Supplemental Visual Impact Assessment

Jericho Rise Wind Farm

Towns of Bellmont and Chateaugay
Franklin County, New York

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Jericho Rise Wind Farm, LLC (the Applicant), Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) prepared a Supplemental Visual Impact Assessment (SVIA) of the proposed Jericho Rise Wind Farm (the Project), located in the Towns of Bellmont and Chateaugay in Franklin County, New York (see Figure 1). The initial Visual Impact Assessment (VIA) was prepared by Tetratech in support of the 2008 Draft Environmental Impact Statement (DEIS). Due to changes in the height and location of the proposed turbines, as well as a reduction in the number of turbines proposed from 53 to 37, a Supplemental Environmental Impact Statement (SEIS) is being prepared to evaluate the impacts of the revised Project layout. The purpose of this SVIA is to evaluate the visual impact of the changes to the proposed Project design/layout that have occurred since the release of the VIA. This report will generally not reiterate information presented in the previous report that remains unchanged but, rather, will refer back to the relevant sections of the VIA.

2.0 PROJECT DESCRIPTION

The Applicant is proposing to develop a wind-powered generating facility consisting 37 turbines; each with a nameplate capacity of 2.1 megawatts (MW), for a total anticipated nameplate generating capacity of approximately 78 MW. However, to allow for flexibility on final site selection, the Applicant is evaluating, and seeks approval for, 43 turbine sites. The wind turbine proposed for the Project is the Gamesa G-114 or equivalent model. Each wind turbine consists of three major mechanical components: the tower, nacelle, and rotor. Assuming use of the Gamesa G-114 turbine, the anticipated "hub height" (height from the foundation to the center of the rotor), is 93 meters (305 feet), and the rotor diameter is 114 meters (374 feet), resulting in a total maximum height of 150 meters (492 feet). A computer model of the Gamesa G-114 wind turbine is presented in Figure 2.

In addition to the turbines, the Project will include construction and operation of a single permanent meteorological tower, a system of gravel access roads, electrical collection and communication cables and a substation. Along with the permanent components of the Project, construction of the Project will also require a temporary construction staging area to store Project components (laydown yard), accommodate construction trailers, and provide parking for construction vehicles. The proposed Project layout is depicted in Figure 3.

The changes in the Project layout that have occurred since the release of the VIA, and are the focus of this SVIA, include a reduction in the number of turbines proposed from 53 to 37, shifts in proposed turbine locations, and an increase in maximum turbine height (i.e., height at the highest blade tip position) from 397 feet to 492 feet. Other changes include a reduction in the number of permanent meteorological towers (from two to four down to one), reduction in the extent of proposed access roads (from 15 miles to 10 miles), elimination of an Operations and Maintenance (O&M) building (now proposed as an expansion to the existing Marble River O&M facility) and placement of almost all of the collection system underground.

3.0 EXISTING VISUAL CHARACTER

3.1 Visual Setting

Consistent with the original VIA, the revised visual study area, is defined as the area in the United States within 7.5 miles of the proposed wind turbines. Based on the SEIS layout of 37 proposed and six alternate turbine sites, the revised visual study area totals approximately 267 square miles. The location and extent of the visual study area is illustrated in Figure 4. Section 3.1 of the VIA provides an accurate a description of the visual setting within this area.

3.2 Landscape Similarity Zones

See Section 3.2 of the VIA for a description of landscape similarity zones (LSZs) present within the visual study area. These include Rural Residential/Agricultural, Forested, Village/Hamlet, and Adirondack Park Zones. Land cover within the revised visual study area is shown in Figure 5.

3.3 Viewer/User Groups

See Section 3.3 of the VIA for a description of viewer/user groups present within the visual study area. These include local residents, commuters/travelers, and tourists/recreational users.

3.4 Viewer Group Exposure and Sensitivity

See Section 3.4 of the VIA for a discussion of those viewer/user group exposure and sensitivity to visual change.

3.5 Visually Sensitive Resources

Section 3.5 of the VIA provides a discussion of visually sensitive resources found within the study area. Due to the revised boundaries of the visual study area and other changes that have occurred since the release of the VIA, there have been some changes to the resources of statewide and local significance, as shown in Figure 6. For example, Chazy Highlands Wild Forest is now included as a resource of statewide significance. This resource was formerly part of the Debar Mountain Wild Forest and was included as such in the VIA. The inventory of local resources has been expanded considerably to include local parks and playgrounds, lakes and rivers, trails, schools, libraries, cemeteries, hospitals, and churches. A table of inventoried visually sensitive resources within the revised visual study area, and an indication of whether they fall within the revised Project's viewshed is presented in Section 5.4 of this SVIA. A map of sensitive sites overlaid with the revised Project viewshed is included in Appendix A of this SVIA.

4.0 VISUAL IMPACT ASSESSMENT METHODOLOGY

The visual assessment procedures and analyses utilized in the preparation of this SVIA are generally consistent with those described in Section 4.0 of the VIA. However several of the analyses conducted for the SVIA included some variation from the methodologies used in the original VIA. Consequently, all SVIA methodologies are described in the following section. These are consistent with methodologies developed by the U.S. Department of the Interior, Bureau of Land Management (1980), U.S. Department of Agriculture, Forest Service (1974), the U.S. Department of Transportation, Federal Highway Administration (1981), U.S. Army Corps of Engineers (Smardon, et al., 1988), New York State Department of Environmental Conservation (NYSDEC, 2000), and are widely accepted as standard visual assessment methodologies for wind energy projects (CEIWEP, 2007). The specific techniques used to assess potential Project visibility and visual effects are described below.

4.1 Project Visibility

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 10-meter resolution USGS digital elevation model (DEM) data, the location and height of all proposed and alternate turbines (see Figures 2 and 3), and ESRI ArcGIS® software with the Spatial Analyst extension. Because alternate turbine sites are included in this analysis, the viewshed evaluates the potential visibility of turbines at 43 potential sites rather than only the 37 that will ultimately be built. Two 7.5-mile radius topographic viewsheds were mapped, one to illustrate "worst case" daytime visibility (based on a maximum blade tip height of 492 feet, or 150 meters, above existing grade) and the other to illustrate potential visibility of turbine lights (based on the Federal Aviation Administration [FAA] obstruction warning light height of approximately 100 meters (328 feet) above existing grade, and the conservative assumption that all turbines could be lit).

The ArcGIS program defines the viewshed (using topography only) by reading every cell of the DEM data and assigning a value based upon visibility from observation points throughout the study area. The resulting topographic viewshed maps define the maximum area from which any portion of any turbine within the completed Project could potentially be seen within the study area during both daytime and nighttime hours (ignoring the screening effects of existing vegetation and structures).

Because the screening provided by vegetation and structures is not considered in this 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 2011 USGS National Land Cover Dataset (NLCD) to identify the mapped location of forestland (including the Deciduous Forest, Evergreen Forest, Mixed Forest, and Woody Wetland NLCD classifications). Based on standard visual assessment practice, the mapped locations of the forest land was assigned an assumed height of 40 feet and added to the DEM. Field review of the study area indicated that much of the forest vegetation within the study area is significantly higher than 40 feet, making this a very conservative assumption. The viewshed analysis was then re-run, as described above. As with the topographic viewshed analysis, two vegetation viewsheds were mapped, one to illustrate "worst case" daytime visibility (based on a maximum blade tip height of 150 meters above existing grade) and the other to illustrate potential visibility of turbine lights (based on an FAA warning light height of 100 meters above existing grade and the conservative assumption that all turbines could be equipped with FAA warning lights). 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 rare, and the available views would typically be narrow/enclosed and include little of the proposed Project. In most forested areas, 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 by tree trunks and branches, 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 because 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, being within the viewshed does not necessarily equate to actual Project visibility. It is also worth reiterating that the viewshed analysis also over estimates Project visibility because it evaluates the potential visibility of 44 turbines (37 proposed plus six alternate locations) rather than the 37 turbines that will actually be built.

4.1.2 Cross-Section Analysis

No new line-of-sight cross sections were prepared, because as indicated in the VIA, they essentially confirm the results of viewshed analysis. In addition, because they do not account for the potential visibility of all proposed turbines, their value in assessing potential Project visibility from specific resources/locations is limited.

4.1.3 Field Investigation

A field review of the study area was conducted on May 7, 2015, in order to obtain updated photos for the development of computer-generated visual simulations. The original VIA included visual simulations from nine viewpoints, developed based on photos taken in 2006. Photos from the same nine viewpoints (or nearby viewpoints that offered better views of the currently proposed Project) were obtained during the 2015 field review. In a few instances, the direction of view captured from these viewpoints was shifted slightly to best capture a view of the revised turbine layout. Views from an additional 37 viewpoints were also obtained in the event that additional updated simulations were requested (see Figure 7 and Appendix C). Unlike the photos utilized in the VIA, the updated photos were obtained under clear and sunny sky conditions that enhanced baseline scenic quality and improved the potential for Project visibility. All photos were obtained during this field effort using a digital SLR camera with a minimum resolution of 10 mega pixels, and the equivalent of a 50 mm lens setting was used for all photos. 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. The time and location of each photograph were noted on field maps and data sheets. Global positioning system (GPS) readings were also taken at each viewpoint to document photo and reference point locations.

4.2 Visual Quality and Impact Evaluation

4.2.1 Viewpoint Selection

As indicated above, views from nine viewpoints comparable to those evaluated in the VIA were selected for the development of updated simulations. Figure 7 indicates the location of the VIA/SVIA viewpoints used for development of visual simulations, and also shows these viewpoints relative to the current Project layout. The basis for the selection of these specific viewpoints is as described in Section 4.2.1 of the VIA (see VIA Table 5). Table 1 below describes the location, viewing distance and orientation of each viewpoint utilized in the development of the visual simulations.

Table 1. Viewpoints Selected for Simulation

Simulation Viewpoint Number	Visually Sensitive Resource or Landscape Context	Viewing Distance	View Orientation[1]
3	Cemetery	1.8	NE
10	Adirondack Park	3.6	NW
14	Cemetery	1.3	SW
15	Rural Residential/Agricultural	2.7	W
19	High Falls Park	0.5	SW
20	Agricultural and Forest	0.5	W
26	Village/Hamlet	2.1	E
31	Rural Residential/Agricultural	3.7	S
34	Adirondack Trail Scenic Byway	8.4	NE

[1]N = North, S = South, E = East, W = West

4.2.2 Existing Visual Quality Rating

Evaluation of existing visual quality, as described in the VIA, was not conducted as part of this SVIA. See Section 4.2.3 for a description of the impact evaluation methodology used in the SVIA.

4.2.3 Impact Evaluation Criteria

As described in the VIA, the visual impact of the original Project was evaluated by determining the existing scenic quality of the nine selected views, and comparing that to the scenic quality of the same view with the Project in place. The visual impact was determined based on the change in perceived visual quality resulting from Project construction, and was characterized as either low, moderate or high.

To determine how visual impact would change due to the revised Project design and layout, EDR prepared updated visual simulations based on the currently proposed number, location and dimensions of the proposed turbines, as described in Section 4.2.4, below. These simulations were then compared to the simulations prepared for the original Project, and the change in Project visibility and visual impact described.

4.2.4 Visual Simulations

To show anticipated visual changes associated with the revised Project, high-resolution computer-enhanced image processing was used to create realistic photographic simulations of the completed turbines from each of the nine previously evaluated viewpoints. The photographic simulations were developed by constructing a three-dimensional computer model of the proposed turbine and turbine layout, based on specifications and survey coordinates provided by the Applicant. For the purposes of this analysis, it was assumed that all turbines would be Gamesa G-114 machines with a hub height of 93 meters, and a rotor diameter of 114 meters (total maximum blade tip height of 150 m or 492 feet). The turbine model used in the simulations is white in color, and has the rotor oriented to the southwest, which is the prevailing wind direction in this area. A rendering of the computer model used in this VIA is shown in Figure 2.

Each photographic viewpoint was aligned with the Project component computer model so that the models could be superimposed on the photographs. This was done by first using Autodesk 3ds Max Design® to create a simulated perspective (camera view) to match the location, bearing, and focal length of each existing conditions photograph. Existing elements in the view (e.g., buildings, existing transmission structures, roads) were modeled based on aerial photographs and DEM data in AutoCAD Civil 3D®. A three dimensional ("3-D") topographic mesh of the landform (based on DEM data) was then brought into the 3-D model space. At this point minor adjustments were made to camera and target location, focal length, and camera roll to align all modeled elements with the corresponding elements

in the photograph. This assures that any elements introduced to the model space (i.e., the proposed wind turbines) will be shown in proportion, perspective, and proper relation to the existing landscape elements in the view. Consequently, the alignment, elevations, dimensions and locations of the proposed Project structures will be accurate and true in their relationship to other landscape elements in the photograph.

Using the camera view as guidance, the visible portions of the modeled Project components were imported to the landscape model space described above, and set at the proper coordinates. Once the proposed Project was accurately aligned within the camera view, a lighting system was created based on the actual time, date, and location of the photograph. Using the Mental Ray Rendering System® with Final Gather and Mental Ray Daylight System® within the Autodesk 3ds Max Design® software, light reflection, highlights, color casting, and shadows were accurately rendered on the modeled Project based on actual environmental conditions represented in the photograph.

The rendered Project was then superimposed over the photograph in Adobe Photoshop CS5® and portions of the Project that fall behind vegetation, structures or topography were masked out. Gravel access roads and other above-ground Project components are added, if they would be visible in the selected viewpoints. Photoshop was also used to take out any existing structures or vegetation proposed to be removed as part of the Project. Once the new Project components were added to the photo, any shadows cast on the ground by the proposed structures were also included by rendering a separate "shadow pass" over the DEM model in Autodesk 3ds Max Design® and then overlaying the shadows on the simulated view with the proper fall-off and transparency using Adobe Photoshop CS5®. A graphic illustration of the simulation process is included in Figure 8.

5.0 VISUAL IMPACT ASSESSMENT RESULTS

5.1 Project Visibility

5.1.1 Viewshed Results

The results of the revised viewshed analysis are depicted in Figure 9 and presented in Table 2. As indicated in Table 2, turbines will be fully screened from view by intervening topography from approximately 23.1 % of the visual study area. These areas are concentrated in the southern portion of the visual study area, which is characterized by greater topographic relief than the northern portion of the study area (see Figure 9, Sheet 1). Once the screening effects of mapped forest vegetation are factored into the analysis, visibility is greatly reduced and that figure increases to 77.3% of the visual study area that is anticipated to be fully screened from view (see Figure 9, Sheet 2). Areas with potential visibility generally consist of agricultural fields/open areas in the central and northern portions of the visual study area. Project visibility in the southern portion of the visual study area is very limited due to the extent of forestland, with the exception of Lower Chateaugay Lake and a few small open areas that are anticipated to have views of the Project. Very similar results are reported for nighttime visibility viewshed analysis, with 27.2% of the visual study area fully screened from view by topography alone and 80.6% fully screened when mapped forest vegetation is factored into the analysis (see Figure 9, Sheets 3 and 4).

Table 2. Summary of SVIA Viewshed Results for 7.5-Mile Study Area

Number of Turbines Visible	7.5-Mile-Radius Study Area Viewshed Results[1]							
	Blade Tip Topography Only		Blade Tip Topography and Vegetation		FAA/Nacelle Topography Only		FAA/Nacelle Topography and Vegetation	
	Square Miles	% of Study Area	Square Miles	% of Study Area	Square Miles	% of Study Area	Square Miles	% of Study Area
0	61.6	23.1	206.3	77.3	72.6	27.2	215.0	80.6
1-10	15.8	5.9	18.8	7.0	19.6	7.4	20.7	7.7
11-20	13.4	5.0	12.3	4.6	19.3	7.2	12.1	4.5
21-30	15.9	6.0	9.8	3.7	18.3	6.9	7.3	2.7
31-40	21.6	8.1	9.0	3.4	27.2	10.2	6.5	2.4
41-43	138.5	51.9	10.7	4.0	109.8	41.2	5.3	2.0
Total Visible	205.2	76.9	60.5	22.7	194.2	72.8	51.8	19.4

[1] The SVIA visual study area totals 266.8 square miles. Due to rounding to the 10th of a square mile and a 10th of a percentage, the sum of the individual turbine count group categories may not precisely equal the size of the study area or 100%.

The SVIA viewshed results are compared with the results of the VIA viewshed analysis in Table 3. With respect to viewshed results, the most influential differences between the VIA and SVIA turbine layouts include a decrease in the number of possible turbines proposed from 53 to 37 (plus six alternates) and the increase in turbine height from 397 feet to 492 feet. As shown in Figure 9, Sheet 1, the SVIA blade tip topographic viewshed shows a similar pattern of

potential visibility to the viewshed maps presented in the VIA. However, due to the increase in turbine height, areas of potential turbine visibility have expanded further down hillsides and valleys throughout the visual study area, into areas that were formerly outside of the VIA viewshed. Many areas that formerly were anticipated to have potential views of 1-10 turbines now may have views of 11-20 turbines and a similar shift has occurred with each of the turbine groups. The differences between the VIA and SVIA viewshed results are less pronounced once vegetation is factored into the analysis since forestland is fairly extensive within the visual study area and will effectively screen views from many areas. However, as indicated in Table 2, many of the turbine count groups have expanded slightly in size as, i.e. the percentage of the visual study area where more than 41 turbines may potentially be visible has increased from 1.6% to 4.0%. Although the current viewshed analysis includes 10 fewer turbines than the VIA analysis, the turbines that are no longer proposed were primarily located in the central portion of the Project, surrounded by turbines that remain in the current layout, therefore the removal of those 10 turbines has minimal effect on the viewshed results.

With respect to nighttime visibility, it is anticipated that approximately 21 of the proposed turbines will be equipped with an FAA obstruction warning lights. However, since the FAA lighting plan has not yet been finalized, the SVIA viewshed analysis is based on the conservative assumption that all turbines could be lit. The VIA viewshed analysis was based on a preliminary lighting plan that included FAA obstruction warning lights on 22 turbines. The difference in viewshed results between the VIA and SVIA are primarily due to this difference in assumptions. However, the increase in anticipated FAA warning light height from 80 meters to 100 meters would also have the effect of increasing nighttime visibility to some extent. Nonetheless, actual nighttime visibility/visual impact will be reduced from what is presented in Table 3 and Figure 9, Sheets 3 and 4 with the use of a lighting plan that restricts lighting to only a subset of the proposed turbines.

Table 3. VIA/SVIA Viewshed Results Comparison

Number of Turbines Visible	7.5-Mile-Radius Study Area Viewshed Results Considering Topography and Vegetation[1]							
	Daytime Visibility				Nighttime Visibility			
	VIA		SVIA		VIA[2]		SVIA	
	Square Miles	% of Study Area	Square Miles	% of Study Area	Square Miles	% of Study Area	Square Miles	% of Study Area
0	237.4	86.8	206.3	77.3			215.0	80.6
1-10	16.6	6.1	18.8	7.0			20.7	7.7
11-21	7.4	2.7	12.3	4.6			12.1	4.5
21-30	4.5	1.6	9.8	3.7			7.3	2.7
31-40	3.3	1.2	9.0	3.4			6.5	2.4
41-53	4.4	1.6	10.7	4.0			5.3	2.0

Total Visible	36.1	13.2	60.5	22.7	25.8	9.4	51.8	19.4

[1] The VIA nighttime visibility viewshed analysis was based on a preliminary lighting plan assuming that 22 turbines would be lit. The results were presented as a total rather than broken down by the number of turbine lights potentially visible. The SVIA nighttime visibility viewshed analysis was based on the conservative assumption that all turbines could be lit.

[2] The VIA 7.5-mile visual study area totaled 273.5 square miles. The SVIA visual study area totals 266.8 square miles. Due to rounding to the 10th of a square mile and a 10th of a percentage, the sum of the individual turbine count group categories may not precisely equal the size of the study area or 100%.

5.2 Analysis of Existing and Simulated Views

Viewpoint 3

Exiting Conditions

Viewpoint 3 is located at the edge of a cemetery off of County Route 24 (Brainardsville Road) near the hamlet of Bellmont Center. This viewpoint was located approximately 0.5 mile southwest of the nearest turbine in the original Project layout. It is now located 1.8 miles southwest from the nearest turbine in the revised Project layout. The VIA indicated that this viewpoint had moderate scenic quality, which remains accurate based on the updated photos obtained in 2015.

Proposed Project

With the originally proposed Project in place, the VIA indicated a moderate level of visual impact at this viewpoint. This was reportedly due to the strong contrast presented by several turbines that were visible above the mid-ground trees, the nearest of which appeared large and out of scale with the surrounding landscape. The SVIA simulation shows two turbines, both of which are well screened by foreground trees. Although the turbines' white color presents contrast with the sky and trees, their vertical line and perceived scale are compatible with the trees and utility lines that dominate the view. This, along with the significant screening provided by the trees and the small number of the visible turbines, results in relatively low visual impact from this viewpoint.

Viewpoint 10

Existing Conditions

Viewpoint 10 is adjacent to County Route 54 near the hamlet of Harrigan, within the boundary of the Adirondack Park. This viewpoint was located approximately 3 miles southeast of the nearest turbine proposed in the original Project layout. It is approximately 3.6 miles southeast of the nearest turbine in the revised Project. Existing visual quality at this viewpoint was rated as moderate in the VIA, and that evaluation remains accurate.

Proposed Project

With the originally proposed Project in place, the VIA indicated that only the blades and/or upper portions of three turbines could be seen through tree branches in the left center portion of the view. However, cloudy sky conditions and poor print quality make this difficult to perceive in the simulations included in the VIA. Distance and screening resulted in a minimal visual impact for this viewpoint. With the clear sky conditions and better photo quality presented in the SVIA simulation, the proposed turbines are still difficult to perceive. Portions of the blades and towers of these turbines can be seen through the trees due to their color contrast with the sky in the background. However, they are almost fully screened by the bare tree branches in this view, and would be completely obscured by foliage during the growing season. Their distance from the viewer and the effects of screening confirmed the VIA assessment of minimal visual impact from this viewpoint.

Viewpoint 14

Existing Conditions

Viewpoint 14 is located at the intersection of Cassidy Road and Number 5 Road north of the hamlet of Brainardsville. This viewpoint was approximately 1 mile northeast of the nearest turbine proposed in the original Project layout. It is approximately 1.3 miles northeast of the nearest turbine currently proposed. Existing visual quality of the view available at this location was characterized as moderate in the VIA. This assessment remains accurate, despite the fact that two turbines from the adjacent Noble Chateaugay Windpark are now clearly visible in the mid-ground of the view.

Proposed Project

As shown in the simulation included in the VIA, with the original Project in place, multiple turbines (more than half the total number of turbines originally proposed) would be visible across the full field of view. The number of visible turbines and their strong line, form and scale contrast resulted in high visual impact at this viewpoint. The turbines became visible focal points that dominated the view.

Even with the addition of the existing Noble Chateaugay turbines, the simulation of the revised Project shows fewer visible turbines than the original Project. The greater height of the currently proposed turbines (492 feet versus 374 feet) is not readily apparent. However, the overall visual impact, while somewhat lessened, is still high for this viewpoint. Although the presence of the existing Noble Chateaugay turbines reduces perceived land use contrast, the number of new turbines, their proximity to the viewer, and the lack of the visual screening, result in a relatively high level of visual impact.

Viewpoint 15

Existing Conditions

Viewpoint 15 is located on U.S. Route 11, approximately one mile east of the Village of Chateaugay. This viewpoint was located approximately 3 miles northeast of the nearest turbine proposed in the original Project layout, and is approximately 2.7 miles northeast of the nearest turbine currently proposed. The VIA characterized existing visual quality at this viewpoint as moderate, although the existing conditions photo included in the VIA appears to have relatively low visual quality. The current existing conditions photo, obtained under better weather conditions, appears to have moderate visual quality, although the presence of 12 visible turbines from the adjacent Noble Chateaugay Windpark may diminish existing visual quality in the opinion of some viewers.

Proposed Project

With the original Project in place, the VIA indicates that multiple turbines appear beyond the tree line along several areas of the horizon. These turbines are difficult to perceive in the VIA simulation due to overcast sky conditions and poor print quality. However, due to the turbines' distance from the viewer, screening by intervening trees, and the presence of other utilitarian built features in the view, overall visual impact was rated as low.

In the updated simulation from Viewpoint 15, only the upper portions of two distant turbines from the revised Project are visible due to the screening effect of intervening topography and forest vegetation. These turbines are barely perceptible amongst the mid-ground trees, and are very minor additions to a view that is now dominated by the closer turbines in the existing Noble Chateaugay Project. Consequently, the revised Project has very low visual impact at this viewpoint.

Viewpoint 19

Existing Conditions

Viewpoint 19 is located at the entrance of High Falls Park off River Road, outside the Village of Chateaugay. This viewpoint was located approximately 0.5 mile northwest of the nearest turbine proposed in the original Project layout. It is still approximately 0.5 mile northeast of the nearest turbine currently proposed. The VIA characterized existing visual quality at this viewpoint as moderate. Current photos from this viewpoint confirmed this assessment.

Proposed Project

Although difficult to clearly see due to cloudy sky conditions and poor print quality, the simulation from Viewpoint 19 included in the VIA shows multiple turbines visible at various distances across the full field of view. Due to the strong line, scale and form contrast presented by the turbines, along with their prominence and incompatibility with the existing park-like landscape setting, overall visual impact at this viewpoint was characterized as high.

The updated simulation from Viewpoint 19 shows a substantially reduced number of visible turbines. Only four turbines are visible beyond the mid-ground ridge. Although their white color presents contrast with the blue sky, all of the turbines are partially screened by foreground trees, and do not present significant scale contrast with the existing vegetation. Even with the somewhat higher baseline scenic quality illustrated in the 2015 existing conditions photographs, the revised Project's overall visual impact appears to be moderate rather than high.

Viewpoint 20

Existing Conditions

Viewpoint 20 is located at the intersection of River Road and Chase Road, outside the Village of Chateaugay. It was located approximately 0.25 mile east of the nearest turbine proposed in the original layout, and is approximately 0.5 mile east of the nearest turbine currently proposed. Existing visual quality at this viewpoint was evaluated as moderate in the VIA, and this evaluation remains accurate today.

Proposed Project

With the original proposed Project in place, multiple turbines were visible in the foreground and mid-ground across the full field of view. Although somewhat difficult to see due to cloudy sky conditions and poor print quality, the VIA simulation appears to include approximately 23-27 turbines (including some that were cutoff in the image presented in the VIA). Impact on visual quality from this viewpoint was characterized as moderate. The strong line, form and scale contrast presented by the turbines was offset to some degree by partial screening, limited color contrast with the sky, and compatibility with the agricultural land use that characterizes this view.

The updated simulation of the revised Project from Viewpoint 20 shows a similar affect, with 10-17 turbines visible at various distances across the full field of view. Although the clear sky conditions in the updated photo enhance the existing scenic quality and the visibility of the proposed turbines, their overall impact remains no greater than moderate, due to the slightly reduced number of visible turbines (10-17 versus 23-27), their somewhat wider spacing, somewhat greater distance from the viewer, and compatibility with the working agricultural landscape featured in this view. The new turbines greater height is not readily perceived when compared to the height of the turbines in the original simulation.

Viewpoint 26

Existing Conditions

Viewpoint 26 is located along Field Road at the south edge at the Village of Burke. This viewpoint was approximately 2.25 miles northwest of the nearest turbine in the original Project layout. It is approximately 2.1 miles west of the

nearest turbine in the revised Project layout. Existing visual quality at Viewpoint 26 was characterized as moderate in the VIA. This characterization remains accurate based on the updated existing conditions photo obtained by EDR.

Proposed Project

With the originally proposed Project in place, multiple turbines extend across the full field of view in the mid-ground and background. Although difficult to count due to cloudy sky conditions and poor print quality, it appears that approximately 18-21 turbines were visible in the simulation from Viewpoint 26. Due primarily to the effects of distance and the cloudy sky conditions, overall visual impact for this viewpoint was evaluated as low.

The simulation of the revised Project from Viewpoint 26 also shows multiple turbines in the mid-ground and backgrounds, spanning the full field of view. The number of visible turbines was somewhat reduced, and mid-ground trees appear to be more effective in screening views of individual turbines from this viewpoint. Despite the clear sky conditions illustrated in the updated photo, the turbines do not present strong color contrast and do not appear to be taller than the shorter turbines featured in the originally simulation. Due to tree screening and effects of distance, visual impact of the revised Project remains low for this viewpoint.

Viewpoint 31

Existing Conditions

Viewpoint 31 is located near the intersection of Callahan and Covey Roads in the Town of Burke, near the Canadian border. This viewpoint was located approximately 4 miles north of the nearest turbine proposed in the original Project layout. It is approximately 3.7 miles north of the nearest turbine in the revised Project layout. The overall visual quality of the view from this viewpoint was characterized as moderate in the VIA. This assessment remains accurate based on conditions as they currently exist.

Proposed Project

With the original Project in place, the VIA indicated that the proposed turbines could not be seen due to the cloudy sky conditions, tree screening, and the effects of distance. Consequently the Project's visual impact for this viewpoint was evaluated as low.

The simulation of the revised Project from Viewpoint 31 shows a clearly visible cluster of turbines in the background on the far left side of the view. The turbines' increased visibility is largely a result of the clear sky conditions in the updated photo, and perhaps the greater height of the turbines currently proposed. However, even though they are visible, the turbines appear as relatively small background features that do not present strong color or scale contrast

with the landscape, despite the clear sky conditions and lack of foreground screening. Due largely to the effects of distance, visual impact for this viewpoint remains low.

Viewpoint 34

Existing Conditions

Viewpoint 34 is located along State Route 30 outside the Village of Malone. It was approximately 8 miles southwest of the nearest turbine in the original Project layout, and is 8.4 miles southwest of the nearest turbine in the revised Project. The VIA characterized existing visual quality at this viewpoint as moderate. Based on the updated photos from Viewpoint 34, this assessment remains accurate.

Proposed Project

With the original Project in place the VIA reported that portions of several turbines could be seen rising above the background trees in the distance. However, these are difficult to perceive in the simulation due to the cloudy sky conditions and poor print quality. Due primarily to the effects of distance and significant screening provided by the wooded background ridge, overall visual impact at this viewpoint was evaluated as low.

With the revised Project in place, the updated simulation from Viewpoint 34 shows that the blade tips of several turbines can be seen just above the background ridge. Their increased visibility is largely the result of the clear sky conditions featured in the updated photo. The taller height of the currently proposed turbines may also contribute to their increased visibility. However, consistent with the findings of the VIA, screening provided by the background ridge and the effects of distance minimize the turbines' visibility and contrast with the existing landscape. Consequently overall visual impact remains low.

5.3 Impacts of Other Project Facilities

An on-site O&M facility is no longer prosed as part of the revised Project, and Project access roads will generally take on the appearance of farm access roads within a few years following completion of construction. Electrical collection lines will be buried except in a few instances where overhead crossings of streams and wetlands are proposed. In those instances, the poles and overhead conductors will be well removed from public vantage points and screened by adjacent forest vegetation. The proposed substation will be located adjacent to the existing Willis substation. Consequently the visibility and visual impact of Project components other than the turbines is expected to be minimal.

5.4 Impacts to Visually Sensitive Resources

As indicated in Section 5.4 of the VIA, a number of the visually sensitive resources within the visual study area are anticipated to have views of the proposed wind turbines. While the discussion of impacts to visually sensitive resources presented in the VIA remains largely accurate, the increase in proposed turbine height will have the effect of increasing visual impact for some of the identified resources.

Out of the ten resources of statewide significance identified in Table 4, below, only one (Adirondack Park Scenic Vista 1) is anticipated to be fully screened from views of the Project. Viewshed analysis indicates that topography and forest vegetation will provide at least partial screening for the remainder of the sites, with the exception of the NRHP-Listed US Inspection Station in Chateaugay. However, it is likely that the landscaping trees surrounding the property (which are unaccounted for in the viewshed analysis) will provide some level of screening from this historic resource and the effects of distance (5.5 miles to the nearest turbine) will diminish the visual impact as well. Resources of statewide significance that may have foreground views of wind turbines include the Chateaugay River (included in the National Rivers Inventory) and the Military Trail Scenic Byway. Simulated views from these resources are presented in Figures 13 and 15, respectively. Resources of statewide significance that will likely have views of turbines at midground distances include the Adirondack Forest Preserve, Chazy Highlands Wild Forest, and State Routes 374 and 190. In addition to the previously mentioned US Inspection Station, the Almanzo Wilder Homestead also has the potential for background views of proposed turbines, although only a small portion of the property is indicated as having potential Project visibility. As mentioned in the VIA, a number of architectural resources that are eligible or potentially eligible for listing on the National Register of Historic Places are also located within the visual study area. Visual impacts to these properties eligible are being evaluated in consultation with the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) in support of a historic resources survey report (EDR, 2015). Therefore, visual impacts to these resources are not addressed in this SVIA.

Anticipated impacts to visually sensitive resources of statewide and local significance are summarized in Table 4, below. Additionally, a large-format map of these resources overlaid with viewshed results is presented in Appendix A.

Table 4. Project Visibility from Sensitive Sites

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
1. Properties listed on or eligible for inclusion in the National or State Register of Historic Places[3]							
Adirondack Forest Preserve (National Historic Landmark)	Ellenburg, Bellmont, Malone	Clinton, Franklin	18, 19, 22, 23, 24, 38, 39 (Simulation VP 34)	0.9	●	+/-	+/-
Wilder Homestead, Boyhood Home of Almanzo Wilder	Burke	Franklin	45	4.3	•	+/-	+/-
US Inspection Station-Chateaugay	Chateaugay	Franklin		5.5	•	+	+
2. State Parks							
None in Study Area							
3. Urban Cultural Parks/Heritage Areas							
None in Study Area							
4. State Forest Preserves							
Adirondack Forest Preserve	Ellenburg, Bellmont, Malone	Clinton, Franklin	27, 28 (Simulation VP 10)	2.6	●	+/-	+/-
Chazy Highlands Wild Forest	Ellenburg, Bellmont	Clinton, Franklin		3.3	●	+/-	+/-
5. National Wildlife Refuges, State Game Refuges and State Wildlife Management Areas							
None in Study Area							
6. National Natural Landmarks							
None in Study Area							
7. National Parks, Recreation Areas, Seashores and/or Forests							
None in Study Area							
8. National or State Designated Wild, Scenic, or Recreational Rivers							
Chateaugay River	Ellenburg, Chateaugay, Burke, Bellmont	Clinton, Franklin	37 (Simulation VP 20)	0.4	●	+/-	+/-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
9. Sites, Areas, Lakes, Reservoirs or Highways Designated or Eligible as Scenic							
Military Trail	Clinton, Constable, Ellenburg, Chateaugay, Burke, Malone	Clinton, Franklin	2, 5, 6, 25, 46 (Simulation VP 15)	0.3	●	+/-	+/-
State Rte 374	Ellenburg, Chateaugay, Bellmont	Clinton, Franklin	5, 24, 33, 34, 40	0.7	●	+/-	+/-
State Rte 190	Ellenburg, Bellmont	Clinton, Franklin	30	1.3	●	+/-	+/-
10. Scenic Areas of Statewide Significance							
None in Study Area							
11. State and Federally Designated Trails							
None in Study Area							
12. Adirondack Park Scenic Vistas							
Scenic Vista 1	Ellenburg	Clinton		4.6	•	-	-
13. State Nature and Historic Preserve Areas							
None in Study Area							
14. Palisades Park							
None in Study Area							
15. Bond Act Properties for Exceptional Beauty or Open Space							
None in Study Area							
Locally Important Resources							
Areas of Intensive Land Use (City, Village, Hamlet)							
Hamlet of Thayer Corners	Burke	Franklin		0.4	●	+	+
Hamlet of Bellmont Center	Bellmont	Franklin		0.6	●	+	-
Village of Chateaugay	Chateaugay	Franklin	5, 40	0.8	●	+/-	+/-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
Hamlet of Brainardsville	Bellmont	Franklin		1.3	●	+	+
Hamlet of Brayton Hollow	Chateaugay	Franklin		1.7	●	+	-
Village of Burke	Burke	Franklin	9 (Simulation VP 26)	2.0	●	+/-	+/-
Hamlet of Blair Kiln	Bellmont	Franklin	22	2.4	●	+	-
Hamlet of Cooks Mill	Chateaugay	Franklin		2.9	●	+	-
Hamlet of Burke Center	Burke	Franklin		3.0	●	+	+
Hamlet of Sun	Burke	Franklin		3.6	•	+	+
Hamlet of Earlville	Chateaugay	Franklin		4.7	•	+	+
Hamlet of North Burke	Burke	Franklin		5.2	•	+	-
Hamlet of Harrigan	Ellenburg	Clinton		5.3	•	-	-
Village of Malone	Malone	Franklin	46, 1	6.4	•	+/-	+/-
Hamlet of Malone Junction	Malone	Franklin		7.1	•	+	+
Hamlet of Whippleville	Malone	Franklin		7.3	•	-	-
Hamlet of Bellmont	Bellmont	Franklin		7.5	•	-	-
Transportation Corridors							
County Route 24	Bellmont, Malone	Franklin	17 (Simulation VP 3)	0.3	●	+/-	+/-
US Highway 11	Clinton, Constable, Ellenburg, Chateaugay, Burke, Malone	Clinton, Franklin	1, 2, 5, 6, 25, 46 (Simulation VP 15)	0.3	●	+/-	+/-
State Highway 374	Ellenburg, Chateaugay, Bellmont	Clinton, Franklin	5, 24, 33, 34, 40	0.7	●	+/-	+/-
State Highway 190	Ellenburg, Bellmont	Clinton, Franklin	30	1.3	●	+/-	+/-
County Route 54	Bellmont	Franklin		2.0	●	+	+/-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
County Route 5	Ellenburg, Bellmont	Clinton, Franklin	27, 28 (Simulation VP 10)	2.9	●	+/-	+/-
State Highway 122	Constable, Burke	Franklin		3.7	•	+/-	+/-
Highway 52 (Canada)	Chateaugay, Province of Quebec	Franklin and Canada		5.5	•	+	+/-
State Highway 189	Clinton	Clinton		7.4	•	+/-	-
Recreation Resources							
Local Parks and Playgrounds							
Ponderosa Campground	Chateaugay, Bellmont	Franklin		0.1	●	+	+/-
High Falls Park and Campground	Chateaugay	Franklin	36 (Simulation VP 19)	0.5	●	+/-	+/-
Chateaugay Town Recreational Park	Chateaugay	Franklin		1.0	●	+	+/-
Sellers Field	Burke	Franklin		2.0	●	+/-	+/-
Franklin County Fairgrounds	Malone	Franklin		7.3	•	-	-
Upper Chateaugay Lake Boat Launch	Ellenburg	Clinton		7.3	•	+/-	-
Malone Memorial Recreation Park	Malone	Franklin		7.5	•	-	-
Lakes and Rivers							
Allen Brook	Chateaugay, Burke	Franklin		0.0	●	+/-	+/-
Little Trout River	Constable, Burke, Bellmont	Franklin		0.1	●	+/-	+/-
Chateaugay River	Chateaugay, Burke, Bellmont, Province of Quebec	Franklin and Canada		0.3	●	+/-	+/-
Collins Brook	Chateaugay, Burke, Bellmont, Malone, Province of Quebec	Franklin and Canada		0.4	●	+/-	+/-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
Alder Brook	Burke	Franklin		0.7	●	+/-	+/-
Bailey Brook	Chateaugay	Franklin		1.0	●	+/-	+/-
Nays Brook	Bellmont	Franklin		1.6	●	+	+/-
Boardman Brook	Chateaugay	Franklin		1.6	●	+/-	-
Lower Chateaugay Lake	Ellenburg, Bellmont	Clinton, Franklin	24	1.8	●	+/-	+/-
Marble River	Clinton, Ellenburg, Chateaugay	Clinton, Franklin		2.1	●	+/-	+/-
Wentworth Brook	Bellmont	Franklin		2.1	●	+/-	-
Thurber Brook	Ellenburg, Bellmont	Clinton, Franklin		2.4	●	+/-	+/-
Foster Brook	Bellmont	Franklin		3.1	●	-	-
Trout River	Burke, Bellmont, Malone	Franklin		3.3	●	+/-	-
East Branch Trout River	Bellmont	Franklin		4.0	•	+/-	-
Oak Creek	Constable, Burke	Franklin		4.2	•	+/-	+/-
Middle Branch Trout River	Bellmont	Franklin		4.4	•	-	-
Hinchinbrook Brook	Clinton, Chateaugay, Province of Quebec	Clinton, Franklin, and Canada		4.5	•	+/-	+/-
Flynn Brook	Constable, Burke	Franklin		4.9	•	+/-	+/-
Dry Brook	Clinton	Clinton		5.0	•	+/-	+/-
Harris Brook	Ellenburg, Bellmont	Clinton, Franklin		5.0	•	+/-	+/-
West Branch Trout River	Bellmont	Franklin		5.0	•	+/-	-
McIntosh Creek	Province of Quebec	Canada		5.3	•	+	+/-
Upper Chateaugay Lake	Ellenburg	Clinton		5.4	•	+/-	+/-
Figure Eight Pond	Bellmont	Franklin		5.4	•	-	-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
Bigelow Brook	Ellenburg	Clinton		5.6	•	+/-	-
North Branch Chazy River	Ellenburg	Clinton		5.6	•	-	-
Ingraham Lake	Bellmont	Franklin		5.7	•	-	-
Rocky Brook	Bellmont	Franklin		5.9	•	-	-
Carew Brook	Ellenburg	Clinton		6.4	•	-	-
Griffin Brook	Ellenburg	Clinton		6.6	•	+/-	-
Ingraham Stream	Bellmont	Franklin		6.8	•	-	-
Beaver Pond Brook	Constable	Franklin		7.0	•	+/-	+/-
Lily Pod Pond	Bellmont	Franklin		7.1	•	-	-
Salmon River	Malone	Franklin		7.1	•	-	-
Bell Brook	Bellmont	Franklin		7.2	•	-	-
Brandy Brook	Clinton	Clinton		7.2	•	+/-	+/-
Ballard Pond	Malone	Franklin		7.3	•	-	-
Trails							
Franklin Snowmobilers	Clinton, Chateaugay, Burke, Bellmont, Malone	Clinton, Franklin		0.0	●	+/-	+/-
State Bike Route 11	Clinton, Constable, Ellenburg, Chateaugay, Burke, Malone	Clinton, Franklin	2, 5, 6, 25, 46 (Simulation VP 15)	0.3	●	+/-	+/-
Northern Adirondack Trailbreakers	Clinton, Ellenburg	Clinton		3.2	●	+/-	+/-
NYSDEC Lands							
Franklin 10 State Forest	Chateaugay	Franklin		3.0	●	+	+/-

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
Chateaugay State Fish Hatchery	Chateaugay	Franklin		3.1	●	+/-	+/-
Golf Courses							
None in Study Area							
Schools and Libraries							
Chateaugay Memorial Library	Chateaugay	Franklin		1.6	●	+	+
Chateaugay Central School	Chateaugay	Franklin	40	1.6	●	+	+/-
Franklin Academy High School	Malone	Franklin		7.3	·	-	-
Flanders Elementary School	Malone	Franklin		7.5	·	-	-
Cemeteries							
Bigelow Cemetery	Chateaugay	Franklin		0.2	●	+	-
Saint Patricks Cemetery	Chateaugay	Franklin	4	0.5	●	+	+/-
Bellmont Center Cemetery	Bellmont	Franklin	17 (Sumulation VP 3)	0.5	●	+	+/-
Thayers Corners Cemetery	Burke	Franklin		1.1	●	+	+/-
Atwater Cemetery	Chateaugay	Franklin		1.2	●	+/-	-
Cassidy Road Cemetery	Chateaugay	Franklin	32 (Simulation VP 14)	1.3	●	+	+
Merrill Cemetery	Bellmont	Franklin		1.5	●	+	-
Ridgeway Cemetery	Burke	Franklin		1.5	●	+	+/-
Bunker Hill Cemetery	Bellmont	Franklin		1.6	●	+	-
Brayton Hollow Cemetery	Chateaugay	Franklin		1.6	●	+	-
Mitchell Cemetery	Burke	Franklin		1.8	●	+	+
Brainardsville Cemetery	Bellmont	Franklin		1.9	●	+	+/-
Smith-Green Cemetery	Chateaugay	Franklin		1.9	●	+	+

Visually Sensitive Resource	Location		VP Number[1]	Distance[2]	Distance Zone	Project Visibility	
						+Visible - Not Visible +/- Partially Visible	
	Town	County		Miles from Nearest Turbine	● Foreground ● Midground ● Background	Topographic Viewshed	Topographic & Vegetation Viewshed
East Side Cemetery	Chateaugay	Franklin		2.0	●	+	+/-
Saint George Cemetery	Burke	Franklin		2.6	●	+	+/-
Pike Cemetery	Burke	Franklin		2.6	●	+	+
Burke Center Cemetery	Burke	Franklin		3.3	●	+	+/-
Sandy Knoll Cemetery	Chateaugay	Franklin	43	3.7	•	+	+/-
Howard Cemetery	Burke	Franklin		3.8	•	+	+
Star Road Cemetery	Ellenburg	Clinton		4.6	•	+	+
Morningside Cemetery	Bellmont	Franklin		4.9	•	+	-
West Hill Cemetery	Ellenburg	Clinton		5.3	•	-	-
Notre Dame Cemetery	Malone	Franklin		7.0	•	-	-
Morningside Cemetery	Malone	Franklin		7.1	•	+/-	+/-
Kimpton Cemetery	Malone	Franklin		7.5	•	-	-
Hospitals							
Bessette Health Center	Chateaugay	Franklin		0.7	●	+	+
Other Local Resources							
St. Patricks Church	Chateaugay	Franklin		1.4	●	+	+
Chateaugay Brainersville United Methodist Church	Chateaugay	Franklin		1.5	●	+	+
Burke Methodist Church	Burke	Franklin		2.2	●	+	+
St. George Roman Catholic Church	Burke	Franklin	9 (Simulation VP 26)	2.2	●	+	+/-

[1] If no viewpoint (VP) number is indicated, no photo was obtained during fieldwork. These viewpoint numbers correspond to the fieldwork conducted for the SVIA, as shown in Figure 7 and Appendix C, and do not reflect the numbering used for simulations. Simulated viewpoint numbers are included in parentheses.

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

[3] Visual impacts to properties eligible for inclusion in the National Register of Historic Places are being evaluated in consultation with the NYSOPRHP in support of a historic resources survey report. Therefore, visual impacts to these resources are not addressed in this SVIA.

5.5 Impact Summary

Viewshed analysis, considering the screening provided by both topography and mapped forest vegetation, indicates that some portion of one or more proposed wind turbines may potentially be visible from approximately 22.7% of the visual study area. Areas with potential visibility generally consist of agricultural fields/open areas in the central and northern portions of the visual study area. Project visibility in the southern portion of the visual study area is very limited due to the extent of forestland, with the exception of Lower Chateaugay Lake and a few small open areas that are anticipated to have views of the Project. Viewshed results indicate that potential nighttime visibility of FAA obstruction warning lights will have a very similar pattern and extent to that of daytime visibility, covering approximately 19.4% of the visual study area.

In addition, viewshed analysis suggests that views of the Project are likely to be fully screened from approximately one third of the identified visually sensitive resources that occur within the visual study area. However, open or partially screened views will be available from many of the identified resources, including the following visually sensitive resources of statewide significance: the Adirondack Forest Preserve, Almanzo Wilder Homestead, US Inspection Station in Chateaugay, Chazy Highlands Wild Forest, Chateaugay River, Military Trail Scenic Byway and State Routes 374 and 190. Adirondack Park Scenic Vista 1 also occurs within the visual study area, but views of the Project from this resource are anticipated to be fully screened by intervening topography.

Based on a comparison of the simulations prepared for the original Project, with those prepared for the revised Project, it appears that overall Project visibility and visual impact will be comparable to, or slightly reduced from that reported in the original VIA. The increased height of the currently proposed turbines is essentially imperceptible, and to the extent that it has any effect, it is offset by the wider spacing and reduced number of turbines currently proposed. The revised evaluation of the updated simulations presented in this SVIA indicates that the revised Project would have a low impact on visual quality at six of the selected viewpoints, a moderate impact at two viewpoints and a high impact at one viewpoint. This represents a slight decrease in overall impact when compared to the results presented in the original VIA. However, the following overall conclusions presented in the VIA remain valid:

1. Locations with foreground (less than 0.5 mile) views of the Project turbines would likely experience moderate to high visual impacts. Even with some tree screening in the immediate foreground, turbines would likely be visible and would create strong contrast with the existing landscape. Project impacts would be higher at locations where the existing visual quality is high and the viewer exposure/sensitivity is high, and would tend to be moderate elsewhere.

2. Impacts at locations with mid-ground (0.5 to 3.5 miles) views of Project facilities would typically range from low to moderate, depending on the degree of screening and the existing level of visual quality.

3. The Project would have low to negligible impact on visual quality in areas with background (greater than 3.5 miles) views of the Project facilities because at such distances the turbines would typically be well screened, blend in with the sky, and/or not be prominent features of the landscape.

4. The predominant visual character of the area is that of a working agricultural and forest landscape. While there are localized exceptions, the proposed Project generally appears to be visually compatible with this type of a visual setting.

6.0 MITIGATION

Section 6.0 of the VIA includes a discussion of potential mitigation measures, much of which still remains relevant. However, as a result of modifications to the Project, the following additional/updated information is provided.

Relocation. Due to the areal extent of the Project, the number of individual turbines, and the requirement that turbines be sited on the highest ground possible to efficiently harness the wind, turbine relocation generally has not significantly altered the Project's visual impact. In many locations that offer open views, numerous turbines are likely to be visible and relocation of individual machines has had little effect on the overall visual impact. Consistent with the findings of the VIA and the SVIA, additional turbine relocation would generally not be effective in mitigating visual impacts.

Low Profile. The currently proposed turbines are substantially taller than those evaluated in the original VIA. The increase in visibility resulting from the use of taller turbines is discussed in Sections 5.1, 5.2 and 5.5. However, this taller height allows for a Project with 30% fewer turbines. As noted in the VIA, several studies have concluded that people tend to prefer fewer larger turbines to a greater number of smaller ones (Thayer and Freeman, 1987; van de Wardt and Staats, 1988). The visual impact of the electrical collection system has been minimized by placing almost all of the lines underground rather than on overhead poles.

Downsizing. As noted above the Project has been downsized from its originally proposed size of 53 turbines to the currently proposed total of 37 turbines (a 30% reduction). While further reduction in the number of turbines could potentially reduce the visual impact from certain viewpoints, the loss of generating capacity would reduce the desirable economic and environmental benefits of the Project, and would likely provide only a marginal reduction of the visual impact of the Project.

Lighting. Turbine warning lights will be kept to the minimum number, and will utilize the longest allowable off-cycle allowed by the FAA.

Offsets. As noted in the VIA, correction of an existing aesthetic problem within the viewshed is a viable mitigation strategy for projects that result in significant adverse visual impact. As noted previously in this SVIA, the Applicant is undertaking additional consultation with NYSOPRHP regarding the Project's potential visual effects on historic resources. Mitigation for impacts to historic properties typically consist of projects that benefit historic properties and/or enhance the public's appreciation of historic resources to offset potential impacts to historic properties resulting from the introduction of wind turbines into their visual setting. Mitigation projects that have been proposed for other wind energy projects in New York State have included activities such as additional historic resources surveys, NRHP

nominations, monetary contributions to historic resource preservation and restoration causes, development of heritage tourism promotional materials, development of educational materials and lesson plans, and development of public history materials, such as roadside markers. In the event that it is determined that cultural resources mitigation is necessary, the Applicant will work with NYSORPHP and the Lead Agencies to define appropriate mitigation projects that will benefit the local community.

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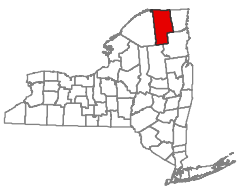
Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont, Franklin County, New York

Figure 1: Regional Project Location

August 2015

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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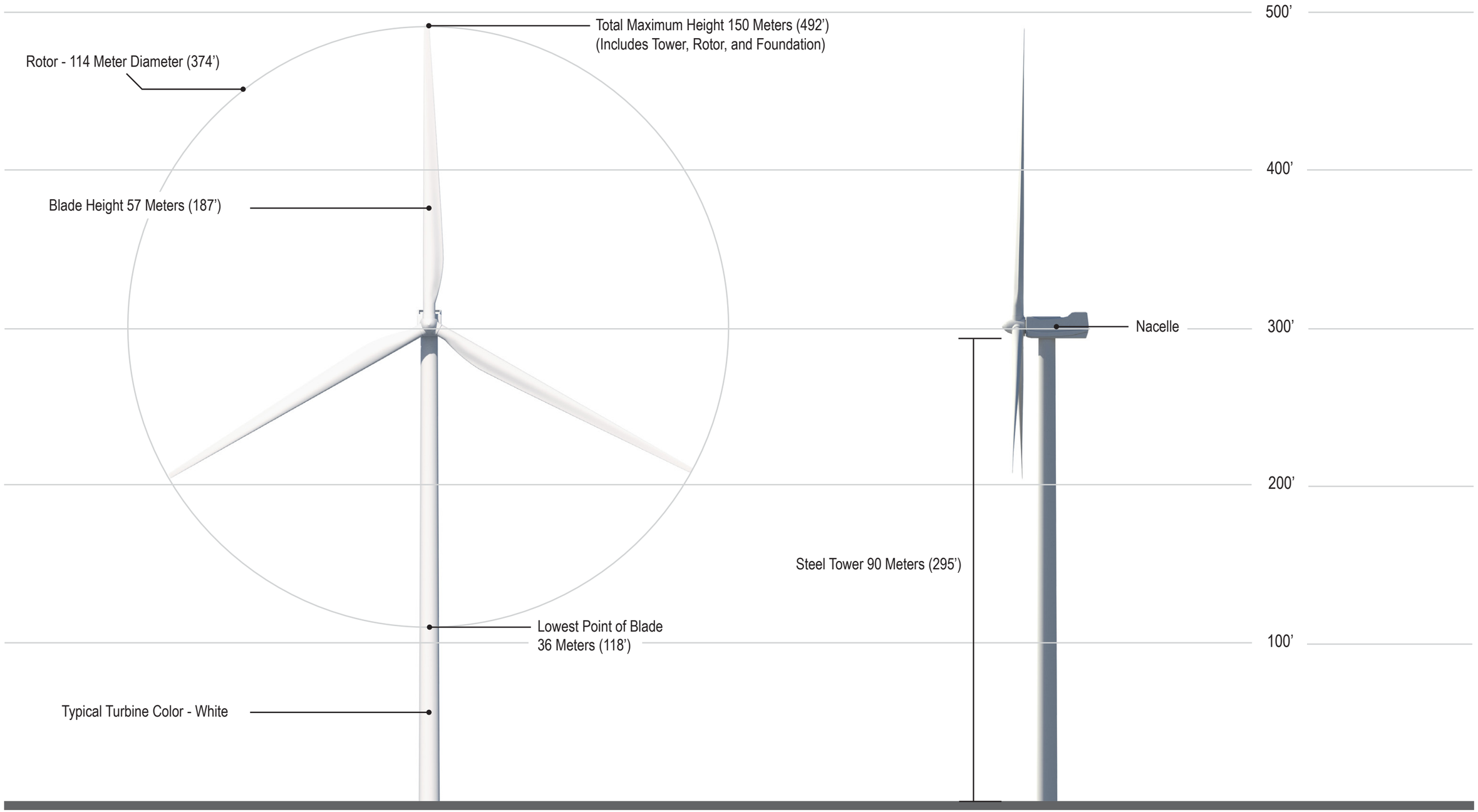

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Figure 2: Computer Model of Proposed Wind Turbine; Gamesa G114 - 2.0
August 2015

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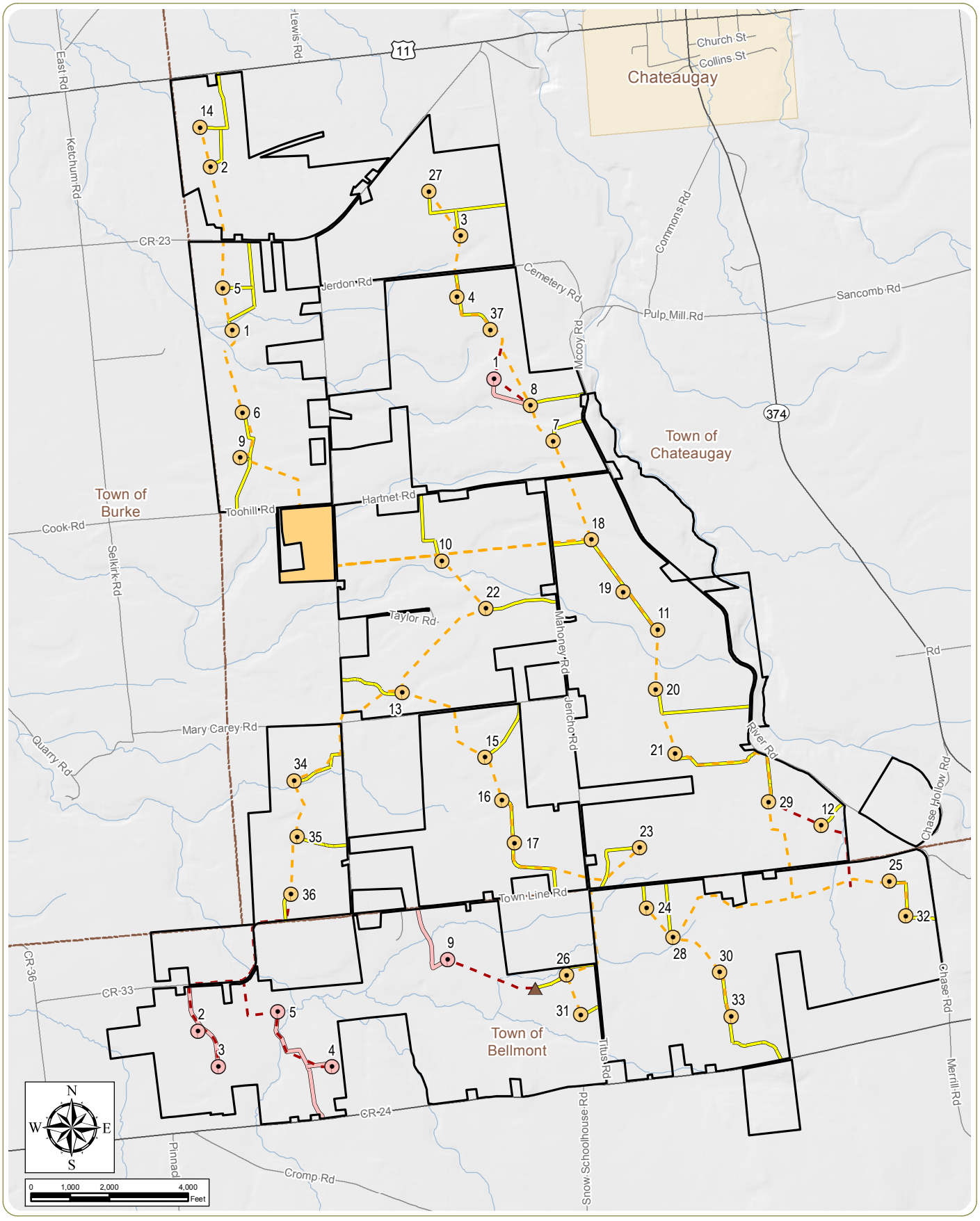

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 3: Project Layout

August 2015

Notes: 1. Basemap: Hillshade derived from USGS digital elevation model data.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Alternate Wind Turbine
- Met Tower
- Buried Collection Line
- Alternate Collection Line
- Access Road
- Alternate Access Road
- Substation Parcel
- Project Site
- Town Boundary

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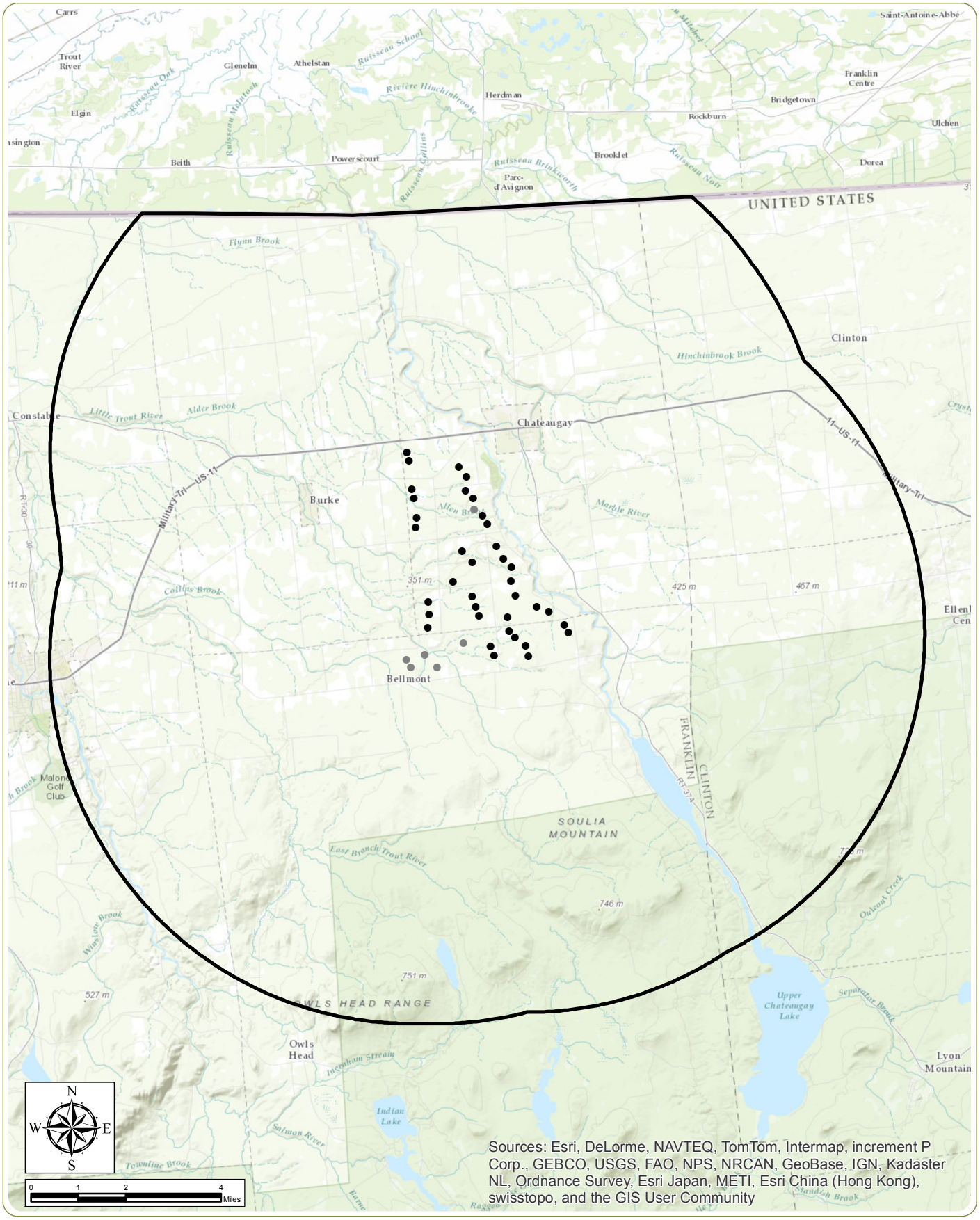

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Visual Study Area

August 2015

Notes: 1. Basemap: ESRI ArcGIS Online "World Topo Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area

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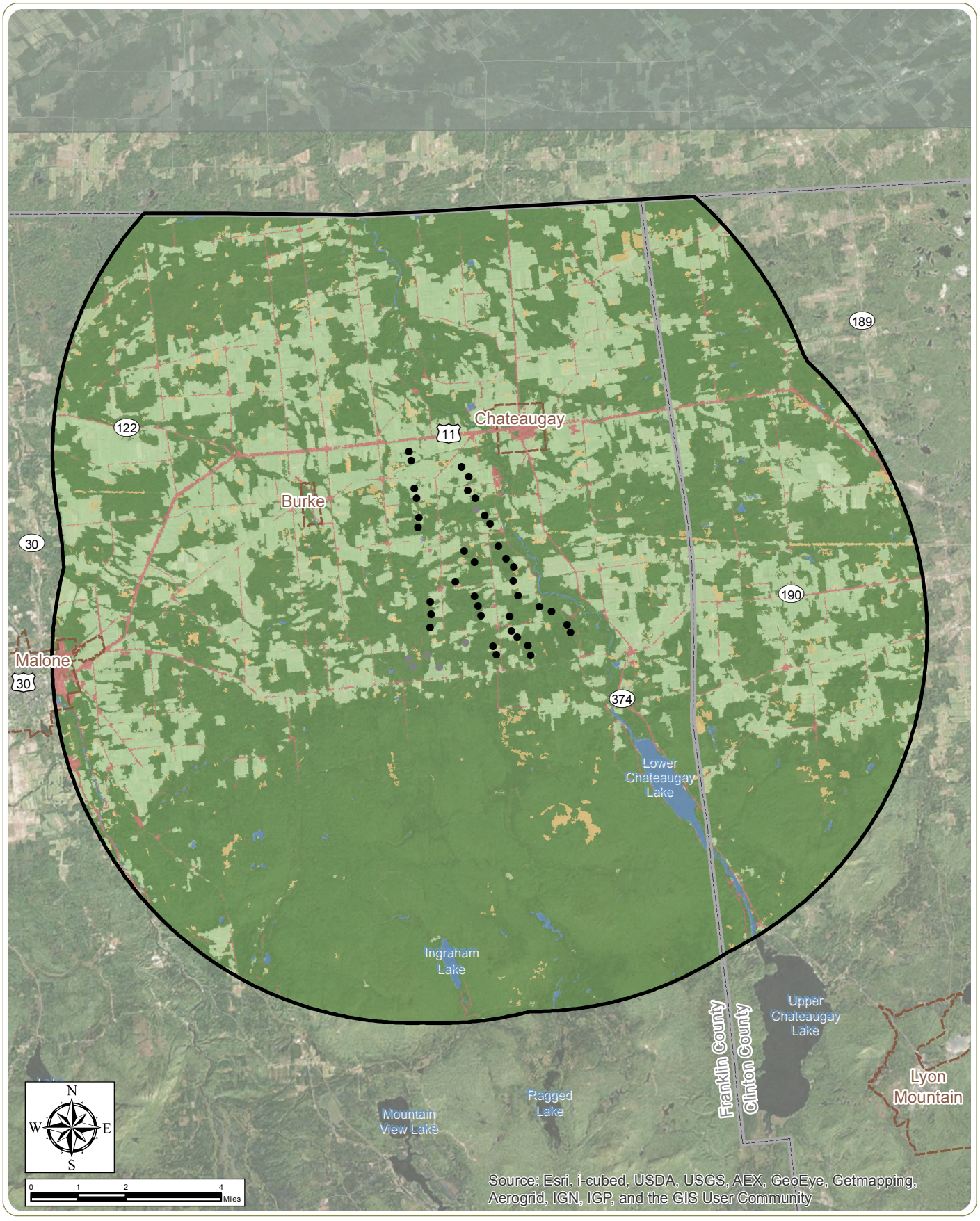

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 5: Study Area Land Cover

August 2015

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service and the 2011 National Land Cover Database (NLCD). 2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area
- County Boundary

2011 NLCD Land Cover

- Developed
- Forest
- Open/Agricultural
- Shrubland
- Water

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Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 6: Visually Sensitive Resources

August 2015

- Wind Turbine
- Alternate Wind Turbine
- Hamlet
- School
- Cemetery
- Church
- Library
- Hospital
- Scenic Vista
- National River Inventory
- Adirondack Scenic Corridor
- NYS Scenic Byway
- Bike Route
- Snowmobile Trail
- NYSDEC Land
- Adirondack Forest Preserve
- Chazy Highlands Wild Forest
- Local Park
- NRHP-Listed Site
- Visual Study Area
- Town Boundary
- County Boundary

Notes:
1. Basemap: ESRI StreetMap North America, 2008.

2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 7: Viewpoint Location Map

August 2015

- VIA/SVIA Simulated Viewpoint
- SVIA Viewpoint
- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area

Notes:

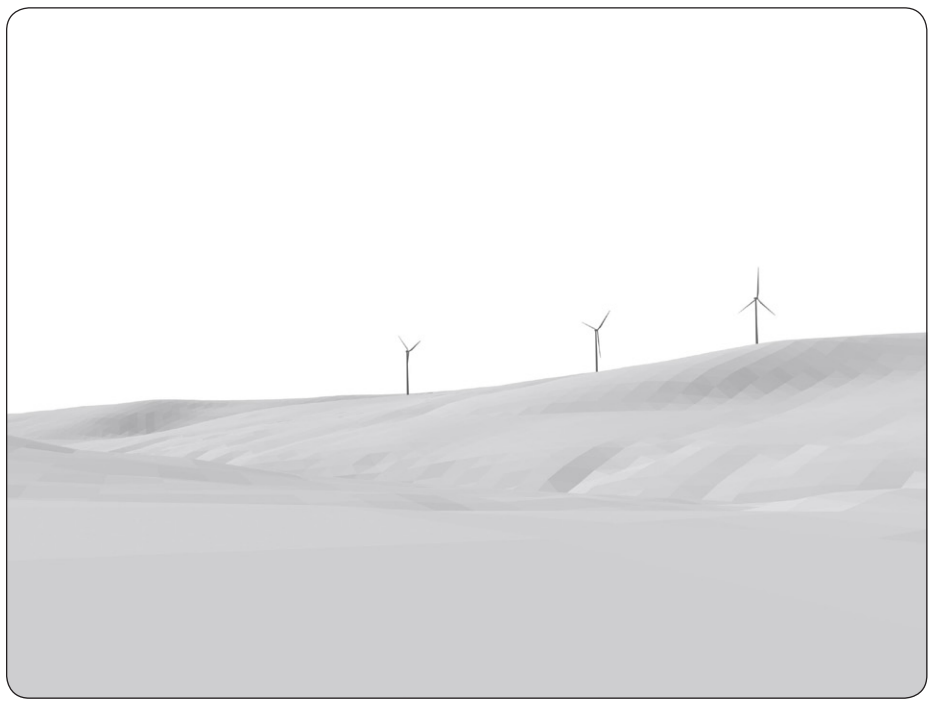
1. Viewpoint numbering in red represents the numbering assigned in the VIA report and the numbering that is used for the simulations presented in this SVIA. The numbering in blue represents the viewpoint numbers assigned during field work associated with this SVIA and corresponds to the numbering assigned in the photo log and field notes presented in Appendix C as well as in Table 4 of this SVIA.

2. Basemap: ESRI ArcGIS Online "USA Topo Maps" Map Service.

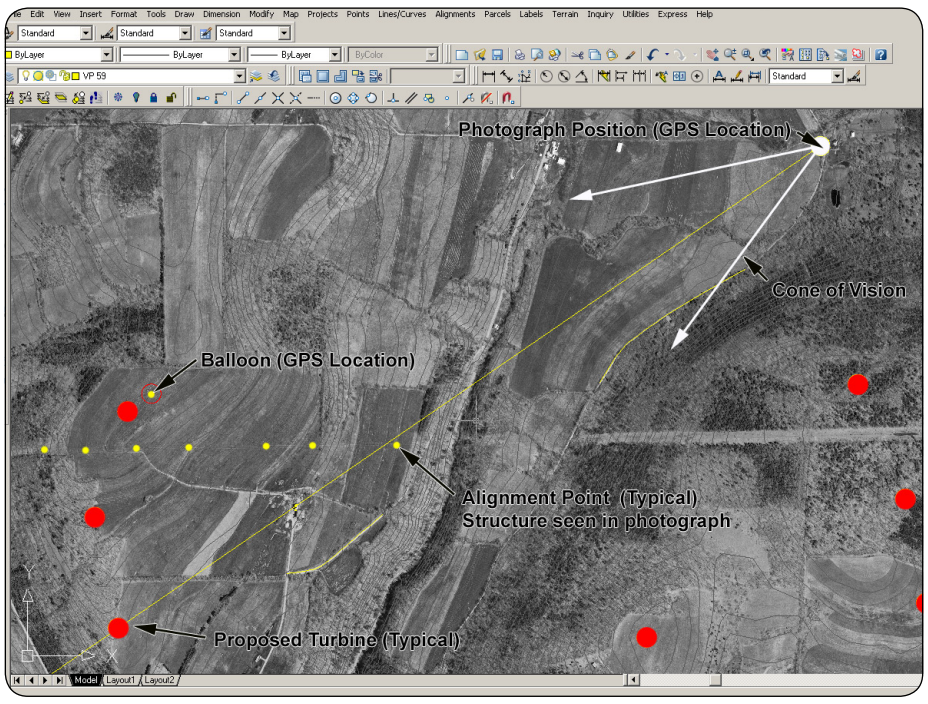
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

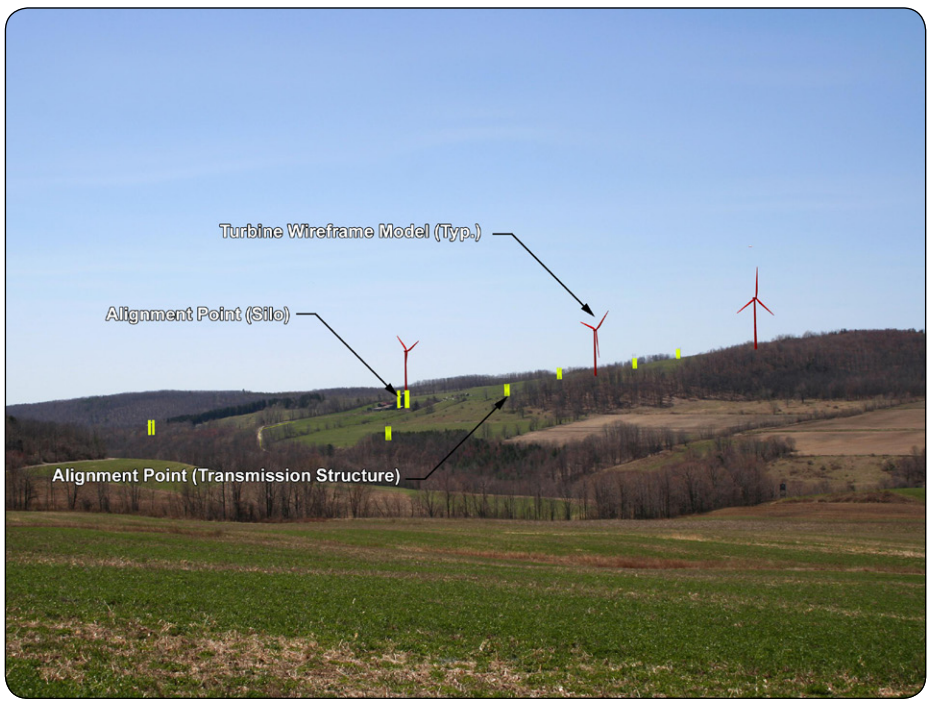
Photos are selected to illustrate typical views of the proposed project that will be available to representative viewer/user groups from the major landscape similarity zones and sensitive sites within the study area.



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 2015® 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.

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 8: Visual Simulation Methodology

August 2015

Note: Images in this figure are not from the Jericho Rise Wind Farm

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Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 9: Viewshed Analysis
Sheet 1 of 4: Blade Tip Visibility Based on Topography Only

August 2015

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area
- City/Village Boundary
- Town Boundary
- County Boundary

Potential Visibility

- 1-10 Turbines Visible
- 11-20 Turbines Visible
- 21-30 Turbines Visible
- 31-40 Turbines Visible
- 41-43 Turbines Visible

Notes:
1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service.
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 a maximum blade tip height of 150 meters.
4. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 9: Viewshed Analysis
Sheet 2 of 4: Blade Tip Visibility Based on Topography and Vegetation

August 2015

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area
- City/Village Boundary
- Town Boundary
- County Boundary

Potential Visibility

- 1-10 Turbines Visible
- 11-20 Turbines Visible
- 21-30 Turbines Visible
- 31-40 Turbines Visible
- 41-43 Turbines Visible

Notes:
1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service.
2. Potential turbine visibility based on topography and potential screening by mapped forest vegetation (with an assumed height of 40 ft).
3. Viewshed analysis based on a maximum blade tip height of 150 meters.
4. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 9: Viewshed Analysis
Sheet 3 of 4: FAA Warning Light Visibility Based on Topography Only

August 2015

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area
- City/Village Boundary
- Town Boundary
- County Boundary

Potential Visibility

- 1-10 Lights Visible
- 11-20 Lights Visible
- 21-30 Lights Visible
- 31-40 Lights Visible
- 41-43 Lights Visible

Notes:
1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service.
2. 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 an approximate FAA light height of 100 meters.
4. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 9: Viewshed Analysis
Sheet 4 of 4: FAA Warning Light Visibility Based on Topography and Vegetation

August 2015

- Wind Turbine
- Alternate Wind Turbine
- Visual Study Area
- City/Village Boundary
- Town Boundary
- County Boundary

Potential Visibility

- 1-10 Lights Visible
- 11-20 Lights Visible
- 21-30 Lights Visible
- 31-40 Lights Visible
- 41-43 Lights Visible

Notes:
1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service.
2. Potential FAA warning light visibility based on topography and potential screening by mapped forest vegetation (with an assumed height of 40 ft).
3. Viewshed analysis based on an approximate FAA light height of 100 meters.
4. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

Existing View

*VIA Simulation (2008)

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 10 : Viewpoint 3 - View from CR 24 near the hamlet of Belmont Center

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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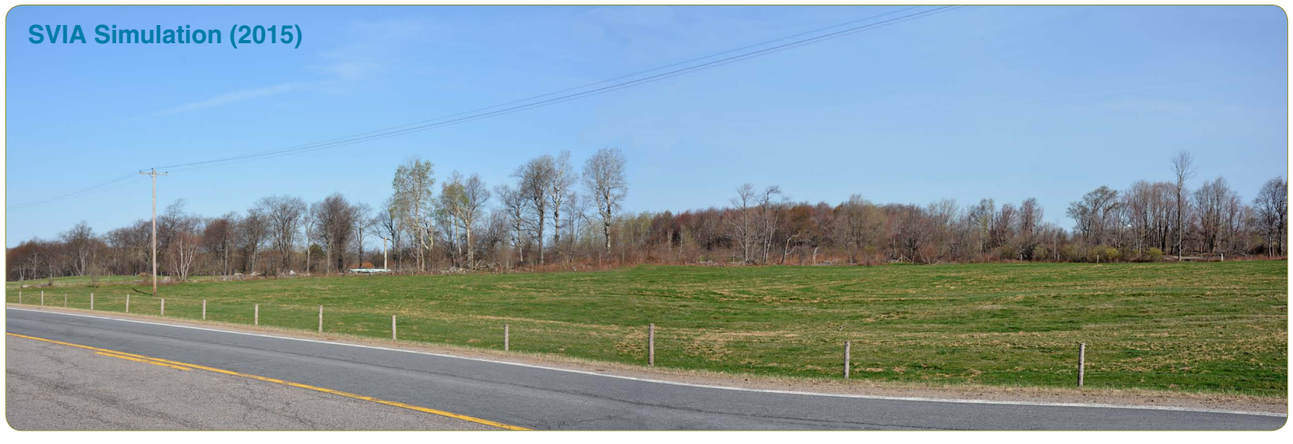

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Figure 11 : Viewpoint 10 - View from CR 54 near the hamlet of Harrigan
August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

***VIA Simulation (2008)**

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 12 : Viewpoint 14 - View from the intersection of Cassidy Road and Number 5 Road, north of the hamlet of Brainardsville

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

***VIA Simulation (2008)**

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 13 : Viewpoint 15 - View from U.S. Route 11, approximately one mile east of the Village of Chateaugay

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

*VIA Simulation (2008)

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 14 : Viewpoint 19 - View from the entrance of High Falls Park off River Road, outside the Village of Chateaugay

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

*VIA Simulation (2008)

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 15 : Viewpoint 20 - View from the intersection of River Road and Chase Road, outside the Village of Chateaugay

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Figure 16 : Viewpoint 26A - View from Field Road at the south edge of the Village of Burke
August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

***VIA Simulation (2008)**

SVIA Simulation (2015)

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Figure 17 : Viewpoint 31 - View from the intersection of Callahan and Covey Roads
August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Existing View

***VIA Simulation (2008)**

SVIA Simulation (2015)

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 18 : Viewpoint 34 - View from Childs Road near the Town of Malone

August 2015

*VIA Simulations (2008) prepared by Tetratech in Original Visual Impact Assessment

JERICHO RISE WIND FARM

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Appendix A

Viewshed/Sensitive Site Map

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix A: Visually Sensitive Resources and Viewshed Analysis

August 2015

- Wind Turbine
- Alternate Wind Turbine
- School
- Cemetery
- Church
- Library
- Hospital
- Hamlet
- Scenic Vista
- Bike Route
- Adirondack Scenic Corridor
- Snowmobile Trail
- National River Inventory
- NYS Scenic Byway
- NYSDEC Land
- Adirondack Forest Preserve
- Chazy Highlands Wild Forest
- NRHP-Listed Site
- Local Park
- Potential Project Visibility
- Visual Study Area
- Town Boundary
- County Boundary

Notes:
1. Basemap: ESRI StreetMap North America, 2008.
2. Potential turbine visibility based on topography and potential screening by mapped forest vegetation (with an assumed height of 40 ft).
3. Viewshed analysis based on a maximum blade tip height of 150 meters.
4. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Appendix B

Full-Sized Simulations

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 3 - Existing view and simulation from CR 24 near the hamlet of Belmont Center

August 2015

JERICHO RISE WIND FARM

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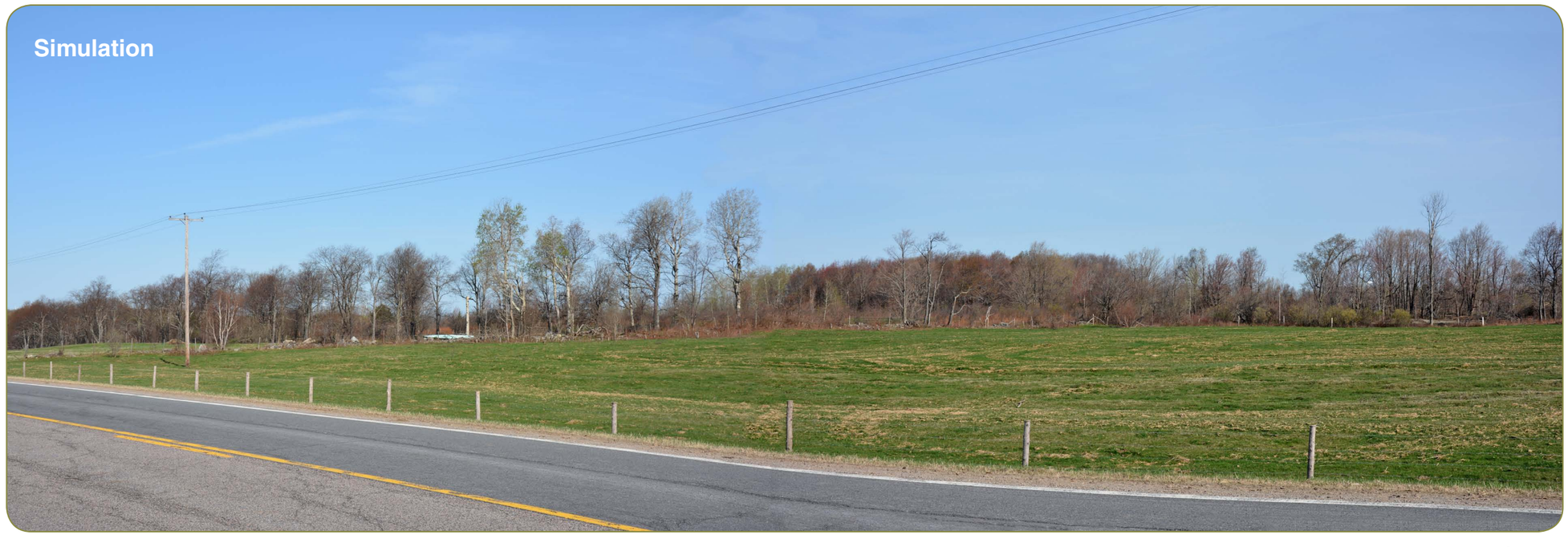

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Appendix B: Viewpoint 10 - Existing view and simulation from CR 54 near the hamlet of Harrigan
August 2015

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Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 14 - Existing view and simulation from the intersection of Cassidy Road and Number 5 Road, north of the hamlet of Brainardsville

August 2015

JERICHO RISE WIND FARM

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Existing View

Simulation

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 15 - Existing view and simulation from U.S. Route 11, approximately one mile east of the Village of Chateaugay

August 2015

JERICHO RISE WIND FARM

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Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 19 - Existing view and simulation from the entrance of High Falls Park off River Road, outside the Village of Chateaugay

August 2015

JERICHO RISE WIND FARM

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Existing View

Simulation

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B : Viewpoint 20 - Existing view and simulation from the intersection of River Road and Chase Road, outside the Village of Chateaugay

August 2015

JERICHO RISE WIND FARM

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Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 26A - Existing view and simulation from Field Road at the south edge of the Village of Burke

August 2015

JERICHO RISE WIND FARM

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Existing View

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 31 - Existing view from the intersection of Callahan and Covey Roads

August 2015

JERICHO RISE WIND FARM

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Simulation

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Appendix B: Viewpoint 31 - Simulation from the intersection of Callahan and Covey Roads

August 2015

JERICHO RISE WIND FARM

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Existing View

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Appendix B: Viewpoint 34 - Existing view from
August 2015

JERICHO RISE WIND FARM

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Simulation

Jericho Rise Wind Farm
Towns of Chateaugay and Bellmont - Franklin County, New York
Appendix B: Viewpoint 34 -Simulation from
August 2015

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Appendix C

Photo Log and Field Notes

Viewpoint - 01
Route 11, Town of Malone

Viewpoint - 02
Route 11, Town of Burke

Viewpoint - 03
Route 11, Town of Chateugay

Viewpoint - 04
St. Patrick Cemetery

Viewpoint - 05
Route 11, Town of Chateaugay

Viewpoint - 06
VP15 Reshot, Route 11

Viewpoint - 07
VP31 Reshot, CR-29

Viewpoint - 08
Callahan Road

Viewpoint - 09
VP26 Reshot, outside Town of Burke

Viewpoint - 10
Pikeville Road

Viewpoint - 11
CR-33/Townline Road

Viewpoint - 12
CR-33/Townline Road

Viewpoint - 13
Legacy Road

Viewpoint - 14
Jericho Road

Viewpoint - 15
Harnett and Jericho Road

Viewpoint - 16
Harnette Road

Viewpoint - 17
Reshot of VP3

Viewpoint - 18
End of Pinnacle Road

Viewpoint - 19
Unknown access road

Viewpoint - 20
Cromp Road

Viewpoint - 21
Banker Hill Road

Viewpoint - 22
Blair Kiln Road

Viewpoint - 23
Drew Lane

Viewpoint - 24
Route 374

Viewpoint - 25
Route 11

Viewpoint - 26
Route 190

Viewpoint - 27
Old Route 190

Viewpoint - 28
Reshot of VP10 - Old Route 190

Viewpoint - 29
Harringan Road and Rupert Way

Viewpoint - 30
Harringan Road and CR-190

Viewpoint - 31
County Line Road and Number 5 Road

Viewpoint - 32
Reshot of VP14 - Number 5 Road

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Cooper Road and CR-374

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CR-374

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Character shots of existing wind turbine site

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VP19 Reshot - High Falls Park

Viewpoint - 37
VP20 Reshot

Viewpoint - 38
View from St. Joseph's Cemetery

Viewpoint - 39
VP34 Reshot

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Chateaugay Central School

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