nodes and strips of commercial development along a highway, and includes retail businesses, restaurants, and convenience stores. Topography is typically level and vegetation restricted to remnant blocks of trees and landscaping around buildings. Views are focused along the axis of the highway, and the foreground is dominated by buildings, automobiles and pavement (roads and parking lots). Scenic quality is typically low. The surrounding landscape varies from residential, to farmland, to forested hills. Within the study area, this LSZ occurs primarily on the outskirts of downtown Bristol, and as isolated nodes along the larger highways. Areas with examples of modern commercial visual character include portions of Route 3A (Mayhew Turnpike) in the Town of Bridgewater and portions of Route 4 within (or near) the hamlet/village areas of Canaan, Danbury and Grafton.

3.2.7 Zone 7. Agricultural Zone

This LSZ is characterized by level to gently sloping crop fields and pastures, along with associated farms and rural residences. This zone occurs primarily in valley areas adjacent to Routes 4 and 104, and is concentrated in the eastern portion of Alexandria, the central portion of Danbury, the southern portion of Bristol, outside the hamlet areas of Hebron and Canaan, and as scattered pockets within the forested portions of the study area. The dominant activity in this area is farming and travel along local roads. Scenic quality is variable. Although open farmland provides for long distance views in this zone, adjacent forest and hills typically frame/enclose these views and/or provide significant screening.

3.2.8 Zone 8. Transportation Zone

The Transportation LSZ includes divided, multilane roads with limited access. Within the Wild Meadows visual study area, this LSZ is limited to a relatively short stretch of Interstate Route 93 that occurs at the far eastern edge of the study area. Foreground views along this road corridor are dominated by automobiles, pavement, guardrails and signs. Driver attention is typically focused on the roadway and associated traffic. Travel is at high speed, and outward peripheral views are fleeting. The surrounding scenery is variable, but within the study area is dominated by adjacent trees with forested mountains in the background.

3.2.9 Zone 9. School Campus Zone

This zone is a relatively minor, but distinctive, component of the study area. It includes the campuses of the New Hampton School and the Cardigan Mountain School (just outside the 10 mile radius study area). This zone is characterized by landscaped campuses with mowed lawns, ornamental shrub plantings, flowerbeds, and scattered large trees. The campuses also include an organized assemblage of educational buildings, typically in the range of 3-4 stories in height, with associated sidewalks, curbed roads and parking lots. Views are typically focused inward, toward the campus, and during the school year are dominated by the movement/activity of students. Outward views from the campuses are blocked in most areas by on-site buildings and trees. However, partially screened, longer distance views are available from some open areas on campus, such as athletic fields and large lawns/quadrangles.

3.2.10 Zone 10. Natural Resource Extraction

The Natural Resource Extraction LSZ includes sand and gravel quarries and timber harvesting sites such as clear cuts and log landings. This LSZ occurs in discrete locations throughout the visual study area, although a concentration of sand and gravel pits occur along Route 4 in the Town of Grafton. The unifying visual characteristic of this LSZ is an area of cleared vegetation with some level of ground disturbance, and activity by heavy equipment. This LSZ occurs in elevated and valley settings, and is typically located away from residential areas and bordered by forest land. These areas often offer open views that are otherwise rare in the surrounding landscape. However, the disturbance present at these sites, along with the noise and activity of operating heavy equipment, generally results in relatively low scenic quality.

3.2.11 Zone 11. Utility Corridor

The visual study area is traversed by a major electric transmission corridor. This corridor averages approximately 300 feet wide, and is characterized by low shrubby vegetation, a rudimentary access road, and multiple overhead electric transmission lines carried on wood pole and steel lattice structures. In most places the corridor cuts through forest, and therefore has sharp, well-defined edges. Like the Resource Extraction LSZ, the Utility Corridor LSZ provides open views in areas that are otherwise well screened by forest vegetation. However, the unnaturally straight edges of the corridor and the presence of large utility structures and overhead lines within this LSZ, generally result in relatively low scenic quality.

3.2.12 Zone 12. Outdoor Recreation

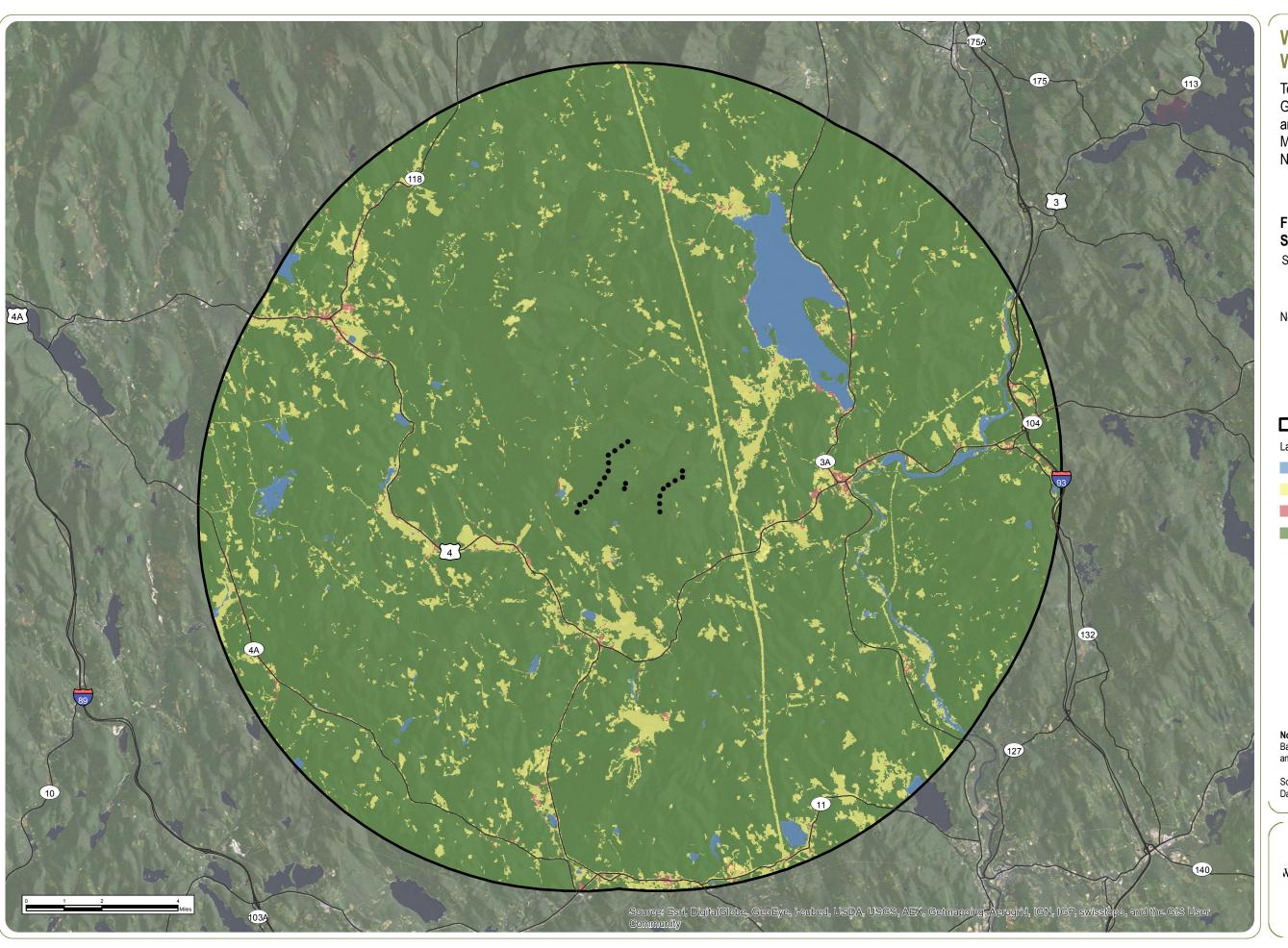
This somewhat diverse LSZ includes local parks, ball fields and playgrounds where people gather for organized or informal outdoor recreation. Within the visual study area, these sites are relatively small in size and characterized by areas of mowed lawn, man-made recreational equipment/facilities, and associated roads, parking areas, and structures. During the recreation season (spring through fall) these areas receive relatively consistent use by local residents. The outdoor recreation LSZ typically occurs in valley settings adjacent to village and hamlet areas, or along rural roads.

3.2.13 Zone 13. Alpine Summit

This LSZ occurs exclusively at the summit of Mount Cardigan and adjacent peaks within Cardigan Mountain State Forest/Park. It is distinguished by elevated location, lack of tall trees, and exposed bedrock. This combination of features results in the availability of panoramic, long-distance views of the surrounding countryside in multiple directions. Consequently, this LSZ is considered to have high scenic quality. The Alpine Summit LSZ is used almost exclusively for recreational purposes by hikers, photographers, sight-seers, and families. Due to the popularity of these summits as recreational destinations, human activity is almost always evident, and at certain times fairly intense. The LSZ is largely natural, but does include some man-made features, including a fire tower, a small hut, trail signs and trail markers (paint blazes).

3.2.14 Zone 14. Shoreline Residential

The Shoreline Residential LSZ is represented primarily by areas of moderate density residential development along the shoreline and slopes bordering Newfound Lake. It is distinguished by the combination of residential and waterfront characteristics. Consequently, this LSZ includes residential homes, mowed lawns, and landscape yards (often of fairly recent vintage) in proximity to open water. Although some shoreline residences are surrounded by trees, most have been sited to provide open views of the Lake. The presence of this water body in turn allows for longer distance views of the surrounding landscape, and higher scenic quality than is typically present in other residential settings. Both residential and recreational activity occurs in this area, and during the summer season, can be fairly intense. Boating and swimming activity on the lake often occurs simultaneously with residential activities such as playing in the yard, gardening, lawn care, and entertaining.



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 5: Landscape Similarity Zones

Sheet 1 of 15: Land Cover Map

November 2013

- Wind Turbine
- 10-Mile Study Area

Land Cover

- Water
- Open
- Developed
- Forest



Notes: Basemap: World Imagery ESRI Map Service and ESRI StreetMap North America, 2012.

Source: USGS 2006 National Land Cover Database.





Zone 1: Forest



Zone 1:

Forest

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 2:

Rural Residential



Zone 2: Rural Residential

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 3:

Village



Zone 3:

Village

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 4: Hamlet



Zone 4: Hamlet

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 5: Water/Waterfront



Zone 5: Water/Waterfront

Figure 5: Landscape Similarity Zones







Zone 6: Commercial



Zone 6: Commercial

Figure 5: Landscape Similarity Zones







Zone 7: Agricultural



Zone 7: Agricultural

Figure 5: Landscape Similarity Zones







Zone 8:

Transportation



Zone 8:

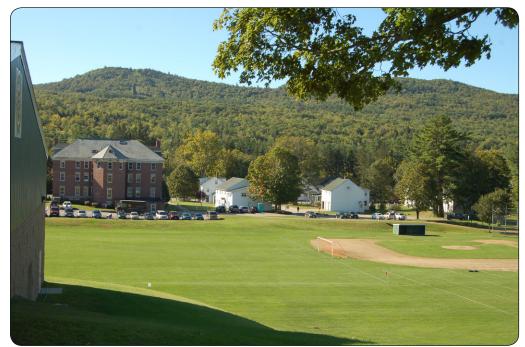
Transportation

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 9: School Campus



Zone 9: School Campus

Figure 5: Landscape Similarity Zones







Zone 10:

Natural Resource Extraction



Zone 10:

Natural Resource Extraction

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 11: Utility Corridor



Zone 11: Utility Corridor

Figure 5: Landscape Similarity Zones







Zone 12:

Outdoor Recreational Parks, Ballfields, Playgrounds



Zone 12:

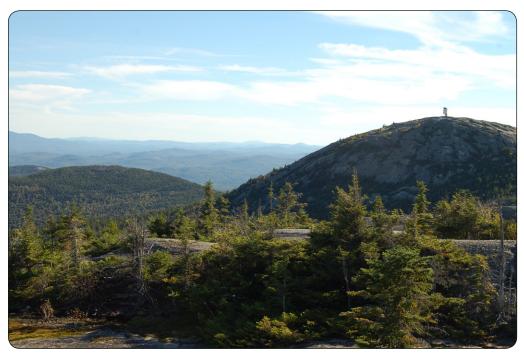
Outdoor Recreational Parks, Ballfields, Playgrounds

Wild Meadows Wind Project
Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire

Figure 5: Landscape Similarity Zones







Zone 13: Alpine Summit



Zone 13: Alpine Summit

Figure 5: Landscape Similarity Zones







Zone 14: Shoreline Residential



Zone 14: Shoreline Residential

Figure 5: Landscape Similarity Zones





3.3 Distance Zones

Three distinct distance zones are typically defined in visual studies. Consistent with well-established agency protocols (e.g., Jones and Jones 1977; USDA Forest Service, 1995), EDR generally defines these zones as follows:

- Foreground: 0 to 0.5 mile. At these distances, a viewer is able to perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of color can be seen on foreground objects.
- Mid-ground: 0.5 to 3.5 miles. The mid-ground is usually the predominant distance at which landscapes are seen. At these distances a viewer can perceive individual structures and trees but not in great detail. This is the zone where the parts of the landscape start to join together; individual hills become a range, individual trees merge into a forest, and buildings appear as simple geometric forms. Colors will be clearly distinguishable, but will have a bluish cast and a softer tone than those in the foreground. Contrast in color and texture among landscape elements will also be reduced.
- Background: Over 3.5 miles. The background defines the broader regional landscape within which a view occurs. Within this distance zone, the landscape has been simplified; only broad landforms are discernible, and atmospheric conditions often render the landscape an overall bluish color. Texture has generally disappeared and color has flattened, but large patterns of vegetation are discernible. Silhouettes of one land mass set against another and/or the skyline are often the dominant visual characteristics in the background. The background can contribute to scenic quality by providing a backdrop for foreground and mid-ground features, an attractive vista, or a distant focal point.

3.4 Viewer/User Groups

Three categories of viewer/user groups were identified within the visual study area. These include the following:

3.4.1 Local Residents

Local residents include those who live, work, and travel for their daily business within the area. They generally view the landscape from their yards, homes, local roads and places of employment. Residents are concentrated in and around the various village and hamlet areas, but occur throughout the visual study area. Except when involved in local travel, residents are likely to be stationary, and have frequent or prolonged views of the landscape. Local residents may view the landscape from ground level or elevated viewpoints (typically upper floors/stories of homes).

Residents' sensitivity to visual quality is variable, and may be tempered by the aesthetic character/setting of their neighborhood or work place. Those living in densely settled areas with views focused on their neighborhood street or their downtown centers may be less sensitive to landscape changes than those with a view of undeveloped forest, lakes and mountains. It is generally assumed, however, that all residents are familiar with the surrounding landscape and may be very sensitive to changes in their views.

3.4.2 <u>Through Travelers</u>

Travelers passing through the area view the landscape from motor vehicles on their way to other destinations. Through travelers are typically moving, have a relatively narrow field of view oriented along the axis of the roadway, and are destination oriented. Drivers on major roads in the area (e.g., State Routes 104 and 3A, U.S. Route 4, and Interstate Route 93) will generally be focused on the road and traffic conditions, but do have the opportunity to observe roadside scenery. Passengers in moving vehicles will have greater opportunities for prolonged off-road views than will drivers, and therefore may be more aware of the quality of surrounding scenery. However, through travelers who are not residents of the area are unlikely to be particularly sensitive to visual change.

3.4.3 <u>Tourists/Vacationers</u>

This viewer group consists of out-of-town vacationers and seasonal/weekend residents who come to the area for the purpose of experiencing its scenic and recreational resources. These viewers include sightseers, families on vacation, and weekend/seasonal homeowners. They may view the landscape on their way to a destination or from the destination itself. Some, such as weekend and seasonal home owners, may spend extended time in the area. Tourists and vacationers in the area are generally involved in outdoor recreational activities at parks and recreational facilities, and in natural settings such as forests and lakes. Typical activities include boating, fishing, camping, snowmobiling, skiing, bicycling, horseback riding, hunting, and more passive recreational activities (e.g., picnicking or walking). Visual quality/scenery may or may not be an important part of the recreational experience for these viewers. However, recreational users are generally considered to have relatively high sensitivity to aesthetic quality and landscape character. They will often have continuous views of landscape features over relatively long periods of time, and scenic quality generally enhances any outdoor recreational activity. Passive recreational activities generally do not require as much concentration as more active recreational activities, and tend to be more focused on the enjoyment of scenery. Those engaged in passive activities therefore may be particularly sensitive to visual change. Tourists and recreational users will be concentrated in and around the various lakes within the area, as well as Cardigan Mountain State Forest/Park and various day use facilities and attractions such as Wellington State Park,

Ruggles Mine, Sculptured Rocks, and the Ragged Mountain Ski Area. However, vacation homes and recreational opportunities occur throughout the study area, and these viewers will also traverse the area while traveling the major roads.

3.5 Public Resources of Potential State and Local Significance

Although the State of New Hampshire does not define aesthetic resources of statewide significance, the 10-mile radius visual study area includes numerous public resources that are of potential statewide significance (see Figure 6). These include 10 sites or districts listed on the National Register of Historic Places, two state parks, nine state forests, 13 wildlife management areas, two designated scenic sites, and several designated trails. Brief descriptions of these resources are presented below. Distances from these resources to the proposed Project are indicated in the Visibility Summary Table in Appendix A. Please note that all distance measurements referenced in this discussion are the minimum distance between the identified resource and the nearest proposed turbine.

Historic Sites

Authorized by the National Historic Preservation Act of 1966, the National Register of Historic Places (NRHP) is maintained by the National Park Service as part of a national program to coordinate efforts to identify, evaluate, and protect historic and archeological resources. The NRHP is the official list of designated historic places worthy of preservation. It includes both public and private properties. The following NRHP-listed properties are located within the visual study area (NPS, 2013):

- Canaan Street Historic District (#73000163) Architecture within this historic district in the village area of
 Canaan (partially outside the visual study area) is primarily early 19th century, and noteworthy structures
 include the Canaan Meetinghouse, Old North Church, and Canaan Town Library and Museum. This area is
 also noteworthy for its open views of Canaan Street Lake (formerly Hart's Pond). It is approximately 9.5
 miles from the proposed Project.
- Central Square Historic District (#83001139) Central Square Historic District is located in the center of the village area of Bristol and includes a number of late 18th century and early 19th century contributing sites, in addition to the square itself. It is approximately 4.3 miles from the proposed Project.
- Dana Meeting House (#84000516) A one-story wooden frame meetinghouse on the west side of Dana Hill Road in New Hampton, built in 1800. It is approximately 10.0 miles from the proposed Project.

- Gordon-Nash Library (#88001437) Located on Main Street in the village area of New Hampton and built in 1895, the Gordon-Nash Library was the first public library building erected in Belknap County. It is approximately 8.5 miles from the proposed Project.
- Hebron Village Historic District (#85000492) This historic district in the hamlet area of Hebron is an example of an early 19th century village built around a spacious central common and is also significant for its attractive early to mid-19th century buildings. It is approximately 6.6 miles from the proposed Project.
- *Hill Center Church* (#85002186) This mid-19th century wooden church is located on Hill Center Road in the hamlet area of Hill. It is approximately 7.6 miles from the proposed Project.
- Murray Hill Summer Home District (#88000179) This historic district consists of a series of late-18th century and early-19th century farmhouses and associated outbuildings in the Town of Hill, which were used as summer residences from 1873 to 1937. It is approximately 2.5 miles from the proposed Project.
- New Hampton Community Church (#85000474) A Greek Revival wooden church on Main Street in the village area of New Hampton, built in 1854. It is approximately 8.7 miles from the proposed Project.
- Protectworth Tavern (#80000322) Also known as Stickney Tavern, this structure located on Route 4A in
 the Town of Springfield, is an essentially intact example of a popular type of late-Georgian/early-Federal
 vernacular architecture once common, but now increasingly rare. It is approximately 9.1 miles from the
 proposed Project.
- South Danbury Christian Church (#85001191) Also known as South Danbury Christian Meeting House, this structure was designed by John Woodbury and constructed in 1867. It is approximately 6.4 miles from the proposed Project.

Additionally, the New Hampshire Division of Historical Resources administers a State Register of Historic Places (SRHP) to recognize and encourage the identification and protection of historical, architectural, archeological and cultural resources (NHDHR, 2013a). The visual study area includes the following six sites listed on the SRHP (NHDHR, 2013b):

- Whipple House (BRI0031) A well preserved Queen Anne style home in Bristol, which currently serves as a bed and breakfast. It is approximately 4.4 miles from the proposed Project.
- Hinksons Carding Mill (GRA0017) This Grafton mill once processed wool (and possibly flax) into usable fiber for knitting, spinning and weaving. Constructed in 1823, it is approximately 3.0 miles from the proposed Project.

- Pines School, Depot School, District 13 (GRA0015) The best preserved of 11 remaining schoolhouses in Grafton. It is approximately 3.9 miles from the proposed Project.
- East Grafton Union Church (GRA0019) Originally a meeting house constructed in 1785, this example of shingle-style architecture was moved and renovated in the 19th century. It is approximately 2.7 miles from the proposed Project.
- Grafton Public Library (GRA0018) A Colonial Revival building constructed in 1921. Its concrete blocks
 were created on site by volunteers. It is approximately 3.6 miles from the proposed Project.
- East Grafton School, District 5/Town Hall (GRA0014) This building was constructed in 1900 and currently functions as the Town Hall. It is approximately 2.6 miles from the proposed Project.

State Parks

Wellington State Park: Located along the shores of Newfound Lake in the Towns of Bristol and Alexandria, 204-acre Wellington State Park is approximately 3.3 miles from the nearest proposed turbine. It boasts the largest freshwater swimming beach in the New Hampshire State Park system. Within the park, the Peninsula Nature Trail features picnic areas, designated fishing areas, plant identification markers, and views of Newfound Lake and Cliff and Belle Islands. A marked hiking trail leads from the park and provides hikers access to Goose Pond, the Sugarloafs, Bear Mountain, Welton Falls, and Mount Cardigan. A developed boat launch operated by the New Hampshire Fish and Game Department adjoins the park, providing boaters free access to Newfound Lake. During the summer season, the park also offers services including comfort stations, a snack bar, and courts for volleyball and horseshoes (NHDRED, 2013a).

Cardigan Mountain State Forest and Park: This combined state forest and state park is located in the northwestern portion of the visual study area. The nearest portion of the forest is located approximately 2.0 miles from the Project (as measured to the nearest proposed turbine). It includes 5,655 acres and is used primarily for hiking. A mountain road leads to a parking lot and trail head on the west slope of Mount Cardigan from which a hiking trail provides access to the summit. Access is also available from the east via multiple trails that originate at a trail head located at the AMC Cardigan Lodge. Twelve acres on the summit of Mount Cardigan are designated as Cardigan Mountain State Park (Cherian, pers. commun.). Mount Cardigan's 3,121-foot treeless granite summit affords expansive views of west central New Hampshire, including Mount Monadnock and the White Mountains, Camel's Hump in Vermont, and Pleasant Mountain in Maine. The proposed Project is approximately 4.4 miles from the fire tower on the summit of Mt. Cardigan. This forest/park is un-staffed during the off-season, but is open to the public year-round at no

charge (NHDRED, 2013b). The hike to the summit of Mount Cardigan is popular as it is a relatively short and manageable hike for most ability levels and offers 360 degree views.

Adjacent to the eastern edge of Cardigan Mountain State Forest is a 1,200-acre reservation owned and managed by the Appalachian Mountain Club (AMC). The reservation features one of New Hampshire's first ski lodges (opened in 1934 and renovated in 2005), which offers access to 50 miles of hiking/cross country skiing trails, a nature trail and swimming pond, and family oriented programs. Lodging accommodations include rooms within in the AMC Cardigan Lodge, campsites, and the secluded High Cabin, located below the treeline between the Mount Cardigan summit and South Peak (AMC, 2013).

State Forests

New Hampshire is the second most forested state in the nation (NHDFL, 2013a). The Forest Management Bureau within the Division of Forests and Lands is responsible for forest management activities on woodlands under state jurisdiction. This includes more than 167,000 acres of state-owned reservations (NHDFL, 2013b). According to the conservation/public lands database maintained by the Complex Systems Research Center at the University of New Hampshire (CSRC, 2013), the following state forests are located within the visual study area:

- Gile State Forest Located in the Town of Springfield off State Route 4A, this 6,675-acre forest includes
 Gardner Memorial Park, a picnic area with a half-mile trail to Butterfield Pond. It is approximately 5.4 miles
 from the proposed Project.
- Province Road State Forest This tract covers 1,040 acres north of Province Road in the Towns of Groton and Dorchester. It is approximately 9.4 miles from the proposed Project.
- Cardigan Mountain State Forest As described above in the state parks discussion, this forest is located in
 the Towns of Orange and Alexandria, and includes over 5,500 acres of rugged terrain. It is approximately
 2.0 miles from the proposed Project.
- Crosby Mountain State Forest This 90-acre tract is located in the Town of Groton, adjacent to the Cockermouth Forest. It is approximately 9.1 miles from the proposed Project.
- Wade State Forest Located in the Town of Hill, this forest encompasses approximately 450 acres. It is approximately 3.5 miles from the proposed Project.
- George Duncan State Forest This tract covers approximately 110 acres off Lougee Road in the Town of New Hampton. It is approximately 7.6 miles from the proposed Project.
- Sugar Hill State Forest Located off State Route 104 in the Town of Bristol, this forest encompasses approximately 60 acres. It is approximately 4.1 miles from the proposed Project.

- William H. Thomas State Forest Located adjacent to Wade State Forest in the Town of Hill, covering approximately 1,680 acres. It is approximately 4.2 miles from the proposed Project.
- Welton Falls State Forest This tract extends over 225 acres in the Town of Alexandria off Shem Valley Road. It is approximately 3.2 miles from the proposed Project.
- Ragged Mountain State Forest Located off State Route 4 in the Town of Andover, this forest
 encompasses approximately 74 acres. It is approximately 8.8 miles from the proposed Project.

Other than Gile State Forest, state forests within the visual study area typically lack any developed recreational facilities. They consist of forest land that is managed for timber production and appropriate public uses such as hunting, hiking and nature study.

Wildlife Management Areas

The Forestry and Wildlife Program is a partnership between the New Hampshire Fish and Game Department (NHFGD) and the Division of Forests and Lands. The two agencies work cooperatively to jointly manage wildlife habitat on all state lands, ensuring that forestry practices help enhance wildlife habitat (NHDFL, 2013c). State wildlife management areas (WMAs) are parcels of undeveloped land owned by the NHFGD that are designated for wildlife resource conservation, hunting, and fishing (NHFGD, 2013a). Also included in this category are wildlife sanctuaries and nature centers managed for wildlife habitat, with public access, owned variously by towns or private groups such as the Audubon Society of New Hampshire. According to the conservation/public lands database maintained by the CSRC (2013), the following wildlife management areas are located within the visual study area:

- McDaniels Marsh Wildlife Management Area This State WMA encompasses approximately 609 acres off
 Howard Road in the Towns of Springfield and Grafton. Three hundred acres consist of a diverse wetlands
 system located along Bog Brook. It is approximately 9.2 miles from the proposed Project.
- Webster Lake Wildlife Management Area This 151-acre State WMA in the Town of Franklin can be
 accessed from Lake Shore Drive, and includes 1,660 feet of frontage along the predominantly developed
 shoreline of Webster Lake. It is approximately 10.0 miles from the proposed Project.
- Bog Mountain Wildlife Management Area This 305-acre parcel is protected by a Conservation Easement
 with the NHFGD. Located off of North Wilmot Road in the Town of Wilmot, this forested tract contains a
 small unnamed pond. It is approximately 6.9 miles from the proposed Project.
- Danbury Bog Wildlife Management Area Located adjacent to Bog Pond in the Town of Danbury, this tract
 covers approximately 246 acres. The majority of this WMA is privately owned, but is leased by the NHFGD
 and is open to the public. It is approximately 4.2 miles from the proposed Project.

- Witte Forest Management Area This tract covers approximately 595 acres off of Clough and Dickenson
 Hill Roads in the Town of Hill, and is owned by the Lakes Region Conservation Trust. It is approximately
 3.7 miles from the proposed Project.
- Hebron Marsh Wildlife Sanctuary This 40-acre tract is located at the north end of Newfound Lake in the Town of Hebron. Owned by the Audubon Society of New Hampshire, the sanctuary includes hiking trails accessed from North Shore Road. It is approximately 6.5 miles from the proposed Project.
- Paradise Point Nature Center and Wildlife Sanctuary This 45-acre parcel is located at the north end of Newfound Lake in the Town of Hebron, along North Shore Road. Owned by the Audubon Society of New Hampshire, the property includes an education center, canoe and kayak rentals, and hiking trails. It is approximately 6.9 miles from the proposed Project.
- Charles L. Bean Sanctuary This 25-acre parcel at the north end of Newfound Lake was donated to the Town of Hebron to prevent development of the property, including Indian Point. The hiking trail is accessed from North Shore Road. It is approximately 6.6 miles from the proposed Project.
- Lester & Edith Youst Conservation Area This 5-acre parcel, located off Riverwood Drive, is protected by a
 Conservation Easement with the Town of New Hampton. It is approximately 8.7 miles from the proposed
 Project.
- Alfred Jenness Natural Area This parcel covers approximately 5.5 acres off Lougee Road, and is owned by the Town of New Hampton. It is approximately 7.3 miles from the proposed Project.
- Wildlife Preserve This 17-acre wildlife preserve owned by the Town of Bristol protects a wetland complex southeast of Newfound Lake, between Lake Street and Hundred Acre Woods Road. It is approximately 4.9 miles from the proposed Project.

Scenic Areas

The following two scenic easements occur within the visual study area:

- New Hampton Scenic Easement Located between Interstate 93 and the Pemigewasset River in the Town
 of New Hampton, this 10-acre parcel is owned by the New Hampshire Department of Transportation
 (NHDOT). It is approximately 9.1 miles from the proposed Project.
- New Hampton Bridgewater Scenic Easement This easement consists of three parcels straddling the Pemigewassest River in the Towns of New Hampton and Bridgewater, located adjacent to the New Hampton Scenic Easement described above. A total of 30 acres are protected by a Scenic Easement with the NHDOT. It is approximately 8.8 miles from the proposed Project.

Trails

Although digital mapping (as shown in Figure 6) is incomplete, several hiking trails exist within Cardigan Mountain State Forest/Park and the AMC property to the west, including the Holt, Clark, Manning, Moglis, West Ridge, and Welton Falls trails. These trails provide access to several mountain peaks, including Mount Cardigan, Mt. Gilman, and Firescrew Mountain. The trails generally occur within dense forest, but open views are available from the exposed mountain peaks. These summits are located northwest of the proposed turbines, at a distance of approximately 3.6 miles (Gilman), 4.4 miles (Cardigan), and 4.7 miles (Firescrew).

The visual study area also includes an extensive network of snowmobile trails, although digital mapping of the snowmobile trail system within the visual study area was not available. However, trail maps available from several local snowmobile clubs (Mount Cardigan Snowmobile Club, Alexandria Ledge Climbers, Hardy Country Snowmobile Club, Lakes Region Snowmobile Club, Pemigawasset Valley Snowmobile Club, and Andover Snowmobile Club) show numerous snowmobile trails within the visual study area, the closest of which (Alexandria Ledge Climbers) passes through the Project site, within 0.25 mile of the closest proposed turbine.

The Appalachian Trail occurs well outside the visual study area (approximately 15 miles northwest of the nearest proposed turbine).

Major Water Bodies

Water bodies are important local resources for the recreational, scenic, and wildlife habitat values they provide. The following major lakes and rivers occur within the visual study area:

Pemigewasset River – With headwaters at Profile Lake in Franconia Notch State Park, the Pemigewasset flows south through the White Mountains, and merges with the Winnipesaukee River to form the Merrimack River in the City of Franklin. This river flows south through the eastern side of the visual study area, and defines the boundary between Belknap County to the east, and Grafton and Merrimack Counties to the west. It also defines the municipal boundary between various Towns, with New Hampton and Sanbornton on the east banks, and Bridgewater, Bristol, Hill, and Franklin on the west bank. At its closest point it is approximately 4.5 miles from the proposed Project. The river offers flat water experiences for boaters, and Atlantic salmon, bass, and trout fishing opportunities for anglers. With the exception of the portion passing through the village area of Bristol, the river corridor is primarily undeveloped, and provides high quality wildlife habitat. Due to these exemplary natural resources, the Pemigewasset is listed in the National Rivers Inventory (NRI), a national listing of river segments potentially eligible for inclusion in the National Wild and

Scenic Rivers System (NHDES, 2012; NPS, 2009). Additionally, the Pemigewasset River is a state-designated rural river, pursuant to the Rivers Management and Protection Program Act, for its qualities in the areas of geologic resources; wildlife, plant and fish resources; water quality; scenic values; historic and archaeological resources; community resources; and recreational resources (NHDES, 1991). In 1943, the U.S. Army Corps of Engineers (USACE) constructed the Franklin Falls Dam on the Pemigewasset, in the City of Franklin, outside the visual study area. The USACE manages the 3,900-acre Franklin Falls Reservoir along 15 miles of the Pemigewasset, approximately 2,300 acres of which fall within the visual study area. Recreational opportunities at the reservoir include picnicking, hiking, mountain biking, fishing, hunting, snowmobiling, cross-country skiing, snowshoeing, kayaking, and canoeing (USACE, 2012).

- Newfound Lake Located entirely within the visual study area in the Towns of Hebron, Bridgewater, Alexandria, and Bristol, Newfound Lake is the fifth largest lake in New Hampshire and also one of the deepest. It is approximately 6 miles long and 2½ miles wide, with a maximum depth of 182 feet. The lakeshore is characterized by private residential development, but also includes public parks, beaches, and wildlife sanctuaries. Public boat access is available with a concrete ramp and parking for trailers at Wellington State Park. The Lake drains south via the Newfound River to the Pemigewasset River, with a dam located at the southern end of the lake to control the water level (NLRA, 2009; NHFGD, 2013b). Newfound Lake is approximately 3.9 miles from the proposed Project.
- Spectacle Pond Located in the Towns of Groton and Hebron, Spectacle Pond is a 46-acre spring-fed cold water pond, and is part of the Newfound Lake Watershed. Private residences and the Circle Program Summer Camp line the western Groton sides of the pond, but the eastern Hebron shores remain undeveloped. In the Town of Hebron, the southern shore of Spectacle Pond lies within the Flint Memorial Forest, protected by the Society for Protection of New Hampshire Forests, and the northern shoreline lies within the Hebron Town Forest. The NHFGD has been stocking trout in the pond since 1950, and gasoline-powered motor boats are prohibited (McGinnis & Vaugh, 2009; LRPC, 2011; NHDOS, 2010).
- Grafton Pond Located in the Town of Grafton, approximately 7.4 miles from the proposed Project, this 324-acre lake contains numerous uninhabited islands and is surrounded by hundreds of acres of protected forestland. The pond in its current form was created in the early 20th century when numerous local creeks and rivers within the Mascoma watershed were dammed to provide both water and energy generation for a local mill company. The Society for Protection of New Hampshire Forests protects the approximately 900-acre Grafton Pond Reservation to the northeast, east, south, and west of the pond, while the Grafton Pond Land Trust protects the land to the north. The shoreline is almost entirely undeveloped, and gasoline-powered motorboats and electric engines above 6 horsepower are prohibited. A parking area along Grafton Pond Road and the nearby state-owned boat launch provide public access for boating and hiking. Grafton

Pond can be very busy on summer weekends, and in 2012, the Friends of Grafton Pond began participating in the New Hampshire Lake Host Program. Lake Hosts check boats for aquatic invasive species, collect visitor information, and provide outreach about the lake's loon populations, boating regulations, and leave no trace policy (Society for Protection of NH Forests, 2012; Friends of Grafton Pond, 2012; NHDOS, 2010).

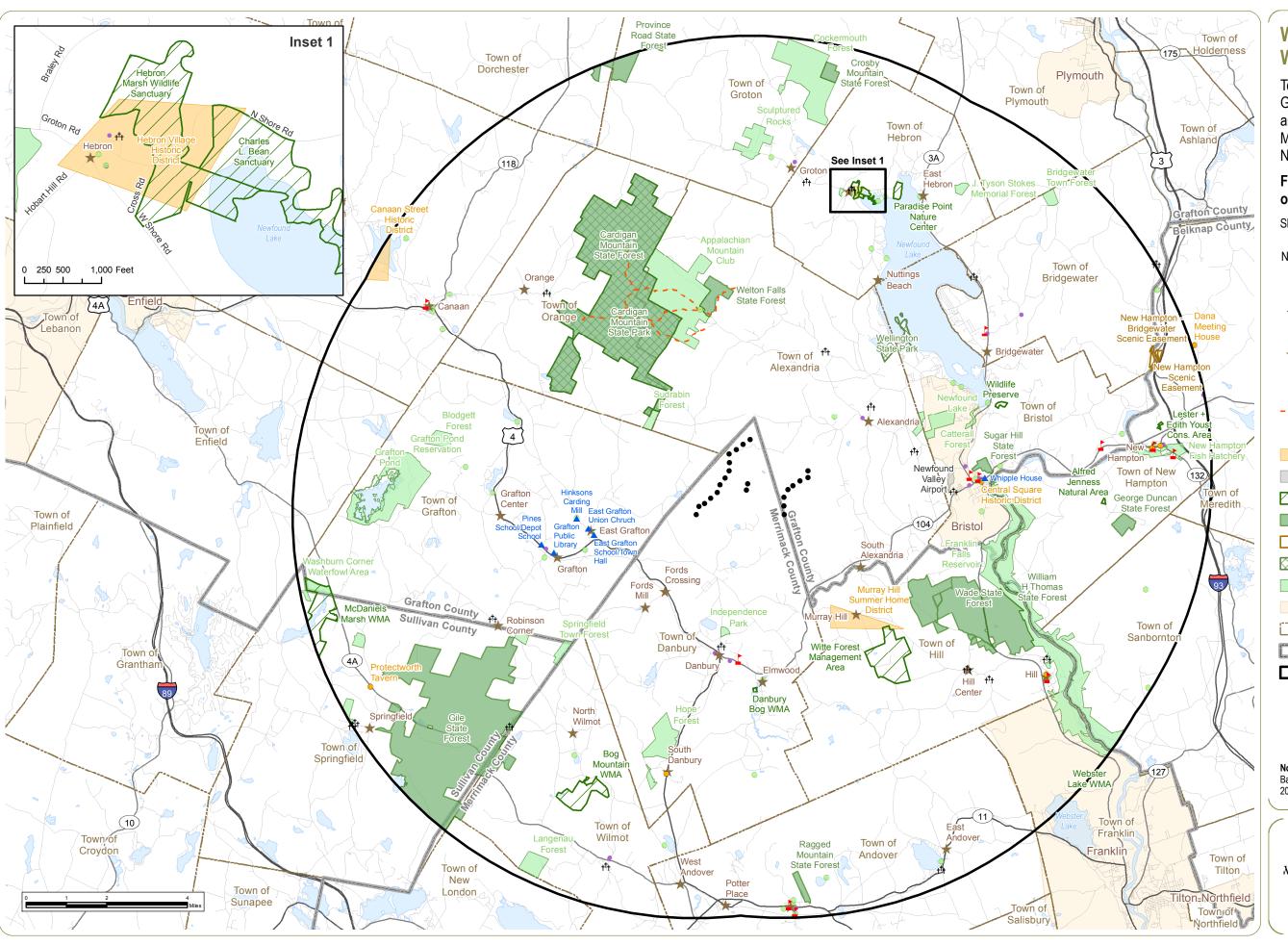
- Canaan Street Lake This 291-acre lake is located in the Town of Canaan, approximately 9.4 miles from
 the proposed Project. The shoreline is mostly developed, with private residences and the campus of the
 Cardigan Mountain School, a private day and boarding school. Public access to the lake is available via a
 boat ramp at the town beach, off Canaan Street. A sandy beach and boat access are also available for
 guests at Crescent Campsites, off Fernwood Farms Road. Canaan Street Lake is a public water supply
 source, and ski craft and hovercraft are prohibited (NHDOS, 2010; Cardigan Mountain School, 2013;
 Crescent Campsites, 2012; NHFGD, 2013b).
- Spectacle Pond The Town of Enfield owns a public access site on Lockhaven Road, which provides cartop parking and a gravel boat ramp. All types of motors in excess of 10 horsepower are forbidden on this approximately 95-acre lake, which is located approximately 7.8 miles from the proposed Project. Private residences line the northern and eastern shores, while the southern and western shores remain undeveloped (NHDOS, 2010; Town of Enfield, 2013).
- *Kilton Pond* The shorelines of this 66-acre lake in the Town of Grafton are largely developed with private residences. Recreational opportunities including swimming and shore bank public access are provided at Kilton Pond Beach on Davis Road. There is no public boat access to this shallow lake, which has a maximum depth of 10 feet, but averages just 4 feet (NHFGD, 2013b). Kilton Pond is approximately 4.9 miles from the proposed Project.
- Waukeena Lake Located in the Town of Danbury, approximately 3.8 miles from proposed Project, this 53acre lake contains numerous small, undeveloped islands. The shoreline is partially developed, with
 residences along the eastern and southern shores. The NHFGD provides public boat access with a gravel
 ramp and parking for small trailers along Waukeena Lake Road. Gasoline-powered boats are prohibited
 (NHDOS, 2010; NHFGD, 2013b).
- Highland Lake This 206-acre lake is located in the Town of Andover, approximately 8.7 miles from the proposed Project. The shoreline is largely developed with private residences. The Highland Lake Boat Launch provides public access via a paved ramp, while the Andover Public Beach offers swimming and picnicking opportunities. Ski craft are prohibited on the lake (NHDOS, 2010; NHFGD, 2013b).
- Webster Lake Approximately 25% of this 606-acre lake lies within the study area. At its closest point it is approximately 9.7 miles from the proposed Project. Although the shoreline is largely developed with private homes, the Webster Lake WMA protects 1,660 feet of frontage on the northeastern shore. Public access for

boating, fishing, swimming and picnicking is available at Griffin Beach on Pine Colony Road and Lagace Beach on Webster Lake Road, both operated by the Town of Franklin, and both well south of the study area. The Lagace Beach boat launch is staffed by a trained Lake Host (NHFGD, 2013b; WLA, 2013).

The 10-mile radius study area also includes several public resources that could be considered regionally or locally significant or sensitive, due to the type or intensity of land use they receive. These include local park and recreational facilities, campgrounds, camps, town forest lands, golf courses, nature preserves, tourist attractions, fish and game clubs, schools, cemeteries, areas of concentrated human settlement (referred to as village and hamlet areas in this study), and heavily traveled highways. The visual study area includes one Interstate highway, one U.S. highway, and five State highways that receive relatively high use. Based on the average of all annual daily traffic (AADT) counts conducted on these highways in 2012 within the 10-mile radius visual study area, the approximate number of vehicles traveling these highways on a daily basis is as follows:

- US Route 4 2,970 vehicles
- State Route 104 6,170 vehicles
- State Route 3A 3,440 vehicles
- State Route 4A 1,110 vehicles
- State Route 11 3,450 vehicles
- State Route 118 1,300 vehicles
- Interstate Route 93 10,070 vehicles

All inventoried public resources of potential state or local significance that occur with visual study area are listed in Table A in Appendix A. The mapped location of these resources within the study area is illustrated in Figure 6, and on the large-scale viewshed map included in Appendix A.



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 6: Public Resources of Significance

Sheet 1 of 2: 10-Mile Radius

November 2013

- Wind Turbine
- rt+ Cemetery
- School
- Populated Place/Hamlet
- Other Local Resource (See Table in Appendix A)
- - Trail
- ▲ SRHP-Listed Site
- NRHP-Listed Site/District
- Airport
- Wildlife Management Area
- State Forest
- Scenic Site
- State Park
- Recreational Resource
- City/Village
- Town Boundary
- County Boundary
- 10-Mile Study Area



Notes:

Basemap: ESRI StreetMap North America, 2012





Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 6: Public Resources of Significance

Sheet 2 of 2: 5-Mile Radius

November 2013

- Wind Turbine
- +++ Cemetery
- School
- Populated Place/Hamlet
- Other Local Resource (See Table in Appendix A)
- -- Trail
- ▲ SRHP-Listed Site
- NRHP-Listed Site/District
- Airport
- Wildlife Management Area
- State Forest
- Scenic Site
- State Park
- Recreational Resource
- City/Village
- Town Boundary
- County Boundary
- 5-Mile Study Area



Notes:

Basemap: ESRI StreetMap North America, 2012



4.0 Visual Impact Assessment Methodology

The VIA procedures used for this study are consistent with methodologies developed by various state and federal agencies, including the U.S. Department of the Interior, Bureau of Land Management (1980), U.S. Department of Agriculture, National Forest Service (1974), the U.S. Department of Transportation, Federal Highway Administration (1981), the Adirondack Park Agency (not dated), and the New York State Department of Environmental Conservation (not dated). The specific techniques used to assess potential Project visibility and visual impacts are essentially the same as those used on the Groton Wind Project which was reviewed and approved by the New Hampshire Site Evaluation Committee (SEC) in 2011. Methodologies utilized by EDR on Wild Meadows Wind Project include viewshed analysis, field verification of potential visibility, identification of representative/sensitive viewpoints, preparation of computer-assisted visual simulations from those viewpoints, and evaluation of the Project's visual contrast by a panel of landscape architects. Each of these techniques are described in the following section.

4.1 Potential Project Visibility

An analysis of potential Project visibility was undertaken to identify those locations within the visual study area where it may be possible to view the proposed wind turbines from ground-level vantage points. This analysis included identifying potentially visible areas on viewshed maps and verifying line of sight conditions in the field. The methodology employed for each of these assessment techniques is described below.

4.1.1 Viewshed Analysis

Viewshed maps define areas of potential Project visibility by identifying areas within the study area that could have an unobstructed line of sight from the viewer to any portion of one or more of the proposed turbines (NYSDEC, not dated). Topographic viewshed maps for the Project were prepared using USGS digital elevation model (DEM) data (7.5-minute series), the location and height of all proposed turbines (see Figures 2 and 3), an assumed viewer height of 5.5 feet, and ESRI ArcGIS® software with the Spatial Analyst extension. Two 10-mile radius topographic viewsheds were mapped, one to illustrate potential "worst case" daytime visibility (based on a maximum blade tip height of 492 feet above existing grade) and the other to illustrate potential nighttime visibility of turbine lights (based on the conservative assumption that all of the turbines could include FAA obstruction warning lights at a height of 318 feet above existing grade).

The ArcGIS program defines the viewshed (using topography only) by reading every cell of the DEM data and assigning a value based upon the existence of a direct, unobstructed line of sight to turbine location/elevation coordinates from observation points throughout the 10-mile study area. The resulting topographic viewshed maps define the maximum area from which any portion of any turbine in the completed Project could potentially be seen within the study area during both daytime and nighttime hours based on the existence of a direct line of sight, and ignoring the screening effects of existing vegetation and structures. The results also provide a turbine count analysis, which indicates how many wind turbines (or any portion therefore) are potentially visible from any given point within the viewshed. These results were then grouped by number of turbines potentially visible. Four turbine count groups were defined to create a nearly even distribution of turbines within each group, and to allow easy interpretation of the final map.

Because the screening provided by vegetation and structures is not considered in this specific analysis, the topographic viewshed represents a "worst case" assessment of potential Project visibility. Topographic viewshed maps assume that no trees exist, and therefore are very accurate in predicting where visibility will not occur due to topographic interference. However, they are less accurate in identifying areas from which the Project would actually be visible. Trees and buildings can limit or eliminate visibility in areas indicated as having potential Project visibility in the topographic viewshed analysis.

To supplement the topographic viewshed analysis, a vegetation viewshed was also prepared to illustrate the potential screening provided by forest vegetation. A base vegetation layer was created using the USGS 2006 National Land Cover Dataset (NLCD) to identify the mapped location of forest land (including the Deciduous Forest, Evergreen Forest and Mixed Forest NLCD classifications). Based on standard visual assessment practice, the mapped locations of the forest land was assigned a conservative assumed height of 40 feet (even though most forest vegetation within the study area exceeds this height), and added to the DEM. The viewshed analysis was then rerun, as described above. As with the topographic viewshed analysis, the results included a turbine count analysis, and two 10-mile radius vegetation viewsheds were mapped, one to illustrate "worst case" daytime visibility (based on a maximum blade tip height of 492 feet above existing grade) and the other to illustrate potential visibility of turbine lights (based on the conservative assumption that all of the turbines could include FAA obstruction warning lights at a height of 318 feet above existing grade). Once the viewshed analysis was completed, the areas covered by the forest vegetation layer were designated as "not visible" on the resulting data layer. Although there are certainly areas of mapped forest that have natural or man-made clearings that provide open outward views, these openings are typically narrow/enclosed and would include little of the proposed Project. In most forested areas, clearings do not exist and views will be well screened by the overhead tree canopy. During the growing season the forest canopy will

fully block views of the proposed turbines, and such views will typically be almost completely obscured, or at least significantly screened, even under "leaf-off" conditions.

Because it accounts for the screening provided by mapped forest stands, the vegetation viewshed is a much more accurate representation of potential Project visibility. However, it is important to note that screening provided by buildings and street/yard trees, as well as characteristics of the proposed turbines that influence visibility (color, narrow profile, distance from viewer, etc.), are not taken consideration in the viewshed analyses. These factors can limit or eliminate Project visibility. Consequently, being within the vegetation viewshed does not necessarily equate to actual Project visibility.

4.1.2 <u>Field Verification</u>

Potential visibility of the proposed Project was also evaluated in the field on September 10-12, 2012 and September 5-6, 2013. The purpose of these visits was to verify the existence of direct lines of sight to the Project site as indicated by viewshed analysis, and to obtain photographs for subsequent use in the development of visual simulations. A mix of clear and partly cloudy skies provided a representative variety of sky/lighting conditions throughout the field review.

During the field verification, EDR staff members drove public roads and visited public vantage points within the 10-mile radius study area to document locations from which the turbines would likely be visible, partially screened, or fully screened. This determination was made based on the visibility of Project ridge tops and/or temporary meteorological towers on these ridges, which served as locational and scale references. Photos were taken from a total of 291 representative viewpoints within the study area. All photos were obtained using Nikon D50, Nikon D200, and Cannon EOS 20D digital SLR cameras with a focal length between 28 and 35 mm (equivalent to between 45 and 55 mm on a standard 35 mm film camera). This focal length is the standard used in visual impact assessment because it most closely approximates normal human perception of spatial relationships and scale in the landscape. Viewpoint locations were determined using hand-held global positioning system (GPS) units and high-resolution aerial photographs (digital ortho quarter quadrangles). The time and location of each photo were documented on all electronic equipment (camera, GPS unit, etc.) and noted on field maps and data sheets (see Appendix B). Viewpoints photographed during field review generally represented the most open, unobstructed available views toward the Project site (see Photolog included in Appendix B).

4.2 Project Visual Impact

Beyond evaluating potential Project visibility, the VIA also examined the visual impact of the proposed wind turbines on the public resources and viewers within the visual study area. This assessment involved creating computer models of the proposed Project turbines, selecting representative viewpoints within the study area, and preparing computer-assisted visual simulations of the proposed Project. These simulations were then used to characterize the type and extent of visual impact resulting from Project construction. Details of the visual impact assessment procedures are described below.

4.2.1 <u>Viewpoint Selection</u>

From the 291 viewpoints documented during fieldwork EDR selected a total of 21 viewpoints for development of visual simulations. These viewpoints were selected based upon the following criteria:

- 1. They represent open views toward the Project site from different directions throughout the visual study area (as determined through field verification).
- 2. They illustrate the most open views available from potentially significant public resources within the visual study area.
- 3. They illustrate open views from LSZs where views of the Project are most likely to be available.
- 4. They illustrate open views of the proposed Project that may be available to representative viewer/user groups within the visual study area.
- 5. They illustrate views of different numbers of turbines, from a variety of viewer distances, and under different lighting/sky conditions, to illustrate the range of visual change that could occur with the Project in place.

In addition, several of these viewpoints were selected for the development of nighttime simulations. The selected nighttime views needed to be in dark settings with minimal ambient lighting to allow successful nighttime photography. These viewpoints were also selected to show variety in sky conditions (degree of darkness), number of lighted turbines, and other lights in the landscape. Location of the selected viewpoints is indicated in Figure 9. Locational details and the criteria for selection of each simulation viewpoint are summarized in Table 1, below:

Table 1. Viewpoints Selected for Simulations and Evaluation

Viewpoint Number	Town	Public Resource LSZ Represented		Viewer Group Represented	Viewing Distance ¹	View Orientation ²
1	Grafton	-	Water & Forest	Residents	0.6 mi.	SE
32	Danbury	Route 104	Agricultural	Tourists, Residents & Travelers	3.8 mi.	NW
46		Newfound Lake Water		Tourists & Residents	4.7 mi	S SE
53	Alexandria	- Agricultural Residents		2.8 mi.	SW	
59	Alexandria	AMC Lodge	Forest	Tourists	3.5 mi.	S
63	Alexandria	Hamlet area	Hamlet	Residents	2.0 mi.	SSW
75	Grafton	-	Rural Residential	Residents	4.5 mi.	NE
78	Orange	Cardigan Mtn.	Forest	Tourists	4.3 mi.	SE
101	Danbury	Ragged Mtn. Ski Area	Forest	Tourists	7.0 mi	NE
129	Grafton	Ruggles Mine	Forest	Tourists	5.7 mi.	E
158	Hebron	Newfound Lake	Water	Tourists & Residents	8.2 mil.	S SW
160	Hebron	-	Rural Residential	Tourists & Residents	6.8 mi.	SSW
173	Bridgewater	-	- Rural Residential		6.0 mi.	SW
182	Bristol	Village area	Village	Residents	4.7 mi.	W
226	Danbury	-	Rural Residential & Agricultural.	Residents	1.6 mi.	N
241	Hill	Murray Hill Hist. Dist.	Rural Residential	Residents	3.5 mi.	N
244	Hill	Murray Hill Hist. Dist.	Rural Residential & Agricultural	Residents	2.9 mi.	N NW
266	Bridgewater	-	Shoreline Residential	Residents	5.1 mi.	SW
269	Bridgewater	Newfound Lake	Water	Residents, Tourists	4.9 mi.	SW
274	Alexandria	-	Utility Corridor	Residents	1.5 mi.	SW
279	Bristol	-	Rural Residential	Residents	1.1 mi.	SE

¹Distance to nearest proposed turbine that would be visible in the selected view

It is worth noting that several additional viewpoints were identified as having possible Project visibility during field review, and were selected as potential candidates for the development of visual simulations (i.e., Viewpoint 65, 78, 172, 176, and 184). However, during the process of camera alignment (see description in Section 4.2.2) it was determined that intervening vegetation and/or topography blocked views of the turbines from all of these viewpoints, and therefore, no simulations were prepared. Additional simulations were prepared for Viewpoints 163, 173, 200 and 219 that are not addressed in this VIA. These viewpoints were excluded because they were similar to other views already selected (daytime view from Viewpoint 173), showed little of the Project (Viewpoints 163 and 200) or included no turbines following revision of the proposed Project layout (Viewpoint 219, see Appendix E).

²N = North, S = South, E = East, W = West

4.2.2 Visual Simulations

To show anticipated visual changes associated with the proposed Project, high-resolution computer-enhanced image processing was used to create realistic photographic simulations of the completed turbines from each of the 21 selected viewpoints. The photographic simulations were developed by constructing a three-dimensional computer model of the proposed turbine and turbine layout based on turbine specifications and survey coordinates (version F-14) provided by the Project sponsor. Proposed clearing limits along Project access roads were also provided by Atlantic Wind, and a 200 foot clearing radius was assumed at each turbine site. For the purposes of this analysis, it was assumed that all turbines would be Vestas V-112 MW machines on 94 meter towers, and that a single meteorological tower would be included on the eastern ridge. Simulation methodology is outlined in Figure 7, and the computer model used in this VIA is shown in Figure 3. A demonstration of simulation accuracy, featuring preconstruction simulations and post-construction photos of the Groton Wind Project is attached as Appendix C.

Simulations were created by aligning each photographic viewpoint with computer models of the proposed turbines, and superimposing the models on the photographs. This step involves utilizing aerial photographs and GPS data collected in the field to create an AutoCAD® drawing. The two dimensional AutoCAD data were then imported into 3D Studio Max® and three-dimensional components (cameras, modeled turbines, etc.) added. These data were superimposed over photographs from each of the viewpoints, and minor camera changes (height, roll, precise lens setting) were then made, as necessary, to align all known reference points within the view. This process ensures that Project elements are shown in proportion, perspective, and proper relation to the existing landscape elements in each view. Consequently, the alignment, elevations, dimensions and locations of the proposed structures are accurate and true in their relationship to other landscape features in the photo.

At this point, a "wire frame" model of the facility and known reference points are shown on each of the photographs. The proposed exterior color/finish of the turbines is then added to the model and the appropriate sun angle is simulated based on the specific date, time and location (latitude and longitude) at which each photo was taken. This information allows the computer to accurately illustrate highlights, shading and shadows for each individual turbine shown in the view. All simulations show the turbines with rotors oriented toward the northwest, which is generally the prevailing wind direction in the area.

It should be noted that the selected view from Viewpoint 78 illustrates an approximately 50 degree field of view to allow the full Project to be included in the view. Panoramas with fields of view up to 112° were also prepared for this

viewpoint to illustrate the context of the Project as viewed from the summit of Mount Cardigan. A panorama (80 degree field of view) was also prepared for Viewpoint 129 (Ruggles Mine parking lot) for this same reason. These images were created by digitally "stitching" together multiple 50 mm photographs. The remaining simulations all show a field of view in the range of 36 to 45 degrees, which is equivalent to the field of view of a standard 50 mm camera lens. This is the standard focal length used in visual impact assessments.

To prepare nighttime simulations, EDR obtained data on the proposed model, and likely location, of FAA obstruction warning lights from Atlantic Wind. For the purpose of the simulations, it was assumed that approximately half the turbines would be equipped with L864 red warning lights, and that the location and spacing of these lights would follow FAA guidance (FAA, 2005). Consequently, lights were shown on turbines N2, N4, C1, C3, C5, C7, C9, G2, E1, E3, E5, E6, and E8. In addition, EDR visited operating wind power projects in New York State to document the appearance of the FAA warning lights at night. These data were used to help simulate the appearance of the FAA warning lights on the proposed Project. Computer modeling and camera alignment for the nighttime photos was prepared in the same manner described for the daytime simulations. However, compositing foreground and background images obtained using different shutter speeds was required in some of the nighttime photos to create a realistic representation of a nighttime view. Although the simulations were prepared based on the technical specifications of the turbines and lights, the images were modified based on field observations and professional experience to assure that they accurately represent the appearance of the FAA warning lights at the appropriate viewing distance. It was assumed that all lights will flash in a synchronized manner, as currently required by FAA quidelines. Nighttime simulations therefore show all turbines with their lights on.

4.2.3 Visual Impact Evaluation

Visual impact of the proposed Project was evaluated by an in-house panel of three registered landscape architects. Panel members were provided with digital files and 11 x 17 inch color prints of the existing conditions photo and simulation of the proposed Project for each of the 20 selected daytime viewpoints and three selected nighttime viewpoints. Digital files containing additional context photos taken at each viewpoint were also made available to the panel. A meeting was held with the panel to review the evaluation process and describe each viewpoint being evaluated. The LSZs, viewer groups, and sensitive resources represented by each viewpoint were reviewed with the panel, along with the rating forms to be used for the visual impact assessment (see Appendix F).

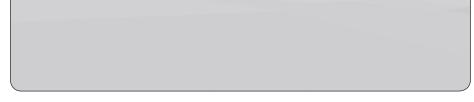
Visual impact rating form instructions (see Appendix F) were provided to the panel to ensure consistency among the panel members in their use of terms and understanding of what information was requested in the rating forms. The

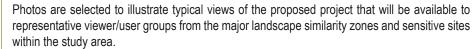
instructions provided: background concerning the LSZs, viewer types, and pubic resources in the study area; guidance regarding how best to describe landscape components depicted in each viewpoint (e.g., in terms of landscape composition, form, line, color, texture, focal point, order, atmospheric conditions, lighting direction, and visual clutter); guidance regarding evaluation of viewpoint sensitivity (in terms of both scenic quality and viewer exposure); and guidance regarding terms and concepts used in contrast rating.

The rating panel members then evaluated the before and after views from each viewpoint, and assigned each view quantitative contrast ratings on a scale of 0 (insignificant) to 4 (strong). The ratings were based on consideration of six landscape components (landform, water resources, vegetation, land use, user activity, and sky). Comments were solicited on the observed degree of contrast, variables that might alter perceived contrast, and overall effect on scenic quality.

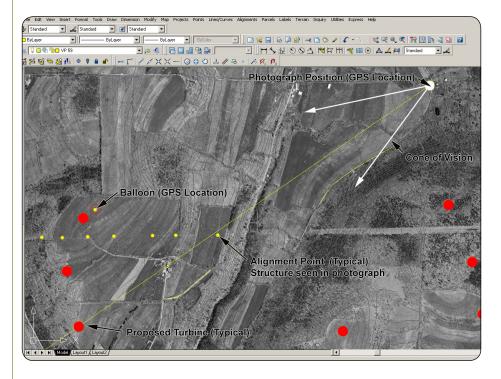
Following the panel's evaluation, each panel member's contrast ratings were compiled as an average for each viewpoint. The three individual ratings were then averaged to generate a composite contrast rating for each viewpoint. Comments provided by the raters were reviewed to identify consistent observations and the range of varying perception regarding baseline scenic quality and the effect of the Project at each viewpoint. These were then used to generate narrative descriptions of the existing setting and the overall visual impact of the Project on the landscape, aesthetic resources, and viewers represented by each of the selected viewpoints. The methodology utilized in this evaluation is a simplified version of the U.S. Department of the Interior, Bureau of Land Management (BLM) contrast rating methodology (USDI BLM, 1980). The rating form was developed by EDR, and has been used for visual impact evaluation on numerous wind power projects, including the Groton Wind Project. Along with having proven to be accurate in predicting public reaction to wind power projects, this methodology 1) documents the basis for conclusions regarding visual impact, 2) allows for independent review and replication of the evaluation, and 3) allows a large number of viewpoints to be evaluated in a reasonable amount of time without "burn-out" of the evaluator.



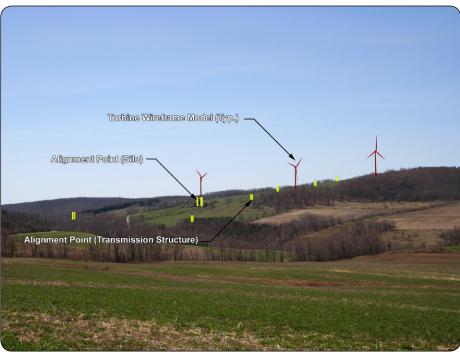




A three-dimensional computer model of the project is built based on proposed turbine specifications and tower site coordinates.



Aerial photographs and GPS data collected in the field are used to create an AutoCAD Civil 3D 2011® drawing.



These data are superimposed over photographs from each of the viewpoints, and minor camera changes are made to align all known reference points within the view.



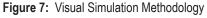
A digital terrain model representing the existing topography is also overlayed on the existing photograph to refine camera alignment, and target elevation.



The proposed exterior color/finish of the turbines was then added to the model and the appropriate sun angle is simulated based on the specific date, time and location (latitude and longitude) at which each photo was taken.

Wild Meadows Wind Project

Town of Alexandria, Grafton County; and Town of Danbury, Merrimack County - New Hampshire







5.0 Visual Impact Assessment Results

5.1 Project Visibility

5.1.1 <u>Viewshed Analysis</u>

Potential turbine visibility, as indicated by the viewshed analyses, is illustrated in Figure 8 and summarized in Table 2. Results of the topographic blade tip analysis indicate that a direct line of sight between a viewer and a blade tip of one or more of the proposed turbines (i.e., unobstructed by topography) could potentially be available from approximately 46.6% of the 10-mile study area, assuming there are no trees. This "worst case" assessment of potential visibility indicates the area where any portion of any turbine could possibly be seen without considering the screening effect of existing vegetation and structures. Areas where no direct line of sight toward the Project exists comprise approximately 53.4% of the overall study area, and generally include valleys and the back sides of mountains and ridges that are oriented away from the Project site. Significant areas that are screened by topography alone occur throughout the study area, especially beyond 5 miles from the proposed turbines. These areas include areas north of Cardigan Mountain, Mowglis Mountain, Oregon Mountain and Bear Mountain; areas west of Prescott Hill; areas southeast of Ragged Mountain and Tucker Mountain; areas east of Plymouth Mountain, Bridgewater Mountain and Bristol Peak; and portions of the Pemigewasset River Valley. Based on blade tip height and the screening effect of topography alone, public resources within the 10-mile radius study area that do not have direct lines of sight toward the Project include the New Hampton and New Hampton-Bridgewater Scenic Easements, Sculptured Rocks State Geologic Site, McDaniels Marsh WMA, Hebron Marsh Wildlife Sanctuary, Highland Lake, Grafton Pond, Spectacle Ponds (in both Groton and Enfield), Webster Lake, Province Road State Forest, Ragged Mountain State Forest, and local resources within the settlements of Hebron, East Andover, Andover, Hill and Hill Center (see Table A in Appendix A). As indicated by the turbine count analysis in Table 2, in approximately 30.5% of the visual study area the majority (13 or more) of the proposed turbines could potentially be visible. Higher numbers of potentially visible turbines are indicated in the high elevation portions of the study area, most significantly to the south/southwest and to the northeast of the proposed turbines. About 16.1% of the 10-mile radius study area has the potential for views that include between one and 12 turbines (if screening by trees is not considered).

Based on topographic viewshed analysis, a direct line of sight between a viewer and one or more of the FAA warning lights on the proposed turbines could potentially be available from approximately 43.3% of the 10-mile radius study area (assuming all of the individual turbines could be lit, and there are no trees to obstruct views of the lights). Although somewhat smaller, these areas of potential nighttime visibility are indicated in roughly the same locations

shown by the blade tip analysis (Figure 8, Sheet 2). Topographic viewshed analysis indicates that 25.5% of the study area would have the potential to simultaneously see over half the FAA warning lights from the Project, assuming all of the turbines could be equipped with lights. Based on FAA guidance, which suggests that no more than 13 of the turbines are likely to be equipped with obstruction warning lights, the viewshed results certainly overstate FAA warning light visibility to some extent.

Although it does not account for all potential sources of visual screening (e.g., man-made structures and small groups of trees) factoring mapped forest vegetation into the viewshed analysis significantly reduces the area where direct lines of sight toward the Project could potentially be available, and is a more accurate reflection of what the actual extent of Project visibility is likely to be (Figure 8, Sheets 3 and 4). Within a 10-mile radius, the vegetation viewshed analysis indicates that only approximately 3.8% of the area could have potential views of some portion of the Project based on the availability of an unobstructed line of sight. Visibility will be eliminated in large portions of the study area where forest vegetation occurs. Forest land is the dominant land use within the study area (covering approximately 85% of the 10-mile radius area) and will significantly reduce potential Project visibility throughout the area, except in some agricultural and wetland areas west of Bristol and north of Danbury, scattered higher elevation openings, existing road and transmission line corridors, and Newfound Lake where cleared areas and open water/fields provide the opportunity for unscreened views. Compared to the topographic blade tip viewshed, areas where more than 12 turbines could potentially be visible decreases from 30.1% to 1.8% of the study area simply by factoring in the screening effect of existing forest vegetation. Roughly the same effect is seen when comparing the vegetation and topographic viewshed analysis of the FAA warning lights (see Table 2). As indicated in Table A in Appendix A, considering the screening effect of both topography and vegetation in the viewshed analysis essentially eliminates potential Project visibility from half of the public resources identified within the study area (and limits visibility from an additional 40 percent of these resources). However, the remaining half of the identified resources are still indicated as having a direct line of sight toward the Project from at least some location(s) within their mapped boundary. Sites where viewshed analysis indicates some level of Project visibility considering the screening effects of topography and vegetation include a small portion of Wellington State Park, the exposed mountain peaks in Cardigan Mountain State Forest/Park, the majority of Newfound Lake, and several historic sites, state forests, wildlife management areas and locally important resources (see Appendix A).

As mentioned previously, being within the Project viewshed does not equate to Project visibility, which needs to be verified in the field (see Section 5.1.2). Areas of actual visibility are anticipated to be more limited than indicated by the vegetation viewshed analysis, due to the slender profile of the turbines (especially the blade, which make up the top 179 feet of the turbine), the effects of distance, and screening provided by yard trees, street trees and structures,

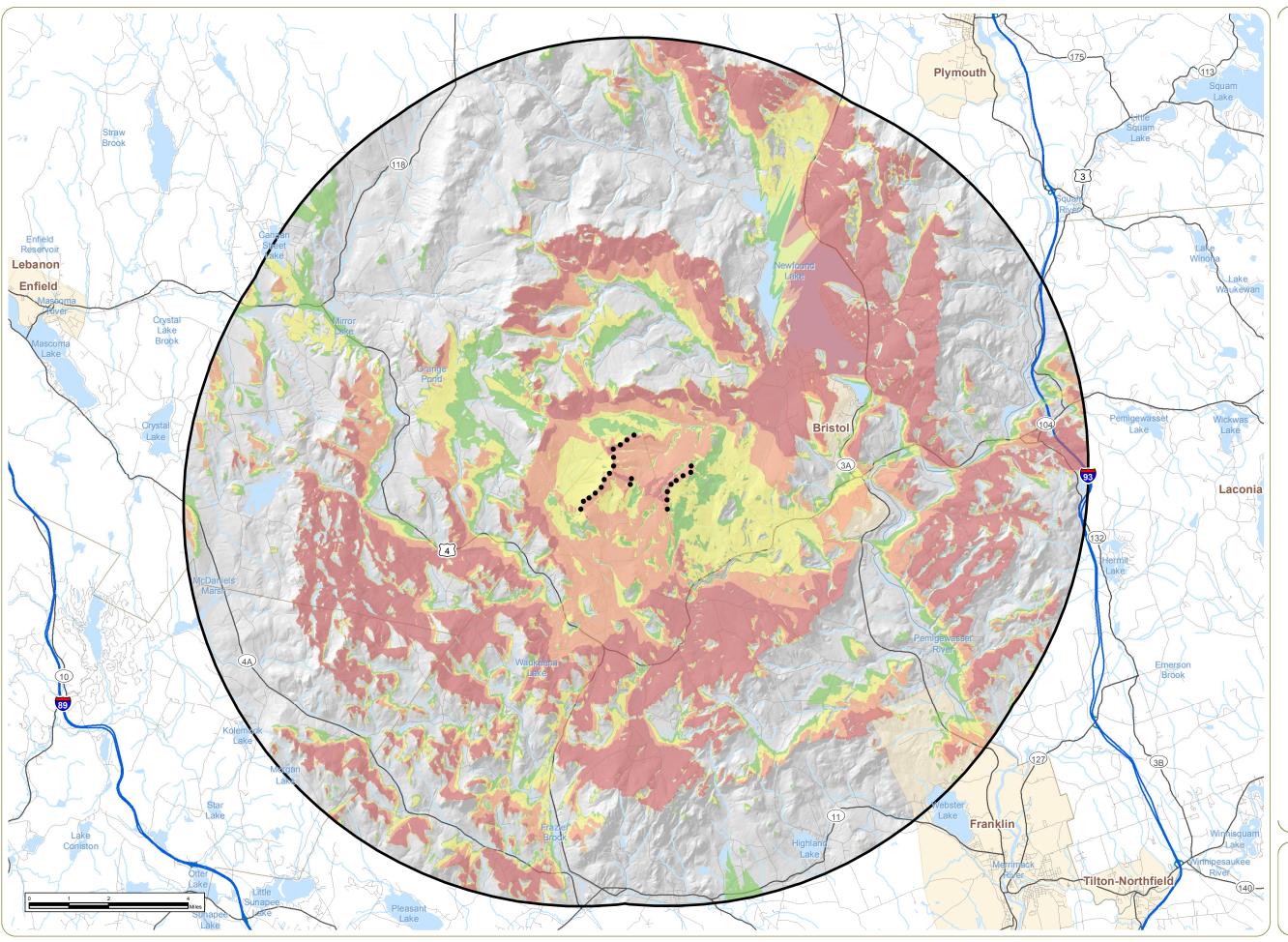
all of which are not considered in the viewshed analysis. In addition, the analysis assumed 40 foot trees, when in fact there are large areas where mature trees are over 60 feet in height.

Table 2. Viewshed Results Summary

	10-Mile-Radius Study Area ¹ Viewshed Visibility										
Number of	Turbines Blade Tip		Blade Tip Topography and Vegetation		FAA Light Topography Only		FAA Light Topography and Vegetation				
Turbines											
Potentially											
Visible	Square	% of	Square	% of	Square	% of	Square	% of			
	Miles	Study Area	Miles	Study Area	Miles	Study Area	Miles	Study Area			
0	209.2	53.4	376.7	96.2	221.8	56.7	378.4	96.6			
1-6	26.3	6.7	3.5	0.9	30.5	7.8	3.4	0.9			
7-12	36.7	9.4	4.0	1.0	39.5	10.1	3.9	1.0			
13-18	41.4	10.6	2.9	0.7	58.7	15.0	5.3	1.3			
19-23	77.8	19.9	4.3	1.1	40.9	10.5	0.5	0.1			
Total Visibility	182.3	46.6	14.8	3.8	169.7	43.3	13.1	3.4			

¹The 10-mile radius study area totals approximately 391.5 square miles, or 250,560 acres.

Note: Land area for turbine count analysis may not be equal to study area acreage due to rounding and/or raster-to-vector conversion.



Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 8: Viewshed Analyses

Sheet 1 of 4: Blade Tip Visibility Based on Topography Only

November 2013

Legend

- Wind Turbine
- 10-Mile Study Area
- Potential Visiblity
- 1 to 6 Turbines Visible
- 7 to 12 Turbines Visible
- 13 to 18 Turbines Visible
- 19 to 23 Turbines Visible

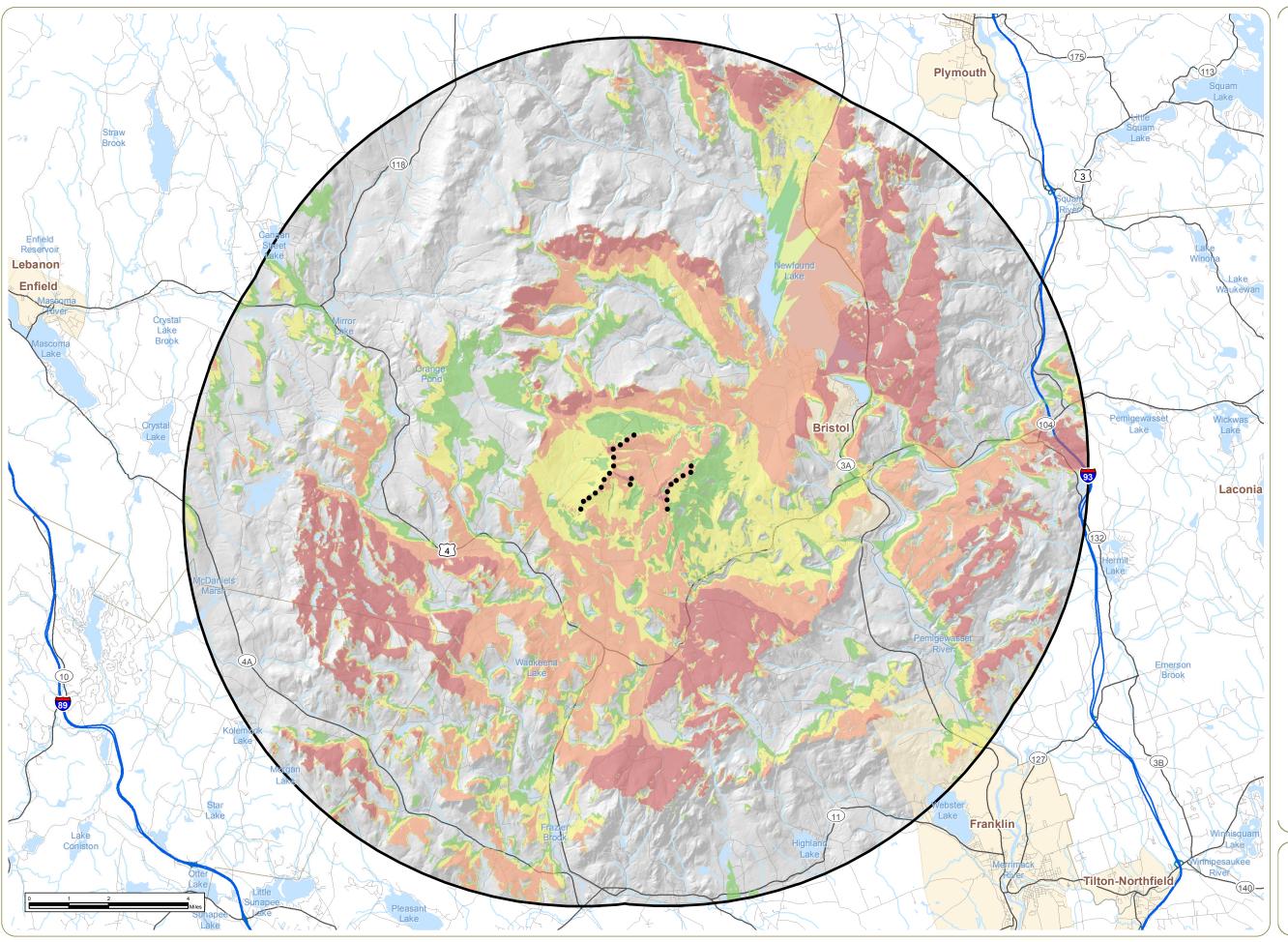
Notes:

- Base Map: Hillshade derived from USGS
 5.5-minute Andover, Ashland, Bristol, Canaan, Danbury, Enfield Center, Franklin, Grafton, Holderness, Mount Cardigan, New London, Newfound Lake, Sunapee Lake North, Winnisquam Lake DEM Quadrangles; and ESRI StreetMap North America, 2008.
- 2. Potential turbine visibility based on topography only. Screening effects of buildings, trees or other factors are not accounted for.
- 3. Viewshed analysis based on the F14 turbine layout and a maximum blade tip height of 150 meters.









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 8: Viewshed Analyses

Sheet 2 of 4: FAA Warning Light Visibility Based on Topography Only

November 2013

Legend

- Wind Turbine
- 10-Mile Study Area

Potential Visiblity

- 1 to 6 Turbines Visible
- 7 to 12 Turbines Visible
- 13 to 18 Turbines Visible
- 19 to 23 Turbines Visible

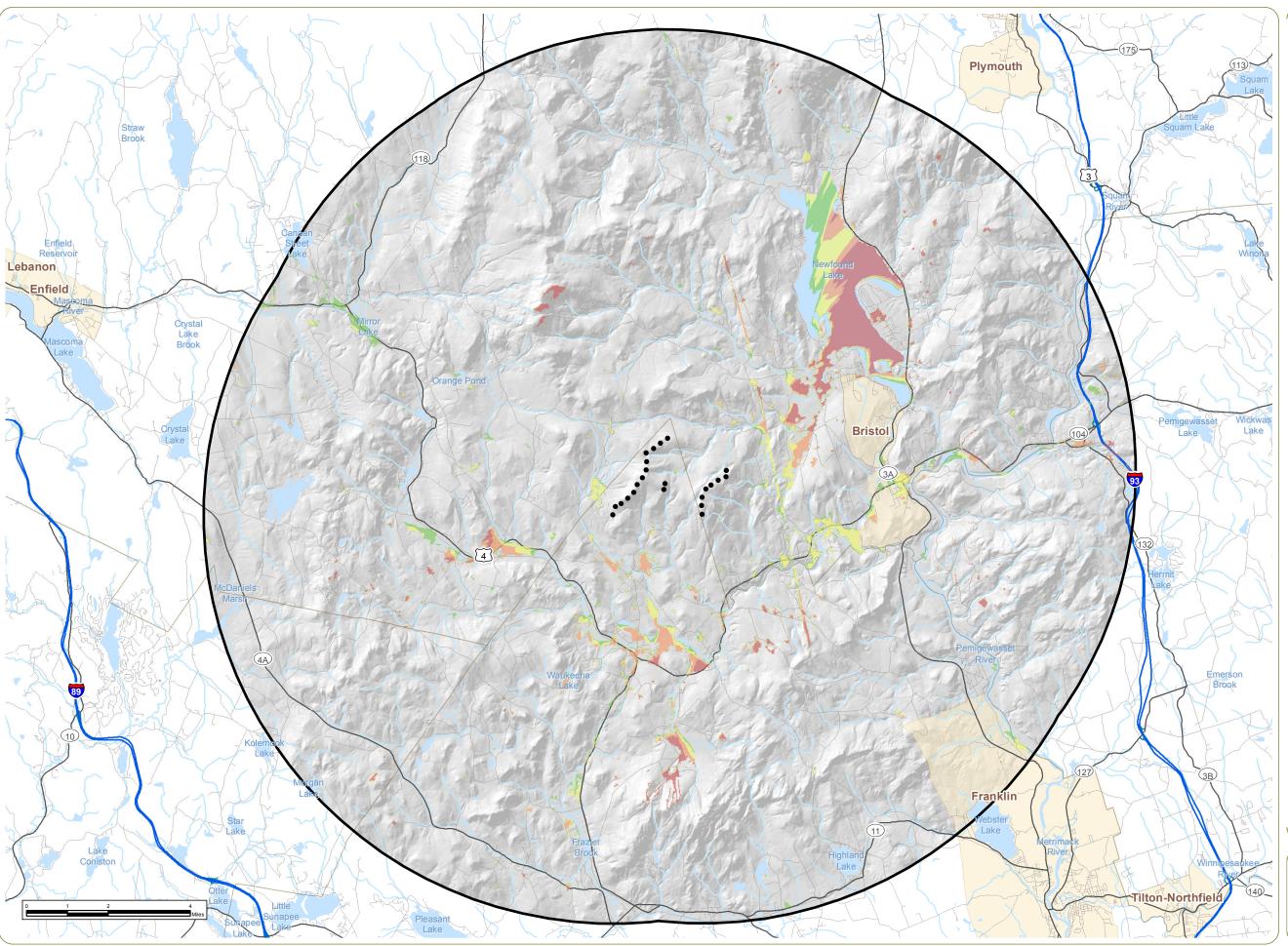
Notes

- Base Map: Hillshade derived from USGS
 5.5-minute Andover, Ashland, Bristol, Canaan, Danbury, Enfield Center, Franklin, Grafton, Holderness, Mount Cardigan, New London, Newfound Lake, Sunapee Lake North, Winnisquam Lake DEM Quadrangles; and ESRI StreetMap North America, 2008.
- Potential FAA warning light visibility based on topography only. Screening effects of buildings, trees or other factors are not accounted for.
- 3. Viewshed analysis based on the F14 turbine layout and an FAA warning light height of 97 meters. The analysis conservatively assumes that all turbines would be lit.









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 8: Viewshed Analyses

Sheet 3 of 4: Blade Tip Visibility
Based on Vegetation and Topography

November 2013

Legend

- Wind Turbine
- 10-Mile Study Area

Potential Visiblity

- 1 to 6 Turbines Visible
- 7 to 12 Turbines Visible
- 13 to 18 Turbines Visible
- 19 to 23 Turbines Visible

Notes

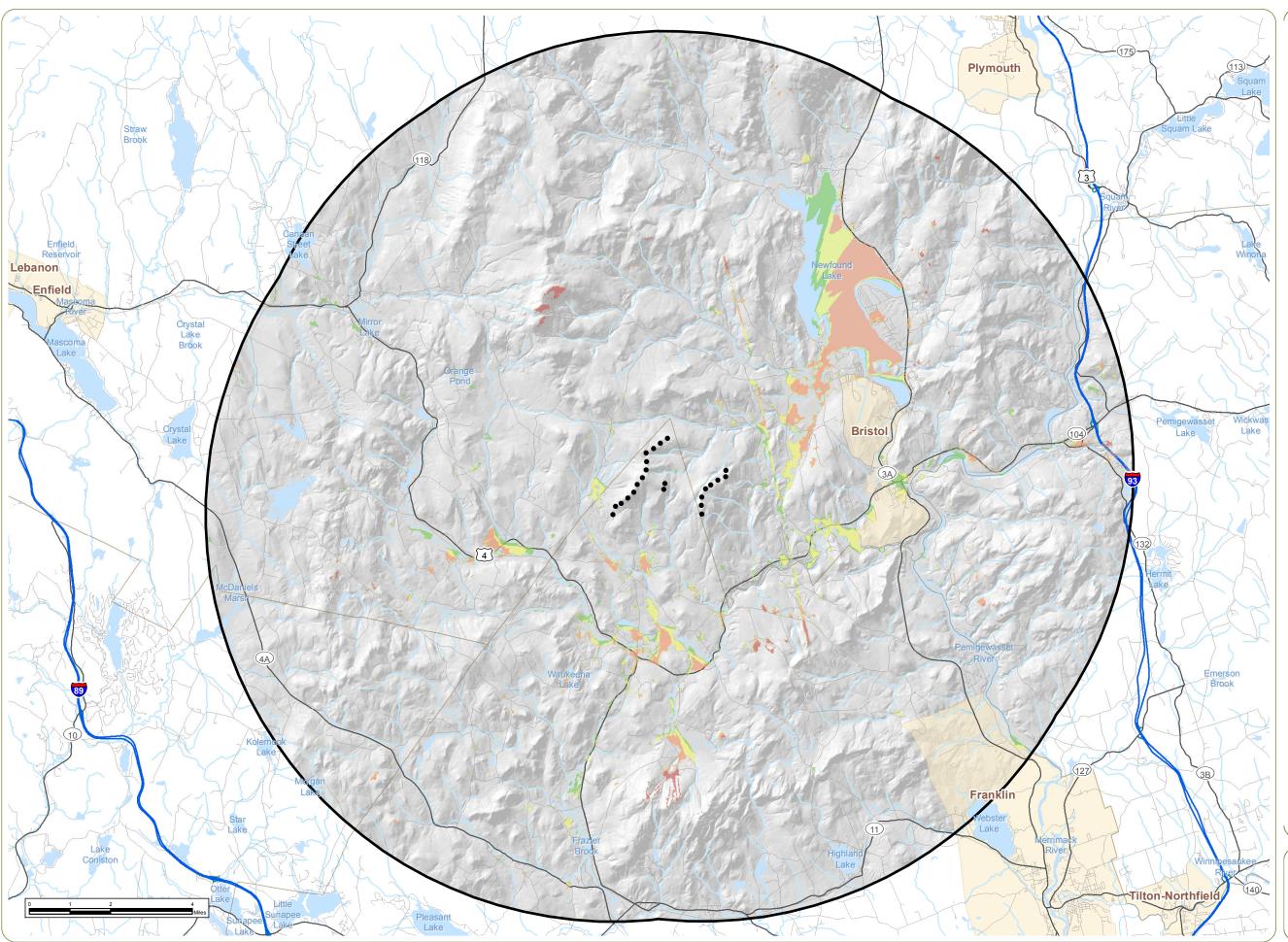
Base Map: Hillshade derived from USGS
 S-5-minute Andover, Ashland, Bristol, Canaan, Danbury, Enfield Center, Franklin, Grafton, Holdemess, Mount Cardigan, New London, Newfound Lake, Sunapee Lake North, Winnisquam Lake DEM Quadrangles; and ESRI StreetMap North America, 2008.

- Potential turbine visibility accounts for topography and potential screening by mapped forest vegetation (with an assumed height of 40 ft).
- 3. Viewshed analysis based on the F14 turbine layout and a maximum blade tip height of 150 meters.









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 8: Viewshed Analyses

Sheet 4 of 4: FAA Warning Light Visibility Based on Vegetation and Topography

November 2013

Legend

- Wind Turbine
- 10-Mile Study Area

Potential Visiblity

- 1 to 6 Turbines Visible
- 7 to 12 Turbines Visible
- 13 to 18 Turbines Visible
- 19 to 23 Turbines Visible

Notes:

- 1. Base Map: Hillshade derived from USGS 7.5-minute Andover, Ashland, Bristol, Canaan, Danbury, Enfield Center, Franklin, Grafton, Holderness, Mount Cardigan, New London, Newfound Lake, Sunapee Lake North, Winnisquam Lake DEM Quadrangles; and ESRI StreetMap North America, 2008.
- 2. Potential FAA warning light visibility accounts for topography and potential screening by mapped forest vegetation (with an assumed height of 40 ft).
- 3. Viewshed analysis based on the F14 turbine layout and an FAA warning light height of 97 meters. The analysis conservatively assumes that all turbines would be lit.







5.1.2 Field Verification

Field review revealed that actual Project visibility is likely to be much more limited than suggested by topographic viewshed mapping. This is due to the fact that screening provided by buildings is significant in village and hamlet areas, and trees within rural portions of the study area typically limit long distance views. The field review confirmed that the vegetation viewshed analysis much more accurately predicts locations where Project visibility is likely to occur. Consistent with the results of this analysis, field review confirmed that visibility of the Project is very limited within the study area due to the prevalence of mature forest vegetation (which covers approximately 85% of the study area). Representative photographs illustrating views of the Project site from throughout the study area, and factors affecting the visibility of the Project, are provided in the Photolog included as Appendix B (viewpoint locations indicated in Figure 9).

Open views of the Project were concentrated to the south and east of the Project site, with a few scattered open views documented to the north and west. The closest open views of the site were documented on Wild Meadows Road in the Town of Grafton; Grafton, Washburn, and Cass Mill Roads in the Town of Alexandria, and Bohonnon Road and Forbes Mountain Road in the Town of Danbury. The most numerous open views were available in agricultural areas in the Town of Danbury and Alexandria, and from the eastern shoreline of Newfound Lake. Newfound Lake itself represents the largest area from which open, unscreened views of the Project will be available. The Project will be screened from view along the west shore of the lake. However, the eastern shore, and areas where clearings in the forest have been created on the hills that border the lake to the east (primarily residential yards in the Town of Bridgewater) will likely have open views of the Project, albeit at a distance of over 5 miles away.

In village and hamlet areas, where population is concentrated, views of the Project site are generally well-screened by buildings, street trees, yard trees, and/or adjacent areas of the forest. No open views were documented from the downtown areas of New Hampton, Hebron, Canaan, or Canaan Center, other than one long distance view across Canaan Street Lake. Open views from the downtown area of Bristol were also very limited, even in areas that lacked foreground screening, due to the presence of an intervening forested ridge to the west. Several open views were documented from the hamlet areas of Danbury and Alexandria. However, views within the village and hamlet areas were in all cases tightly framed or partially blocked by buildings, street tress, and/or surrounding wooded hills (e.g., Viewpoints 61-65, 71-72, 167, 179-181, 185, and 188-190).

Few open views were documented from the more heavily traveled highways that traverse the study area. No open views were observed from State Routes 118 or 4A, or Interstate Route 93. Despite its proximity to the Project site,

views of the Project site from U.S. Route 4 were typically blocked by intervening forested ridges, even where gravel pits and other clearings adjacent to the highway provided open views in the direction of the Project site. These areas may offer occasional, limited views of the upper portions of some turbines. Although open views will be available from adjacent Newfound Lake, views from State Route 3A within the study area were almost always well screened by adjacent roadside vegetation. The highway offering the greatest opportunities for views of the Project is State Route 104. Although often screened by forest, open fields in a few locations along Route 104 in the Towns of Alexandria, Danbury, and Bristol will offer at least partial views of the Project. A large open field north of Route 104 in Danbury (see Appendix B: Viewpoints 32 and 70) provides the most open, expansive view of the Project from any of the heavily-used highways within the study area.

Elsewhere within the study area, open views were generally limited to isolated locations in some valleys and on slopes oriented toward the Project site, where clearings in the forest overstory associated with residential yards, water bodies, agricultural fields, or utility corridors, provided outward views.

Although field review focused on the identification of sites with potential views of the proposed Project, it is worth reiterating that the field view confirmed that views toward the Project site were screened throughout the vast majority of the visual study area. Rural portions of this area were generally screened by the mountainous topography and forest vegetation. Where views of the surrounding landscape were available in rural, forested areas, these views tended to be narrow openings in the forest canopy that offered limited or fleeting outward views. These openings are typically in association with a rural roadway or residential yard (e.g., Viewpoints 49, 50, 95, 98, 115, 125, 155, 168, 170-172, 212, 214, 243, 252, 256, 260, and 270).

Public resources of potential statewide significance with open views toward the Project site included portions of Cardigan Mountain State Forest/Park where multiple views are available from the trails and overlooks on the bald summit and upper slopes of Mount Cardigan, South Peak and Firescrew Mountain (see photos from Viewpoints 77-86 and 283-290). Broad, open (in places 360 degree) views of the surrounding landscape, including the Project site and the built Groton Wind Farm are available from multiple locations on the exposed portions of these peaks. Trails leading up to the summit of Mount Cardigan from trailheads in the state forest to the west, and on the AMC property to the east, generally run through mature forest and are well screened. Partially screened open views in the direction of the proposed Project were documented from an area of mowed lawn adjacent to the AMC Cardigan Lodge (Viewpoint 59) and in the vicinity of designated campsites to the west of the lodge (Viewpoint 286). No open ground-level views are available from the lodge itself or its parking lot.

Open views were also documented from Newfound Lake and its shoreline in various locations (see Viewpoints 45-47, 158, 163, 268 and 269). Views from the southern and western shorelines are well screened by forest vegetation, buildings and/or topography, which rises steeply from the lakeshore. No open views were documented from Wellington State Park, although the Project site comes into view above the shoreline trees as one proceeds out into the lake from the Park's boat launch (see Viewpoints 45-47). The most open views of the Project site were available from the surface of Newfound Lake, the eastern shoreline of the lake, and clearings on the west-facing slopes immediately to the east. These locations which range in distance from approximately 4 miles to over 8 miles from the nearest proposed turbine site, offer unobscured views of the background ridges/hilltops where the turbines are proposed to be located, and in many of these areas, all or portions of the majority of the proposed turbines will be visible.

Open views toward the Project site were also documented from some locations within the Murray Hill Summer Home Historic District in the Town of Hill (Viewpoints 239-244). Other public resources or tourist destinations with open views toward the Project site include the parking lot of Ruggles Mine (Viewpoint 129-131), the ski trails at Ragged Mountain Ski Area (Viewpoints 100-104), the golf course at Ragged Mountain (Viewpoint 107), and several small lakes and ponds (e.g., Viewpoints 1, 133, 146, 200, and 276). Sites that receive significant public use with potential open views of the Project include the Alexandria Town Hall (Viewpoint 62), Danbury Town Hall (Viewpoint 72), and Bristol Elementary School (Viewpoints 183 and 184).

Public resources of potential statewide significance where no open views toward the Project site were documented included the Pemigewasset River within the Franklin Falls Reservoir Recreational Resource Area, several of the National or State-listed historic sites (e.g., the Hebron Village Historic District, Hill Center Church, Gordon-Nash Library, New Hampton Community Church, Dana Meeting House, and sites in East Grafton), the New Hampton and New Hampton-Bridgewater Scenic Easements, Grafton Pond, Kilton Pond, the Newfound River, and all of the State Forests and WMA's visited during field review. In addition, no open views toward the Project were identified for many resources of local significance, including the hamlet areas of Hebron, Groton, Hill Center East Grafton, Grafton, South Danbury, Orange, or Franklin, as well as several schools, municipal buildings, and local recreational facilities.

A summary of potential Project visibility from public resources of potential statewide significance, major water bodies, and areas of intensive land use (excluding roads) is presented in Table 3.

Table 3. Summary of Potential Project Visibility from Identified Public Resources.

		Not	Results of Field Review			
Visually Sensitive Resource Type	Total Count	Visible Per Viewshed Analysis	Not Visible	Limited/ Partial Visibility	Open View	Not Visited
State/National Register Listed Historic Sites	16	9	4	2	1	-
State Parks	2	-	1	-	1	-
State Forests	10	5	1	1		31
Wildlife Refuges/Wildlife Management Areas	11	7		1		32
Designated Scenic Sites	2	2	-	-	-	-
Areas of Intensive Land Use	30	16	5	9	-	-
Lakes and Rivers	16	8	1	5	2	-
Schools and Colleges	11	5	3	3	-	-
Hospitals, Town Halls, Libraries, Community Centers	28	15	4	6	3	-
TOTAL	126	67	19	27	7	6

¹Visibility of the Project is assumed to be completely screened, or only very limited, isolated views would be available, from State Forests within the study area due to the extent of screening provided by forest vegetation.

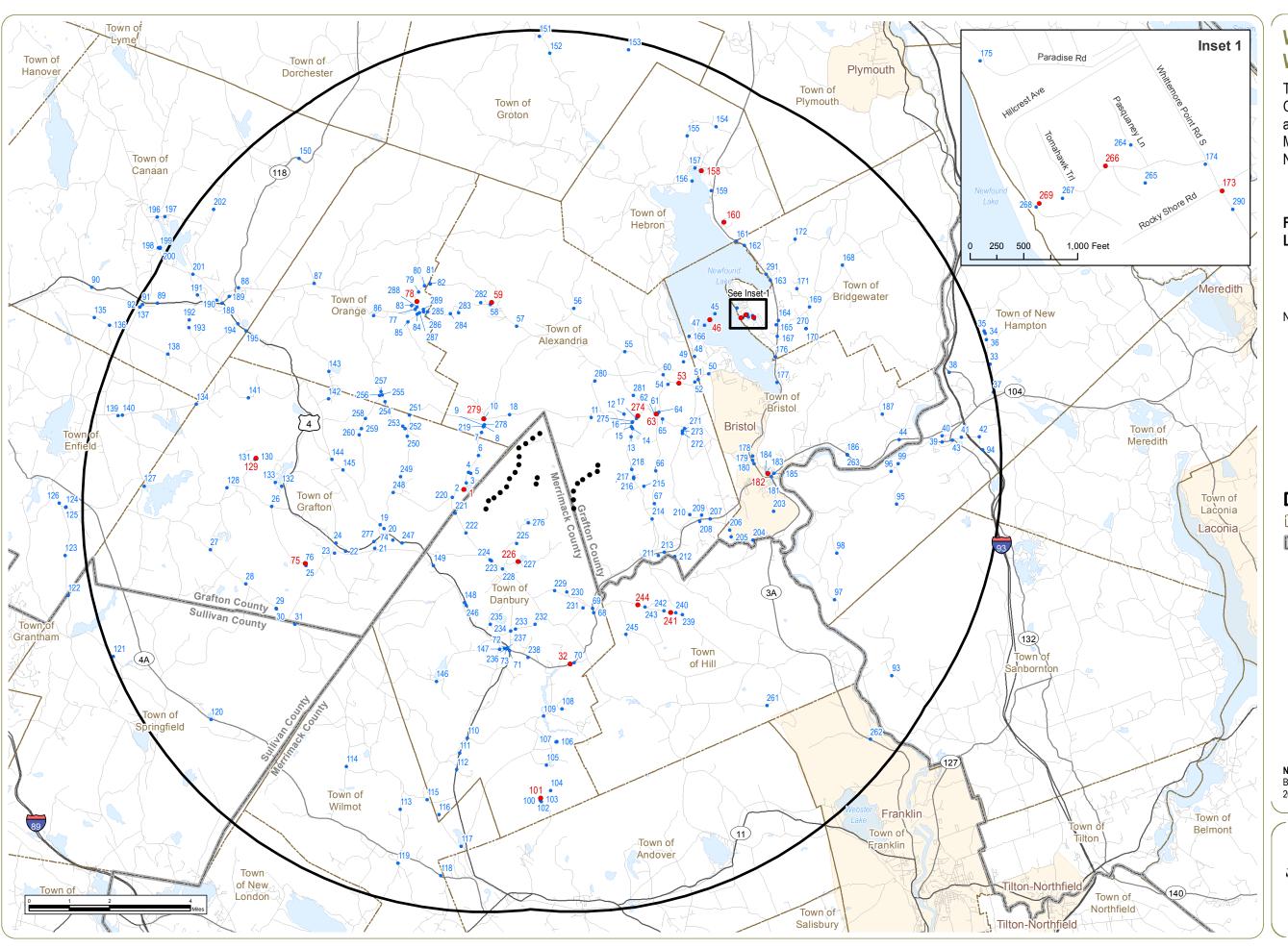
Table A in Appendix A presents a comprehensive summary of potential Project visibility from all inventoried public resources within the visual study area.

5.2 Project Visual Impact

5.2.1 <u>Analysis of Existing and Proposed Views</u>

Photographic simulations of the completed Project from each of the 21 viewpoints indicated in Figure 9 were used to evaluate Project appearance and visual contrast with the existing landscape. As indicated in Section 4.2.1, these viewpoints were selected from 291 viewpoints documented during fieldwork, and are representative of the most open, unobstructed views toward the Project site that are available from the LSZ or public resource they represent. Consequently, simulations developed from these locations illustrate "worst case" Project visibility from these resources within the visual study area. Review of these images, along with photos of the existing view, allowed for comparison of the aesthetic character of each view, with and without the proposed Project in place. Results of this evaluation were reviewed to identify common perceptions and the variety of opinions expressed by the rating panel. These narrative summaries are presented in the following section. Numerical scores resulting from the VIA evaluation are summarized in Section 5.2.2, and the significance of the identified visual impacts is discussed in Section 5.2.3.

²The viewshed analysis indicates potential visibility from very small/limited areas within Witte Forest, Danbury Bog, and Bog Mountain Wildlife Management Areas. However potential views of the Project from most portions of these sites will be screened by topography and vegetation.



Town of Alexandria, Grafton County and Town of Danbury, Merrimack County New Hampshire

Figure 9: Viewpoint Location Map

November 2013

- Viewpoint Location
- Simulated Viewpoint
- Wind Turbine
- 10-Mile Study Area
- Town Boundary
- County Boundary



Notes: Basemap: ESRI StreetMap North America, 2012



Viewpoint 1 (Figure 10)

Existing View

This viewpoint is located on Wild Meadows Road in the Town of Grafton, approximately 0.6 mile from the nearest turbine that would be visible in this view. It offers the closest publicly-accessible open view toward the proposed Project within the visual study area. The view featured in the selected photograph is to the southeast across Grants Pond, and features an expanse of open water with a small wooded island. This view is enclosed by adjacent forest (outside the field of view in the selected photo) and excludes discordant shoreline features (picnic table, duck pen, benches, grill) associated with a rural home located directly behind the viewer. The pond is backed by a horizontal band of emergent vegetation and an undeveloped, forested shoreline. The hillside is uniformly forested and rises to a gently sloping horizon line. It is devoid of any developed features, other than two temporary meteorological towers erected for the Wild Meadows Project. This viewpoint is representative of the Water/Waterfront and Forest LSZs, and would be experienced primarily by a small number of local residents that live along lightly used rural roads in the study area. Scenic quality of the selected view is moderate to high.

Proposed Project

With the proposed Project in place, four wind turbines rise prominently above the ridge that forms the visible horizon line. At this distance, the large size of the turbines is relatively apparent, and their scale, color, texture and form present strong contrast with the existing landform and vegetation. Although their white color is compatible with the clouds in the background, the turbines are clearly visible against a blue sky. Evidence of tree clearing to accommodate the turbines is limited, but as the only man-made objects in the view, the turbines alter the undeveloped character of the view and become new focal points. They also present strong contrast with the adjacent residential land use. However, open foreground views like this are very rare, and will generally be perceived by only a small number of residents as they travel local roads.



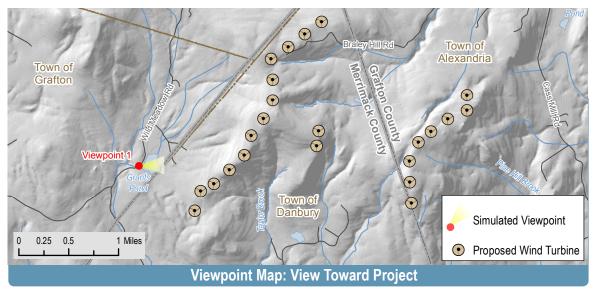












Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 10: Viewpoint 1

Sheet 1 of 3: Viewpoint Context - View across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 10: Viewpoint 1

Sheet 2 of 3: Existing view across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire - Facing East November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 10: Viewpoint 1

Sheet 3 of 3: Proposed view across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire - Facing East November 2013





Viewpoint 32 (Figure 11)

Existing View

This viewpoint is on Route 104 in the Town of Danbury, approximately 3.8 miles from the nearest purposed turbine. The view is to the northwest across a large open field adjacent to the highway. It is the most open view toward the Project site that is available from heavily traveled Route 104. The open field includes a few storage trailers and other man-made objects. It is backed by low forested hills that are primarily undeveloped but include at least one visible structure. The far edge of the field and the undulating crest of the ridge create strong horizontal lines in the landscape. Under the sunset conditions illustrated in this photo, the dark color of the forested hills presents strong contrast with the light gray and pink color of the sky. Openings like this are rare along the state highways in the study area. Such roads are generally more closely bordered by adjacent forest, and open views are narrow and of brief duration. This view is representative of the Agricultural LSZ. It has moderate scenic quality and will be available primarily to travelers and local residents.

Proposed Project

With the proposed Project in place, turbines extend across the entire ridgeline included in this view. The turbines break the horizon line, and under these lighting conditions, appear somewhat dark against the light sky. However, the turbines' color contrast with the sky is not strong. The turbines are subordinate to the dark, heavy mass of the landform, and follow the undulating form of the ridge. Their scale, color, and form present moderate to appreciable contrast with the existing vegetation and sky, but the agricultural field and storage containers in the foreground limit their apparent land use contrast. Although the turbines create new focal points in the landscape, distance, the presence of other man-made features in the view, and their peripheral location relative to the direction of travel on the road, limit their overall impact.

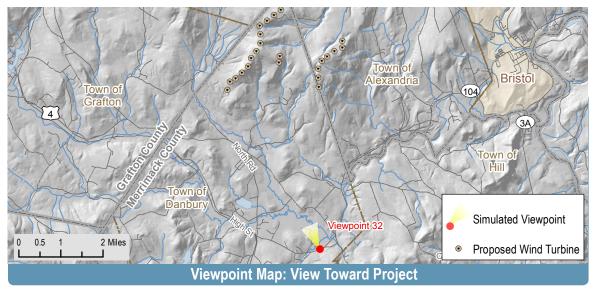












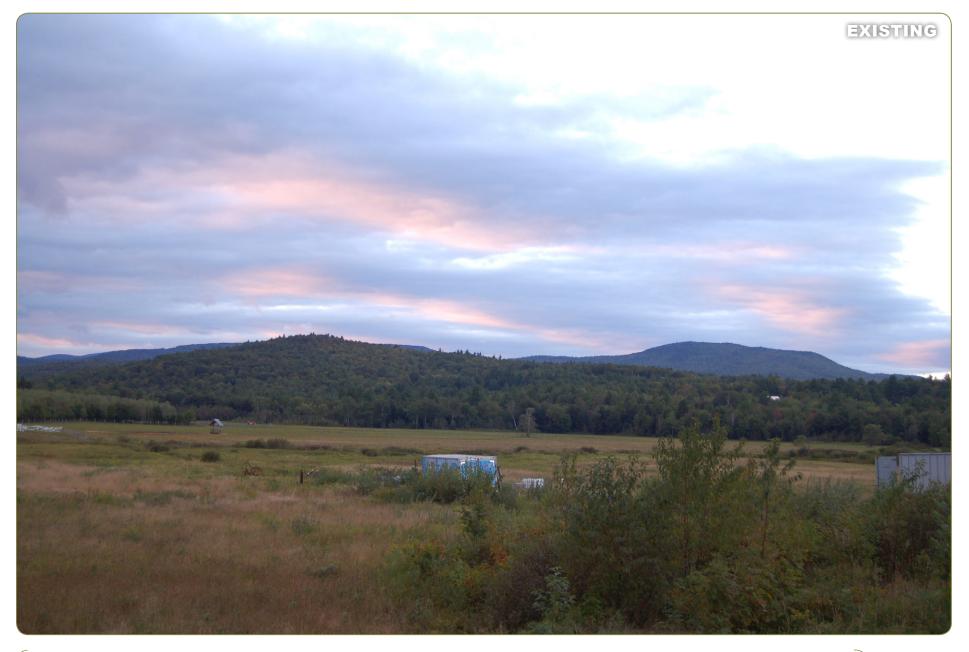
Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Figure 11: Viewpoint 32

Sheet 1 of 3: Viewpoint Context - View from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire November 2013







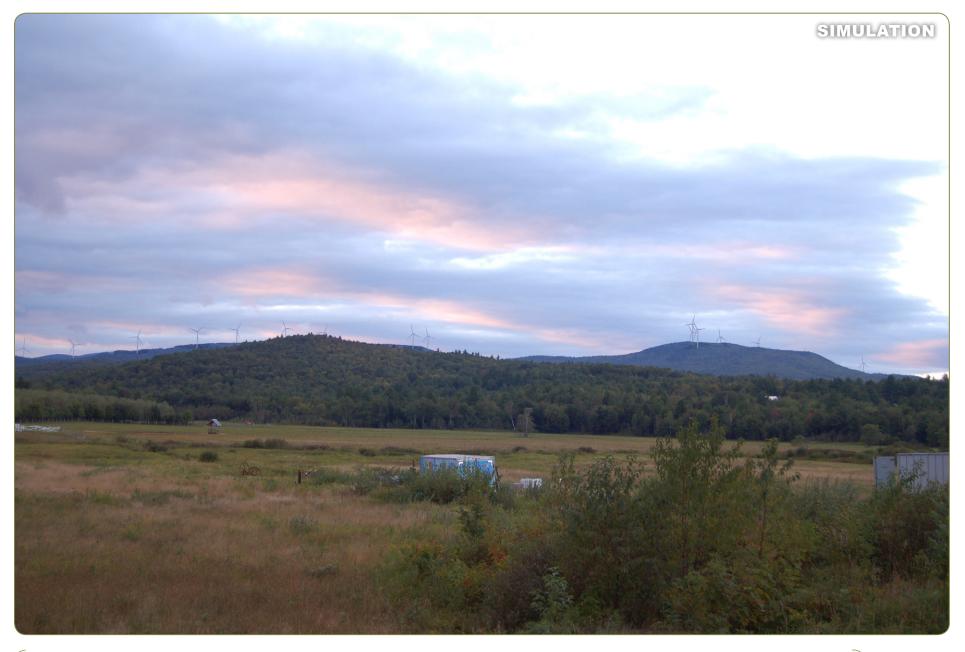
Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Figure 11: Viewpoint 32

Sheet 2 of 3: Existing view from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Figure 11: Viewpoint 32

Sheet 3 of 3: Proposed view from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire - Facing North November 2013





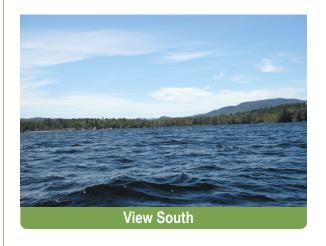
Viewpoint 46 (Figure 12)

Existing View

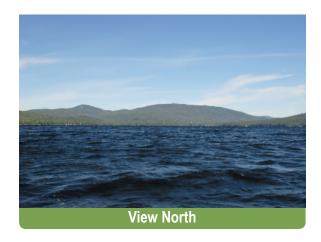
This view to the south-southwest is from the surface of Newfound Lake, off-shore from Wellington State Park in the Town of Bristol. The viewpoint is located approximately 4.7 miles from the nearest proposed turbine. The existing view features a broad, uninterrupted expanse of rough open water in the foreground, backed by a wooded, largely undeveloped shoreline (Wellington State Park). A small node of shoreline development is visible on the left side of the view, which extends outside the limits of the selected photo. Low, solidly wooded hills/ridges rise above the shoreline trees in the mid-ground and background and form an irregular horizon line against the open sky. The view is representative of the Water/Waterfront LSZ, and is experienced by tourists and local residents (seasonal and year round) that use Newfound Lake for recreation. This viewpoint has high scenic quality, and is representative of the closest unscreened views of the Project site that will be available from the surface of Newfound Lake.

Proposed Project

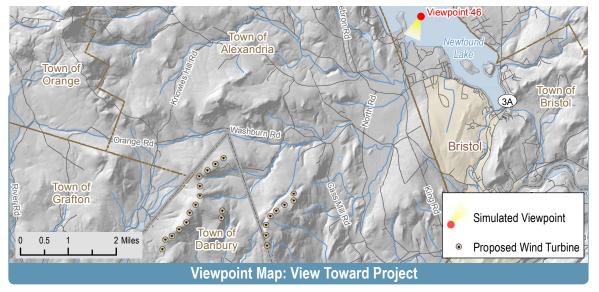
With the proposed Project in place, a cluster of turbines is added to the ridgeline in the center of the view, and a line of turbines extends along the ridge to the right. The turbines project into the sky, and become focal points in the view. Clearings associated with turbine work sites and access roads interrupt the uniform forested cover of the hills. The turbines' scale and the clearings at their base present appreciable contrast with the homogeneous texture and size of the existing vegetation. The introduction of large man-made elements to a primary undeveloped view also presents appreciable land use contrast. The distance of the turbines from the viewer and their limited color contrast with the background sky reduces their visual impact. Recreational activities on the lake will not be directly affected, and alternate views that do not include the proposed Project are available in all directions. However, enjoyment of the scenery will be reduced for some viewers.











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 12: Viewpoint 46

Sheet 1 of 3: Viewpoint Context - View from Newfound Lake in Bristol, Grafton County, New Hampshire November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 12: Viewpoint 46

Sheet 2 of 3: Existing view from Newfound Lake in Bristol, Grafton County, New Hampshire - Facing Southwest November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 12: Viewpoint 46

Sheet 3 of 3: Proposed view from Newfound Lake in Bristol, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 53 (Figure 13)

Existing View

This viewpoint is located on Fowler River Road in the Town of Alexandria, approximately 2.8 miles from the nearest turbine that would be visible in this view. The selected view is oriented to the southwest and features a rustic barn and open hayfields in the foreground. The flat fields are bordered by trees and backed by low forested hills and ridges that rise in the mid-ground and background. The hills are carpeted with forest vegetation and have an irregular, rolling form. Their dark color and fine texture create an abrupt horizon line against the open blue sky. The view is representative of the Agricultural LSZ and would be experienced primarily by local residents. It has moderate scenic quality.

Proposed Project

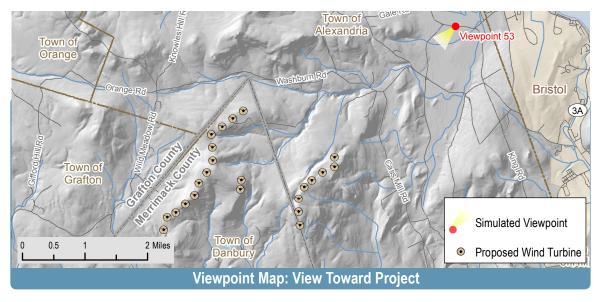
With the proposed Project in place, a cluster of turbines is visible on the background hill to the left, and a line of turbines runs along the ridgeline to the right. The turbines extend well above the horizon line, but do not present strong color contrast with the sky. They follow the rolling crest of the hills, and the line and mass of the landform remains dominant over the Project. The color and scale of the turbines create appreciable to strong contrast with the forest vegetation, and the clearings at their base interrupt the homogeneous texture of the forest cover. Although the turbines contrast with the undeveloped hills in the background, the barn and field in the foreground continue to dominate the view. Because the turbines are not the only man-made features in the view, their contrast with existing land use is limited. The barn and surrounding features remain the focal points in this view, and the turbines appear compatible with the working agricultural character of this landscape.











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 13: Viewpoint 53

Sheet 1 of 3: Viewpoint Context - View from Fowler River Road in Alexandria, Grafton County, New Hampshire November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 13: Viewpoint 53

Sheet 2 of 3: Existing view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 13: Viewpoint 53

Sheet 3 of 3: Proposed view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 59 (Figure 14)

Existing View

This view to the south is from an elevated area of lawn adjacent to the AMC Cardigan Lodge. The Lodge is located at the end of Shem Valley Road in the Town of Alexandria. This viewpoint is approximately 3.5 miles from the nearest turbines that would be visible, and is the only open view of the Project site available from the Lodge area (forest screening completely blocks long-distance outward views from the lower elevation Lodge and parking area). The selected view features a small area of open lawn in the lower right portion of the view, completely surrounded by mature mixed forest vegetation. An opening in a foreground line of conifers reveals a port-a-john and a portion of the Lodge's gravel entrance drive/parking lot. These features provide an indication of scale and the elevated location of the viewer. This elevated location allows for views of rolling background hills that rise above the treetops in the foreground. The view is representative of the Forest LSZ and could be available to hikers staying at Cardigan Lodge, although it is well removed from any areas of concentrated activity at the Lodge. However, the elevated view afforded by this location is likely comparable to the views that guests could experience through windows on the upper floors of the AMC Cardigan Lodge.

Proposed Project

With the proposed Project in place, the upper portions of several turbines can be seen rising above the rolling background hills. The limited extent to which the turbines extend into the sky, their narrow profile, and their light color, minimize contrast with the bright white sky in the background. The turbines follow the rolling elevation of the landform and their line and form are reflective of the vertical rhythm of the tree tops. Although they introduce a manmade feature into a largely natural view, their impact is minimized due to the screening provided by vegetation and topography, and the effects of distance. Their impact on viewer activity is likely to be minimal as this viewpoint is not a focus of activity at the AMC Lodge. Where such activity does occur, the turbines would be completely screened.

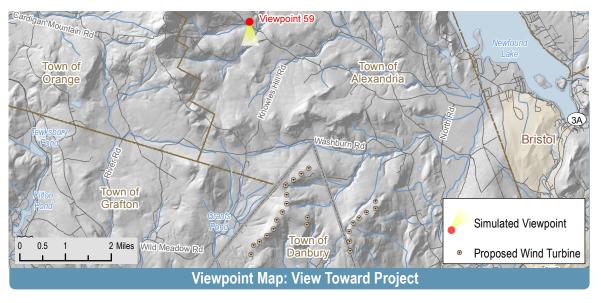












Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 14: Viewpoint 59

Sheet 1 of 3: Viewpoint Context - View from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 14: Viewpoint 59

Sheet 2 of 3: Existing view from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire - Facing South - Southeast November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 14: Viewpoint 59

Sheet 3 of 3: Proposed view from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire - Facing South - Southeast November 2013





Viewpoint 63 (Figure 15)

Existing View

This viewpoint is located in the hamlet area of Alexandria on Washburn Road. It is directly in front of the Haynes Library, approximately 2.0 miles from the nearest proposed turbine that would be visible in this view. The view is oriented to the southwest and is framed by the red brick library building on the right, trees on the left, and overhead utility lines. A small gazebo and a young tree in an area of mowed lawn occupy the immediate foreground. The lawn is backed by a solid row of trees, beyond which a small area of ridgetop is visible in the mid-ground. The ridgetop forms the horizon and blocks views of more distant landscape features. This view is typical of the narrow, enclosed outward views toward the Project site that are available in the hamlet area of Alexandria. The view has moderate scenic quality, and is representative of views local residents experience in the Hamlet LSZ in general.

Proposed Project

With the proposed Project in place, several turbines are visible on the mid-ground ridge. The line, color, and scale of the turbines present moderate contrast with the landform and vegetation. Their relative proximity to the viewer and hilltop location accentuates scale contrast and make the mid-ground ridge feel closer. The turbines interrupt the relatively small area of open sky visible from this viewpoint, and will compete with the structures in the foreground as focal points in the view. Their modern form and utilitarian character present appreciable contrast with the traditional architecture and residential/community character of the hamlet setting. However, the Project's overall impact is reduced by foreground buildings and trees that still define the character of the view, and screen substantial portions of the Project.

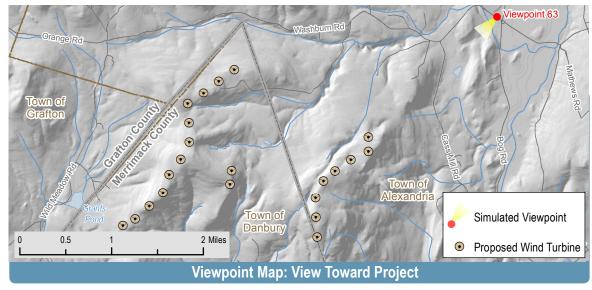




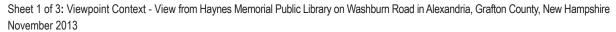








Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 15: Viewpoint 63









Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 15: Viewpoint 63

Sheet 2 of 3: Existing view from Haynes Memorial Public Library on Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 15: Viewpoint 63

Sheet 3 of 3: Proposed view from Haynes Memorial Public Library on Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 75 (Figure 16)

Existing View

This viewpoint is located on William Hill Road in the Town of Grafton, approximately 4.5 miles from the nearest proposed turbine. A panoramic view in this area is available to the northeast and is one of the most open views toward the Project site documented in the Forest and Rural Residential LSZ within the study area. However, narrower open views toward the site are available to local residents from some rural yards and homes in the forested hills that surround the Project site. The existing view features an open lawn in the foreground and a broad expanse of rolling wooded hills in the background. An intervening valley cannot be seen from this location. Although a home and barn are present outside the field of view, the only man-made features in the selected photo are a small planter and a flag pole in the foreground, which serves as a focal point in the view. The only other sign of development is a man-made clearing on the forested hills in the background on the far right side of the view. Existing scenic quality of the selected view is moderate.

Proposed Project

With the proposed Project in place, a line of turbines can be seen climbing the background hills and running along the ridgeline. Evidence of forest clearings around the base of some of the turbines, and along the Project access roads, can also be seen. The turbines' white color and vertical line present moderate to appreciable contrast with the dark wooded hills in the background. However, the turbines reflect the shape of the landform, rising and falling with changes in elevation. The turbines' scale contrast with the forest vegetation is apparent, but the clearings at their base are not prominent in this view. Introduction of these man-made elements to a largely undeveloped background presents moderate to appreciable contrast with the existing land use and viewer activity. The turbines' white color minimizes contrast with the sky and their distance from the viewer reduces overall impact but their presence will alter the character and expansive feel of the existing view.

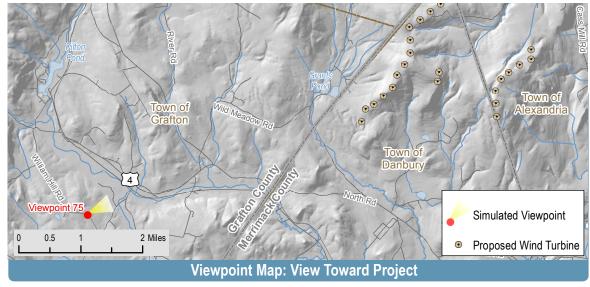












Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 16: Viewpoint 75

Sheet 1 of 3: Viewpoint Context - View from William Hill Road in Grafton, Grafton County, New Hampshire November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 16: Viewpoint 75

Sheet 2 of 3: Existing view from William Hill Road in Grafton, Grafton County, New Hampshire - Facing Northeast November 2013







Sheet 3 of 3: Proposed view from William Hill Road in Grafton, Grafton County, New Hampshire - Facing Northeast November 2013





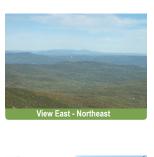
Viewpoint 78 (Figure 17)

Existing View

This viewpoint is on the summit of Mount Cardigan in Cardigan Mountain State Forest, in the Town of Orange. It is approximately 4.4 miles from the nearest proposed turbine site. Open, long distance views at this location are available in all directions, although views to the north, toward the White Mountains, are perhaps the most dynamic. The selected view is oriented to the southeast, toward the Project site. It features an expanse of exposed bedrock in the immediate foreground, with numerous forested hills and mountains extending away from the viewer from the midground to the distant background. The hills are uniformly blanketed in forest vegetation, with evidence of development limited to a single structure on the far left and the cleared ski trails of Ragged Mountain in the background on the right side of the view. More distant man-made features (including the Groton Wind Project) and a fire tower on the summit occur outside the selected field of view. The elevated viewer perspective and lack of foreground vegetation allow for unobscured long distance views. This view is located in the Alpine Summit LSZ and would be experienced almost exclusively by tourists and recreational users.

Proposed Project

With the Project in place, all of the proposed turbines are visible along the crest of the rolling ridges in the near background portion of the selected view to the southeast. The white color and linear arrangement of the turbines present strong contrast with the landform, and their color and scale, as well as the clearings at their base, result in appreciable contrast with the existing forest vegetation. The turbines do not breach the horizon line, and therefore have little effect on the sky. However, they do introduce man-made utilitarian features to the largely undeveloped view. They become a focal point and alter the perceived land use in this view. While the turbines will not be viewed negatively by all viewers, their presence does change the character of the view in this direction, and may be perceived as an intrusion by those viewers anticipating an undeveloped view. However, as illustrated in the panoramic views included as Sheet 4 of Figure 17, the availability of similar (and perhaps more interesting) views in other directions from this viewpoint serves to limit the overall impact of the Project. The summit of Mount Cardigan offers a unique perspective on the proposed Project. While the Project may appear out of place to some viewers, it is likely that others will feel the Project adds an interesting new feature to the view.











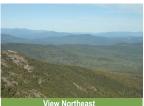


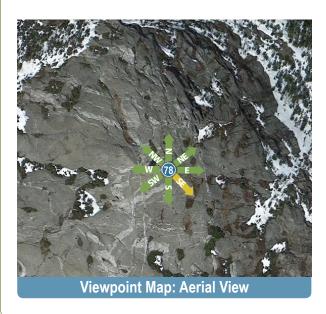


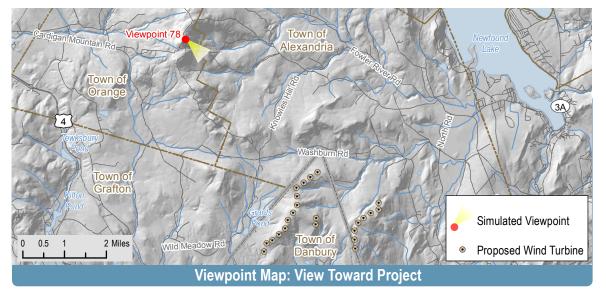












Sheet 1 of 4: Viewpoint Context - View from Mount Cardigan in Orange, Grafton County, New Hampshire November 2013







Figure 17: Viewpoint 78

Sheet 2 of 4: Existing view from Mount Cardigan in Orange, Grafton County, New Hampshire - Facing South - Southeast November 2013







Figure 17: Viewpoint 78

Sheet 3 of 4: Proposed view from Mount Cardigan in Orange, Grafton County, New Hampshire - Facing South - Southeast November 2013











Figure: 17 Viewpoint 78 - Panoramic Views

November 2013





Viewpoint 101 (Figure 18)

Existing View

This viewpoint is located at the summit of the Ragged Mountain Ski Area in the Town of Danbury, approximately 7.0 miles from the nearest proposed turbine. The existing view to the north features a mowed ski trail and chair lift in the foreground, with a mix of forest, river and wetlands in the mid-ground valley. Forested mountains (including Mount Cardigan) rise up on the opposite side of the valley and continue on into the distant background. The background mountains create an irregular multi-layered horizon line against the open sky. Other than a few open fields and wetlands, the landscape is primarily forested. Buildings and other man-made features are largely obscured, except for a few buildings that are visible in small forest openings, and the distant turbines of the Groton Wind Project on the right side of the view. The chairlift and cleared trails identify this as a developed recreation area within a forested setting. As such, this view is experienced almost exclusively by tourists and recreational users (skiers) during the winter season.

Proposed View

With the proposed Project in place, a line of turbines runs along the crest of a background ridge in the middle of the view, and a cluster of turbines can be seen above a ridgeline on the right. The turbines follow and accentuate the form of the ridgeline. Their elevation is lower than the Summit of Mount Cardigan and more distant mountains to the north, but due to their contrasting color and form, the turbines become new focal points that draw the viewer's eye away from the mountain peaks. Where they break the crest of the ridge, the turbines' white color blends well with the background sky. When viewed against the forested slopes behind them, their color, form and scale present moderate contrast with the existing vegetation. By adding man-made features to the largely undeveloped background, the turbines also present contrast with existing land use. However, the presence of other built features in the view, and the distance of the Project from this viewpoint, help to reduce this effect. Impacts on viewer activity (skiing) should be relatively minor and the presence of the turbines in the distance may actually be of interest to skiers. During the winter season, snow cover will likely reduce the Project's visibility and contrast with the landscape.



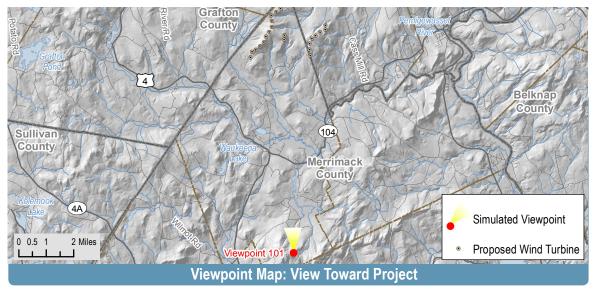












Sheet 1 of 3: Viewpoint Context - View from Ragged Mountain in Danbury, Merrimack County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Ragged Mountain in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Sheet 3 of 3: Proposed view from Ragged Mountain in Danbury, Merrimack County, New Hampshire - Facing North November 2013





Viewpoint 129 (Figure 19)

Existing View

This viewpoint is located at the parking lot of Ruggles Mine, a local tourist attraction in the Town of Grafton. The primary attraction at this site is the mine, where open views toward the Project are screened from view. However, the slopes adjacent to the parking area are maintained in a cleared condition to provide a scenic view. As indicated by the small sign at the edge of the parking area, and the panoramic photo prepared for this viewpoint, Mount Cardigan (to the northeast) is the focal point of the existing view, but the elevated parking area offers expansive open views to the east, including the proposed Project site. This viewpoint is approximately 5.7 miles from nearest proposed turbine. The existing view features the gravel parking lot and associated vehicles in the immediate foreground, with wooded hills and mountains rising from a screened mid-ground valley to the background horizon line. As illustrated in the panoramic photo, the ridgeline of gently rolling, forested mountains extends across the view and descends gradually to the right (eastern) side of the view. The broad valley and open sky contribute to the expansive character of the view. The landscape is uniformly forested, but includes some small openings where a few buildings can be seen. The panoramic open view available at this location has high scenic quality, and is unusual within the Forest LSZ.

Proposed Project

With the proposed Project in place, a line of turbines can be seen climbing the forested slope and projecting above the ridgeline on the right side of the view. The turbines follow the form of the descending ridgeline, and in the broad panorama, are a relatively minor component of the view. However, the addition of these man-made elements to the view presents appreciable contrast with the largely undeveloped forest that dominates the view. The turbines' line, color, and scale, as well as clearings created at their bases, contribute to this affect. Under the sky conditions in this photo, the turbines' color contrast and height create appreciable contrast, although this would be substantially reduced under more hazy or overcast conditions. Although the turbines will become a new focal point in the view, the expansiveness of the existing view, their location off to the side of the view, and the continued dominance of Mount Cardigan, will limit their overall impact. In addition, the turbines will not affect the reason tourists visit this site, and may actually serve as an added attraction for many of these visitors.

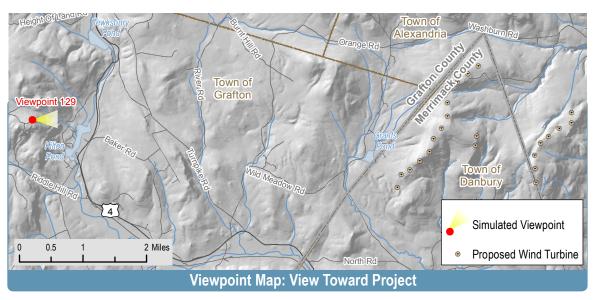












Sheet 1 of 4: Viewpoint Context - View from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire November 2013







Sheet 2 of 4: Existing view from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire - Facing East November 2013







Sheet 3 of 4: Proposed view from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire - Facing East November 2013









Sheet 4 of 4: Panoramic view from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire - Facing Northeast to East November 2013





Viewpoint 158 (Figure 20)

Existing View

This viewpoint is from the northeastern shoreline of Newfound Lake, off Stone Gate Road in the Town of Hebron. The view is from a private beach and boat docking area adjacent to Sanborn Bay, approximately 8.2 miles from the nearest turbine that would be visible in this view. The primary view down the axis of the lake from this viewpoint is to the south. The selected view is oriented to the south-southwest and features a dock and moored boats on the lake surface in the immediate foreground. The lake extends into the mid-ground and background to the far shoreline, which is characterized by a mix of forest and developed features (i.e., residences along the shoreline). Small rounded, forested hills rise abruptly from the western shoreline, and more distant hills can be seen beyond the south shore of the lake. This view has high scenic quality and is representative of views within the Water/Waterfront LSZ that are available to tourists, recreational users and seasonal homeowners along the northeastern shore of Newfound Lake.

Proposed View

With the proposed Project in place, a small cluster of turbines can be seen in a saddle between two hills in the background. The Project appears to be tucked into the existing topography, although the height of the turbines above the existing forest vegetation indicates their scale contrast. The turbines introduce developed features to the background hills. However, their contrast with the existing land use and potential impact on viewer activity are moderated by the limited number that are visible, their distance from the viewer, and the abundance of other manmade elements in the view. Scenic quality is not appreciably diminished with the proposed Project in place.



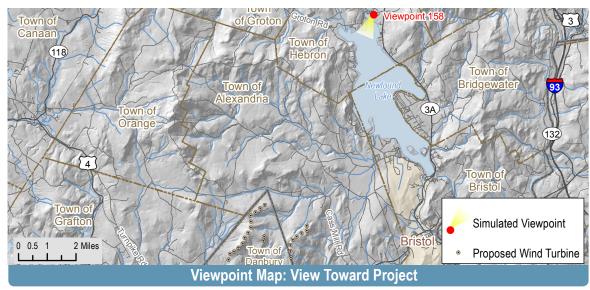












Sheet 1 of 3: Viewpoint Context - View from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 3 of 3: Proposed view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013





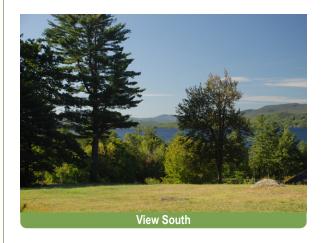
Viewpoint 160 (Figure 21)

Existing View

This viewpoint is located on Camp Pasquaney Lane, at Camp Pasquaney (a private camp) in the Town of Hebron, approximately 6.8 miles from the nearest turbine that would be visible from this location. This viewpoint was selected because views closer to Newfound Lake, along Route 3A, were completely screened by trees. The view featured in this photograph is oriented to the south-southwest, and includes an open yard in the immediate foreground backed by trees and the roof of an adjacent building. The land in the mid-ground descends to Newfound Lake, which can be seen through breaks in the foreground trees. The opposite shoreline of the lake rises steeply to a series of undulating forested hills and small mountains. A few developed features can be seen along the lake shoreline, but otherwise the background appears largely undeveloped. Although this view is not available to the general public, it was selected because views from Route 3A east of Newfound Lake were well screened by roadside structures and trees. It is also representative of views that may be available to tourists and residents at sites where small openings and yards have been cleared in the forest to accommodate residential development. The scenic quality of this view is relatively high.

Proposed Project

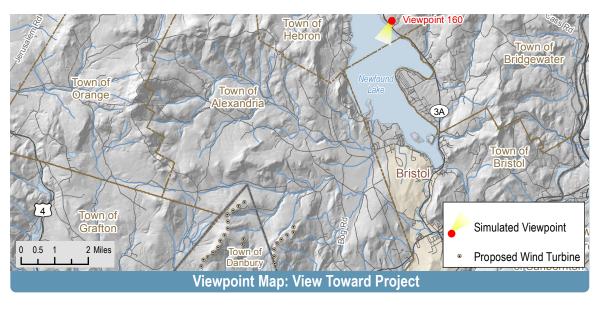
With the proposed Project in place, a group of turbines is visible on the slope and crest of a background hill in the center of the view. Two additional turbines can be seen on a background ridge between the branches of a foreground tree on the right. The turbines follow the lay of the land, occupy a relatively small portion of the ridge, and present limited color contrast with the sky where they break the horizon line. However, the vertical line and manmade form of the turbines contrast with the undeveloped character of the background hills. Obvious clearings at some of the turbine bases, along with their height, create appreciable contrast with the forest vegetation. The Project could diminish the scenic quality of the existing view by introducing new man-made features in the background. However, the effect of the turbines from this viewpoint is mitigated by their positioning on the hillside and their distance from the viewer.











Sheet 1 of 3: Viewpoint Context - View from Pasquaney Lane in Hebron, Grafton County, New Hampshire November 2013







Figure 21: Viewpoint 160

Sheet 2 of 3: Existing view from Pasquaney Lane in Hebron, Grafton County, New Hampshire - Facing South - Southwest

November 2013







Figure 21: Viewpoint 160

Sheet 3 of 3: Proposed view from Pasquaney Lane in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013





Viewpoint 182 (Figure 22)

Existing View

Viewpoint 182 is located in the village/downtown area of Bristol, at Kelley Park, off Main Street. It is approximately 4.7 miles from the nearest turbine that would be visible. The existing view to the west features open athletic fields in the foreground backed by a mix of buildings and trees in the adjacent village area. A low, forested ridgeline rises to form the visible horizon in the mid-ground. Scenic quality in this view is relatively low. This view would be experienced primarily by local residents within the Village LSZ. Due to the presence of the fields, this view toward the Project site is more open and unobstructed than most others that are available within the village/downtown area of Bristol, or this LSZ in general.

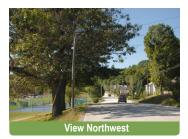
Proposed Project

With the proposed Project in place, the blades of two turbines are visible above the forested mid-ground ridge. The turbine blades blend with the jagged irregular texture of the ridgeline, and are barely visible. Due to their limited visibility, the turbines will not have a substantial effect on perceived land use or user activity at this site. Any distraction they present will be minor, and the park and surrounding village structures will continue to define the character of this view.



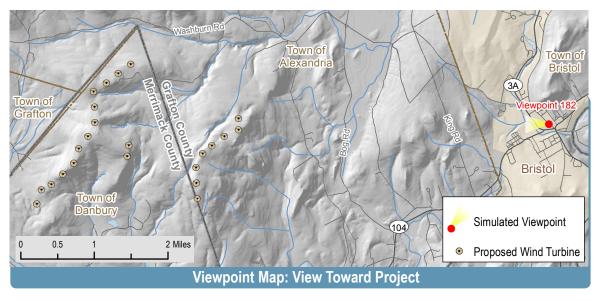












Sheet 1 of 3: Viewpoint Context - View from Main Street in Bristol, Grafton County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Main Street in Bristol, Grafton County, New Hampshire - Facing West November 2013







Sheet 3 of 3: Proposed view from Main Street in Bristol, Grafton County, New Hampshire - Facing West November 2013





Viewpoint 226 (Figure 23)

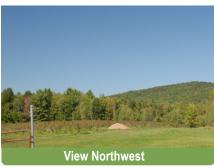
Existing View

This viewpoint is located on Brad Chase Road in the Town of Danbury, approximately 1.6 miles from the nearest turbine that would be visible in this view. The existing view to the north features an agricultural field in the immediate foreground interspersed with some scattered low trees and shrubs. The field is backed by a low, forested ridgeline that defines the visible horizon against a clear blue sky. The ridgetop creates a strong horizontal line in the view and obscures more distant landscape features. The selected view lacks any developed elements (although a home and gate are present outside the field of view of the selected photo), and has moderate scenic quality. It is representative of the Rural Residential and Agricultural LSZs within the study area.

Proposed Project

With the proposed Project in place, portions of seven individual turbines appear on either side of the crest of the midground ridge. The turbines are evenly spaced along the ridgeline and their proximity to the viewer accentuates their large size. However, they follow the existing topography, and their vertical lines reflect the pattern of the tree trunks in the foreground. The turbines present appreciable contrast with the landform, vegetation, and sky, due to their large size, white color, and novel form. Their orderly arrangement and functional character do not appear out of context with the agricultural land use in the foreground. However, because they are the only man-made features in this view, the turbines become new focal points, and draw viewer attention away from the existing, largely undeveloped, landscape.

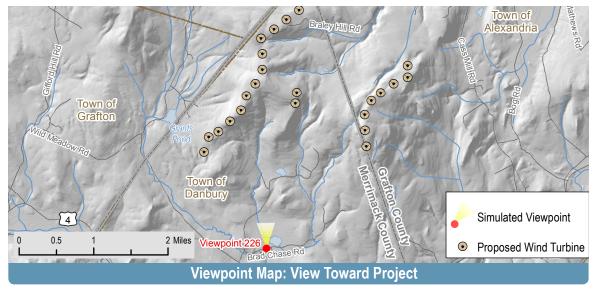












Sheet 1 of 3: Viewpoint Context - View from Brad Chase Road in Danbury, Merrimack County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Brad Chase Road in Danbury, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 3 of 3: Proposed view from Brad Chase Road in Danbury, Merrimack County, New Hampshire - Facing North - Northwest November 2013





Viewpoint 241 (Figure 24)

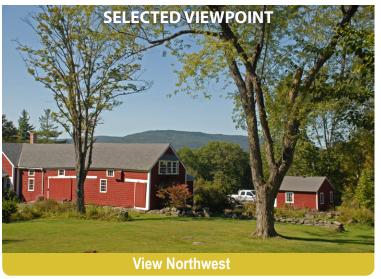
Existing View

Viewpoint 241 is located on Murray Hill Road within the Murray Hill Historic District in the Town of Hill. It is approximately 3.5 miles from the nearest turbine that would be visible in this view. The view featured in this photograph is oriented to the north and includes a well-maintained residential yard, barn, and outbuilding in the foreground. The yard is enclosed by trees, but offers an open view of an undulating wooded ridgeline in the midground that sharply defines the visible horizon against a clear blue sky. The red siding, white trim, and traditional, historic character of the well-maintained farm buildings provide the view with a strong rural character and high scenic quality.

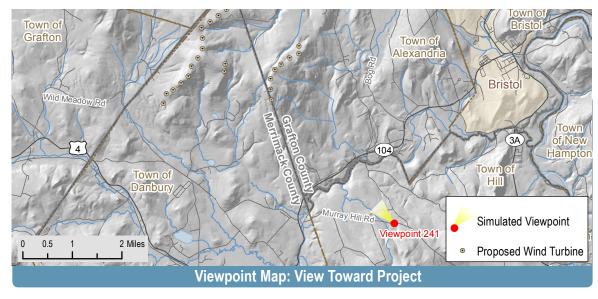
Proposed Project

With the proposed Project in place, a line of turbines span the full extent of the mid-ground ridge that forms the horizon. The turbines extend well above the horizon line, but their white color and distance from the viewer reduce contrast with the sky. Although the turbines follow the natural topography, their vertical line and ridgetop location create contrast with the landform. Evidence of clearing at some of the turbine bases, and the turbines' white color, present appreciable to strong contrast with the uniform forest vegetation on the ridge. However, the Project appears orderly and uncluttered, and the foreground trees help frame the turbines and reduce their scale contrast. The turbines' man-made form and utilitarian character present appreciable to strong contrast with the traditional rural residential land use and associated viewer activities represented by this viewpoint. However, they are background features in the view and their perceived compatibility with the landscape is likely to be variable amongst different viewer groups (e.g., residents versus travelers).









Sheet 1 of 3: Viewpoint Context - View from Murray Hill Road in Hill, Grafton County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Murray Hill Road in Hill, Grafton County, New Hampshire - Facing Northwest November 2013







Sheet 3 of 3: Proposed view from Murray Hill Road in Hill, Grafton County, New Hampshire - Facing Northwest November 2013





Viewpoint 244 (Figure 25)

Existing View

This viewpoint is located on Murray Hill Road in the Town of Hill. It is approximately 2.9 miles from the nearest proposed turbine, and offers the closest publicly available open view of the proposed Project from the Murray Hill Historic District. The view to the north-northwest featured in this photo includes an open pasture with grazing cows in the foreground. The pasture transitions abruptly to forest, which drops into a valley before extending up into a solidly forested mid-ground ridge that defines the visible horizon against a broad expanse of clear blue sky. Although a house and utility poles occur just outside the field of view, the selected photo lacks any developed features. This view has moderate scenic quality, and is representative of views available to local residents from the Agricultural LSZ and open portions of the Rural Residential LSZ.

Proposed Project

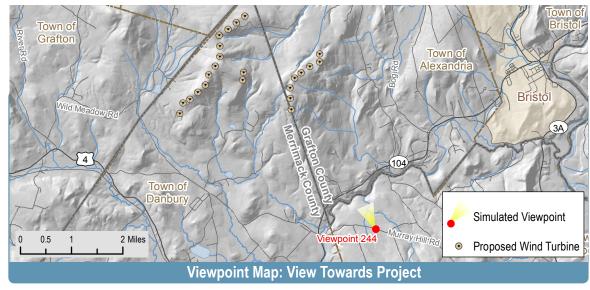
With the proposed Project in place, an evenly-spaced line of turbines follows the mid-ground ridgetop along the full width of the open view. Some of the turbines are substantially screened by the ridgeline, while others are fully visible. The turbines follow the horizon elevation, but their presence on the crest of the ridge results in contrast with both the landform and the sky. Clearings around the bases of some of the turbines, along with their scale, form, and color, also create appreciable contrast with the forest vegetation on the ridge. As the only man-made features in the view, the turbines add a utilitarian character to the existing scene. However, they do not look out of character in a working agricultural landscape. Consequently, the Project would have limited impact on viewer activity and scenic quality in this view.











Sheet 1 of 3: Viewpoint Context - View from Murray Hill Road in Hill, Merrimack County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Murray Hill Road in Hill, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 3 of 3: Proposed view from Murray Hill Road in Hill, Merrimack County, New Hampshire - Facing North - Northwest November 2013





Viewpoint 266 (Figure 26)

Existing View

This viewpoint is located on Tomahawk Trail, a private road on Whittemore Point in the Town of Bridgewater. It is immediately east of Newfound Lake, approximately 5.1 miles from the nearest proposed turbine. The selected view to the southwest features a subdivision road in the immediate foreground, flanked by landscaped yards and suburban style residences. Newfound Lake is a prominent mid-ground feature that is framed and partially screened by trees along the lake shoreline and in the adjacent yards. Fairly concentrated shoreline development, including houses and boats, can be seen along the opposite shore of the lake. Beyond this well-defined line of development, undeveloped forested hills rise in the background. The hills/ridges have an undulating form and irregular crest that forms the visible horizon in this view. This view has relatively high scenic quality and is representative of the type of views available to seasonal and full time residents in the Shoreline Residential LSZ.

Proposed Project

With the proposed Project in place, a cluster of turbines can be seen on the background slope and hilltop on the left side of the view. A line of turbines also runs along the ridgeline in the center of the view. The turbines follow and reflect the existing landform, but their ridgetop placement accentuate scale contrast. Their scale and visible clearings at some of the turbine bases results in appreciable contrast with the forest vegetation on the hills. The turbines extend well above the horizon line, but their color limits contrast with the hazy white sky. However, at sunrise and sunset they are likely to be more visible against the sky. Their most substantial impact in this view is their contrast with land use and viewer activity. The turbines interrupt the undeveloped background hills, and are out of character with the developed features in the foreground that are more typical of a suburban residential setting.

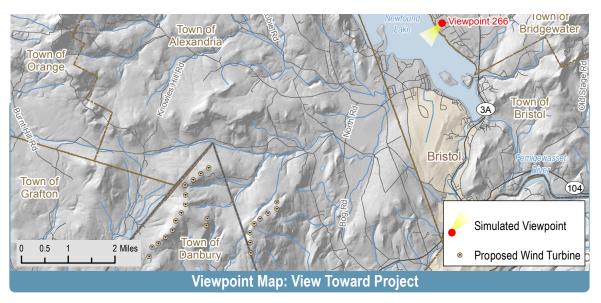












Sheet 1 of 3: Viewpoint Context - View from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 3 of 3: Proposed view from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 269 (Figure 27)

Existing View

This view is from a private waterfront, including a beach, swimming area, and boat mooring area, in the Whittemore Shores Development on Whittemore Point in the Town of Bridgewater. The viewpoint is located on the eastern shore of Newfound Lake, approximately 4.9 miles from the nearest proposed turbine. The existing view from this location extends from the south to the northwest, and is dominated by the surface of the lake in the foreground and midground. In the selected view to the southwest, the lake surface is interrupted only by swimming platforms and buoys in the immediate foreground. On the far shore of lake an area of concentrated development is apparent in the center of the view, with areas of more undeveloped/lightly developed forested shoreline to either side. Beyond the far shoreline, undulating hills and ridges rise to an irregular horizon line. The hills are uniformly forested, with the exception of one large building prominently sited on a hilltop. The existing view has high scenic quality and is typical of views that are available to local residences and recreational users from the Water/Waterfront LSZ on Newfound Lake.

Proposed Project

With the proposed Project in place, the arrangement of turbines and their visibility on the background ridges is very similar to that described for the previous viewpoint. The only difference in this view is that the turbines to the far right are not screened by foreground vegetation. The turbines follow the existing topography, but from this viewer perspective appear to extend somewhat higher into the sky. Their vertical line and white color contrast with the dark horizontal landform. The scale of the turbines, and clearings at several turbine bases, also present appreciable contrast with the blanket of forest cover on the hills. Despite their significant distance, the turbines feel relatively close to the water and draw viewer attention away from the water surface and the landform. As in the previous viewpoint, contrast with existing land use and viewer activity represents the greatest visual impact from this viewpoint. Recreational and residential users of this waterfront will likely perceive an adverse effect on existing scenic quality.











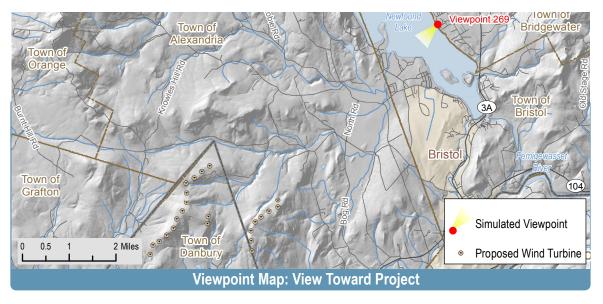


Figure 27: Viewpoint 269

Sheet 1 of 3: Viewpoint Context - View across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire November 2013







Figure 27: Viewpoint 269

Sheet 2 of 3: Existing view across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Figure 27: Viewpoint 269

Sheet 3 of 3: Proposed view across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 274 (Figure 28)

Existing View

This viewpoint is located on Washburn Road in the Town of Alexandria, approximately 1.5 miles from the nearest turbine that would be visible in this view. The open view to the southwest in this area results from a cleared transmission line right-of-way (ROW) which crosses Washburn Road. The existing view features the road in the immediate foreground, which rises slightly before descending out of sight. Brushy vegetation on the cleared ROW flanks the road on both sides, and overhead power lines supported by steel lattice structures cross the sky perpendicular to the road. An existing roadside distribution line is also present on the right side of the view. Larger trees occur beyond these immediate foreground features, and largely screen more distant landscape elements. However, the slopes and crest of a forested mid-ground ridge rise above most of this vegetation on the right hand side of the view. Brushy foreground vegetation and the mid-ground ridge define the horizon line against a blue and white sky. This view has relatively low scenic quality, and is representative of views local residents and travelers will have from the Utility Corridor LSZ.

Proposed Project

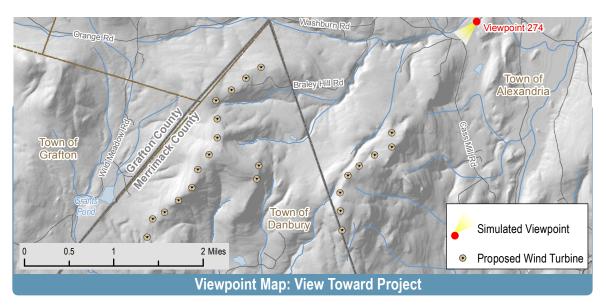
With the proposed Project in place, five turbines and a meteorological tower are apparent above the crest of the midground ridge on the right side of the view. Their vertical lines contrast with the horizontal orientation of the ridge, and their dark color (resulting from back lighting) contrast with the white sky in the background. Scale contrast with the forest vegetation on the ridge is evident, but mitigated by the presence of taller foreground vegetation and utility structures. Visual clutter created by the existing overhead utility lines minimizes the turbines' contrast with the sky and any perceived change in land use. Although located in the sight line of drivers traveling this direction, viewer activity (i.e., local travel), and expectation of scenic quality will not be affected by the Project in this view.











Sheet 1 of 3: Viewpoint Context - View from Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 3: Existing view from Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 3 of 3: Proposed view from Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013





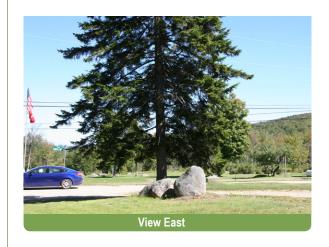
Viewpoint 279 (Figure 29)

Existing View

This viewpoint is located on Orange Road, near the intersection with Grafton, Washburn and Knowles Hill Roads, in the Town of Alexandria. It is approximately 1.1 miles from the nearest proposed turbine that is visible in this view, and is the most open view of the proposed Project site from this area. The existing view to the southeast features a white rural home in the foreground, surrounded by mowed lawn, a few low trees, and gravel driveways. Overhead utility lines run in front of the house and cross the sky in multiple directions. Beyond the home, the land descends before rising as a forested mid-ground ridge that forms the visible horizon in this view. The ridge has a gentle rolling form and a rough texture resulting from its uniform forest cover. This view is representative of the relatively rare open views that are available to local residents at near mid-ground distances from the Project site within the Rural/Residential LSZ. Scenic quality in this view is moderate.

Proposed Project

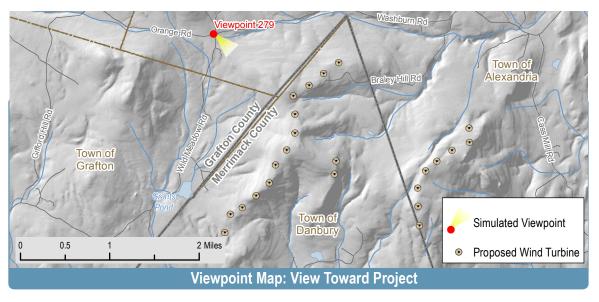
With the proposed Project in place, six turbines rise above the forested ridge in the mid-ground. The turbines appear large due to their proximity to the viewer, and present appreciable scale contrast with forest vegetation on the ridge. They extend well above the existing ridgeline and appear prominently against the sky. However, they do not extend above the height of the foreground utility lines, and their white color is consistent with the color of the house and clouds in the background. The turbines add to the visual clutter created by the utility line and will be even more noticeable when the operating turbines are in motion. The overall visual impact of the Project on this area has been reduced by eliminating the turbines originally proposed west of Grafton/Wild Meadows Road (outside of this view, see simulation of preliminary Project layout from Viewpoint 219 in Appendix E), but the turbines as proposed still present appreciable to strong contrast with residential activities in this area.











Sheet 1 of 3: Viewpoint Context - View from Orange Road in Alexandria, Grafton County, New Hampshire November 2013







Sheet 2 of 3: Existing view from Orange Road in Alexandria, Grafton County, New Hampshire - Facing Southeast November 2013







Sheet 3 of 3: Proposed view from Orange Road in Alexandria, Grafton County, New Hampshire - Facing Southeast November 2013





Viewpoint 53 Nighttime (Figure 30)

Existing View

As described previously, Viewpoint 53 is located on Fowler River Road in the Town of Bristol, approximately 2.8 miles from the nearest proposed turbine. In this nighttime view to the southwest, lights from an adjacent home partially illuminate a barn and utility pole on the right side of the view. This ambient lighting also allows perception of the open field in the immediate foreground. The only other visible landscape feature is the silhouette of the undulating background ridge that forms the horizon line. The ridgeline is broken by the crown of a single foreground tree that cannot be fully perceived in this nighttime view. No lights are visible in the scene, although lights from adjacent structures are present outside the field of view along the road. Above the ridge, the recent sunset creates a mix of dark blue sky, pinkish gray clouds, and emerging stars. This view is representative of those that will be available to local residence and travelers in the Rural/Residential and Agricultural LSZs where clearings provide open views of the Project site, man-made sources of light are minimal, and dark sky conditions prevail.

Proposed Project

With the proposed Project in place, the silhouettes of multiple turbines are visible against the not-yet-dark sky at the horizon line. The turbines span the entire ridge in this view and the cluster on the left does not appear to reflect the elevation of the landform. Red FAA warning lights are present on several of the turbines, and appear to be concentrated in the cluster of turbines on the left side of the view. The presence of the turbines adds a unique and prominent man-made feature to the view that will draw the viewer's eye, especially when the rotors are turning and the lights are flashing. The character of the view changes from a typical rural nighttime scene to a more utilitarian landscape. While the lights do not create perceptible sky glow, they do add man-made lights where none existed previously. They compete with the stars and compromise dark sky conditions in this view. Although the effect on travelers in vehicles along Fowler River Road will be fleeting and relatively minor, residents in the area will experience a more substantial impact.



Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 30: Viewpoint 53 (Night)

Sheet 1 of 2: Existing Night view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 30: Viewpoint 53 (Night)

Sheet 2 of 2: Proposed Night view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013





Viewpoint 158 Nighttime (Figure 31)

Existing View

As described previously, this viewpoint is located at a private beach/boat docking area along the northeastern shoreline of Newfound Lake in the Town of Hebron. It is approximately 8.2 miles from the nearest turbine that would be visible in this view. In the existing nighttime view to the south-southwest, the dark form of boats and a dock can be perceived against the dark blue surface of the lake in the foreground. The lake surface extends to the far shoreline, which is defined by the edge of the dark background landform and scattered lights. The irregular form of black background hill can be seen against the dark blue sky that is punctuated with bright stars. This view is representative of what shoreline residence and tourists along the northeastern shoreline of Newfound Lake would see under nighttime conditions. Because the photo was taken outside the peak recreation season, light spillage from nearby residences and the number of visible lights on the lake surface and along the lakeshore are less then would be visible during the summer.

Proposed Project

With the proposed Project in place, a small cluster of red lights can be seen in the saddle between two hills in the background. The turbines themselves are barely perceptible against the dark blue sky at the horizon. Occurrence of the lights within a topographic depression lessens their contrast with the landform and the sky. Although they are the only lights visible in the sky, their low height relative to the adjacent hills, and the presence of other lights along the shoreline, minimize the land use contrast they present. The FAA warning lights create a slight reflection of the water, but the effect is modest. Synchronized flashing of the lights during Project operation will increase their prominence and the perceived contrast in land use. However, during the summer recreation season, when outdoor nighttime views will be appreciated by the largest number of viewers, additional lights from homes and moving vehicles (cars along the shoreline and boats on the water) will lessen this contrast.



Figure 31: Viewpoint 158 (Night)

Sheet 1 of 2: Existing Night view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Figure 31: Viewpoint 158 (Night)

Sheet 2 of 2: Proposed Night view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013





Viewpoint 173 Nighttime (Figure 32)

Existing View

This viewpoint is located on Whittemore Point South Road in the Town of Bridgewater. It is approximately 6.0 miles from the nearest turbine that would be visible in this view. The existing view is oriented to the southwest, looking down at an opening created by a private driveway and residential yard. The open view is framed by a house on the left and trees on either side. Under the nighttime conditions illustrated in this photo, the silhouette of the house and trees in the foreground are visible against the lighter sky at the horizon. The surface of Newfound Lake can be seen in the mid-ground, reflecting the lighter color of the sky. The lake is backed by a dark irregular landform that rises from the far shoreline to the sky. Lights at the base of this landform define the shoreline of the lake. Following sunset, the partly cloudy sky is a mix of dark blue, grey, and pink colors with stars just starting to emerge. This view is representative of nighttime views that would be available to residence and tourists in the Shoreline/Residential LSZ. However, because the photo was taken outside the peak recreational season, the extent of man-made lighting is probably less than what would be seen during the summer, when such views will be experienced by the largest number of viewers.

Proposed Project

With the proposed Project in place, the dark silhouettes of multiple turbines can be seen against the light-colored sky above the background ridge. Illuminated FAA warning lights on six of the turbines are also clearly visible. The turbines follow the line of the landform, and under nighttime conditions their contrast with vegetation is not apparent. However, they are clearly the tallest elements on the background ridge. Although it does not result in noticeable sky glow, the Project adds man-made features and sources of light to a background that was formally perceived as dark and undeveloped. The presence of the turbines and the flashing FAA warning lights create a noticeable change in land use and will alter the character and quality of the nighttime view enjoyed by residents.



Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 32: Viewpoint 173 (Night)

Sheet 1 of 2: Existing Night view from Whittemore Point South Road in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Figure 32: Viewpoint 173 (Night)

Sheet 2 of 2: Proposed Night view from Whittemore Point South Road in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013





5.2.2 <u>Impact Evaluation</u>

The simulations described in the previous section are representative of the most open views of the Project that will be available to the public from various LSZs and/or public resources within the visual study area. As indicated previously, such views are available almost exclusively from open fields, water bodies, mountain peaks, cleared yards and road/utility corridors that provide openings in the forest vegetation that dominates the study area. The simulations evaluated by the rating panel thus represent focused views of the Project from a very small portion of the study area. They also often occur in LSZs with relatively high baseline scenic quality. Therefore, evaluation of the Project's effect from these viewpoints represents a "worst case" assessment of potential visual impact within the study area.

As described in Section 4.2.3, a panel of three registered landscape architects evaluated the visual impact of the Project by reviewing photos of the existing view and simulations of the proposed Project from each of the 21 selected viewpoints. Visual contrast was evaluated for each viewpoint using a simple evaluation form designed to provide a consistent and objective means of evaluating the Project's contrast with the existing landscape (see Appendix F). Results of the contrast evaluation conducted by the rating panel are summarized in Table 4 below.

Table 4. Visual Contrast Rating Summary Table

Viewpoint	Distance to Project ¹	LSZ ²	Viewers	Sensitive Resource	Rating Panel Contrast Scores ³			
					#1	#2	#3	Average
1	0.6 mi.	1, 2, 5	Residential	-	3.7	3.8	2.3	3.3
32	3.8 mi.	2, 7	Residential Travelers	-	3.0	1.8	1.1	2.0
46	4.7 mi.	5	Residential, Tourists	Newfound Lake	2.9	1.8	2.0	2.2
53	2.8 mi.	2, 7	Residential	-	3.0	1.3	1.4	1.9
59	3.5 mi.	1, 12	Tourists	AMC Lodge	3.0	0.6	0.6	1.4
63	2.0 mi.	4	Residential Travelers	-	3.2	2.9	1.3	2.5
75	4.5 mi.	2	Residential	-	3.5	1.5	1.6	2.2
78 ⁴	4.3 mi.	13	Tourists	Mount Cardigan	3.3	3.0	3.2	3.2
101	7.0 mi.	1, 12	Tourists	Ragged Mtn.	2.7	1.8	1.7	2.1
12 9 ⁵	5.7 mi.	1, 12	Tourists	Ruggles Mine	3.5	2.1	2.2	2.6
158	8.2 mi.	4, 14	Residential, Tourists	Newfound Lake	2.3	0.9	1.3	1.5
160	6.8 mi.	2, 12	Residential, Tourists	-	3.1	1.7	1.9	2.2
182	4.7 mi.	3, 12	Residential, Tourists	Ball Fields	0.5	0.2	0.1	0.3

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Viewpoint	Distance to Project ¹	LSZ ²	Viewers	Sensitive Resource	Rating Panel Contrast Scores ³			
					#1	#2	#3	Average
226	1.6 mi.	1, 7	Residential	-	3.4	3.4	1.8	2.9
241	3.5 mi.	2	Residential	Murray Hill Historic District	3.5	3.4	2.8	3.2
244	2.9 mi.	2, 7	Residential	Murray Hill Historic District	3.6	2.2	1.2	2.3
266	5.1 mi.	14	Residential	-	3.3	2.7	2.2	2.7
269	4.9 mi.	5, 14	Residential, Tourists	Newfound Lake	3.3	3.4	2.2	3.0
274	1.5 mi.	11	Residential, Travelers	-	1.9	1.2	1.0	1.4
279	1.1 mi.	2	Residential	-	3.3	3.5	2.2	3
Average						2.2	1.7	2.3
Nighttime Viewpoints								
53	2.8 mi.	2, 7	Residential	-	3.6	3.6	1.9	3.0
158	8.2 mi.	4, 14	Residential, Tourists	Newfound Lake	1.6	0.8	1.7	1.4
173	6.0 mi.	14	Residential	-	3.0	1.8	2.2	2.3
Average						2.1	1.9	2.2
Overall Average						2.1	1.8	2.3

¹As measured to the nearest visible turbine.

As indicated in Table 3, contrast ratings varied greatly by viewpoint and individual rating panel member. Individual scores for specific viewpoints ranged from 3.8 (indicating a strong contrast) to 0.1 (indicating an insignificant contrast). Composite scores (i.e., the average score of all three rating panel members) ranged from 0.3 to 3.3, and averaged 2.3. In general, the highest contrast sores were received by views where the turbines were relatively close to the viewer (0.6 – 1.6 miles), were completely or substantially unscreened, occupied a significant portion of the view, and/or presented substantial contrast with the landscape features or viewer activities occurring at the site.

Nine of the 20 daytime viewpoints received composite scores indicating appreciable visual contrast (score of 2.5 to 3.3). These scores were generally the result of the Project presenting relatively high contrast with multiple landscape features. The highest composite scores were received by viewpoints where the Project's contrast with existing land use and associated viewer activity was considered appreciable to high. This generally occurred when the turbines were added to an undeveloped forest landscape, or as a backdrop to a shoreline or residential setting. This, along with the proximity of the proposed Project, resulted in Viewpoint 1 receiving the highest individual and composite

²Landscape Similarity Zones: 1 = Forest, 2 = Rural Residential, 3 = Village, 4 = Hamlet, 5= Water/Waterfront, 7 = Agricultural, 11 = Utility Corridor, 12 = Outdoor Recreation, 13 = Alpine Summit, 14 = Shoreline Residential

³Scores: 0 = Insignificant, 1 = Minimal, 2 = Moderate, 3 = Appreciable, 4 = Strong

⁴Scores for 50 degree panorama, not broader panoramic simulation.

⁵Scores for selected 55 mm photo, not panoramic simulation.

contrast ratings (3.8 and 3.3 respectively). One of the rating panel members indicated strong Project contrast in this view for five out of the six landscape components being evaluated. However, this view will be seen by a relatively small number of residents traveling on Wild Meadows Road and is not a public resource of potential significance. It is also worth noting that the simulation prepared at this viewpoint purposely excluded numerous visually discordant features associated with a nearby residence that affect baseline scenic quality.

The next highest composite contrast ratings (3.2) were received by simulations from Mount Cardigan (Viewpoint 78) and the Murray Hill Historic District (Viewpoint 241). The sensitivity of these viewpoints, and their high scenic quality, factored into the relatively high contrast ratings they received. In the case of Mount Cardigan, the full extent of the Project can be viewed against a backdrop of largely undeveloped forested hills. Although the Project is approximately 4.4 miles away, strong contrast with existing land use and viewer activity at this viewpoint was consistently noted. For vegetation and landform, contrast was considered strong by two out of the three panel members. An adverse impact on scenic quality and viewer enjoyment was also indicated. However, the panel acknowledged that the proposed turbines themselves were not unattractive, and that not all viewers would object to the presence of the turbines in this view. The availability of undeveloped views in other directions will also serve to moderate the impact of the Project for some viewers.

At Viewpoint 241 in the Murray Hill Historic District, appreciable to strong contrast with multiple landscape features was noted by all of the rating panel members. The contrast presented by the turbines' location on an undeveloped background ridge, as well as their contrast with the traditional architecture of the structures in the foreground was consistently indicated for this viewpoint. However, panel members again noted that viewer reaction to the Project is likely to be variable, and that it could be perceived as somewhat compatible with the working agricultural character of the landscape.

The only other simulation to receive a composite score of 3.0 or greater on the 0-4 contrast scale was Viewpoint 269 on the eastern shoreline of Newfound Lake (rating of 3.0). High contrast ratings at this viewpoint are largely attributable to the completely unscreened view of the Project and its perceived contrast with the existing forested hills on which it occurs and the recreational and residential viewer activity that occurs on the lake and its shoreline.

On the other end of the scale, six of the 20 daytime viewpoints received a score of 2.0 or less, indicating insignificant to moderate contrast. The lowest composite contrast score (0.3) was received by Viewpoint 182, and is attributable to the fact that the Project is almost completely screened at this most open viewpoint within the village area of Bristol. Partial screening, or a limited number of turbines being visible, also contributed to relatively low contrast scores for

Viewpoint 59 adjacent to the AMC Cardigan Lodge (1.4) and Viewpoint 158 along the northeastern shoreline of Newfound Lake, (1.5). The presence of other man-made features in the view was also a factor in the scores received by Viewpoint 158, and in particular, Viewpoint 274 (1.4) which was located on a cleared utility corridor. The Project's compatibility with a working agricultural landscape contributed to lower contrast ratings for Viewpoint 53, and was also noted by panel members as a mitigating factor in their evaluation of Viewpoints 32, 244, and 266 (although composite contrast ratings for these viewpoints were in the range of 2.0 to 2.9).

As with daytime viewpoints, the rating panel's evaluation of nighttime visual impacts was highly variable. As indicated in Table 3, individual scores for the three nighttime views ranged from 0.8 to 3.6. Composite (average) ratings for these viewpoints ranged from 1.4 to 3.0, and averaged 2.2. The magnitude of nighttime visual impact from a given viewpoint appears to be strongly influenced by distance of the turbines from the viewer, how many lighted turbines are visible, what other sources of lighting are present in the view, the extent of screening provided by structures and trees, and nighttime viewer activity/sensitivity. The highest individual and composite nighttime contrast scores were received by Viewpoint 53 where the turbines were relatively close to the viewer (2.8 miles) and the turbine lights were visible across a substantial portion of a formerly dark sky. Panel members indicated that the greatest nighttime impact was the effect of the proposed turbines and FAA warning lights on perceived land use (i.e., lack of development in the view) and viewer activity (e.g., enjoyment of the sunset, start-gazing). FAA warning lights on the turbines could be perceived negatively by residents and vacationers that currently experience dark nighttime skies. The contrast of aviation warning lights with the night sky can be strong in dark, rural settings, and their presence suggests a more commercial/industrial land use. Viewer attention is drawn by the pulsing of the lights, and any positive reaction that wind turbines engender (due to their graceful form, association with clean energy, etc.) is lost at night. While generally not an issue from roads and public resources visited almost exclusively during the day (parks, trails, historic sites, etc.), turbine lighting could be perceived negatively by area residents who may be able to view these lights from their homes and yards. However, this impact will be limited in areas of more concentrated human settlement/development, where existing light sources will limit the visibility and contrast of the aviation warning lights. In addition, it should be reiterated that the rural portions of the study area are dominated by forest which will screen views toward the Project site in most location. Considering the screening of forest vegetation, viewshed analysis indicates that no lighted turbines should be visible from 97% of the 10 mile radius study area.

Based on the results of numerous visual impact assessments of wind power projects conducted or reviewed by EDR since 1999, along with published studies of viewer reaction to proposed or constructed projects, the perceived contrast and visual impact of wind turbines is highly variable. Consistent with the findings of this evaluation, the greatest impact typically occurs when numerous turbines are visible, where the turbines are close to the viewer, or

where the turbines appear out of place in their setting (e.g., in undeveloped forest). These conditions tend to heighten the Project's contrast with existing elements of the landscape in terms of line, form, and especially scale.

5.2.3 <u>Impact Significance</u>

The overall conclusion of the visual impact evaluation process conducted for the Wild Meadows Wind Farm is that for most viewpoints that offer an open view of the Project, the degree of contrast will be moderate to appreciable, and scenic quality is likely to be diminished for some viewers. However, as indicated previously, even for those viewpoints where more appreciable visual contrast was noted, there was generally a high degree of variability among the scores of individual rating panel members. In many cases certain panel members indicated little or no contrast with components of the landscape where other panel members noted a substantial contrast. This likely reflects the individual variability in the way people perceive landscapes and react to wind turbines. Wind turbines are unlike most other energy/infrastructure facilities, such as transmission lines or conventional power plants that are almost universally viewed as aesthetic liabilities. Wind turbines have a clean sculptural form that is considered attractive by some viewers (Pasqualetti e al., 2002). As indicated by rating panel comments, in several instances, even though the turbines may create substantial contrast with the existing landscape, they are not unattractive, and could be perceived as adding an element of interest to the existing view.

However, assuming that the degree of contrast presented by the Project represents an adverse impact on scenic quality in some locations, the remaining question is whether the effect is "unreasonably" adverse. The term unreasonable is not defined in the New Hampshire siting regulations or well established through previous Site Evaluation Committee (SEC) rulings. Wind projects in New Hampshire have been approved that offer clear views of turbines from a nearby State Park (Pillsbury State Park in the case of the Lempster Wind Project) and from a trail overlook in the White Mountain National Forest (Rattlesnake Mountain in the case of the Groton Wind Project). On the other hand, the Antrim Wind Project was denied by the SEC, based largely on its visibility from a nearby Aububon Society sanctuary.

Guidance on what may constitutes an unreasonable or undue adverse visual impact can be obtained by looking at how other states define significant adverse visual impacts. In New York, the Department of Environmental Conservation's Visual Policy (NYSDEC, 2000) states the following:

"Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public's

enjoyment and/or appreciation of the appearance of an inventoried resource (e.g. cooling tower plume blocks a view from a State Park overlook)."

In Vermont (using an approach referred to as the Quechee Analysis [State of Vermont, 2012]), an adverse visual impact may be considered "undue" if it meets one or more of the following criteria:

- 1. The project violates a clear written community standard intended to preserve the aesthetics or scenic beauty of the area.
- 2. The project is so out of character with its surroundings or so significantly diminishes the scenic qualities of the area as to be offensive or shocking to the average person.
- 3. The applicant failed to take generally available mitigation steps which a reasonable person would take to improve the harmony of the proposed project with its surroundings.

Using the criteria defined by New York State Visual Policy and the Quechee Analysis as a guide, EDR reviewed the Master Plans for the Towns of Alexandria and Danbury to determine if the Project violated a written community standard to protect scenic resources.

Within its vision statement, the Town of Alexandria Master Plan (Alexandria Planning Board, 2010) indicates a desire to protect the predominately rural character of the Town and its natural resources. It also mentions an interest in broadening the Town's tax base by encouraging appropriate industry. The only lands identified where future development cannot occur are properties owned by the State of New Hampshire or the Society for the Protection of New Hampshire Forests. Other areas identified as priorities for protection include specific natural and cultural resources, as well as prime agricultural land, surface waters and wetlands, groundwater and aquifers, and steep slopes. The Future Land Use map within the Master Plan identifies portions of the proposed Project site as conservation/preservation area that should be developed with caution to minimize environmental impacts and municipal service costs. Protection of views and scenic resources is not mentioned in the Master Plan, and no scenic districts, roads or overlooks are designated or proposed.

The vision statement in the Danbury Master Plan (Danbury Planning Board, 2011) indicates that residents would like to retain the Town's "small town country atmosphere within a rustic setting well into the 21st century." The goal is to preserve Danbury's natural resources, while encouraging controlled residential, commercial and industrial growth. No scenic areas, roads, or overlooks are identified in the Master Plan, and protection of scenic resources is not

mentioned in the discussion of projected future land use/needs or recommendations. The only item related to this is found in the results of the residents survey, which indicated the desire of some residents to protect dark skies. Survey results also indicated that when asked what kind of energy development should be encouraged in Danbury, wind power was identified above all others by 51% of the respondents.

Several regional planning documents were also reviewed to determine if they defined specific scenic resources or areas that warranted protection. EDR reviewed the Lakes Region Economic Development Strategy (LRPC, 2013), the New Hampshire Division of Parks and Recreation Ten-Year Strategic Development and Capital Improvement Plan (NH Division of Parks and Recreation, 2010), the New Hampshire Statewide Comprehensive Outdoor Recreation Plan, 2013-2018 (NHOEP and DRED, 2013), and the Quabin to Cardigan Conservation Plan (Sundquist, 2008). Although aesthetic resources are recognized in all of these plans, no specific resources or scenic areas are identified for protection. The plans encourage the protection of natural and historic resources in general, in part because of their contribution to scenic quality, but visual/aesthetic resources are not a focus of these reports. The Lakes Region Economic Development Strategy discusses energy and the natural environment in the context of sustainability, and indicates that development of renewable energy needs to be balanced by responsible stewardship of the region's natural resources. Planning Boards are encouraged to identify and preserve unique areas and resources that maintain the region's quality of place, sense of community and identify. However, no specific quidance is provided as to how this should be achieved. The Project is also well-removed (approximately 9 miles away) and completely screened from view at the only two sites within the study area that have received official designation as scenic areas (the New Hampton-Bridgewater Scenic Easement). Thus, based on the data reviewed by EDR, the Project does not violate a clear written community standard intended to preserve the aesthetics or scenic beauty of the area.

In regard to the second criteria the Quechee Analysis, and guidance provided by New York State Visual Policy likely viewer reaction to the Project can be predicted by reviewing studies of how wind power projects actually affect viewer enjoyment and continued use of scenic and recreational resources. To our knowledge, no such studies have been conducted in New Hampshire. However, in Maine, the Wind Energy Act (35-A M.D.S.A., Ch. 34-A) requires that the effect of wind generating facilities on the public's use and enjoyment of scenic resources be considered. Consequently, several visual impact studies for proposed wind energy projects in Maine have conducted surveys of recreational users. In these studies respondents were asked to rate the existing view and a photo simulation of the view with the proposed turbines in place, and indicate how the project would affect their recreational use and enjoyment of the trails and lakes they were using, and the likelihood of their returning to the area if the project was built. For hikers/trail users, such surveys have been conducted for the Highland Wind Project in Highland Plantation,

Maine (Portland Research Group, 2011b), the Bull Hill Wind Power Project in Bull Hill, Maine (Robertson and MacBride, 2010), the Spruce Mountain Wind Project in Woodstock, Maine (Mildner and MacBride, 2010b), and the Saddleback Ridge Wind Project in Carthage, Maine (Mildner and MacBride, 2010a). A summary of the results of these surveys is presented below.

In general, the hikers surveyed for the wind projects referenced above indicated that introduction of the proposed wind turbines would somewhat reduce the perceived scenic value of the view. However, for most hikers, the presence of the turbines would not significantly affect their enjoyment, and would have no overall effect on the likelihood of their returning to the area. Results of the survey conducted for the Spruce Mountain Wind Project (Mildner and MacBridge, 2010b) are illustrative, and may be particularly applicable to users of Mount Cardigan. This survey was conducted on the overlook on Bald Mountain in Woodstock, Maine. As stated in the report, "Bald Mountain is a recreational attraction because it is accessible, a short hike, and has nice views. Hikers here are not expecting a wilderness experience, rather, a chance to get exercise and enjoy the outdoors, often as a family." When presented with photographs of the existing view and a photographic simulation of the proposed wind project from Bald Mountain, respondents rated the current scenic value at 4.5 on a 7-point scale, slightly above the mid-point or neutral (4) level. Addition of the wind farm to view dropped the average rating to 3.6, slightly below the mid-point or neutral level of the scale. Most respondents thought that the addition of a wind farm to the view from Bald Mountain would have no effect on their enjoyment of the resource. Expectations for negative and positive effects were nearly balanced and no respondents said that the effect on their enjoyment would be extremely negative or extremely positive. Comments from the respondents included statements such as:

- "There's nothing aesthetically that offends me about this."
- "It'd be somewhat adversely affected now we're looking at a relatively unspoiled view of nature here we
 have a very pronounced view of man-made structures. You're reminded you're not really escaping
 civilization."
- "It was the hike; it was nature; that doesn't affect it at all."
- "It's still a good hike for kids and a good view, even with the windmills."

Intercept surveys of recreational boaters have also been conducted for the Bull Hill Wind Power Project in Bull Hill, Maine (Robertson and MacBride, 2010), the Bowers Wind Project in Carroll Plantation and Kossuth Township, Maine (Kleinschmidt, 2012b), the Oakfield Wind Project in Aroostook County, Maine (Robertson and MacBride, 2011b), the Passadumkeag Mountain Wind Power Project in Grand Falls Township, Maine (Robertson and MacBride, 2011a),

and the Bingham Wind Project in Bingham, Mayfield Township and Kingsbury Plantation, Maine (Kleinschmidt, 2013).

These surveys may be indicative of the type of reaction that could be received from users of Newfound Lake. A summary of the results of these surveys is presented below:

- The survey results for boaters on Donnell Pond indicate that the turbines of the proposed Bull Hill Project would likely have a negative impact to the pond's scenic value. However, 82% of respondents indicated that the wind turbines would have no impact (78%) or a positive impact (4%) on their likelihood of returning to Donnell Pond for water activities such as boating, canoeing, kayaking, swimming, or fishing (Robertson and MacBride, 2010).
- The results of the Bowers Wind Project boaters intercept survey conducted on Junior, Scraggly, and Pleasant Lakes indicate there would be a decrease in the overall scenic value once the project was complete. However, for the majority of users (55%), the project would have no effect or a positive effect on their use and enjoyment, and the vast majority (80%) stated the project would have no effect on their likelihood of returning to the lake in the future (Kleinschmidt, 2012b).
- Sixty-two percent of respondents on the Pleasant Lake and Mattawamkeag Lake user survey indicated that
 the proposed Oakfield Wind Project would result in no change or have a positive effect on their enjoyment of
 the lakes. Seventy-three percent of respondents for Pleasant Lake indicated that the proposed wind project
 would result in no change or a positive change in their likelihood to return for boating, kayaking, and
 canoeing; 76% responded similarly for fishing, 83% responded similarly for ice fishing; and 81% responded
 similarly for swimming. Responses were similar for Mattawamkeag Lake (Robertson and MacBride, 2011b).
- The boater intercept survey conducted for the Passadumkeag Mountain Wind Project indicated a decreased scenic value with views of the built project from all water bodies studied. However, 59% of respondents at Saponac Pond and 62% of respondents at Lower Pistol Lake indicated that the proposed project would result in no change to their enjoyment of the pond. Sixty-eight percent of respondents at Nicatous Lake indicated that the project would have no impact (48%) or a positive impact (20%) on their visit to the lake (Robertson and MacBride, 2011a).
- Overall, respondents at both Wyman Lake and Bald Mountain Pond indicated a diminished scenic value
 with the proposed Bingham Wind Project in place. However, at Wyman Lake, 73% of respondents stated
 the wind turbines would have no effect (40%) or a positive effect (33%) on the enjoyment of their visit. Fifty
 seven percent of the respondents at Bald Mountain Pond indicated the wind turbines would have no effect
 on the enjoyment of their visit (Kleinschmidt, 2013).

Overall, intercept surveys of both boaters and hikers in Maine indicated that, although proposed wind turbines would likely decrease overall scenic value, their presence would not substantially impact enjoyment of the lake or the hiking trail being used, or their likelihood of recreational users returning to these sites.

As opposed to pre-construction surveys, there is much less data available on the actual reaction of recreational users or local residents to operating wind projects. A post-construction survey was conducted on Baskahegan Lake in Maine to evaluate whether visibility of the 55-turbine Stetson Wind Project was impacting scenic quality or recreational use of the lake. The study was the first post-construction survey conducted in Maine, and as such evaluates actual perception and impact as opposed to anticipated impacts. The results of the survey indicated that 81% of the respondents felt that the wind farm had no effect or a positive effect on scenic value, 93% of respondents stated that the wind farm had no effect or a positive effect on the quality of their experience, and 93% stated that the wind farm would have no effect on the likelihood of their return. The survey conducted at Baskahegan Lake suggests that significant visibility of the wind turbines in the viewshed of a recreational lake will not necessarily have a substantial impact on either scenic quality or the experience of recreational users (Kleinschmidt, 2012a).

This finding is consistent with a number of broader studies that have found increased local support for wind projects once they are constructed and become operational. Public support often follows a "U" pattern, in which acceptance is initially high, drops during the planning and construction, and then rebounds after the wind farm commences operation, and impacts are found to be less detrimental than feared (Firestone et al., 2009).

In EDR's experience, operating wind power projects in New York State have generally received a positive public reaction following their construction. This observation is supported by recent annual surveys conducted by Jefferson County Community College in Lewis County, New York (location of the 195-turbine Maple Ridge Farm Project in operation since 2006), which revealed strong community support for wind power (JCCS, 2008, 2010, 2011, 2012). A significant majority (approximately 90%) of Lewis County residents who participated in these surveys expressed support for the development of additional wind energy projects (JCCS, 2010, 2011, 2012). Approximately 70% of respondents have consistently indicated that wind farms have had a positive impact on Lewis County (JCCS, 2009, 201, 2012). The 2008 survey indicated that 77% of individuals that were able to see and/or hear turbines from their homes indicated that the wind farms have had a positive impact on Lewis County. Additionally, only 7.5% of participants who live within 1 mile of the nearest wind turbine felt that wind farms have had a negative impact (JCCS, 2008).

EDR's observations, and the Jefferson Community College 2008 survey, are consistent with anecdotal reports of public reaction to the Lempster, New Hampshire Wind Project, and the results of a recent study of public perception of wind power in Scotland and Ireland (Warren, et. al., 2005). The conclusion of this study states the following:

"A remarkably consistent picture is emerging from surveys of public attitudes to wind power, and the case studies provide further evidence that this picture is a representative one. Large majorities of people are strongly in favour of their local windfarm, their personal experience having engendered positive attitudes. Moreover, although some of those living near proposed windfarm sites are less convinced of their merits, large majorities nevertheless favour their construction. This stands in marked contrast with the impression conveyed in much media coverage, which typically portrays massive grassroots opposition to windfarms."

Thus, although the Wild Meadows Project can be anticipated to present appreciable contrast with the existing landscape from some vantage points and a likely reduction in scenic quality for some viewers, this reaction will not be universal. Based on rating panel comments and studies/surveys conducted at other proposed and operating wind projects, the Wild Meadows Project is unlikely to significantly decrease viewer use and enjoyment of the area's scenic resources, or discourage people from returning to the area in the future to enjoy these resources. Therefore, although the Project will certainly have an impact on some of the area's landscapes and public resources, it is unlikely to offend the sensibilities of the average person viewing it.

In regard to the third criterion used by the Quechee Analysis, the Project has incorporated a number of mitigation measures, as described in Section 6.0. The most significant of these is the reduction of the proposed Project size from 37 turbines to 23 turbines (a 38% reduction). Given the various mitigation measures proposed or under consideration, it is clear that Atlantic Wind has not failed to take generally available mitigation steps which a reasonable person would take to improve the harmony of the proposed Project with its surroundings.

Therefore, based on the standards applied in the Quechee Analysis and New York State Visual Policy, the Wild Meadows Wind Project will not have an undue or unreasonable adverse visual impact.

6.0 Conclusions

The VIA for the Wild Meadows Wind Project allows the following conclusions to be drawn:

- 1. Visibility analyses indicate that the Project has the potential to be visible from only a small portion of the 10-mile radius study area. There are no publicly available foreground views of the Project (i.e., views from distances of 0-0.5 mile), and in the majority of open views, the Project will be in the background (i.e., over 3.5 miles from the viewer). Several studies have indicated that significant visual effects of wind power projects diminish quickly with distance, and are generally concentrated within 3.5 miles of a project site (Eyre, 1995; Bishop, 2002). Based on viewer reaction to simulations of turbines at various distances (albeit substantially smaller turbines than those proposed for the Wild Meadows Project), Bishop (2002) concluded that, "Visual impact remains 'in the eye of the beholder' but may well become minimal beyond 5 km 7 km, even in clear air. What is abundantly clear is that any impact model should not be based purely on line of sight, but must also take distance into account." EDR's observations of built wind power projects in New York State indicate that under favorable conditions, views of the wind turbines will likely be available from certain viewpoints over 10 miles from the Project site. However, at distances beyond 5 miles visual impact is typically limited.
- Viewshed analysis indicates that over half the visual study area (53%) will be screened from view of the Project by topography alone. When considering the screening of both topography and mapped forest vegetation, viewshed analysis indicates that over 96% of the study area will not have daytime or nighttime views of the proposed turbines. In addition, viewshed analysis suggests that views of the Project are likely to be fully screened from approximately half of the identified public resources that occur within this 10-mile radius study area. Field review confirmed the results of the vegetation viewshed analysis, and indicated that the Project will either not be visible, or will be significantly screened by foreground vegetation and structures in most locations. Viewshed analysis and field review suggest that 86 (68%) of the public resources of potential statewide significance, water bodies, and areas of intensive land use within the study area will be completely screened from view of the Project. An additional 27 (21%) of these sites/resources will have partially screened views. However, open views will be available from several public resources of potential statewide significance, including portions of Mount Cardigan, Newfound Lake, the Murray Hill Historic District, Canaan Street Historic District and Paradise Point Nature Center.
- 3. Simulations of the proposed Project indicate that the visibility and visual contrast of the wind turbines will be highly variable, based on the extent of screening/number of turbines visible, the character of the surrounding

landscape, and distance of the viewer from the Project. In most cases where open views are available, the Project will be viewed on a forested background ridge. In many of the open views featured in the simulations, the Project resulted in the addition of man-made features to a primarily undeveloped view. This change resulted in perceived contrast with land use and viewer activity in forested and residential settings, but appeared compatible with working agricultural landscapes.

- 4. Evaluation by a panel of registered landscape architects indicates that the Project's overall contrast with the visual/aesthetic character of the area will be highly variable. Composite contrast ratings for individual daytime viewpoints ranged from 0.3 to 3.3 on the scale of 0 (insignificant) to 4 (strong), and averaged 2.3 (moderate). This likely reflects the variety of circumstances under which the Project will be viewed, and the differing perspectives of the individual rating panel members. However, appreciable contrast (scores of 2.5 to 3.5) was noted for nine of the 20 daytime viewpoints. In general, the highest contrast scores were received by views where the turbines were relatively close to the viewer, were completely or substantially unscreened, occupied a significant portion of the view, and/or presented substantial contrast with the landscape features or viewer activities occurring at the site. For those viewpoints with the highest contrast rating, rating panel comments indicated that the Project presented appreciable to strong contrast with multiple features of the existing landscape, in particular land use and viewer activity.
- 5. Based upon rating panel review of nighttime simulations, the turbines and FAA warning lights could result in a nighttime visual impact on certain viewers. Composite contrast rating scores for nighttime simulations ranged from 1.4 to 3.0. This range of contrast was related to how many lighted turbines were visible, what other sources of lighting were present in the view, the extent of screening provided by structures and trees, and nighttime viewer activity/sensitivity. While night lighting will likely be perceived negatively by rural residents and vacationers in locations where they currently experience dark nighttime skies, nighttime visibility/visual impact will be limited due to the abundance of mature trees that screen the Project from many homes, and the concentration of residences in village and hamlet areas, and along highways, where existing lights already compromise dark skies and compete for viewer attention.
- 6. Review of the Master Plans for the Towns of Alexandria and Danbury, as well as regional and statewide planning documents, indicate that the Wild Meadows Wind Project will not violate a clear written community standard to preserve aesthetics, scenic or natural beauty. In addition, it is not likely to be perceived as offensive or shocking to the average person. Based on rating panel comments, recreational user surveys from other sites, and experience with currently operating wind power projects elsewhere, public reaction to the Project is also likely to be variable depending on proximity to the turbines, the affected landscape, the activity in which the

viewer is engaged, and the viewer's personal attitude regarding wind power. Recreational surveys conducted for wind power projects in Maine consistently indicate that the projects may result in a perceived decrease in scenic quality, but are unlikely to diminish the recreational experience for most users, or reduce the likelihood of their returning to the area in the future. This may reflect the fact that wind turbines are not, in and of themselves, unattractive and have a positive connotation for many viewers. As Stanton (1996) notes, although a wind power project is a man-made facility, what it represents "may be seen as a positive addition" to the landscape. Consequently, although the turbines will present appreciable contrast from certain viewpoints, including some public resources of potential statewide significance, they are unlikely to offend the sensibilities of the average person.

- 7. Given the nature of wind power projects and their siting criteria (tall structures located on elevated sites) some level of visual impact is unavoidable. However, several measures that help mitigate visual impact have been incorporated into the design of the Wild Meadows Wind Project. These include the following:
 - The initial Project design, including 37 turbines, was reduced to 23 turbines (a 38% reduction). See comparison of simulations of the preliminary Project layout (October 2012) with the revised Project layout (September 2013) in Appendix E.
 - The turbines eliminated from the original Project design were those proposed to be closest to Mount Cardigan. See comparison of simulations of the preliminary Project layout with the revised Project layout from Viewpoint 78 in Appendix E.
 - The Project will be located in a forested area that essentially eliminates the opportunity for foreground views from public vantage points, and limits potential Project visibility to a small portion of the surrounding area.
 - New access road construction will be minimized by utilizing existing logging roads whenever possible, and forest clearing along the proposed access roads and at turbine sites will be minimized to the extent practicable.
 - The placement of any, manufacturer's logos or other markings on the turbines will be prohibited.
 - The proposed Operations and Maintenance facility will be located at approximately 1,800 feet from the nearest public road and will be well screened by forest vegetation. It therefore will present little if any adverse visual impact.
 - The Project will use the minimum number of aviation warning lights (currently assumed to be 13 of the 23 turbines), and longest permissible off cycle allowed by FAA guidance.
 - The Project will be decommissioned and removed at the end of its operational life.

In addition, the following recommendations are provided:

- 1. Explore the feasibility of utilizing radar-activated FAA warning lights that would only go on only when an airplane is actually approaching the Project. While such systems are not currently approved by the FAA, they may be in the future, and if employed on the Project, could substantially reduce nighttime visual impacts.
- 2. Evaluate construction techniques that could further reduce the extent of tree clearing required, and allow revegetation of trees wherever they would not interfere with Project operations and safety.

In summary, based on the results of this VIA, it can be concluded that: 1) the project will have very limited visibility from most locations within the 10-mile radius study area (including the majority of public resources of potential statewide significance), 2) although presenting appreciable visual contrast from some viewpoints, the Project will not violate a clear written community standard intended to preserve scenic resources, nor will it offend the sensibilities of an average viewer, 3) the Project is unlikely to substantially diminish the enjoyment of viewers engaged in recreational activities, or their likelihood of returning to the area, and 4) the Project sponsor has committed to feasible and appropriate mitigation measures that improve the harmony of the proposed Project with its surroundings. Based on these findings, and in consideration of existing literature and prior SEC decisions, it can be concluded that the Wild Meadows Wind Project will not have an unreasonable adverse visual impact.

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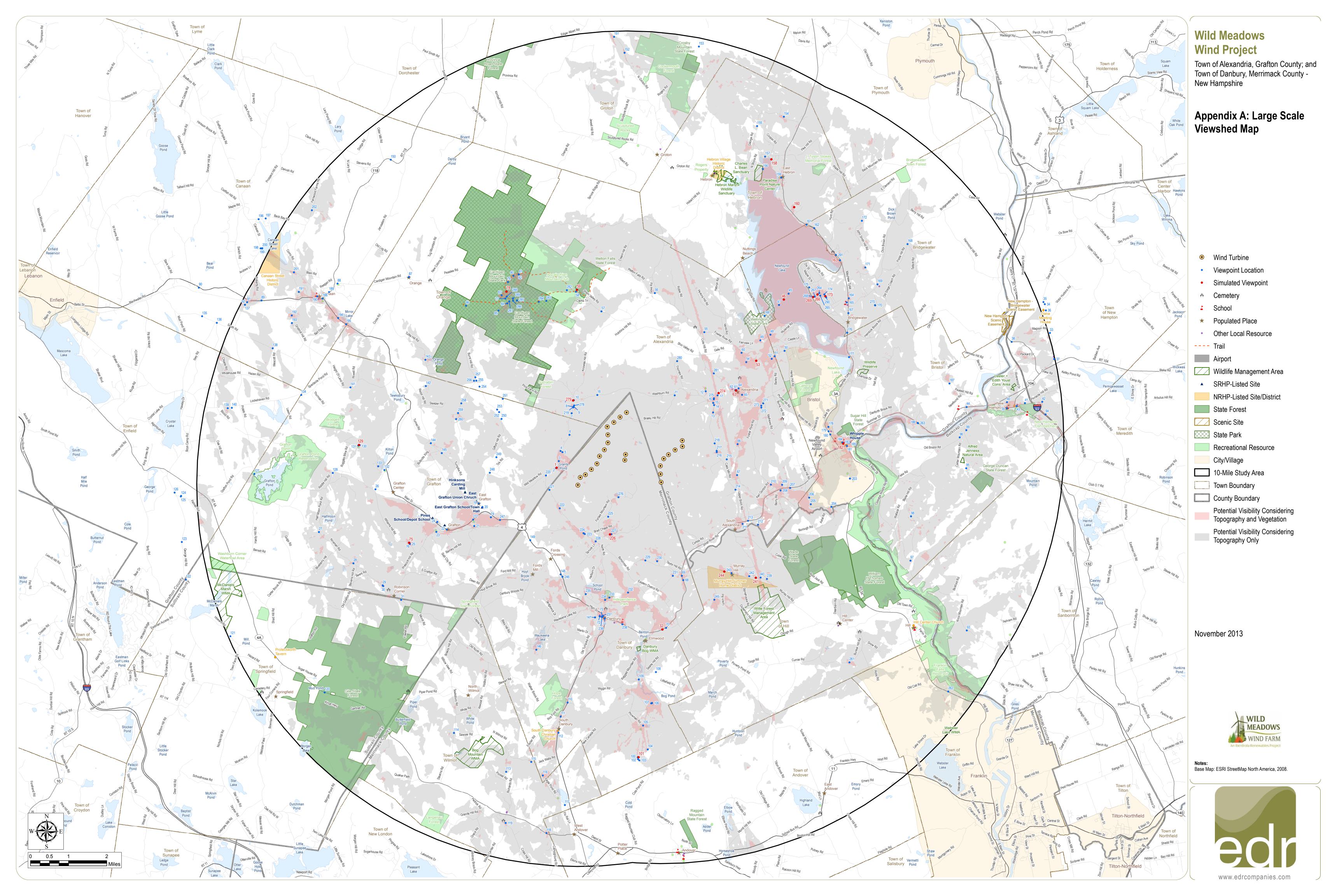
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Appendix A

Large Scale Viewshed Maps and Visibility Summary Table



	Loos	tion		Distance ²		Project Visibility +Visible - Not Visible +/- Partially Visible		
	Loca	IUON		Distance	Distance Zone			,
				Miles from	Foreground Midground	Topographic	Topographic 8	k
Visually Sensitive Resource	Town	County	VP Number ¹	Nearest Turbine	Background	Viewshed	Vegetation Viewshed	Field Review
National or State Register of Historic Places								
Murray Hill Summer Home District	Town of Hill	Merrimack County	239-244	2.5	•	+/-	+/-	+
Central Square Historic District	Town of Bristol	Grafton County	181-185	4.3	۰	+	+	-
South Danbury Christian Church	Town of Danbury	Merrimack County	11	6.4	•	+	+/-	-
Hebron Village Historic District	Town of Hebron	Grafton County		6.6	•	-	-	-
Hill Center Church	Town of Hill	Merrimack County		7.6	•	-	-	-
GordonNash Library	Town of Bristol	Belknap County	39	8.5	•	+	+/-	-
New Hampton Community Church	Town of Bristol	Belknap County	43	8.7	٠	+	+	-
Protectworth Tavern	Town of Springfield	Sullivan County		9.1	٠	-	-	-
Canaan Street Historic District	Town of Canaan	Grafton County	198-201	9.5	٠	+/-	+/-	+/-
Dana Meeting House	Town of Hampton	Belknap County	36	10.0	•	+	-	-
East Graffton School/Town Hall	Town of Grafton	Grafton County	20	2.6	•	-	-	-
East Grafton Union Chruch	Town of Grafton	Grafton County	19	2.7	•	+	-	-
Hinksons Carding Mill	Town of Grafton	Grafton County		3.0	•	-	-	-
Grafton Public Library	Town of Grafton	Grafton County	22, 24	3.6	۰	-	-	-
Pines School/Depot School	Town of Grafton	Grafton County	24	3.9	•	+	-	-
Whipple House	Town of Bristol	Grafton County	185	4.4	٠	+	+	-
State Parks								
Cardigan Mountain State Park	Town of Orange	Grafton County	77-86, 283-290	2.0	•	+/-	+/-	+/-
Wellington State Park	Towns of Alexandria and Bristol	Grafton County	166	3.3	•	+/-	+/-	-
State Forests	RHZIOI	Granon County	100	3.3				
Cardigan Mountain State Forest	Town of Orange	Grafton County	77-86, 283-289	2.0	•	+/-	+/-	+
Welton Falls State Forest	Town of Alexandria	Grafton County	7.7 00/ 200 207	3.2	•	+/-	+/-	
Wade State Forest	Town of Hill	Merrimack County		3.5	•	+/-	_	
Sugar Hill State Forest	Town of Bristol	Grafton County		4.1	•	+/-	+/-	
William H. Thomas State Forest	Town of Hill	Merrimack County		4.2	•	+/-	+/-	
		Merrimack and Sullivan				+/-	+/-	
Gile State Forest	Town of Springfield	Counties	120	5.4	•		+/-	-
George Duncan State Forest	Town of New Hampton	Belknap County		7.6	•	+/-	-	
Ragged Mountain State Forest	Town of Andover	Merrimack County		8.8	•	ı	-	

						Project Visibility		
	Loc	ation		Distance ²	Distance Zone	+Visible - N	lot Visible +/-	Partially Visible
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	ForegroundMidgroundBackground	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
Crosby Mountain State Forest	Town of Groton	Grafton County		9.1	•	+/-	_	
Province Road State Forest	Town of Dorchester	Grafton County		9.4	•	+/-	-	
National Wildlife Refuges and State Wildlife Mana								
Witte Forest Management Area	Town of Hill	Merrimack County		3.7	•	+/-	+/-	
Danbury Bog WMA	Town of Danbury	Merrimack County		4.2	•	+/-	+/-	
Wildlife Preserve	Town of Bristol	Grafton County		4.9	•	+/-	-	
Hebron Marsh Wildlife Sanctuary	Town of Hebron	Grafton County		6.5	•	-	-	-
Charles L. Bean Sanctuary	Town of Hebron	Grafton County		6.6	•	-	-	-
Paradise Point Nature Center	Town of Hebron	Grafton County	156	6.9	•	+/-	+/-	+/-
Bog Mountain WMA	Town of Wilmot	Merrimack County		6.9	0	+/-	+/-	
Alfred Jenness Natural Area	Town of New Hampton	Belknap County		7.3	0	+/-	-	
Lester + Edith Youst Cons. Area	Town of New Hampton	Belknap County		8.7	•	+	-	
McDaniels Marsh WMA	Towns of Springfield and Grafton	Sullivan and Grafton Counties		9.2	0	-	-	
Webster Lake WMA	Town of Franklin	Merrimack County		10.0	•	-	-	
National Park System, Recreation Areas, Seashor	es, Forests							
None in Study Area								
National or State Designated Wild, Scenic, or Rec	reational Rivers							
None in Study Area								
Other Designated Scenic Sites, Area, Lake, Reserve								
New Hampton - Bridgewater Scenic Easement	Towns of New Hampton and Bridgewater	Belknap and Grafton Counties		8.8	٠	-	-	
New Hampton Scenic Easement	Town of New Hampton	Belknap County		9.1	•	-	-	
State or Federally Designated Trail, or Proposed f	or Designation							
None in Study Area								
Lakes and Rivers								
Grants Pond	Town of Grafton	Grafton County	1	0.5		+	+/-	+
0 111 01	Towns of Grafton, Danbury, Alexandria, New Hampton,	Belknap, Merrimack and	400,000	4.0	•	+/-	+/-	+/-
Smith River	and Hill	Grafton Counties	132, 208	1.8	•	+/-	+/-	
Fowler River	Town of Alexandria	Grafton County	170	2.6				-
Newfound River	Town of Bristol	Grafton County	179	3.7	0	+/-	-	-

						Р	roject Visibili	ity
	Local	ion		Distance ²	Distance Zone	+Visible - N	lot Visible +/- I	Partially Visible
				Miles from	Foreground		Topographic &	
Visually Sensitive Resource	Town	County	VP Number ¹	Nearest Turbine	MidgroundBackground	Topographic Viewshed	Vegetation Viewshed	Field Review
Waukeena Lake	Town of Danbury	Merrimack County	146	3.8	•	+/-	+/-	+/-
Newfound Lake	Towns of Hebron, Bridgewater, Alexandria, and Bristol	Grafton County	45-47, 156, 159	3.9	0	+/-	+/-	+
Pemigewasset River	Towns of Franklin, Sanbornton, Hill, Bristol, New Hampton, and Bridgewater	Belknap, Merrimack and Grafton Counties	10 17, 100, 107	4.5	0	+/-	+/-	+/-
Kilton Pond	Town of Grafton	Grafton County	132, 133	4.9	•	+/-	-	-
South Branch Baker River	Towns of Dorchester, Groton, and Orange	Grafton County		6.2	•	-	-	
Cockermouth River	Towns of Groton and Hebron	Grafton County		6.6	0	-	-	
Grafton Pond	Town of Grafton	Grafton County	127	7.4	0	+/-	-	-
Mirror Lake	Town of Canaan	Grafton County	194-195	7.4	•	+/-	+/-	+/-
Spectacle Pond	Town of Enfield	Grafton County		7.8	•	-	-	-
Highland Lake	Town of Andover	Merrimack County		8.7	٠	-	-	
Canaan Street Lake	Town of Canaan	Grafton County	198-200	9.4	•	+/-	+/-	+/-
Blackwater River	Meredith, and New Hampton	Merrimack County		9.6	•	-	-	
Webster Lake	Town of Franklin	Merrimack County		9.7	•	1	-	
Morgan Lake	Town of Springfield	Sullivan County		9.7	•	-	-	
Kolemook Lake	Town of Springfield	Sullivan County		10.0	•	ı	-	
Locally Important Resources								
Areas of Intensive Land Use (City, Village, Han	nlet Areas)							
Alexandria	Town of Alexandria	Grafton County	61-65	1.7	•	+/-	+/-	+/-
Fords Crossing	Town of Danbury	Merrimack County		1.9	•	-	-	
South Alexandria	Town of Alexandria	Grafton County	211	2.1	•	+/-	+/-	+/-
Fords Mill	Town of Danbury	Merrimack County		2.4	•	+/-	-	
East Grafton	Town of Grafton	Grafton County	19, 20	2.4	•	+/-	-	-
Murray Hill	Town of Hill	Merrimack County	243	2.9	•	+	+/-	+/-
Bristol	Town of Bristol	Grafton County	178-185	3.0	•	+/-	+/-	+/-
Danbury	Town of Danbury	Merrimack County	71-73, 236, 237	3.3	•	+	+/-	+/-
Grafton	Town of Grafton	Grafton County	22	3.4	•	+/-	+/-	-
Elmwood	Town of Danbury	Merrimack County		4.0	•	+/-	+/-	-

						Project Visibility			
	Loca	tion		Distance ²	Distance Zone	+Visible - N	lot Visible +/-	Partially Visible	
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	Foreground Midground Background	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review	
Grafton Center	Town of Grafton	Grafton County		4.7	•	+/-	-		
Nuttings Beach	Town of Hebron	Grafton County		4.9	•	-	-		
Bridgewater	Town of Bridgewater	Grafton County	167, 176	5.1	0	+/-	+/-	+/-	
Robinson Corner	Town of Grafton	Grafton County	31	5.4	0	+/-	+/-	+/-	
Hill Center	Town of Hill	Merrimack County		5.8	0	-	-	-	
North Wilmot	Town of Wilmot	Merrimack County		6.0	•	-	-		
South Danbury	Town of Danbury	Merrimack County	112	6.2	•	+/-	+/-	-	
Orange	Town of Orange	Grafton County	87	6.3	•	+/-	-	-	
Hebron	Town of Hebron	Grafton County		6.4	•	-	-		
Groton	Town of Groton	Grafton County		6.6	•	-	-	-	
Franklin	Town of Franklin	Merrimack County	262	7.1	٠	+/-	+/-	-	
East Hebron	Town of Hebron	Grafton County	159	7.2	٠	+	+/-	+/-	
Hill	Town of Hill	Merrimack County		7.4	•	-	-	-	
Canaan	Town of Canaan	Grafton County	188, 190	8.1	٠	+/-	+/-	+/-	
New Hampton	Town of New Hampton	Belknap County	39, 40, 43	8.4	•	+/-	+/-	-	
West Andover	Town of Andover	Merrimack County		9.0	٠	-	-		
East Andover	Town of Andover	Merrimack County		9.0	•	-	-		
Springfield	Town of Springfield	Sullivan County		9.5	٠	-	-		
Potter Place	Town of Andover	Merrimack County		9.5	٠	-	-		
Andover	Town of Andover	Merrimack County		9.5	•	-	-		
Recreation Resources (town parks, boat lauches	s, fishing access, trails)								
Peter Brown Boat Shop	Town of Alexandria	Grafton County	12	1.4	•	+	+/-	-	
Sudrabin Forest	Town of Orange	Grafton County		2.0	•	+/-	-		
Appalachian Mountain Club	Town of Alexandria	Grafton County	58, 59, 282	2.6	•	+/-	+/-	+/-	
Catterall Forest	Town of Bristol	Grafton County		2.8	•	+/-	+/-		
Smith River Sporting Clays	Town of Grafton	Grafton County	277	2.8	•	+/-	+/-	+/-	
Independence Park	Town of Danbury	Merrimack County	233, 234	2.9	•	+	+/-	+/-	
Grafton Carding Mill	Town of Grafton	Grafton County		2.9	•	+/-	-		
Clark Trail	Town Alexandria	Grafton County		2.9	•	+/-	-		
Welton Falls Trail	Town Alexandria	Grafton County		3.3	•	+/-	+/-		
AMC Cardigan Lodge	Town of Alexandria	Grafton County	58, 59	3.4	•	+/-	+/-	+/-	

	Loca	ition		Distance ²	Distance Zone	Project Visibility +Visible - Not Visible +/- Partially Vi		
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	Foreground Midground Background	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
Manning Trail	Towns of Orange and Alexandria	Grafton County	78	3.5	•	+/-	+/-	+/-
iwaning maii	Towns of Orange and	Granon County	70	3.3		,		
Holt Trail	Alexandria	Grafton County	78, 286, 288	3.5	•	+/-	+/-	+/-
Grafton Recreation Field	Town of Grafton	Grafton County	23	3.8	•	+	+/-	-
Ragged Mountain Ski Area	Town of Danbury	Merrimack County	100-105	4.0	•	+/-	+/-	+
Newfound Lake	Town of Bristol	Grafton County	45-47, 156, 159	4.0	•	+	+	+
Kelley Park	Town of Bristol	Grafton County	182-184	4.1	0	+	+/-	+
DeVost Marina	Town of Bristol	Grafton County		4.1	•	+/-	-	
Newfound Lake Beach 1	Town of Bristol	Grafton County		4.2	•	+/-	-	
Slim Baker Area	Town of Bristol	Grafton County	203	4.3	•	+/-	-	-
West Ridge Trail	Town Orange	Grafton County	78, 83	4.3	•	+/-	+/-	+/-
Springfield Town Forest	Town of Springfield	Grafton Counties		4.4	0	+/-	+/-	
Franklin Falls Reservoir	Town of Franklin	Grafton Counties		4.5		+/-	+/-	
Welles Field	Town of Bristol	Grafton County		4.7	•	+/-	+/-	
Newfound Lake Beach 2	Town of Bristol	Grafton County		4.7	•	+/-	+/-	
Moglis Trail	Town Orange	Grafton County		4.7	•	+/-	+/-	
Tewksbury Pond Boat Launch	Town of Grafton	Grafton County		4.9	•	-	-	
Hope Forest	Town of Danbury	Merrimack County		5.0	•	+/-	+/-	
Huff Beach	Town of Grafton	Grafton County	132	5.0	•	+/-	-	-
Camp Wi-co-su-ta	Town of Hebron	Grafton County		5.5	•	+/-	_	
Camp Berea	Town of Hebron	Grafton County		5.5	•	-	-	
Ruggles Mine	Town of Grafton	Grafton County	129-131	5.7	•	+/-	_	+
Blodgett Forest	Town of Grafton	Grafton County	•	6.3	•	+/-	-	
Ragged Mountain	Town of Danbury	Merrimack County	100-105	6.4	0	+	+/-	+
Rogers Property	Town of Hebron	Grafton County		6.4	0	-	_	4
Hebron School Playground	Town of Hebron	Grafton County		6.5	0	-	_	
Town Common	Town of Hebron	Grafton County		6.5	0	-	_	
Camp Wilmot	Town of Wilmot	Merrimack County		6.6	0	+/-	+/-	
Town Beach - Newfound Lake	Town of Hebron	Grafton County		6.6	0	+/-	-	
Grafton Pond Reservation	Town of Grafton	Grafton County	127	6.6	•	+/-	_	_
Newfound Marina	Town of Hebron	Grafton County		6.8	0	+/-	+/-	
	=	- · · ·y			-		- 1	

						Project Visibility +Visible - Not Visible +/- Partially Visible		
	Loc	cation		Distance ²	Distance Zone			
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	ForegroundMidgroundBackground	Topographic Viewshed	Topographic 8 Vegetation Viewshed	Field Review
Hebron-Groton Athletic Association	Town of Groton	Grafton County		6.9	•	-	-	
Sculptured Rocks State Natural Area	Town of Groton	Grafton County		6.9	•	-	-	
Mowglis	Town of Hebron	Grafton County	159	7.3	•	+	+/-	-
Hill Town Park	Town of Hill	Merrimack County		7.5	•	-	-	
Playground	Town of Hill	Merrimack County		7.6	•	+/-	-	
Mount Cardigan Fish & Game Club	Town of Canaan	Grafton County		7.6	•	+/-	+/-	
Davidsons Countryside Campground	Town of Bristol	Grafton County		7.7	•	-	-	
J. Tyson Stokes Memorial Forest	Town of Hebron	Grafton County		7.8	•	+/-	-	
Canaan Fairgrounds	Town of Canaan	Grafton County	88	7.9	•	-	-	-
Indian River	Dorchester	Grafton County		7.9	0	+/-	+/-	
Cockermouth Forest	Town of Groton	Grafton County		8.0	•	+/-	+/-	
New Hampton Fish Hatchery	Town of New Hampton	Belknap County		8.0	•	+/-	+/-	
Williams Field	Town of Canaan	Grafton County	188	8.1	0	+/-	+/-	+/-
Canaan Town Green	Town of Canaan	Grafton County	188	8.1	•	+/-	+/-	+/-
Eagle Pond (Camp Kenwood)	Town of Wilmot	Merrimack County		8.1	•	+/-	-	
Lindsay Ice Arena	Town of New Hampton	Belknap County	39, 40	8.5	•	+	+/-	-
Michael Burke Memorial Forest	Town of Sanbornton	Belknap County		8.7	•	-	-	
Bridgewater Town Forest	Town of Bridgewater	Grafton County		8.9	•	-	-	
Hopkins Pond R.O.W.	Town of Andover	Merrimack County		9.0	•	-	-	
Washburn Corner Waterfowl Area	Town of Grafton	Sullivan and Grafton Counties		9.2	•	-	-	
Langenau Forest	Town of Wilmot	Merrimack County		9.3	•	+/-	-	
Town Beach - Highland Lake	Town of Andover	Merrimack County		9.4	•	-	-	
Proctor Academy Ice Area	Town of Andover	Merrimack County		9.5	•	-	-	
Crescent Campsite	Town of Canaan	Grafton County		9.5	•	-	-	
Andover Town Green	Town of Andover	Merrimack County		9.6	•	-	-	
Jellystone Park Camp	Town of New Hampton	Belknap County		9.7	•	-	-	
Proctor Academy	Town of Andover	Merrimack County		9.7	•	-		
Athletic Fields	Town of Andover	Merrimack County		9.8	•	-		
Liha	Town of Sanbornton	Belknap County		9.8	•	-	-	
Blackwater Park	Town of Andover	Merrimack County		9.9	•	1	-	
Cemeteries								

	Locat	ion		Distance ²	Distance Zone	Project Visibility +Visible - Not Visible +/- Partially Visible		
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	Foreground Midground Background		Topographic & Vegetation Viewshed	,
Crawford Cemetery	Town of Alexandria	Grafton County		2.2	•	+	+/-	
Burns Hill Cemetery	Town of Alexandria	Grafton County		2.7	•	+/-	+/-	
Riverside Cemetery	Town of Alexandria	Grafton County		2.9	•	+	_	
Riverside Cemetery	Town of Danbury	Merrimack County		3.3	•	+	+/-	
Homeland Cemetery	Town of Bristol	Grafton County		3.6	•	+/-	-	
Prescott Hill Cemetery	Town of Grafton	Grafton County		5.6	•	+	_	
Hill Center Church Yard	Town of Hill	Merrimack County		5.9	•	-	_	
Orange Common Cemetery	Town of Orange	Grafton County		6.0	•	_	_	
Whittemores Cemetery	Town of Bridgewater	Grafton County		6.3	•	+	+/-	
Bunker Hill Cemetery	Town of Hill	Merrimack County		6.5	•	+	-	
Pratt Cemetery	Town of Hebron	Grafton County		6.5	•	-	-	
Hebron Village Cemetery	Town of Hebron	Grafton County		6.7	•	-	-	
Fowler Cemetery	Town of Springfield	Counties		7.0	•	-	-	
Pleasant Hill Cemetery	Town of Hill	Merrimack County		7.4	•	-	-	
Bunker Hill Cemetery	Town of Wilmot	Merrimack County		9.0	•	+	-	
Lakeside Cemetery	Town of Andover	Merrimack County		9.6	•	-	-	
Pleasant View North Cemetery	Town of Springfield	Sullivan County		9.9	•	-	-	
Pleasant View South Cemetery	Town of Springfield	Sullivan County		10.0	•	-	-	
Webster Cemetery	Town of Bridgewater	Grafton County		10.0	•	-	-	
Transportation Corridors (State and Interstate	highways)							
US Route 4	Towns of Canaan, Orange, Grafton, Danbury, Wilmot, and Andover	Merrimack and Grafton Counties	22, 71, 89, 90, 110-112, 149, 188, 194, 195, 237, 246, 247, 277	1.8	•	+/-	+/-	+/-
State Route 104	Towns of Danbury, Alexandria, Bristol, and New Hampton	Belknap, Merrimack and Grafton Counties	32, 44, 68, 69, 70, 181, 185, 186, 207, 213, 238, 263	1.9	•	+/-	+/-	+/-
State Route 3A	Towns of Plymouth, Hebron, Bridgewater, Bristol, Hill, and Franklin	Merrimack and Grafton Counties	161-163, 167, 176, 179, 180, 181, 262, 291	3.8	٠	+/-	+/-	+/-
State Route 4A	Towns of Enfield, Grafton, Springfield, Wilmot, and Andover	Merrimack, Sullivan and Grafton Counties	118, 120	7.9	٠	+/-	+/-	+/-
State Route 118	Towns of Canaan and Dorchester	Grafton County	150, 188, 189	8.0	0	+/-	+/-	+/-

						Pi	roject Visibil	ity
	Locati	on		Distance ²	Distance Zone	+ Visible - N	lot Visible +/-	Partially Visible
Visually Sensitive Resource	Town	County	VP Number ¹	Miles from Nearest Turbine	ForegroundMidgroundBackground	Topographic Viewshed	Topographic & Vegetation Viewshed	Field Review
State Route 11	Town of Andover	Merrimack County		8.7	•	+/-	+/-	+/-
State Route 132	Towns of New Hampton and Meredith	Belknap County	38, 43	8.7	•	+/-	+/-	+/-
Interstate 93	Towns of New Hampton and Meredith	Belknap County	94	8.9	•	+/-	+/-	+/-
Schools and Colleges	Wereditti	Beikhap County	71	0.7				
Danbury Elementary School	Town of Danbury	Merrimack County	238	3.7	0	+	+	+/-
Newfound Memorial Middle School	Town of Bristol	Grafton County	34-36	4.0	•	+	+/-	+/-
Bristol Elementary School	Town of Bristol	Grafton County	183, 184	4.2	•	+	+	+/-
Bridgewater-Hebron Village School	Town of Bridgewater	Grafton County	165	5.5	•	+	+/-	-
Newfound Regional High School	Town of Bristol	Grafton County	44	7.2	•	-	-	-
Jennie D Blake School	Town of Hill	Merrimack County		7.6	0	-	-	-
Canaan Elementary School	Town of Canaan	Grafton County	190	8.3	0	+/-	+/-	-
New Hampton School	Town of New Hampton	Belknap County	39, 40	8.5	0	+	+/-	-
New Hampton Community School	Town of New Hampton	Belknap County		9.0	0	+/-	-	
Proctor Academy	Town of Andover	Merrimack County		9.6	•	-	-	
Andover Elementary School	Town of Andover	Merrimack County		9.8	•	-	-	
Hospitals, Town Halls, Libraries, Community Center	rs							
Alexandria Town Hall	Town of Alexandria	Grafton County	62	1.9	•	+	+	+
Town Hall	Town of Danbury	Merrimack County	72	3.4	•	+	+	+
Danbury Community Center	Town of Danbury	Merrimack County	73, 236	3.5	•	+	+/-	+/-
Danbury General Store	Town of Danbury	Merrimack County	71	3.5	•	+	+/-	+/-
George Gamble Library	Town of Danbury	Merrimack County	238	3.7	•	+	+/-	+/-
Grafton Town Offices	Town of Grafton	Grafton County	24	3.8	•	+	-	-
Bristol Town Hall	Town of Bristol	Grafton County	180	3.9	•	+	-	-
Minot-Sleeper Library	Town of Bristol	Grafton County		4.0	•	+	+/-	+/-
Tapley Thompson Community Center	Town of Bristol	Grafton County		4.2	0	+	+	-
Old Town Hall	Town of Bristol	Grafton County	185	4.3	0	+	+	-
Bridgewater Town Hall	Town of Bridgewater	Grafton County	167	5.6	0	+	-	-
Meeting House	Town of Hill	Merrimack County		6.0	0	-	-	
Orange Town Hall/Offices	Town of Orange	Grafton County	87	6.5	0	-	-	-

						Р	roject Visibil	ity
	Locat	tion		Distance ²	Distance Zone	+Visible - N	lot Visible +/-	Partially Visible
				Miles from Nearest	ForegroundMidground	Topographic	Topographic & Vegetation	k
Visually Sensitive Resource	Town	County	VP Number ¹	Turbine	Background	Viewshed	Viewshed	Field Review
Old Meeting House	Town of Bridgewater	Grafton County	169	6.5	•	+	-	-
Hebron Town Hall	Town of Hebron	Grafton County		6.6	•	-	-	
Hebron Public Library	Town of Hebron	Grafton County		6.7	۰	-	-	
Groton Town Hall	Town of Groton	Grafton County		6.9	٠	-	-	
Hill Public Library	Town of Hill	Merrimack County		7.7	٠	-	-	
Canaan Town Library	Town of Canaan	Grafton County	188, 190	8.2	•	+	+	+/-
Mascoma Senior Center	Town of Canaan	Grafton County	188, 190	8.3	•	+	+	+/-
Gordon-Nash Library	Town of New Hampton	Belknap County	39	8.5	•	+	+/-	-
Library	Town of Wilmot	Merrimack County		8.7	•	+/-	-	
Town Hall	Town of Wilmot	Merrimack County		8.8	•	+/-	-	
New Hampton Town Hall	Town of New Hampton	Belknap County		8.8	0	+	+/-	-
Andover Town Hall	Town of Andover	Merrimack County		9.7	٠	-	-	
Andover Public Library	Town of Andover	Merrimack County		9.8	٠	-	-	
Town House	Town of New Hampton	Belknap County		10.0	•	+/-	-	
Airports								
Newfound Valley Airport	Town of Bristol	Grafton County		3.5	•	-	_	

¹ If no viewpoint (VP) number is indicated, no photo was obtained during fieldwork.

² For large areas and linear sites, approximate distance to the nearest turbine was measured from the respective area's closest point.

Appendix B

Photo Log and Field Notes























































Viewpoint - 10

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log





























































Appendix B: Photo Log













Appendix B: Photo Log











Viewpoint - 24









































































Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log

























Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log























Viewpoint - 46

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log

































Viewpoint - 52



Appendix B: Photo Log

























Appendix B: Photo Log



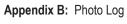
















































Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log















































Viewpoint - 74









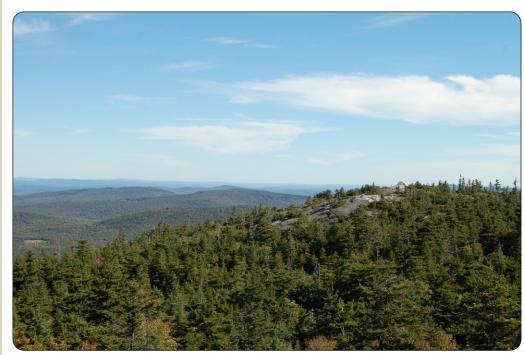
















Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log









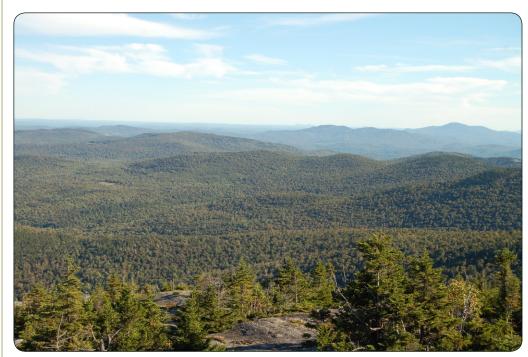


Viewpoint - 80













Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log





















Viewpoint - 88



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log

































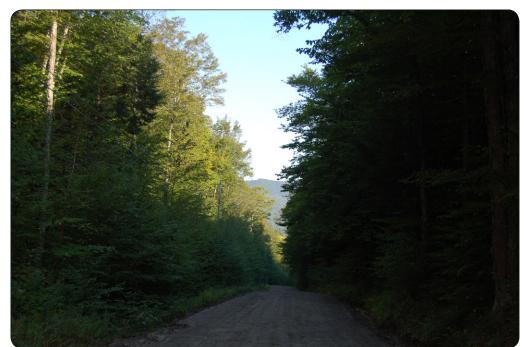






































Viewpoint - 100













Appendix B: Photo Log











Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log













Appendix B: Photo Log









Viewpoint - 110

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log











Viewpoint - 112

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log



















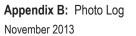






Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

























Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Viewpoint - 124

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log























Viewpoint - 128

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log























Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log









Viewpoint - 138

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log

































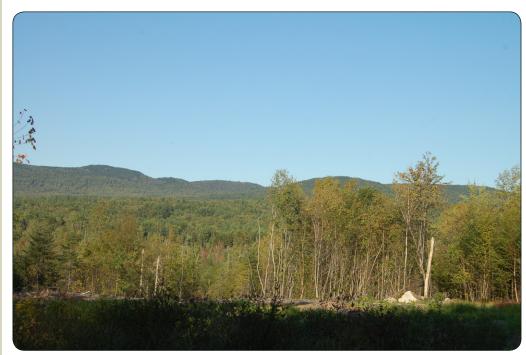














Viewpoint - 146























Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Viewpoint - 152















































Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log

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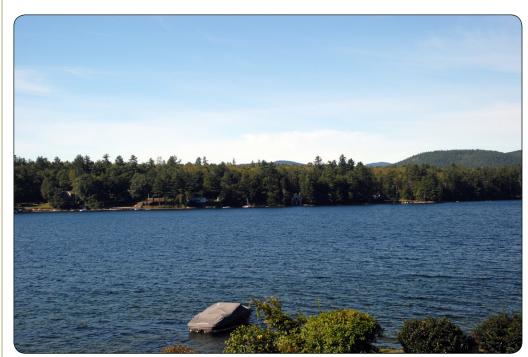


Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log











Viewpoint - 166







































Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log



































Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log













Appendix B: Photo Log











Viewpoint - 182

Appendix B: Photo Log

















































Appendix B: Photo Log























Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log











Viewpoint - 196





















Viewpoint - 200

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log



































Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log



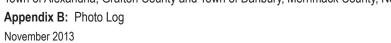








Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire













Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log



































Viewpoint - 218









Viewpoint - 220

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log

























Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log











Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log























Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log











Viewpoint - 246

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log









Viewpoint - 254

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log

























Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log





















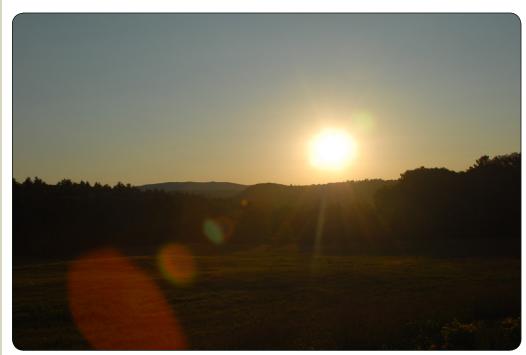














Viewpoint - 264









Viewpoint - 266

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log









Viewpoint - 268

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log

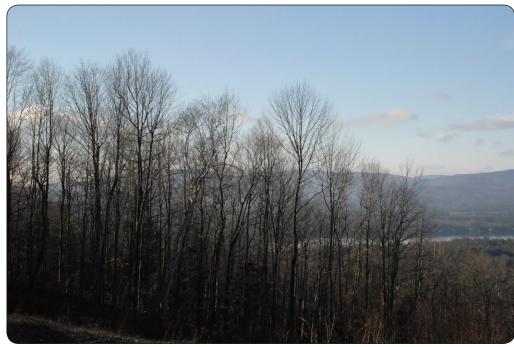












Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log



































Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log











Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix B:** Photo Log







Viewpoint - 286



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix B: Photo Log























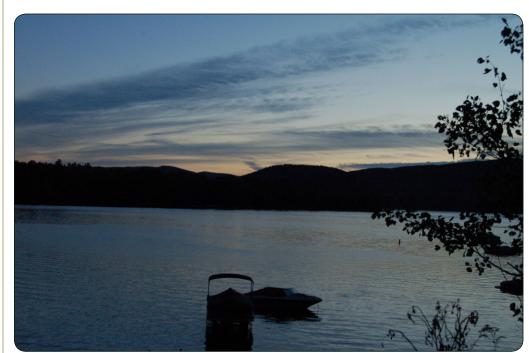
Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log













Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log





Viewpoint - 160 (Night)



Viewpoint - 173 (Night)



Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix B: Photo Log





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WP#	# GPS#	Photo Reference	Time	Location/ Sensitive Resource/ Comments	Direction of View
20	926	7213 - 7214	S:40	Changes And Change How Dead Line Marchia	1
a	420	キ12七 - 512七	00:0	PRESENT FILL ROAD, NARROW A PART NOT SEEL STORY OF SELECT SECOND	J .
es es	920	1221 -3251	4013	Service alen, prosec	ZAN
G.	62.6	4727 - 228.4	Visi		
8		. 1	\$ t	יייייייייייייייייייייייייייייייייייייי	N N
(·)		1	6:23	PRESSOTT HILL ROAD, BENTIFUL ENRY 154-CON BEECK RESIDAL FROM.	2 2
	632	7232-72367	05:9	RELATIVELY OBEN VIEW ACLOSS VALLEY OF PROJECT RUDGE (NOTHER BIE) N.H. ROSTE 104, WIDE OPEN VIEW OF PROJECT, MET TOWERS VISIBLE	3
3/11/2		7239 - 7240	\$:05	Roselvent of Cont. NO 181	
<u>~</u>	03\$4	7241 - 7244	\$:35	1 Rd Openia	WE SW
60	03.5	7245-7251	\$6.8	. 'vis	3
(a)	0 20	7252-7253	8;50	38 ~	32
9	087	7254-7255	V.>: ≪	in . vis. Between blokes - your more	
6	-	7256-7257	9:00	Though and house	1
63	039	7258-7261	2:10	Twomsteries 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3
(1)	040	7262 - 7266	2:35	1 04 429 Th	3
.)	140	1267-7271	8:30	Hampton Schoo	3 3
24	048	7272-7273	9.30	- 0	122 12
:,(543	7274-7281	10:00	Mark Super through bound is	
· ·	77.0	2000		more is from yourds - fishes - Carelingen	3
À :	: 65 :	1X3X - 1X8X	0/:0/	New House Comp + Church - No U.S.	3
i y	5 6 5 6 1 0 5	/x27-/x86	10:15	S. Churcherny Born A.	3
Š	040	1287-7280	11:38	Concern Hot - Tours Shetos	3,
7.		7291-7293	11:45	2	3 3
3		7297-7295	11:55	子	3 :
o/	053	7296-7297	12:00	Tiest events a treet	3 3
\mathcal{E}_{ℓ}	550	7478-7303	at many of	C YESON	

Date:		weather		Camera: 人によっている Sheet 3 of 7	Initials: つま
‡ 1	- 1		Time	Location/ Sensitive Resource/ Comments	Direction of View
10	050	-	72:10	Peroverie view in an extra Now Now in it	
10	0.55	7310-7313	12:15		3
5	950	7314-7317	12:27	0- Cit se not.	3
.3	8	7318-7319	12:40	blocked by wills	
	1 1/2			\$ 12 tous - 254 think the	S
	,	7320-7323 -	Come	Lot & the man when the project right	
5	0 0	7324-7530	(2:50	- yourd tield	The second secon
10	059	7331-7334	000	my see tartings - Shewhiller	Ś
(i)	8	7335-7339	50:1	- Comment of the second	V)
13	o O	7340-7342	. 20	coject ridge	Ś
	290	7343-7346	S7: V2:	1 1 2 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1	550
3	(S)				3
3	600	- 1		2001 S	3
	0 67	7355-7359	>	SOLVEN SECTION	3
	990	7355-7358	55.1	150 VISO	35
	**		THOUGH Comment of the	by Create City At A. A.	3
3	657	7357-7362	1,52	that off Books. Hot town	3
1	290	7363-7370	2:00	7	
13		7371-7372	2:10	24 + Swith Riv Rd. Estring ston	३ २
	0%0	7373-7375	2:15	25. 25.	. ,
		7376-7387	8;50	TOWN HILL RAY	>
15	072	7383-7385	2:37	omy - 124. Ries 104+4 - 5	300
	570	7386-7387	2:35	to right of age store, Colinger	120
10	270	7388-7391	23:37		250
7		735%-7398		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	300
13		7399-7409	8.8		5 ,
	077	11.62 - 01.46	\$:00	W W W W W W W W W W W W W W W W W W W	5 S
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Date:7/11-12/12 Weather: CLo	Date: 7/11-12/12 Weather:	Weather. Char		Camera: X) Wan OSO Sheet: 4 of V	loitiale.
, # 4	GPS#	Photo Reference	Time	Location/ Sensitive Resource/ Comments	Direction of View
77	840	616L-21KC	3:55	South Florit, Condigo Mita- nous with	S S S & &
8	620	7420 - 7433	4:05	o Gendiga	
1.	0	7434-7440	4:20	Charly visible	
8	60 0	3-5-12-15-6	4:30	3	
100	8,30082/083	83 7459-5469	2:40		The second statement of the se
3	780		5:00		
00 %		7476-7480	5:18	result? Looks like Het to Land	
i 'c		7457 . 7492	0 3	10-10-1-10-1-10-1-10-1-10-1-10-1-10-1-	(b)
, (c)	S & S & S	2499-7500	0,30),
82	38 089	4052-1052	6:27	1000	J N
cs)	0 %	7505-7506	07:3	Jest ridges	
<i>⇔</i>	130	7507 - 7514	6,50	The Bow of Mey Ridge	
4	760	75/5- 75/8	6:57	1 3 3	^
02 ().	000	75/9- 7521	7:00		•
12/2	100	7522	5:20	1200x Min. 1200x - 400kg 200 100 to 100 100	1.17.
3.	1000	75-23-752C	8:40	S N non New House of a first of the North will now N &	
10	960	1527-7531	8:85	po 720? were it. " Chent 121 -0	3
47	2003	7532 - 7535	3:02	by motor of the Contact (the Red) See the Contact to War offer	38.3
5:3:	860	7536 - 7538 7539- 7542	51:2	11/2 to SW - Lot sure it project site _ U.s.?? Int Blave Hill Rd. + Coollidge Ridge Rd Wells Open viou from york - more to Sw transom	
%:	3	2751 - 5757	7:30	3 3	₩ 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

1/21/6

VP# GP				or Care or Car	to Tolinials
	# Seb	Photo Reference	Time		Direction of View
		4552 - 8,452	10:20	Top of Regget Mtn Summit Sixpord Lift - Fullvis	3
201 105		11	10:22	Roycest Mtn. Top Chyper Extilitities Trail	11/15
103	3 757/	7575	10:25	" - Ski Patrol house - Primarily for	1/2
		1	10:35		ĮŊ
		1	05:01	Tobot laver Riby trail	3
(4			0/.//	Right With base 100mg	2
2000	15%5-	5- 7545	87:77	G.C Looking sockets whe	S.
-			7.30	a sich toward projecte - 015	? u
		7777	•	to project site	3
2 3		7615	77: 58 	to project vides conos worsh - Regard Min Ril	?
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1		7620-7631	04://	Sort of S. Dansay	•
D		7622	12,50	1	>
-		7623-76246	12:15		2000
	-	7		adosed.	9
<u> </u>	•	16 ×1 - 1648	52:21	vis. through	NNE
211 9.		7629-7633	72:30	3	シラ
1/8		7634-7635	58:21		
5 119		7636-7637	56:21	\ <u></u>	2
0215		7638 - 7642	12:50	13 States by tongon	2000
3 (2)	74.47	4			WASH
12/ 12/		7644-7645	2000	· No vis	3
		6292-9	1:35	of it of	288
25 139		72.50-7652	14in	73	NCI
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25 125 125 126		7658	257	Ros - Only openion - From your	3:

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Sheet & of \$7	Comments	moin viau to W/NW		1	Ep	, (the the twent the	Section of A	- ٢- ساله	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		= 1		20 - trees - 10, wis		man to s	T Anymon's surganch	くいろうかいかい		W 2.2 8000 0.0 W	2 1	V.S. 4. 12.5.	2		1.5 >
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	Time	00:2	۵): اده	2,35	37.65		>	0		\$:25	The state of the s	03:50	3:45		5:50			4:12		55.7	7,40	1					5:50
Date: 7/12/12 Weather: Cland	Photo Reference	7659-7663	7664- 7667	7668 - 7670	7621-7677	1894 - 8692	4892 - 2892	(7687 7691	7672-7695		2896-3897	76.78-7767		7763-7706	7207	7709 - 7209	7710-7714	7715 - 7718	2227 - 8177	7743-7728	7729-772	731-7737	7758- 7742		2745	
Date: 7/12/12 Weather:	%P# GPS#	181 187	() () () () () ()	33 139 39	130	131	732	22/33	58/	32/ 185		136	3.5(37		137 138	139	190	74.0	143	5.40 5.40 5.40	77.	145	3 146		851	19.9	150

VP# GPS# Photo Reference 50 /S/ 7755 51 /52 7756 - 7755 52 /53 7759 - 7761	Photo Reference	ě j-		
15/		2		Direction of View
53	7755	8,00	Route 118 - 20 Uls - Stockent by right	8
	7526	2 2 2		

חמוב. ל	Date: 4/11 /2012-	Weather: CLEAR, SUNNY	Date: 9/11 /2012 Weather: CLEAR, SUNNY	Comment of the commen	
∀	GPS#	Photo Reference	Time	Location/ Sensitive December 1 of 5	Initials: PAR
23	100	1M9-4001	000	Silvania Comments	Direction of View
i			The state of the s	one sead	S
K !	8	0002 - 000S	8:12	SCENIC OPEN AS	
Ŋ	^ 00	-2500	8:50	SCORPC ROAD, ELEVATOR OPEN LIFE & WALKENIN TAYEN SOME	y,
30	3	5100 - 0100	8:35	PARNICE BALL SEENED BY US A	Ņ
				ע בואו	V
m)	Soo	Stor - 000	8:50	Sylven To Caron Transport	The state of the s
S	900	0500 - 3200	9; 8	1047	S
C)	ę	1 - 0043	4:15	Com Standard Andread House of Constant	S, S - 36 - 36 - 32
3	88	0000 - 550	4:30	(is: 50)	5/SSW
-55	600	COS 1 - 00 52	0 h : b	WE SO THE STATE OF PROJECT CARE, THE SOUL END OF PROJECT	3
(and the second s	OSPECIAL CONTRACT CONTRACT CONTRACTOR CARREST CARREST CONTRACTOR CARREST CONTRACTOR CARREST CONTRACTOR CARREST CARREST CARREST CONTRACTOR CARREST CONTRACTOR CARREST CONTRACTOR CARREST	38
Ž	010	0053 - 0057	% %		
$\ddot{\omega}$	ō	0058 - 0062	ö	N. P. S. D. S. C. S. C. CACE (ROADSIDE TREES)	755
1	615	5000 -5000	\$1:01	THE POTE OF THE PARTY BOAT IS TO PER DE TOTAL TOTAL DE TO	38
10	610	1 01 8	20:01	BRIDES ATTO 1 DE STRIP SIEUS XREENED BY TRUES	776
2	20	-)+8	년: 61	1.	3
	W	448		יי צפט	30%
	210	8693-8600	11:69	SKEIST CIMEN TROM LEWFOLD CARGO	7.
-	9	5805 - 950	11:13	NOWTHEN CARE THE CATCH SOTARRY END, PROJECT USIBLE	દ્ધ
	4	अमिन एक नियान प्राप्त - वर्णान	400	The state of the s	Se
()	ď	6		Posici ciera altre con proporti	38
2	2 6		15:51	BRINGEN PACK HALL, X.H. RATE SA. NO WESTERT	
1	5	1 +-	32:21	District Office of	30
à	ß.			POSIGEN MOLLUNGS PROKET STEE	3
. (9 ;		ης:51	SECTION HOUSE, DICK BROWN REAL STRING	
)	0.247.0	5016 - 0162	SH:21	5	355
15	626-926	0103-0171	1:02	DAN SOLL OF CAROGAN MONTALN	2
50	तु	0112 - 0119		שונים ווכאון אוצא סיבר חובר סיב	Sich
,	(·	CONTRACTOR AND MAN AREA OF PROSECT SITE, NEUTONIA, CARE,	3.5
<i>(</i>).	\$20	5710 - 0710	(153	アニー アラングの コカップ になる どうの人のこれの	
<u>.</u>	97 27	0126-0135	۲۵:۲	WHITTERLOOKE BINT ALCO SOTH C TO WARAUK LANK. "WHITTER MOS LANK."	353

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Date:	Date: 9/11/2012	Weather: CLERQ, SUNNY		Camera: NVKSN 1720C) Sheet: 2 of 9	Initials: 67.3
۸۲ ۱	#Sd5	Photo Reference	Time		1 22
i.	±20	OF10 -3510	2:08	STORE ROAD (WHITTERNOODE POINT), MOSTLY OPEN SIGH OF PROSECT, NCHESIND LAKE	Susw
13	= 3	०५१० - १५७	5: 16	NEW TEAM CAKE FROM N. H. PACTER TO SON STITLE OF STONES	
<u>``</u> :	500	0151 - 0156	2:24		3 3 3
50	8	2910- 6510	5:40	GREEN STREET, VICTORIA OF BRISTON, MOST OPEN CITY TO W	3
15.	160	0163 - 0169	2:42	To the Period of the Period of the Priod of the Period of	
8		१०१० - ८०१०	2:50		
ķ-,		५२७ - ७८७	d' 0	CENTRAL SQUARGE HISTORIC DISTRICT VILLAGE OF TRICTS	3
50		0178 - 9186	3:18		Y
13		1	3:56	KELLEY PARK / BRISTOL BLENDENTARY SHOCK/MAIN ST BRISTOL	3
5		7610 -1510	3:56	10 11 11 11 11 11 11 11 11 11 11 11 11 1	3
1		- 1		NOTE: UR 34-36 ASS (NYLLODE NYCLEOND HEMBER MID) E STROOL	
(A)		5615	3:35	OLD TOUN HALL, ROUTETON BRISTON - NIEUS AREARINETY	3
S		6198 - 0205	3:45	M.H. ROUTE 184, WIDE OPEN, DISTANT VIEW OF PROJECT - WEITHOUSE USIBLE	. 3
E	079	0200 - 0210	00:5	PEAKED HILL ROAD, BLANKIED OPEN WELL OF PROJECT	. 4
63	070	0211 - 0214	4:82	CANDAN TOWN GREEN, U.S. ROTTE I - SOME XREENING	? u.
<i>b</i> <	5	, r c c c c c c c c c c c c c c c c c c	50.5	P	
		. 1	۸ ن ن	/ 1320 PSE	# \ \ \
1 3		1310 1 + 27 0	80.8	1	e 5 É
		l		MEN FLENATED VION,	85E
S. 1	10	١	5:23	2	ω
93	-	,	% % %	WORE OPEN, BLEUNTED, POLIALLY SCARENCE	W
	3 5	0576 / 0520	S: 3.1	U.S. ROUTE 4 @ BOLL PARIC KILL ROAD, OUTSKIRTS OF CANARA,	ESE
10	200	12.5% - 1.25d	75:5	COSCI KINDO SCHOOL STORY	
1 3		1	6:00:0	384 PAN	2 13 V
				ことがある。 ころのことのできないとしている。	}
a.	0 2.	0529 - 6529	6:08	GAN MOUNTAIN SCHOOL	7
90	0.50	2770 - 1520	<u>0</u>	CALARA STREET FISTERIC DISTRICT (CANADA STREETING HOUSE	00 75
ţ			(OPEN VIEW OF LAKE, PROJET PROBABU SIRRENED	11 () () () () () () () () () (
8.8	200	2570 - 17.0	- 2	Ple SABU	刃 20 20
3	1	1	(2.9)	1000 COS COS CALAR CONTAINS VICE CHICAL TINGS COS COS COS COS COS COS COS COS COS CO	\ <u>\</u>

OPEN VIEW ROADS LAILS PLEASURE INCLUDES TRADECT

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Date:	9/11/2012	Date: 9/11/2012 Weather: CUEAR	9/12/2012 AUS	ACS SOWY, CLEAR Camera: NIKON D200 Sheet 3 of 5	initials:
۸ **	# SdS	Photo Reference	Time	Location/ Sensitive Resource/ Comments	1 .2
$\bar{\beta}$	ලීව	bb20 - 7520	45:9	CANARN STREET HETORIC DISTRICT - DEMETCRY AT FERNINGO FROM ROAD	38
3	08c	\$000 - 0000	(t .5 .9	FERNWOOD FALM ROAD, MOST OPEN VIEW AVAILABLE, CARDIANA MATH REAK VIEW AVAILABLE, CARDIANA	<u>ह</u>
		BEGIN 9/12 2012			Managed Helpinini III (1911)
8	550	- 9550	3:51	SUIN SYRET WER PARKENS OF TRAINERS STORY NOT TO THE	
3) 90	0307 - 0311	5.5	SMITH THUL ROAD, BUKLOKED ENER VANIEY W SMALL OFFINE PIEDO	33
3	550	1312- 6321	9:56	SMITH HILL RAND, SEGAD OPEN AS FIELD IN GIVER JAILEY /PLODERIU	3
É	658	6322 - 5326	3:52		r
Co.	950	6330 - 6333	15:5	1-	323
8	0 90	6834 - 6343	÷ †	SERRY FROM ROOM BLIDGE OVER SMITH RIVER, VICUL OF BEDEET	111111111111111111111111111111111111111
				ENERGY CORPUSED BY THEEST AND OF ENGLOSSED THEEST AND SELDS AND SELDS AND SELDS AND	32
9	30	5 - 5 - 5 - 5 - 6 - 5 - 6 - 6 - 6 - 6 -	77:45	7 NAC 1235	323
Q Q	790	0350 - 0355	9.	MCHARRY ROAD DOMINERST LIEU OF GAST RIDGE W/ RURAL	32
	06,9	0356- 6361	\$ 0:01	W	Sin
0	2,	562 - 250	51:0	SMITH RIVER ROBY, ALEXANDRIA TRANSPER STOTION 1782 13000	
(7)	0.65	ne20 - h720	72:03	N. P. ROTE 104 AT TRANSMISSION LINE PLONG ROAD OTHERWISE SECRED	3
i.	330	1355 - 3581	(0:32	CHSS MICH ROAD, VIEW OF NOCTH COND OF EMST PROXOT RIDGE (WAY	TAN.
121	8	0387- 0380	97-:0)	ADRIA CARD (COLOR CARD) DIECES OTHER COLORS SCREET COLORS	
(è	03 03 03	0341 - 646Z	725.01	CAS, MICH ROAD AT LAKE VIEW HEIGHTS, ESSIEW NEW TO LODING OF THE WATER	353
1. 0	9000 9000	2403-0417	£ 65.11	CXX MICL ROAD SOUTH OF LACE VIEW HEITHTS	N. SS.
)		

STERRY TO STREETS PATCLOSED BY TREES

Date: o	Date: 9 [12 12	Weather SUNNY CLEAR	Y, CLEAR		Camera: Socioto Dood	o solchio
* dy	#Sd5	Photo Reference	erence	Time	Resource/ Comments	Direction of View
<u>j</u>	년	042 0 - 0240	3 7 5 0	EE:33		5/ms/m
8	750	けがる		34:11	WILD MERICUS ROAD AT LENTINGETH ROAD, NARBOLL VENCS ALONG	אן און
8	55	2919 - 8550	76.7	11:52	WENTENDERS FOR AT TOWN LIVE, BSSIDIE PARTIAL URES OVER	Š
8	6. 2.	0 - Earo	8	12:01	TREES, OTHCRUSS TORGENED/ENCLOSE, OPEN ROMINENT SIEW OF "O" TURBIN	Ä
8	550	० ५८)	0460	20:50	SOUTH BOAD OPEN THE WAS ALL SOUTH THE STATE OF THE SOUTH	1
50, 5			050J	21:21	NORTH ROND, HISTORIC PARM HOUSE, PROJECT BRITISH	27
	ሰ ሰ ሰ	0.50 S 1	02 50	12:25		? 7
C.	8 E0	- 1159	528	(2:3)		3, 2
	e.	0230	02750	h5:21	BODD CHINE ROAD, ASKE FRAM, ROMINENT VIEW OF	DANA 2
8	080	0549-0	5550	12:52	NORTH ROAD SCHOOL / DANBURY HISTORICAL SCHOOL / DANBURY HISTORICAL SCHOOL , MUSEUM,	
000	8	1	750	1.02	Sound	
					LIGHT TOOL TO THE TOTAL OF THE TOTAL STREET TO	2
8	88 7	0 - 9550	0587	30:1	PECKHAM CANE, OREN VIEW OF "E" TULBINES, RUBL BCSIDENTIAL	Z.
<i>b</i> 6	883	0588	100	5	A CONTROL TO A CONTROL AND CONTROL TO A CONT	
33.0	280/20	- 709D	0621	1:28	EASTERN DISTRICT ROAD, HORSE FARM, 180° PAN INCLUDES	2
60	19 80	0 - 2230	0635	1:34	CHOCKE PROJECT CISTELL DON SORE STATELL	7
5.	90 4.	1 2600	\$643	1:39	CISIBLE (NAME) ADUS TOURS DISTRICT TOURS OF STREET	
д М	10 83	1 22.00	1500	34:1	CHEN VIEW OF PLOXICT	ā Ā
28	P30	0052- 0	<u> </u>	٩٤:١	DRVBURY COMMUNTY GENTER (FRONT STERS/18CCU), VIENS DROTING	
537	000	0657-	7 200	7:01	SOME ENER DE CARAGO UNIN TRECES	

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# & &		100 Land		Camera: Narch Color Assault	- 1
SS	%SBS	Photo Reference	Time	Location/ Sensitive Resource/ Comments	Initials: Post
	180	St90 - St90	7:1.2	15 (Je	Z
936	9	८८७० - १६१०	2:39	CASS MILL BAD @ MURCAY HILL ROAD, VERY NARROW VIEW ALCIN RCAD,	3 2 2
8	510	0678 - 0679	Sh:Z	MURRAY FILL ROAD AT DESCRIPTION OF THE OF TH	
	770	5480 - 0895	2:49	HILL OVAN CHARLES	Z
	1560	120 - 6300	7:42	FIRST HOUSE	Z
(4)	360	0692- 0698	5:28		Z
	480	- 85058		טאלע ויאנין היאנין היאנין היאנין היאנין שולאין	322.
(4.F)	Switcher	SO MENORY CARD FROM	7 500 7	263	
3	4. 65	2000 - 1000 FEETS	3:05		
10.	810	110 / 2000	3:17	LANCH BARN SHOPE SHIP STATE OF THE STATE STATE OF THE STA	,
				PARCHAMIC MEET INCLUDES PROJECT + ROSERT) MOUTAIN	3 2.
				וויין אוויין איין איין איין איין איין אי	The state of the s
	697	818-813	3:33	U.S. ROUTS Y GOSSIBLE VIEW OF PROJECT (SINGS) JUBBER	
	000	6180 - 5100	3:40	SAND ALASS C. D. C	3 2 2
25.00	101	0010 - 0023	3:50	(GIRECED HILL ROADS WENS CASEDIAN D.	いてして
(4) 21:	102	120 - HZW	3:82	GIFFERD HILL (ROAD, VIELLY SYREETING) B. GOOTH	N /
0	103	828 - 83G	3.50	Ü	الد
			terms upper terms	CREATOR OF TO THE PROPERTY OF	7)
Ki.	20	003c - 063ch	7.0	TENONE ROOM CONTRACTOR OF THE PROPERTY OF THE	
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Appendix C

Demonstration of Simulation Accuracy





Viewpoint and Camera Technical Data

 Time of Photograph:......2:34 PM
Turbine Model:......Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

 Photograph View Direction:......Northwest
Distance to Nearest Visible Turbine:.....1.9 Miles
Date Photograph Taken:....September 5, 2013

Time of Photograph:.....2:28 PM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Viewpoint:	14
Camera Type:	Nikon D200
Focal Length:	

Photograph View Direction:......South-Southwest
Distance to Nearest Visible Turbine:.....1.8 Miles
Date Photograph Taken:......August 5, 2009

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Viewpoint:	
Camera Type:	
Focal Length:	
Total Lengthinininin	

Photograph View Direction:.....South-Southwest
Distance to Nearest Visible Turbine:.....1.8 Miles
Date Photograph Taken:.....September 5, 2013

Time of Photograph:......3:46 PM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Viewpoint:.....23
Camera Type:.....Nikon D200
Focal Length:.....32mm

Photograph View Direction:......South-Southwest
Distance to Nearest Visible Turbine:.....1.5 Miles
Date Photograph Taken:......August 5, 2009

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Viewpoint:......23
Camera Type:.....Canon EOS 20D
Focal Length:....28mm

Photograph View Direction:.....South-Southwest
Distance to Nearest Visible Turbine:.....1.5 Miles
Date Photograph Taken:.....September 5, 2013

Time of Photograph:.....6:22 PM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Viewpoint:....60Nikon D200 Camera Type:... Focal Length:... 35mm

Photograph View Direction:..... Distance to Nearest Visible Turbine:....East Date Photograph Taken:.... ...August 6, 2009

Time of Photograph:..
Turbine Model:....10:42 AM ...Gamesa G87 Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Viewpoint:.... Camera Type:... Focal Length:... ..Nikon D5035mm Photograph View Direction:.....East
Distance to Nearest Visible Turbine:.....2.5 Miles
Date Photograph Taken:.....September 6, 2013

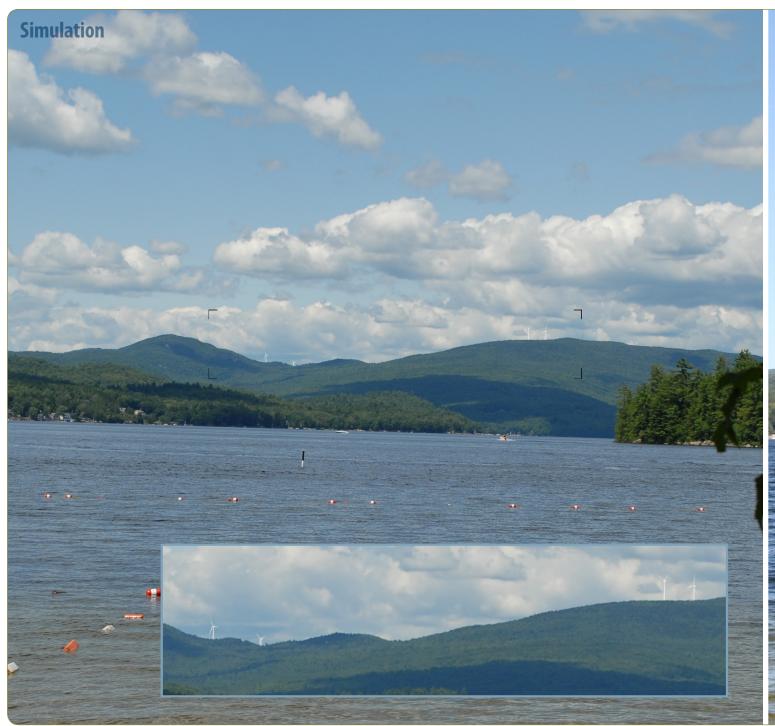
Time of Photograph:..
Turbine Model:.... Maximum Blade Tip Height from Ground:....398'

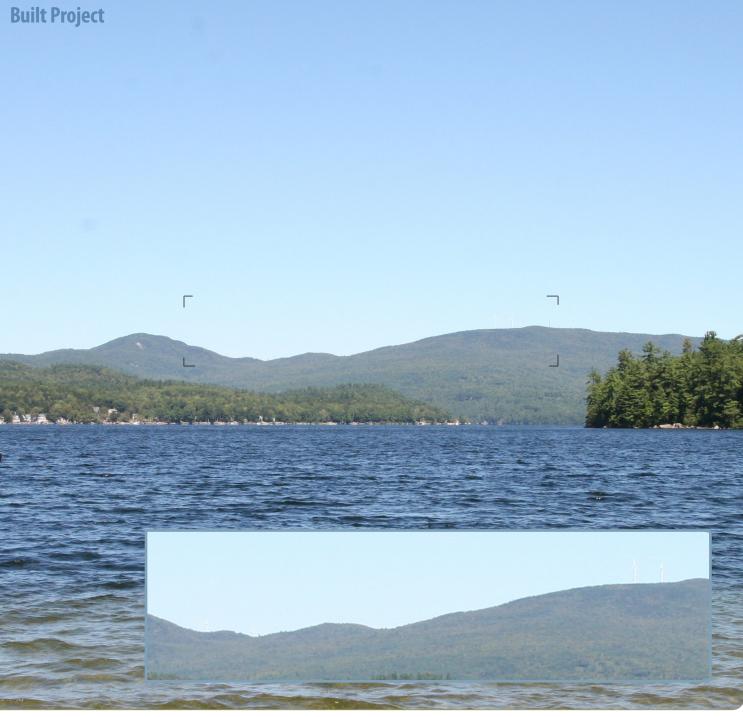
Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Viewpoint:....77Nikon D200 Camera Type:..... Focal Length:.... 32mm

Photograph View Direction:..... Distance to Nearest Visible Turbine:....North Date Photograph Taken:.... ...August 6, 2009 Time of Photograph:...
Turbine Model:....1:00 PM ...Gamesa G87 Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Viewpoint:.... Camera Type:..... Focal Length:....Canon EOS 20D30mm

Time of Photograph:...
Turbine Model:.... Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy







Viewpoint and Camera Technical Data

Viewpoint:...Nikon D200 Camera Type:... Focal Length:... 32mm

Photograph View Direction:..... Distance to Nearest Visible Turbine:....North Date Photograph Taken:.... ...August 6, 2009

Time of Photograph:..
Turbine Model:.... ...Gamesa G87 Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Viewpoint:.... Camera Type:... Focal Length:... ...Nikon D5035mm

Time of Photograph:..
Turbine Model:.... Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Photograph View Direction:......Southwest Distance to Nearest Visible Turbine:......2.2 Miles Date Photograph Taken:....September 6, 2013

Time of Photograph:.....8:22 AM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Viewpoint:126Photograph View Direction:SouthwestCamera Type:Nikon D200Distance to Nearest Visible Turbine:5.2 MilesFocal Length:35mmDate Photograph Taken:August 7, 2009

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Photograph View Direction:......Southwest Distance to Nearest Visible Turbine:.....5.2 Miles Date Photograph Taken:....September 6, 2013

Time of Photograph:.....7:37 AM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

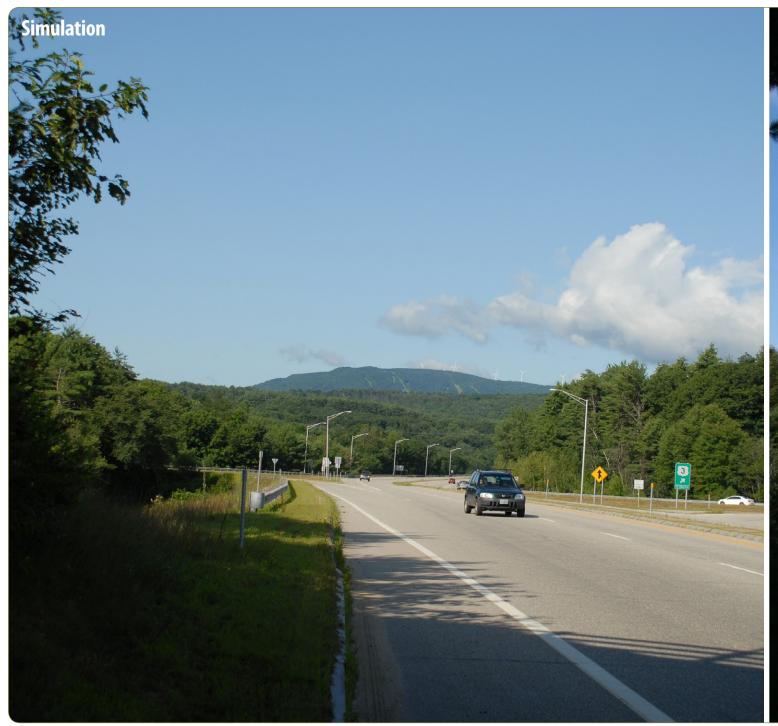
Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

Time of Photograph:......8:09 AM
Turbine Model:......Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Photograph View Direction:......Southwest Distance to Nearest Visible Turbine:.....5.9 Miles Date Photograph Taken:.....September 6, 2013

Time of Photograph:.....9:47 AM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:....398'

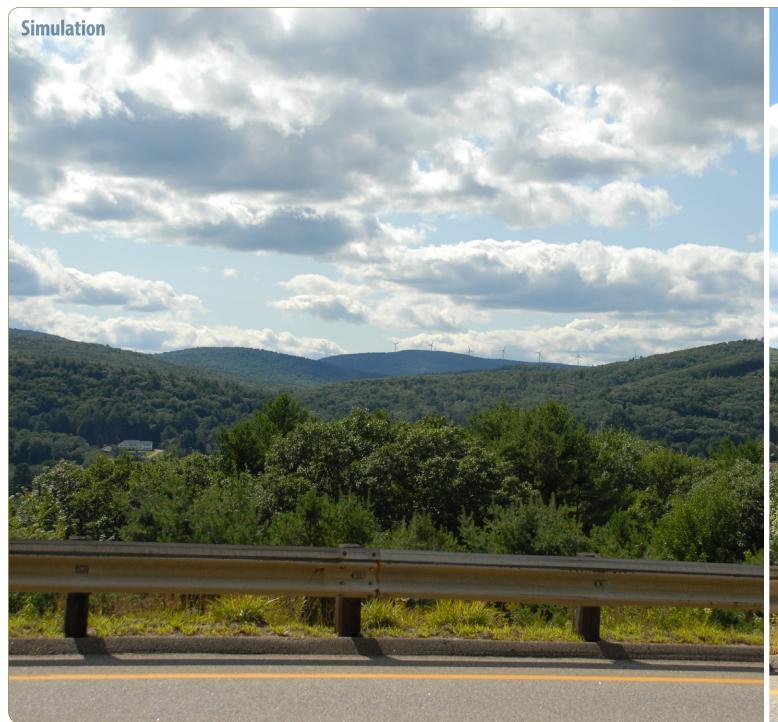


Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

 Time of Photograph:......2:45 AM
Turbine Model:......Gamesa G87
Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

Photograph View Direction:......West - Northwest Distance to Nearest Visible Turbine:.......6.6 Miles Date Photograph Taken:.....September 5, 2013

Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy









Viewpoint and Camera Technical Data

.....180Nikon D200 Viewpoint:... Photograph View Direction:..... Distance to Nearest Visible Turbine:.... Camera Type:... Focal Length:... 32mm Date Photograph Taken:....

....Southwest1.3 Miles Time of Photograph:..
Turbine Model:....3:09 PM ...Gamesa G87 ...August 7, 2009 Maximum Blade Tip Height from Ground:....398'

Groton Wind Project - Built Project

Viewpoint and Camera Technical Data

.....180 ...Nikon D50 Viewpoint:.... Camera Type:... Focal Length:...35mm

Photograph View Direction:......Southwest
Distance to Nearest Visible Turbine:.....1.3 Miles
Date Photograph Taken:.....September 5, 2013

Time of Photograph:.....2:40 PM
Turbine Model:.....Gamesa G87
Maximum Blade Tip Height from Ground:...398'

Wild Meadows Wind Project
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire

Appendix C: Demonstration of Simulation Accuracy





Appendix D

Digital Visual Simulations



Sheet 1 of 2: Existing view across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire - Facing East November 2013



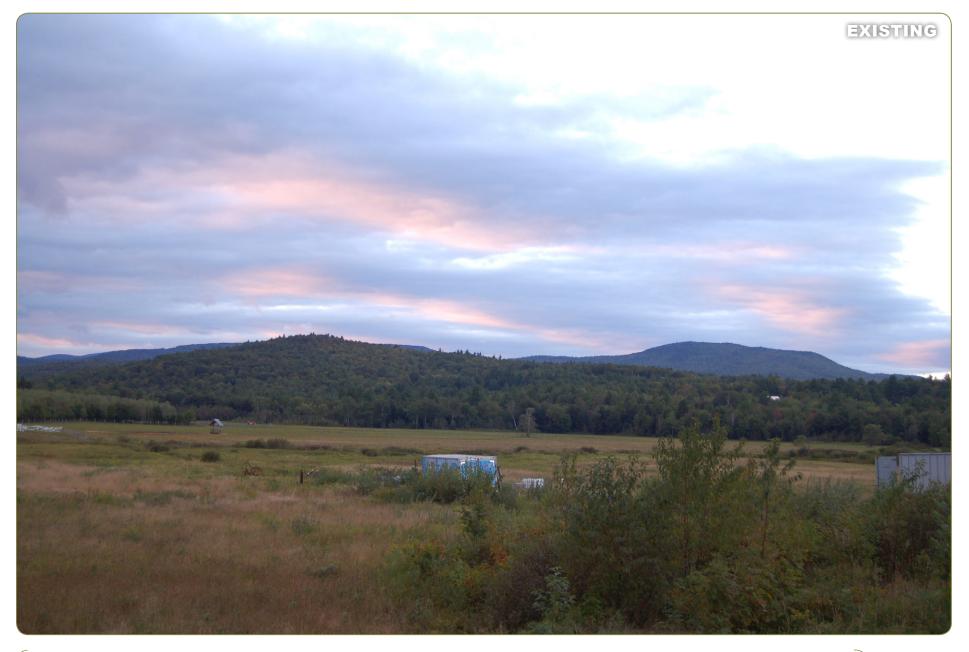




Sheet 2 of 2: Proposed view across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire - Facing East November 2013



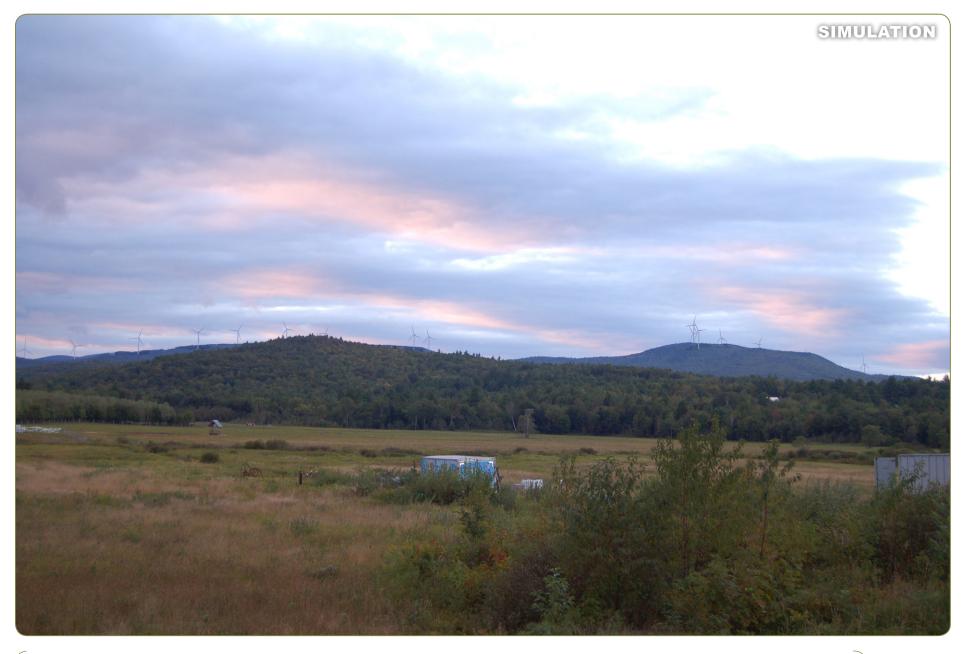




Sheet 1 of 2: Existing view from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Sheet 2 of 2: Proposed view from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Sheet 1 of 2: Existing view from Newfound Lake in Bristol, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view from Newfound Lake in Bristol, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire - Facing South - Southeast November 2013







Sheet 2 of 2: Proposed view from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire - Facing South - Southeast November 2013







Sheet 1 of 2: Existing view from Haynes Memorial Public Library on Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view from Haynes Memorial Public Library on Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view from William Hill Road in Grafton, Grafton County, New Hampshire - Facing Northeast November 2013







Sheet 2 of 2: Proposed view from William Hill Road in Grafton, Grafton County, New Hampshire - Facing Northeast November 2013







Sheet 1 of 2: Existing view from Mount Cardigan in Orange, Grafton County, New Hampshire - Facing South - Southeast November 2013







Sheet 2 of 2: Proposed view from Mount Cardigan in Orange, Grafton County, New Hampshire - Facing South - Southeast November 2013







Sheet 1 of 2: Existing view from Ragged Mountain in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Sheet 2 of 2: Proposed view from Ragged Mountain in Danbury, Merrimack County, New Hampshire - Facing North November 2013







Sheet 1 of 2: Existing view from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire - Facing East November 2013







Sheet 2 of 2: Proposed view from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire - Facing East November 2013







Sheet 1 of 2: Existing view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 2 of 2: Proposed view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 1 of 2: Existing view from Pasquaney Lane in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 2 of 2: Proposed view from Pasquaney Lane in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 1 of 2: Existing view from Main Street in Bristol, Grafton County, New Hampshire - Facing West November 2013







Sheet 2 of 2: Proposed view from Main Street in Bristol, Grafton County, New Hampshire - Facing West November 2013







Sheet 1 of 2: Existing view from Brad Chase Road in Danbury, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 2 of 2: Proposed view from Brad Chase Road in Danbury, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 1 of 2: Existing view from Murray Hill Road in Hill, Grafton County, New Hampshire - Facing Northwest November 2013







Sheet 2 of 2: Proposed view from Murray Hill Road in Hill, Grafton County, New Hampshire - Facing Northwest November 2013







Sheet 1 of 2: Existing view from Murray Hill Road in Hill, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 2 of 2: Proposed view from Murray Hill Road in Hill, Merrimack County, New Hampshire - Facing North - Northwest November 2013







Sheet 1 of 2: Existing view from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view from Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed view from Washburn Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing view from Orange Road in Alexandria, Grafton County, New Hampshire - Facing Southeast November 2013







Sheet 2 of 2: Proposed view from Orange Road in Alexandria, Grafton County, New Hampshire - Facing Southeast November 2013







Sheet 1 of 2: Existing Night view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed Night view from Fowler River Road in Alexandria, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 1 of 2: Existing Night view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 2 of 2: Proposed Night view from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire - Facing South - Southwest November 2013







Sheet 1 of 2: Existing Night view from Whittemore Point South Road in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013







Sheet 2 of 2: Proposed Night view from Whittemore Point South Road in Bridgewater, Grafton County, New Hampshire - Facing Southwest November 2013





Appendix E

Comparison of Preliminary and Revised Turbine Layout (October 2012)





Wild Meadows Wind Project

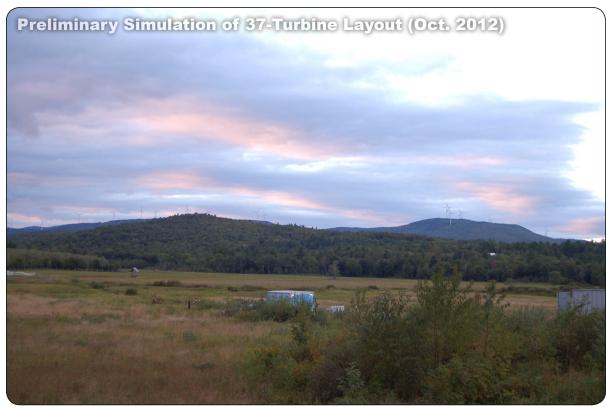
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 1: View across Grants Pond from Wild Meadows Road in Grafton, Grafton County, New Hampshire November 2013









Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts **Viewpoint 32**: View from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire

Viewpoint 32: View from Ragged Mountain Highway (State Route 104) in Danbury, Merrimack County, New Hampshire November 2013







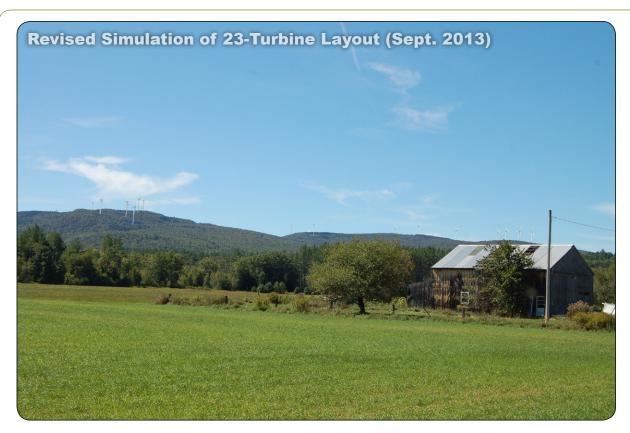


Wild Meadows Wind Project

Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts **Viewpoint 46**: View from Newfound Lake in Bristol, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts **Viewpoint 53**: View from Fowler River Road in Alexandria, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 59: View from the lawn adjacent to the AMC Cardigan Lodge in Alexandria, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 63: View from Haynes Memorial Public Library on Washburn Road in Alexandria, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts **Viewpoint 75**: View from William Hill Road in Grafton, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts **Viewpoint 78**: View from Mount Cardigan in Orange, Grafton County, New Hampshire November 2013







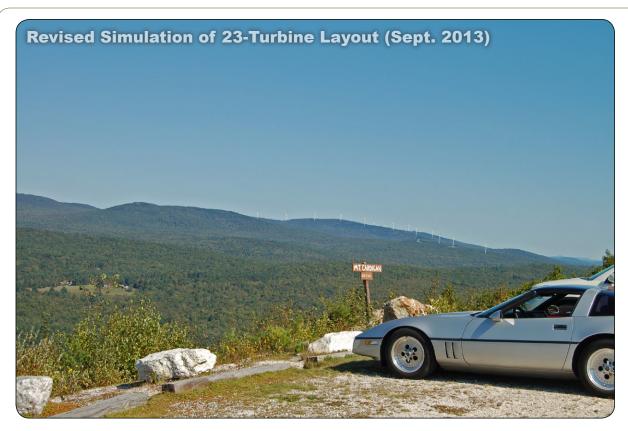


Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 101: View from Ragged Mountain in Danbury, Merrimack County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix E: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 129: View from Ruggles Mine Parking Lot in Grafton, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 158: View from Sanborn Bay on Newfound Lake in Hebron, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix E: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 160: View from Pasquaney Lane in Hebron, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 163: View from Mayhew Turnpike on Newfound Lake in Bridgewater, Grafton County, New Hampshire November 2013









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 173: View from Whittemore Point South Road in Bridgewater, Grafton County, New Hampshire November 2013









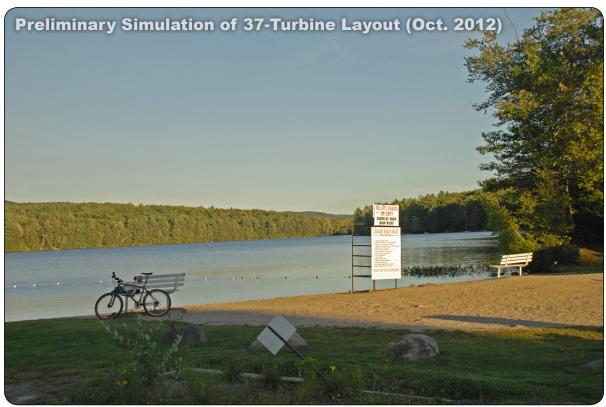
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 182: View from Main Street in Bristol, Grafton County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 200 : View from Canaan Town Beach in Canaan, Grafton County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 219: View from Grafton Road in Alexandria, Grafton County, New Hampshire







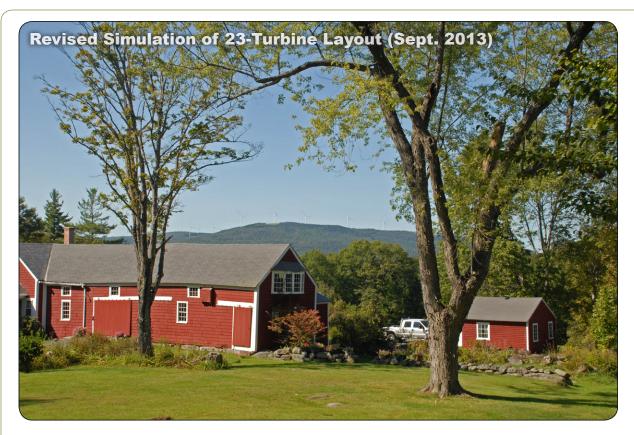


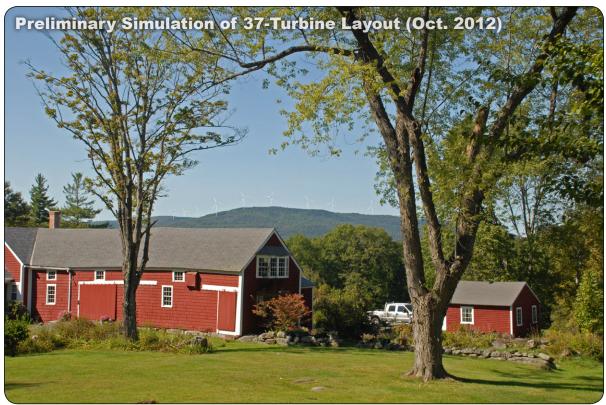
Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 226 : View from Brad Chase Road in Danbury, Merrimack County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 241: View from Murray Hill Road in Hill, Grafton County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire Appendix E: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 244 : View from Murray Hill Road in Hill, Merrimack County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 266 : View from Tomahawk Trail in Bridgewater, Grafton County, New Hampshire









Town of Alexandria, Grafton County and Town of Danbury, Merrimack County, New Hampshire **Appendix E**: Comparison of Preliminary and Revised Turbine Layouts

Viewpoint 269: View across Newfound Lake from Whittemore Point in Bridgewater, Grafton County, New Hampshire November 2013





Appendix F

Sample Rating Form and Instructions

Visual Impact Rating Form

Wild Meadows Wind Farm [EDR Project 12068]



Viewpoint #:		Viewpoint Location:				
Your Name:			Date:			
Landscape Similarity Zone (LSZ):			Viewer Type check as many as apply □Resident □Traveler □Recreational □Other			
Designated Aesthetic Resources: □Yes □No			Describe:			
VIEWPOINT DESCRIP	PTION: Please de	scribe this view in your own	words.			
VIEWPOINT SENSITIVITY: Rate the scenic quality and viewer exposure for this view.						
SCENIC QUALITY: p		g scenic quality ⊒High		VIEWER EXPOSURE: frequency and duration of view ☐ Continuous ☐ Repeated/Regular ☐ Occasional/Brief ☐ Rare		
CONTRAST RATING: Rate the level of contrast between the proposed structures and the existing view.						
COMPONENT	SCORE	DESCRIPTION OF CONTRAST				
Landform						
Vegetation						
Land Use						
Water *						
Sky						
Viewer Activity						
TOTAL		Total all scores above.				
AVERAGE		Average all scores abo				
		ase enter "N/A" in the 'Score				
Variable factors that r	may have influence	ced rating (atmospheric co	onditions, season	n, etc.):		
Perceived effect on so	cenic quality / vie	wer enjoyment:			Contrast Rating Score Chart 0 Insignificant 0.5 1 Minimal 1.5 2 Moderate 2.5 3 Appreciable 3.5 4 Strong	



Visual Impact Rating Form Instructions

Project Name: Wild Meadows Wind Farm EDR Project No: 12068

Date: September 30, 2013

Reference: Visual Impact Rating Form - Instructions

These instructions are intended to guide personnel conducting visual impact assessment contrast ratings through EDR's Visual Impact Rating Form.

Viewpoint #/Viewpoint Location:

Please fill this in based on the information in the title block for each photograph/viewpoint that is provided.

Your Name/Date:

Please complete.

Landscape Similarity Zone:

The definition of landscape types found in a given study area provides a useful framework for the analysis of available visual resources and viewer circumstances. These landscape types, or Landscape Similarity Zones (LSZs), are defined based on the similarity of features such as landform, vegetation, water, and land use patterns. The LSZs within the study area include:

Forest Zone
Rural Residential Zone
Village Zone
Hamlet Zone
Water/Waterfront Zone
Commercial Zone
Agricultural Zone
Transportation Zone
School Campus Zone
Natural Resource Extraction
Utility Corridor
Outdoor Recreation
Alpine Summit
Shoreline Residential

Viewer Type:

Please infer who the mostly likely viewer(s) is/are based on the location and context of the view. Please also refer to the Viewpoint Location Map and title block for photographs. For instance, if the photo shows a residential or concentrated settlement, check *resident*. If the viewpoint is a roadway location, check *traveler*, and if the viewpoint is from an aesthetic/recreational resource, check *recreational*.

217 Montgomery Street, Suite 1000, Syracuse, New York 13202 P. 315.471.0688 :: F. 315.471.1061 :: www.edrcompanies.com

Designated Aesthetic Resources:

The visual study area includes numerous public resources and/or designated visually sensitive resources that are of potential statewide significance. These include 12 sites or districts listed on the National Register of Historic Places, two state parks, 10 state forests, 13 wildlife management areas, two designated scenic sites, and several designated trails. The visual study area also includes several public resources that could be considered regionally or locally significant or sensitive, due to the type or intensity of land use they receive. These include local park and recreational facilities, campgrounds, camps, town forest lands, golf courses, nature preserves, tourist attractions, fish and game clubs, schools, churches, cemeteries, areas of concentrated human settlement (areas referred to as "villages" and "hamlets" in this study), and heavily traveled highways. Please refer to the Viewpoint Location Map and title block for photographs from each viewpoint to determine whether the view is from a specific visually sensitive resource.

Viewpoint Description:

Please describe the view in your own words, focusing on the landscape components described below.

- Landscape Composition: The arrangement of objects and voids in the landscape that can be categorized by their spatial arrangement. Basic landscape components include vegetation, landform, water and sky.
- Form, Line, Color, and Texture: These are the four major compositional elements that define the perceived visual character of a landscape. Form refers to the shape of an object that appears unified; often defined by edge, outline, and surrounding space. Line refers to the path the eye follows when perceiving abrupt changes in form, color, or texture; usually evident as the edges of shapes or masses in the landscape. Texture in this context refers to the visual surface characteristics of an object.
- Focal Point: Certain natural or man-made landscape features stand out and are particularly noticeable as a
 result of their physical characteristics. Focal points often contrast with their surroundings in color, form,
 scale or texture, and therefore tend to draw a viewer's attention. Examples include prominent trees,
 mountains and water features. Cultural features, such as a distinctive barn or steeple can also be focal
 points.
- Order: Natural landscapes have an underlying order determined by natural processes. Cultural landscapes
 exhibit order by displaying traditional or logical patterns of land use/development. Elements in the
 landscape that are inconsistent with this natural order may detract from scenic quality.
- Atmospheric Conditions: Clouds, precipitation, haze, and other ambient air related conditions affect the
 visibility of an object or objects and can greatly impact the design elements of form, line, color, texture, and
 scale.
- Lighting Direction: Backlighting refers to a viewing situation in which sunlight is coming toward the observer
 from behind a feature or elements in a scene. Front lighting refers to a situation where the light source is
 coming from behind the observer and falling directly upon the area being viewed. Side lighting refers to a
 viewing situation in which sunlight is coming from the side of the observer to a feature or elements in a
 scene.

• Visual Clutter: Numerous unrelated built elements occurring within a view can create visual clutter, which adversely impacts scenic quality.

Viewpoint Sensitivity:

Please rate the sensitivity of each viewpoint as determined by scenic quality and viewer exposure, as follows:

Scenic Quality:

Please rate the scenic quality of the existing view according to your opinion about the quality of the existing landscape, without the project in place, for the general public. An undeveloped landscape, or one containing aesthetically important structures, might be at the high end of the scale, while a landscape already impacted by infrastructure or industrial facilities might be at the low end. Most residential areas will fall into the moderate category, unless they are either historic neighborhoods, or degraded/abandoned. Note that designation as a scenic or recreational resource is an indication that there is broad public consensus on the value of that particular resource. The particular characteristics of the resource that contribute to its scenic or recreational value provide guidance in evaluating a project's visual impact on that resource. However, the scenic quality rating you assign depends on your individual judgment.

View Exposure:

Some views are seen as quick glimpses while driving along a roadway or hiking a trail, while others are seen for a more prolonged period of time. Longer duration views of a project, especially from significant aesthetic resources, have the greatest potential for visual impact. Please infer the frequency and duration of views based on the Viewer Type, LSZ, viewpoint context, and viewpoint location map. Please indicate whether there is potential for continuous or repeated exposure (such as residences, village intersections, and principal transportation routes with an open view towards the project), brief or occasional exposure (such as openings in otherwise screened areas or secondary roads that most people will not use on a daily basis), or rare exposure (such as viewpoints that are clearly off the beaten track and/or represent small areas of narrow visibility in otherwise completely screened areas).

Contrast Rating:

Please rate the level of contrast that you perceive between the existing landscape components (as they appear in each in photo) and the effect that the proposed project has on those components. Please provide a numerical rating between 0 and 4 for each landscape component, where:

- 0 = Insignificant Contrast
- 1 = Minimal Contrast
- 2 = Moderate Contrast
- 3 = Appreciable Contrast
- 4 = Strong Contrast
- * (please make use of .5 to allow for refinement or ambivalence between any of these ratings, e.g., 2.5 = Moderate to Appreciable Contrast).

Please then also describe in your own words the factors in the appearance of the photo that contribute to or affect the degree of contrast for each landscape component. Please consider the following for each landscape component:

Landform: Please consider the effect of the project relative to the appearance of the type/form of the

landform, the edge of the line, the strength and range of color, the density of relief, the space as

defined by the landform, and the extent of its scale.

Vegetation: Please consider the effect of the project relative to the appearance of the form(s) and variety of

vegetation, the edge of its lines, the range of color, the density of texture, its space as defined by

the vegetation, and its hierarchy/diversity of scale.

Land Use: Please consider the effect of the project relative to the appearance of identifiable land use(s) in

the view, and evaluate the degree to which the project is compatible with the appearance of

existing land use(s) in the view.

Water: Please consider the effect of the project relative to the appearance of water features in terms of

the form of the water body(ies), edges of its (their) lines, clarity of color, texture, which refers here to movement; for space, degree of enclosure around the feature(s); and the scale, or extent

of the presence of water in the view.

Sky: Please consider the effect of the project relative to the appearance of the sky in terms of form

(including the appearance of clouds), the edges of its lines (perhaps in terms of the horizon), clarity of color, texture, which here could refer cloudiness or other atmospheric conditions, the

degree of openness or enclosure, and the scale, or extent of the sky in the view.

Viewer Activity: Please consider the effect of the project on the viewer's perception of the scenic quality and

potential viewer enjoyment of the view, taking into account the viewpoint location and context,

viewer type, and viewer exposure.

Variable factors that may have influenced rating:

Please note any conditions, based on what is visible in the photographs that may influence the degree of contrast perceived between the project and the existing conditions (e.g., atmospheric condition, season, etc.).

Perceived effect on scenic quality/viewer enjoyment:

Please summarize your evaluation of the project's overall effect on the appearance of the view, taking into account the viewpoint location and context, sensitivity of that location, scenic quality of the existing view, viewer type, and viewer exposure.