



**Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
2 August 2006**

**DATE:** 2 August 2006  
**TO:** Richard A. Jack, Supervisor, and Members, Town of Stark Town Board  
Members, Town of Warren Board  
**FROM:** Patricia M. O'Donnell, FASLA, AICP, Principal, Heritage Landscapes  
Prepared for Otsego 2000 & Advocates for Stark  
**REVIEW:** Appendix F: Visual Impact Assessment  
Appendix H: Phase 1A Cultural Resources Survey and 1B Archaeological Survey  
& Historic Architectural Survey  
**PROJECT:** Jordanville Wind Power Project Draft Environmental Impact Statement

From the basis of our expertise as preservation landscape architects and planners, Heritage Landscapes provided testimony at the hearing on July 27, 2006, and carried out a focused review of the summary elements of the DEIS that relate to visual assessment and cultural resource and the two full appendix sections of the Draft Environmental Impact Statement (DEIS), addressing these topics for the Jordanville Wind Power Project:

- Section 3.5 Aesthetic/Visual Resources and Appendix F: Visual Impact Assessment, Jordanville Wind Power Project, Towns of Stark and Warren Herkimer County, New York, prepared by Environmental Design Research, P.C., May 16, 2006
- Section 3.6 Historic, Cultural, and Archeological Resources and Appendix H: Cultural Resources Survey, prepared by John Milner Associates, Inc., December 2005

This review by Heritage Landscapes is focused on our professional skills in the identification, documentation, assessment, preservation treatment and management of our commonwealth of public landscapes for the benefit of this and future generations. As principal, my expertise derives from over three hundred projects undertaken over the past 19 years to address various aspects of historic landscape preservation, stewardship and management. We have recently conducted DEIS reviews for the cultural landscapes of Somers and North Castle, NY. I append my one-page resume and the one-page description of my firm, Heritage Landscapes, Preservation Landscape Architects & Planners. Further information is available at [www.heritagelandscapes.com](http://www.heritagelandscapes.com). In addition to my professional expertise, I was born in Buffalo, New York and my family roots are in Medina and Albion, New York, two small, rural communities near Lockport and Lake Ontario. As a result I have a broad familiarity with the landscapes of New York State. We are fully qualified to carry out this DEIS review with authority.

## ***HERITAGE LANDSCAPES CONCLUSIONS***

In summary our review indicates that the Jordanville Wind Power Project Draft Environmental Impact Statement is incomplete as scoped and flawed as executed. In order to be complete this DEIS must be enlarged to address the project impacts and the mitigation of those impacts to significant cultural and historical landscapes within the Mohawk Valley Heritage Area, along the New York State Scenic Byway Route 20 corridor and within numerous designated, eligible and potentially eligible National Register historic districts and rural historic districts in the project area, abutting townships, counties and areas, up to a distance of 15 miles from the proposed intensive Jordanville Wind Power Project, which is sited on a high plateau area that is visible from significant distances.

## ***HERITAGE LANDSCAPES DEIS REVIEW DISCUSSION***

### ***A. PROJECT OVERVIEW***

The Jordanville Wind Power Project that is the subject of this DEIS includes approximately 6,225 acres of land along an elevated plateau in the Towns of Stark and Warren, New York, where a project of 75 wind turbines of 122 meters (approximately 399-400 feet) in height is proposed. The proposed project site is spread out over an area that is approximately 7 miles by 3.5 miles. Each individual tower is noted to include “an 87-meter (about 285-foot) diameter, three bladed rotor mounted on a 78-meter (255-foot) pole tall steel tower” (Appendix H, Phase 1a, page 1, Introduction).

While the proposed project is specifically located within the jurisdiction of Stark and Warren, the magnitude and scale of this large project produces visual impacts beyond town boundaries to the historic and scenic landscapes in adjacent townships and counties. We address impacts both within and beyond the specific proposed project location. The DEIS studied impacts only to the five-mile and eight mile radius from the project which is insufficient to address the larger impacts and mitigation of impacts from this very large project. As a result, Otsego 2000 and Advocates of Stark have requested this targeted DEIS review, concerning the visual impacts and cultural resources of the affected areas, go beyond those addressed in the DEIS to include:

- Glimmerglass Historic District, listed on the National Register of Historic Places
- Lindsay Patent Rural Historic District, listed on National Register of Historic Places
- Waggoner Patent Historic District, determined eligible for listing on the National Register of Historic Places
- Potential Jordanville Rural Historic District, requiring a Determination of Eligibility
- New York State Route 20 Scenic Byway, 123 mile corridor through 7 counties
- Mohawk Valley Heritage Corridor
- Erie Canal National Heritage Corridor
- Adirondack Park

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 3 of 21

This review addresses resource identification, potential impacts and proposed mitigation of impacts from the proposed Jordanville Wind Power Project, with attention to Jordanville as well as the adjacent historic districts and scenic byway listed above. This review specifically references Section 3.5 and Appendix F: Visual Impact Assessment and Section 3.6 and Appendix H: Cultural Resources Survey of the DEIS.

For this review there are three firms working in coordination.

- Heritage Landscapes provides historical, cultural and scenic landscape expertise for review of the DEIS
- Stone Environmental studies and generates GIS maps for the areas in question both within and outside of the 8-mile buffer zone used in the DEIS
- Xtra-Spatial Productions develops night lighting photomontage from field image taken by David Healy

Each of these components is used in this discussion. An on-site review was carried out conducted in coordination with David Healy, of Stone Environmental, Inc. in mid-July. Heritage Landscapes subsequently reviewed the photomontage prepared by James A. Zack, President of Xtra-Spatial Productions, LLC, Saratoga Springs, NY. The on site visual impact assessment overview of the Glimmerglass Historic District, Route 20 Scenic Byway, Lindsay Patent Rural Historic District, Waggoner Patent Rural Historic District and Jordanville project area was carried out on July 19 and based upon the information provided in the Jordanville Wind Power Project DEIS and in the related *Viewshed Analysis Visibility Study* mapping of a 15 mile area from the project by Stone Environmental Inc. Expanding the mapping presented in the DEIS to a distance of 15 miles aids in quantifying and discussing the potential impacts of the project at a larger scale. GIS maps were developed based on varying nacelle heights, blade height, topography, and tree canopy. This data and Heritage Landscapes reading and assessment of DEIS Sections 3.5 and 3.6 and Appendices F and H form the basis of this statement.

In conducting this review, Heritage Landscapes focuses on specific questions to be answered that include:

- What is the importance of the cultural landscapes in the project region?
- What are the potential impacts of the wind power project to these designated, listed, eligible and to be assessed cultural landscapes?
- What is addressed within the Jordanville DEIS scope and what is missing in terms of resources, impacts and mitigations? Is the DEIS complete or incomplete as scoped? Are cultural resources and visual resources left out of the DEIS that should be included in the impact assessments?

***B. WHAT IS THE IMPORTANCE OF THESE MIDDLE NEW YORK STATE CULTURAL LANDSCAPES?***

Before addressing the components of Sections 3.5 and 3.6 and Appendix F and H of the DEIS, it is useful to understand the value of the historical and scenic places that may be impacted by the Jordanville Wind Power Project. The landscapes of Otsego and Herkimer Counties are cultural landscapes of historic and scenic value. A cultural landscape, as defined by the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, is “a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.” This federal publication goes further and defines four types of cultural landscapes—historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes. A historic vernacular landscape is one that “evolved through use by the people whose activities or occupancy shaped it. Through social or cultural attitudes of an individual, a family, or a community, the landscape reflects the physical, biological, and cultural character of everyday lives. Function plays a significant role in vernacular landscapes. This can be a farm complex or a district of historic farmsteads along a river valley. Examples include rural historic districts and agricultural landscapes.” Given this definition, the majority of the land around the Jordanville Wind Power Project can be categorized as a historic vernacular landscape and a number of these landscapes are designated historic districts while others, particularly the project area itself, are potentially eligible for historic district designation in their current state.

There are four designated historic districts noted wholly or partially within the project area in Appendix H, Management Summary. These are:

- Three districts in Richfield Springs to include Church Street, West Main Street and East Main Street
- North end of the Glimmerglass Historic District

Additionally, Section 3.5 of the DEIS briefly mentions the Lindsay Patent Rural Historic District, as located outside of the 5-mile project radius (Section 3.5.1.3, page 87). The “not yet listed as a designated scenic byway, State Route 20 (8 miles of which bisect the southern portion of the visual study area)” is also mentioned as part of the 5-mile project radius (Section 3.5, page 88). This last statement is incorrect as Route 20 is officially recognized by the state of New York as a scenic byway and should receive more discussion in the DEIS.

In addition to the historic districts identified within the 5 and 8-mile turbine buffer zone and the historic districts and scenic byway beyond that zone, all noted properties have significant historic and scenic values that are potentially impacted by the proposed Jordanville Wind Power Project. In short, the Glimmerglass Historic District, listed on the National Register of Historic Places, contains 15,000 acres of land featuring Otsego Lake, the village of Cooperstown, Glimmerglass

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 5 of 21

State Park and Hyde Hall (a National Historic Landmark), Thayer Farm, and the undeveloped and conserved Clark Foundation property along the east side of the lake. As one of the largest historic districts in the state of New York, it is known for being one of the earliest picturesque landscapes in the nation, first identified as such in 1818. The area was also home to famed author James Fenimore Cooper and the father of baseball, Abner Doubleday. The Glimmerglass Historic District offers different levels of landscape in terms of scale from lake edge, to wooded hills, to distant views and vistas of adjacent lands, including the escarpment proposed for siting of the Jordanville Wind Power Project.

Lindesay Patent Rural Historic District, listed on the National Register, is a cohesive agricultural setting for historic significance in the areas of settlement, community development, transportation, agriculture, industry, and architecture. Dating to 1738, the 9200-acre district was one of the first permanent European settlements in the area and is characterized by long, 100-acre lots with a grid of access roads. The land patterns exhibited and organize the landscape today have survived since the 18<sup>th</sup> century. The Lindesay Patent Rural Historic District is also one of New York's largest historic vernacular landscapes.

The Waggoner Patent Historic District, determined eligible for listing on the National Register, contains a large portion of working agricultural land and three rural hamlets. The agricultural land is representative of a 200-year evolution of agriculture and practices of land division, land use, and building placement within the region. The original plat and land divisions are evident in the landscape today along with an intact 18<sup>th</sup> and 19<sup>th</sup> century road system. Other characteristics of the Waggoner Patent Historic District include rolling topography, limestone geology, farmstead clustering, and a patchwork arrangement of fields, pastures, meadows, and woodlots, fences, hedgerows, and tree lines.

These Otsego County historic districts are listed on the National Register for several areas of significance to include literature, exploration and settlement, landscape architecture, architecture, entertainment and recreation, conservation and social history. For additional information, the three summary listings taken from the National Park Service National Register of Historic Places website are:

**Glimmerglass Historic District**

Historic Significance: Person, Architecture/Engineering, Event

Architect, builder, or engineer: multiple

Architectural Style: Mid 19th Century Revival, Early Republic

Historic Person: Cooper, James Fenimore

Area of Significance: Literature, Exploration/Settlement, Landscape Architecture, Architecture, Entertainment/Recreation, Conservation, Social History

Period of Significance: 1700-1749, 1750-1799, 1800-1824, 1825-1849, 1850-1874, 1875-1899, 1900-1924, 1925-1949

Owner: Private , Local Gov't , State , Federal

Historic Function: Agriculture/Subsistence, Domestic, Landscape, Recreation And Culture

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 6 of 21

Historic Sub-function: Agricultural Fields, Animal Facility, Camp, Fishing Facility Or Site, Hotel, Outdoor Recreation, Single Dwelling

Current Function: Agriculture/Subsistence, Domestic, Landscape, Recreation And Culture

Current Sub-function: Agricultural Fields, Animal Facility, Camp, Fishing Facility Or Site, Hotel, Outdoor Recreation, Single Dwelling

#### Cooperstown Historic District

Historic Significance: Architecture/Engineering, Person, Event

Architect, builder, or engineer: Multiple

Architectural Style: Italianate, Greek Revival, Late 19th And 20th Century Revivals

Historic Person: Cooper, James Fenimore, et al.

Area of Significance: Agriculture, Architecture, Commerce, Military, Transportation, Literature, Law, Exploration/Settlement, Politics/Government, Industry

Period of Significance: 1750-1799, 1800-1824, 1825-1849, 1850-1874, 1875-1899, 1900-1924

Owner: Private, Local Gov't

Historic Function: Commerce/Trade, Domestic

Historic Sub-function: Single Dwelling

Current Function: Commerce/Trade, Domestic

Current Sub-function: Multiple Dwelling, Single Dwelling

#### Lindesay Patent Rural Historic District

Historic Significance: Architecture/Engineering

Architectural Style: Mid 19th Century Revival, Late Victorian, Federal

Area of Significance: Architecture

Period of 1700-1749, 1750-1799, 1800-1824, 1825-1849, 1850-1874, 1875-1899, 1900-1924, 1925-Significance: 1949

Owner: Private, Local Gov't

Historic Function: Commerce/Trade, Domestic, Education, Government, Religion

Historic Sub-function: Business, City Hall, Religious Structure, School, Single Dwelling

Current Function: Commerce/Trade, Domestic, Education, Government, Religion

Current Sub-function: Business, City Hall, Post Office, School, Single Dwelling

In addition to these designated areas, the proposed Jordanville project area is also a rural agricultural landscape that has similar qualities, character and integrity to the surrounding districts. In driving around the project area the character of the landscape and the patterns of land uses are intact with a high degree of integrity. A predominantly agricultural area, the landscape features farm core clusters, fields, modestly developed crossroads, a historic monastery, old cemeteries and areas of woodlands. The potential district may also be based on historic land patent boundaries. An early map of the region dated to 1829 is included as Figure 6 in Appendix H of the DEIS and shows early landowners and division with an overlay line defining the project area. (See Figure 1). This area should be the subject of an expert study with a determination of eligibility for a National Register Rural Historic District designation made.

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 7 of 21

The New York State designated Route 20 Scenic Byway is a main east-west thoroughfare to the north of the Glimmerglass Historic District and Otsego Lake offering spectacular views of the rolling and productive agricultural lands characteristic of upstate New York. From the proposed visitor center along this corridor there is a wide view of the Jordanville escarpment. The scenic byway portion of the two-lane road is 123 miles in length and represents over 300 years of state history from an early footpath, to a rural turnpike, and eventually to a modern roadway. The primary theme for the Route 20 Scenic Byway is the “layering of history”. The history of the byway corridor is reflected through extant landscape features, sites, buildings, structures, and objects that are associated with the specific historic themes and uses.

The proposed project location is also within a larger regional context of the Mohawk Valley, Erie Canal National Heritage Corridor, and Adirondack Park. The Mohawk Valley Heritage Corridor is a 70-mile wide corridor that spans 130 miles from the Hudson River to Oneida Lake and encompasses 203 communities. This area is overseen by the non-profit Mohawk Valley Heritage Corridor Commission that seeks to “preserve, promote, and celebrate our natural, cultural and historic strengths in order to enhance the quality of life and stimulate economic vitality throughout the corridor.” Goals of the commission are to build a regional identity, strengthen place, and make and sell tourism products. “Preserving and interpreting historic resources to improve quality of life throughout the region is an objective” of the commission, along with positive economic impact. The proposed Jordanville project will impact the Mohawk Valley in terms of visual impacts and cultural, historical, and scenic resource impacts. The DEIS ignores this designation and should be amended to address it.

The Erie Canal National Heritage Corridor covers 524 miles in Upstate New York of “four navigable waterways: Erie, Champlain, Oswego and Cayuga-Seneca; sections of the first Erie Canal; and over 200 municipalities adjacent to the canals.” These waterways are significant for their role in the settlement of the Mohawk and Hudson valleys, transportation of agricultural and industrial products. The Erie Canal National Heritage Corridor is managed by the National Park Service in partnership with the Erie Canalway National Heritage Corridor Commission. The purpose of the commission is to create and implement “a Canalway Plan for the corridor that fosters the integration of canal-related historical, cultural, recreational, scenic, economic and community development initiatives.” The Erie Canal National Heritage Corridor is within the 5-mile project radius.

Adirondack Park is the largest publicly protected area within the contiguous United States, encompassing over 3,000 lakes, 30,000 miles of rivers and streams, and a wide variety of habitats. The entire park is approximately 6 million acres, and 43 percent or roughly 2.6 million acres are owned by the State of New York. The park was originally created in 1892 by New York State to address the conservation of water and timber resources of the region. State-owned lands are protected to remain “forever wild,” which the remainder of the land remains in private hands and are devoted principally to forestry, agriculture, and open space recreation. The southern edge of Adirondack Park, valued in part for access to the night sky, is within the 15-mile project radius.

**C. WHAT ARE THE POTENTIAL IMPACTS OF THE JORDANVILLE WIND POWER PROJECT TO THESE LISTED, ELIGIBLE AND TO BE ASSESSED CULTURAL LANDSCAPES?**

There are both visual impacts and cultural resource integrity impacts in the areas defined within the DEIS and those identified in this review beyond the 5-mile and 8-mile DEIS distances as scoped. The Jordanville Wind Power Project has the potential to significantly impact the Glimmerglass Historic District, Route 20 Scenic Byway, Lindesay Patent Rural Historic District, Waggoner Patent Rural Historic District, and Mohawk Valley Heritage Corridor. The proposed wind towers placed along ridgelines will alter daytime views and vistas from the historic districts and scenic byway to the larger landscape. These broader views have mostly remained unchanged since the 18<sup>th</sup> century and are significant character-defining features of each of these properties.

The overall scale of the project is a substantial impact from all distance measures, within the project, within the 5-mile boundary and within the continuing 10 and 15-mile boundaries. The GIS review by Stone Environmental indicates a vast level of visual contact with the towers within a 15-mile radius, during both day and night. This visual clutter will dramatically alter and degrade the historic, scenic landscapes that heretofore had extremely limited utility lines, cell towers and other vertical modern objects seen against the skyline. Within Jordanville and also much of the 5-mile radius there will be few directional views that are without wind turbines. The 75 turbines will pervade the daily visual experience of the entire area. The 399-foot height of the turbines will be simply inescapable, dwarfing all forms of the landscape present today including grand old trees with a 60 to 80-foot height and historic buildings averaging about 25 to 40 feet in height.

Night lighting the towers required by FAA regulations at any height over 200 feet with the current proposed height of approximately 399 feet has a high potential for visual pollution and light pollution of the night sky. This lighting would cast a light spill glow altering the current rural dark night sky, adding artificial visual elements (blinking red lights) within a peaceful rural night sky and reducing the currently high level of star visibility throughout the project area and to all the surrounding areas. While not assessed in the DEIS, it is expected that project impacts related to night lighting will extend well beyond the 5 and 8-mile turbine buffer zone.

Project implementation also has the potential for seasonal impacts that have not been addressed in the DEIS. The late fall, winter and early spring appearance of the wind power project will be different than those during the spring or summer seasons due to the lack of leaves the partial screening of the bottoms of the wind towers will be missing with bare tree trunks revealing more of the towers. Additionally, new pests such as the Emerald Ash Borer give cause for concern for destroying ash trees nationwide. Ash trees are predominant throughout the adjacent areas of the Jordanville Wind Power Project site, and have the potential to be impacted by the Emerald Ash

Borer. Loss of tree canopy will result in less screening and greater visibility of the 399-foot wind towers.

***D. WHAT IS ADDRESSED WITHIN THE JORDANVILLE DEIS SCOPE AND WHAT IS MISSING IN TERMS OF RESOURCES, IMPACTS AND MITIGATIONS? IS THE DEIS COMPLETE OR INCOMPLETE AS SCOPED? ARE CULTURAL RESOURCES AND VISUAL RESOURCES LEFT OUT OF THE DEIS AND SHOULD THESE BE INCLUDED IN THE IMPACT ASSESSMENTS?***

The DEIS fails to meet the requirements of the scope in terms of the inclusion of all cultural resources. DEIS Section 3.5: Aesthetic/Visual Resources, Appendix F, DEIS Section 3.6: Historic, Cultural and Archaeological Resources, and Appendix H specifically address the resources within the areas of Heritage Landscapes expertise.

The DEIS includes a 5-mile and 8-mile turbine buffer for assessing visual impacts to the surrounding landscape. This area does not fully include the actual impact area of the project which extends beyond this buffer zone used in the DEIS. The impact area for the DEIS should be addressed at a 15-mile radius from the proposed project site. Night light pollution is viewed from large distances and will likely create impacts well beyond the DEIS range of 8 miles and somewhat beyond the proposed range studied for Otsego 2000 of 15 miles. In particular the forever wild Adirondack park edge is within the 15 mile radius but extends well beyond that. Night sky light pollution from this project will extend to Adirondack Park views that face the southwest. The DEIS addresses impacts to geology, soils and topography, water resources, biological, terrestrial and aquatic resources, climate and air quality, aesthetic/visual resources, historic, cultural, and archaeological resources, sound, transportation, socioeconomics, public safety, community facilities and services, communication facilities, land use and zoning within separate numbered sections. The last section of the DEIS presents an alternatives analysis for the project. Despite the sections addressing impact areas in the DEIS, a section specifically addressing the scope of the work was not found in the document.

**D1. Section 3.5 & Appendix F: Aesthetic/Visual Resources & Impacts**

Aesthetic/Visual Resources are discussed in Section 3.5 of the DEIS with supplemental and more detailed information pertaining to visual resources in Appendix F. Section 3.5 spans from page 83 to 104 and includes subsections on existing conditions, landscape similarity zones, viewer/user groups, visually sensitive resources, potential impacts from construction and operation, and mitigation. The discussion of existing conditions within Section 3.5.2 limits the project area “within a 5-mile radius of each of the proposed turbines. This area includes 174 miles in Herkimer and Otsego Counties... However due to the abundance of visually sensitive resources outside this area, the area within 8 miles of the project were also examined.” (Section

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 10 of 21

3.5.1, page 83). Section 3.5.1.3 lists visually sensitive resources organized by category. Categories include Sites Listed on the State and National Register of Historic Places, Sites Determined Eligible for Listing on the National Register, State Parks, State Forest Preserves, State Wildlife Management Areas, National Park System Lands, Designated Scenic Roads/Byways, State or Federal Designated Trails, Local Scenic Viewsheds, Recreational Areas, Areas of Intensive Land Use, and Transportation Corridors. Attention was given to sites of scenic resources according to NYSDEC Visual Policy as stated in Section 3.5.1.3 on page 86. Based upon this policy, consideration of cultural landscapes at a broader scale is lacking. Additionally, local scenic viewsheds are limited to views within the project site and from the project site to larger landscape. Views from the larger landscape to the project site are not considered, but should be included in a revised DEIS.

Using the framework of the larger categories outlined in Section 3.5, the Glimmerglass Historic District is listed in the visual study area (5-mile radius) as a site listed on the National Register (Section 3.5.1.3, page 86). Two areas of the Glimmerglass Historic District, the Glimmerglass State Park and Otsego Lake, are listed under state parks and areas of intensive land use (Section 3.5.1.3, page 87 & 90). The Lindesay Patent Rural Historic District is briefly mentioned as “just over 6 miles from the nearest proposed turbine” and therefore not in the study area (Section 3.5.1.3, page 87). Route 20 is briefly addressed under scenic byways, as “not yet listed as a designated scenic byway” and under transportation routes (Section 3.5.1.3, pages 88 & 91). This statement is incorrect as it is officially designated and recognized as a scenic byway by the state of New York. The Waggoner Patent Historic District, though within the 5-mile project area, is not mentioned in any category.

In terms of mitigation for the operating project, Section 3.5.3 lists screening, relocation, camouflage, low profile, downsizing, alternate technologies, nonspecular materials, lighting, maintenance, and offsets as mitigation strategies. Though each is very briefly mentioned, no discussion is presented to minimize and mitigate visual impacts. Instead the document states, “mitigation options for the operating project are limited, given the nature of the project and its siting criteria” (Section 3.5.3, page 101). Mitigation strategies focusing on decreasing the height of the tower and downsizing the number of towers, are only mentioned and dismissed. In short, the DEIS lists mitigation strategies but does not apply any of those strategies. There are no changes to the project considered and therefore no mitigation of impacts.

Mitigation for night lighting impacts is also mentioned briefly, though not in detail. Subsection H under Section 3.5.3 of the DEIS states

Turbine lighting will be kept to the minimum allowable by the FAA. New FAA guidelines (FAA, 2005) do not require daytime lighting, and allow nighttime lighting of perimeter turbines only, at a maximum spacing of 0.5 mile. Medium or low intensity pulsing red lights will be used at night, rather than white or red strobes, or steady burning red lights. Lighting at the substation will be kept to a

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 11 of 21

minimum, and turned on only as needed, either by switch or motion detector. (Section 3.5.3, page 102)

Section 3.5 of the DEIS fails to mention that the FAA height requirement for obstruction marking and lighting of vertical structures is 200 feet. Chapter 2, Section 20 of *US DOT FAA Advisory Circular AC70/7460-1K, Obstruction Marking and Lighting*, states

Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet (61m) above ground level (AGL) or exceeds any obstruction standard contained in 14 CFR part 77, should normally be marked and/or lighted. However, an FAA aeronautical study may reveal that the absence of marking and/or lighting will not impair aviation safety. Conversely, the object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure safety to air navigation. Normally outside commercial lighting is not considered sufficient reason to omit recommended marking and/or lighting. Recommendations on marking and/or lighting structures can vary depending on terrain features, weather patterns, geographic location, and in the case of wind turbines, number of structures and overall layout of design. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 (61m) feet AGL or 14 CFR part 77 standards because of its particular location. (US DOT FAA Advisory Circular AC70/7460-1K, Chapter 2, Section 20, page 3)

Chapter 5, Section 55 of *US DOT FAA Advisory Circular AC70/7460-1K* specifically addresses wind turbine structures. The section states

Wind turbine structures should be lighted by mounting two flashing red beacons (L-864) on top of the generator housing. Both beacons should flash simultaneously. Lighting fixtures are to be mounted at a horizontal separation to ensure an unobstructed view of at least one fixture by a pilot approaching from **any** direction. (US DOT FAA Advisory Circular AC70/7460-1K, Chapter 5, Section 55, page 14)

Document *US DOT FAA AR-TN05/50, Development of Obstruction Lighting Standards for Wind Turbine Farms* more specifically addresses concerns regarding lighting wind turbines. Though a specific height requirement for night lighting of wind turbines is not given in the document, night lighting is addressed in detail. A few of the concluding statements presented in the document that have an impact on the Jordanville Wind Power Project are stated as follows

Not all wind turbine units within an installation or farm need to be lighted. Definition of the periphery of the installation is essential, however, while lighting of interior wind turbines is of lesser importance unless they project above the

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 12 of 21

peripheral units. This can be the case most often when higher ridges or plateaus are present within the wind turbine farm area...

Since the hub of the wind turbine unit is frequently as large as the nacelle (body) itself, a top mounted obstruction light should be raised well above the surface of the nacelle so that it may be easily seen from directly in front of the turbine...

When possible, antennas or towers of heights over 200 ft that are within the turbine farm area should be incorporated into the lighting plan for the site, as they offer tall, unobstructed platforms on which lighting fixtures can be mounted and should be included in the synchronization and spacing calculations...

Each turbine should only require one fixture, assuming that the turbine site is manned daily, and that a failed light fixture can be replaced within the next working day. Failure to replace a failed fixture, which is essential to maintaining the 1/2-mile separation requirement, will result in an unsafe gap in the lighting configuration. If it is determined that the facility does not possess the capability to replace fixtures within the next working day, the requirement to fit each turbine with two fixtures should be explored.

Furthermore, the document continues to state

The development of wind turbine farms is a very dynamic process, which constantly changes based on the differing terrain they are built on. In reviewing plans, special consideration may be made to the following:

- Situations that may require additional lighting consideration:
  - Proximity to airports
  - Proximity to known visual flight rule routes
  - Extreme terrain where the turbines vary greatly in their relative vertical position to each other.
  - Proximity to areas of known flight activity, such as frequent agricultural activity.

Based upon these FAA regulations and the uniqueness of each wind turbine farm, each project requires a different amount of night lighting depending on topography, proximity to airports, relationship to flight paths, number of proposed wind structures, and overall project layout. It is possible that over half of the wind turbines of the Jordanville project will need night lighting, not just perimeter lighting, because of variations in topography. Lighting will also be positioned above the height of the nacelle (262 feet) in order to be visible to aircraft approaching the site from all directions. Due to the remoteness of some wind turbines and lack of daily maintenance, some wind towers may also need two lights per structure in accordance with the lighting standard guidelines. Additionally, collector towers associated with the wind turbines will need night lighting. None of these night lighting issues were noted or discussed in the DEIS.

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 13 of 21

In summary the visual impacts regarding red blinking wind tower night lighting are not fully addressed in the DEIS. These impacts are difficult to quantify in reviewing the DEIS as no lighting effect simulations or images and details of similar scale projects with night lighting were submitted to accompany the lighting plan in the DEIS, although a project with fewer lights was shown in one image. In general, no mitigation strategies were presented for consideration in decreasing the visual impact of night lighting on the project area and regional landscape. Instead, the narrative says

It is anticipated that Jordanville Wind will consult with the OPRHP to undertake various activities to mitigate potential visual impacts on historic structures. Although not yet finalized, this mitigation is anticipated to involve establishment of a historic property visual mitigation program that would fund historic structure protection/restoration projects within the Towns of Warren and Stark. In many respects this is comparable to the offset mitigation described in the NYSDEC visual policy. (Section 3.5.3, page 104)

The lack of a mitigation strategy for night lighting visual impacts within the DEIS is insufficient. Night lighting impacts alone have the potential for light pollution into the night sky, casting a dome of light pollution glow and decreasing the visibility of stars in this rural area currently with high star visibility. The visual effect on the Glimmerglass Historic District would be profound as the reflective quality of a dark blue, calm Otsego Lake would include tower lights and their reflection rather than a starry night sky (See Photo 3B).

The Jordanville project scale is large and visual presence of the wind farm as proposed would carry to considerable distances. Three existing conditions photographs portray three different areas at distances greater than 8 miles that will receive visual impacts from the proposed wind project. Photo 1, depicts the existing conditions view from Thayer Farm on the west side of Otsego Lake, to the proposed project location. In this view, the Glimmerglass Opera House is seen on the left as a white roof. The Jordanville escarpment is in the distance behind the Opera House to the left. (See Photo 1).

The view from NY Route 20 Scenic Byway is also one that would have a large number of wind towers highly visible should the Jordanville Wind Power Project be constructed as proposed. The existing view looking northwest toward the proposed project area shows the Jordanville escarpment clearly. (See Photo 2). Photo 2 shows this view with the proposed project location to the center left. The image was taken from the proposed Route 20 Visitor Center location, overlooking the Mohawk Valley.

An existing conditions photograph of Otsego Lake shows the Jordanville escarpment of the proposed project area quite clearly. (See Photo 3 and 3B nighttime simulated view from the same vantage). Photo 3, taken from Point Florence on Otsego Lake looking north, shows the ridgeline where the proposed project is proposed for siting as a prominent landscape feature to the north of the lake. These views demonstrate the visible presence of the escarpment in adjacent larger-scale

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 14 of 21

landscapes. The night view simulation, Photo 3B, showing red lights mounted on the nacelle, reveal the basic night effect of a line of blinking red lights paired with their reflection in the surface of the lake. These nightlights, if installed on the 399-foot towers, would alter the historic and scenic landscape of Otsego Lake measurably degrading this view.

The Appendix F Visual Assessment further overlooks these significant large-scale cultural landscapes and the visual impacts associated with the proposed Jordanville Wind Power project. No degree of focus is given to historic cultural landscapes, the combined works of humanity and nature. The Visual Impact Assessment presented in Appendix F describes existing visual character, visual impact assessment methodology, and visual impact assessment results. Existing visual character is presented in terms of physiographic/visual setting, including landform and vegetation, land use, and water features, landscape similarity zones, viewer/user groups, and visually sensitive resources.

Appendix F addresses existing visual character only in terms of landforms, vegetation, land use, and water features only. Other character-defining features such as overall spatial organization, views and vistas, land patterns and small scale landscape objects and furnishings should also be addressed when discussing cultural landscapes and should be included in the DEIS. Additionally a 5-mile radius was used from the project site to address visual impacts; however, visual impacts occur beyond the 5-mile radius, as demonstrated by the GIS study commissioned by Otsego 2000 and as demonstrated using this study data in on-site review.

Like DEIS Section 3.5, Appendix F of the DEIS offers a limited definition of impacts and mitigation of impacts and limited mitigation solutions. Though several mitigation measures are listed, the two solutions offering the lowest impact, low profile and downsizing, are not thoroughly addressed. Given the high integrity of the cultural and scenic landscapes in the Jordanville Wind Power Project vicinity, more sensitivity should be used when selecting locations and height requirements for this project. Decreasing the height of the wind towers to below the FAA night lighting requirement for night lighting to 199-foot maximum would aid in mitigating impacts. In addition the overall density, spread and spacing of the project over the 6000 plus acre landscape is a significant impact in terms of the pervasive, omnipresent visual, auditory and night sky contact with this huge project. Decreasing the number of towers and their concentration should be considered as a mitigation strategy to address the sensitivity of the project site and adjacent lands that will be within the project viewshed. The project should also be relocated if a large rural historic district is identified in the Jordanville project area and if impacts cannot be mitigated.

***D2. Section 3.6 & Appendix H: Historic, Cultural, & Archeological Resources & Impacts***

Historic, Cultural and Archaeological Resources are summarized in Section 3.6 pages 104 through 112 of the DEIS with reference to Appendix H, a more detailed cultural resources survey. Section 3.6 of the DEIS indicates in text and accompanying tables that the Jordanville

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 15 of 21

Wind Power Project 5-mile radius contains several buildings and historic districts that are listed and eligible for listing on the National Register of Historic Places. Table 12 on page 108 of Section 3.2 lists the archeological sites located within the vicinity of the project area, and Table 13 on page 109 of Section 3.2 lists the properties listed on or determined eligible for the National Register. However, the list in Table 13 is limited to sites immediately within a 5-mile radius to the proposed project site, and does not take into consideration properties outside of that range (Section 3.6.1.4, page 109). Furthermore, the Glimmerglass Historic District is listed within Table 13, but the Lindesay Patent Rural Historic District and the Waggoner Patent Rural Historic District are not listed. The text of Section 3.2 also does not include description assessments or significance statements about the landscape of these listed and eligible properties. Mitigation in Section 3.6.3.2 is discussed on page 112, stating

Mitigation measures to address the visual impacts of the project on historic properties are currently being discussed with the SHPO. Warren and Stark Town Boards and Historians will be consulted for historic resource initiatives within the Towns. In general, mitigation will include preservation and restoration of local historic resources. Proposals under consideration include natural screening and offsets such as repairing local cemeteries, which have been identified as in need of repair.

It is the Applicant's intent to first address the needs of the local communities and focus mitigation efforts on those resources and individuals that may be impacted by the project. A plan will be developed between the SHPO, the Towns of Warren and Stark, and Jordanville Wind, outlining the details of the final mitigation plan. (Section 3.6.3.2, page 112)

As stated previously, the lack of an outlined and proposed mitigation strategy for the Jordanville wind power project is insufficient. Visual impacts to the project area and adjacent areas cannot adequately be evaluated without a selected mitigation strategy. The DEIS should be rewritten to address effective mitigation strategies that address the broader cultural landscape.

In particular there are several shortcomings in Appendix H. Heritage Landscapes believes that the historic and cultural resources description of the project site is inadequate. A cultural resources survey was conducted for the DEIS by John Milner Associates and is included in the document as Appendix H with Phase 1A and 1B. Phase 1A contains 13 pages of text and tables with 16 pages of mapping and photographs. Phase 1B has 10 pages of narrative and 5 pages of mapping. Both sections of Appendix H, Phase 1A Cultural Resources Survey and Phase 1B Archeological Survey & Historic Architectural Survey, address only listed historic districts and historic architecture and archaeological resources but fails to address the potential eligibility of the Jordanville landscape and a rural historic district in accordance with the mandate to "identify previously recorded cultural resources (i.e., archaeological or historic sites) and to evaluate the potential for previously unrecorded cultural resources to occur within the project area." Within Phase 1A, the consultants primarily "identified 17 individual structures or properties and four

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 16 of 21

historic districts located within approximately five miles of the Project Area that are listed on, or have been determined eligible for listing on, the State and/or National Registers of Historic Places” (Appendix H, Phase 1A, Management Summary). These four historic districts are the Church Street District, West Main Street District, and East Main Street District within Richfield Springs and the northern portion of the Glimmerglass Historic District. Other potential cultural landscapes and historic districts eligible for listing on the National Register within the 5-mile project radius are not identified, including the potential eligibility of the Jordanville landscape as a rural historic district.

Based on the review of the text, maps and site walk, it does appear that valuable historic vernacular landscapes that would qualify for the State and National Register exist within the towns of Jordanville and Stark. Based on my expertise, I would assert that overall, the vicinities of Jordanville and Van Hornesville that are proposed to receive this project appear to be high integrity, intact rural historic districts that are comparable in character to the adjacent designated districts. The review of the existing conditions information provided along with the whole agrarian landscape of the Jordanville and Van Hornesville areas leads me to believe that historically significant cultural landscapes within the proposed project site may be eligible for listing on the National Register. A study of the project area with the intent to determine eligibility should be undertaken. Due to the lack of either determination or listing, these resources are unidentified in the DEIS as cultural resources that will be impacted by the project. The broader cultural landscape is also largely overlooked and therefore the impacts to these resources are neither identified nor mitigated. Both text and mapping in the DEIS should be developed in greater detail to fully capture the cultural resources of the property to include the cultural landscape.

Appendix H addressing cultural resources also largely overlooks listed large historic districts outside of the 5-mile radius, which are not identified. Additionally, Phase 1A of Appendix H does not address visual simulations showing potential visual impacts to historic sites. Neither does the cultural resource discussion address in any way the potential rural historic district in the Jordanville and Van Hornesville area itself. The purpose stated in this appendix is to address existing cultural resources as designated and to also identify and address potential cultural resources. “The purpose of [Appendix H] was to identify previously recorded cultural resources (i.e., archaeological or historic sites) and to evaluate the potential for previously unrecorded cultural resources to occur within the project area” (Section 3.6, page 104). In fulfilling this purpose, Appendix H fails utterly.

Within Section 4.3 Recommendations of Phase 1A of Appendix H, the document states “As the nature of visual effects on any particular structure is dependent on site-specific conditions, it is not possible to precisely evaluate if or how such structures would be affected by the Project. Visual simulations have not yet been prepared for the Project. A review of visual simulations (once completed) will allow for more definitive evaluation of the nature of visual impacts to historic structures or districts in the vicinity” (Appendix H, Phase 1A, Section 4.3, page 12). Phase 1B focuses exclusively on archeological and architectural surveys within the 5-mile

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 17 of 21

project radius, and fails to mention historic districts or cultural landscapes of any kind in the 5-mile zone. Cultural landscapes and historic districts outside of the 5-mile area are also not addressed in Phase 1B.

According to the scope of Section 3.6 and Appendix H of the DEIS, the resources addressed are historic buildings and the archaeological resources. Cultural landscapes are noted only in terms of historic districts. However, the discussion of these districts is limited to simple listings. It excludes description, condition assessment, potential impacts and mitigation measures for the National Register listed and determined eligible rural historic landscape districts and historic districts with a wide array of character-defining features.

***D3. What Should Be Included In The Jordanville Wind Power Project Draft Environmental Impact Statement?***

Overall, the DEIS presents a limited analysis of the visual impacts of the proposed project from a 5-mile and 8-mile radius. This data range is insufficient to adequately address the impacts of the project on adjacent cultural landscapes. GIS Data and photographic simulations are needed from longer distances away, such as 15 miles. The document does not show views from the southern half of the Glimmerglass Historic District, Lindesay Patent Rural Historic District, and the Waggoner Patent Historic District in Otsego County. All of these cultural landscapes will be impacted by the proposed project. The DEIS must be rewritten to address impacts to the larger landscape at a 15-mile radius from the project site to include National Register listed and eligible sites including but not limited to the entire Glimmerglass Historic District, Lindesay Patent Rural Historic District, Waggoner Patent Historic District, and Route 20 Scenic Byway.

In general, the visual impacts to all types to the cultural landscape are largely ignored in the limited discussion of mitigation in Section 3.5, Section 3.6, Appendix F and Appendix H. No mitigation strategies were selected or applied to decrease the range of visual impacts that the proposed project would create. The DEIS should address impacts and mitigation of impacts more completely and offer actual mitigations for the project impacts. The revised DEIS should be rewritten to more effectively address visual impacts of night lighting and the cultural landscape.

The GIS mapping from Stone Environmental, proves that significant portions of the Glimmerglass Historic District, Route 20 Scenic Byway, Lindesay Patent Rural Historic District, and the Waggoner Patent Historic District will be impacted by views to the proposed project site. The mapping shows different levels of visibility based upon turbine height (399 feet), nacelle height (277 feet), vegetation (40 feet) and topography, highlighted in varying colors for different levels of impacts. Blue shows the land with the least impact with 1 to 15 towers visible. Red shows the highest level of visible impact with 61 to 75 towers visible. Given this information, a large portion of the Glimmerglass Historic District, Route 20 Scenic Byway, Lindesay Patent Rural Historic District, and the Waggoner Patent Historic District are affected. To further illustrate the visible effects, Xtra-Spatial Productions conducted a photographic simulation of the

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 18 of 21

visual impacts of the Jordanville Wind Power Project to the Glimmerglass Historic District. The simulation was done for Point Florence on Otsego Lake in the Glimmerglass Historic District illustrating the effects of the night lighting on the proposed wind turbines.

Looking at the *Viewshed Analysis: Visibility to Top of Nacelle – Navigation Light (262 ft.)* map, a large portion of Otsego Lake will be visually impacted with a range of 1 to 45 wind towers visible within different areas of the lake. This map also demonstrates the areas of visibility of the blinking red night lights. Additionally, the entire eastern shore of Clark Foundation lands with north facing slopes have a view of many of these wind towers. This visual impact increases as the additional height of the blades at 399 feet is considered. The *Viewshed Analysis: Visibility to Tip of Blades (399 ft.)* shows a larger area of the lake and Clark Foundation lands within the orange visibility zone at 46 to 60 towers visible, and a smaller portion of the lake within the red visibility zone at 61 to 75 towers. The lake areas with the most visible impacts are Point Florence, 5 Mile Point, and Gravelly Point with 46 to 60 towers visible. Photo 3 shows the existing view from Point Florence on Otsego Lake, and Photo 3B shows a night time and night lighting photographic simulation of the proposed project site from the same point. The 399-foot wind towers are quite visible from this viewpoint, as their red lights line the ridge in the distance.

Both GIS maps show similar impacts to the Thayer Farm along the west edge of Otsego Lake, also within the Glimmerglass Historic District. The *Viewshed Analysis: Visibility to Top of Nacelle – Navigation Light (262 ft.)* map and *Viewshed Analysis: Visibility to Tip of Blades (399 ft.)* map show the east and northeast slopes of the Thayer Farm within the high impact area, with 61 to 75 of the proposed wind towers visible. Photo 1 shows the current existing conditions view.

The mapping for the Route 20 Scenic Byway shows a similar visual impact with north-facing slopes receiving the most visual impact, especially east of the intersection of Route 20 and Route 54. Like the Thayer Farm, this area is highlighted in red with a distinct visual impact to the scenic byway at this location. The view from this ridgeline will include 61 to 75 wind towers by the proposed project. The existing view of this location is shown in Photo 2. It should also be noted that another proposed wind farm project within Cherry Valley will be visible from this Route 20 location, making the Route 20 corridor not only a scenic byway, but also a wind power corridor as well. To address these cumulative impacts of several wind farms along the Route 20 Scenic Byway corridor, the DEIS must be rewritten to avoid segmentation, since it ignores too many current and proposed wind farms in the Route 20 viewshed.

In addition to a larger project radius of 15 miles and cumulative impacts of several wind farms in the area, the DEIS also lacks a balloon simulation to address visual impacts. Such simulations, properly publicized and conducted, should be required. Sending balloons to 277 feet, the height of the light on the nacelle, and to 399 feet, the height of the tip of the blade, would be beneficial to see firsthand how prominent these proposed structures would be in the cultural landscape and how far the impacts are visible.

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 19 of 21

Further study and simulations should be conducted regarding the FAA night lighting impacts. Within the conclusions section of Appendix F, under section 6H for mitigation lighting, the report states, “Medium or low intensity pulsing red lights should be used at night, rather than white or red strobes or steady burning red lights. Upwardly directed lighting fixtures should be utilized to minimize nighttime visual impacts on nearby residents.” (Appendix F, page 27) Examination of FAA requirements for wind turbines confirms that night lighting of these structures will have a significant visual impact on the night sky, reducing the visibility of the stars.

A sensitivity in scale for historic and scenic landscapes is also missing from the DEIS and visual impact assessment. Knowing that the proposed project area and adjacent lands contain numerous properties eligible and listed on the National Register, research in decreasing the height and decreasing the number of the structures would make the project more compatible and visually appropriate for the surrounding landscapes. Doing so, would reduce visibility of the project area from the Glimmerglass Historic District, Otsego Lake, Route 20 Scenic Byway, Lindesay Patent Rural Historic District, and the Waggoner Patent Rural Historic District. A simulation using a height of 199 feet, the height at which the wind towers do not need night lighting would be useful for understanding the visual impacts of a lower tower height. This simulation should be included in the DEIS to adequately address mitigation alternatives.

Additionally, visual impacts from the project’s collector system (above ground lines that collect power), meteorological towers (two at 262 ft high), and changes in the landscape character of 21 miles of farm service roads are not addressed. Section 3.5.2.2 on page 92 states, “once the final design of the 230kV line is completed, along with final design of substation, collection station, and meteorological towers, the visual impact of this support components of the project will be evaluated in a supplemental VIA” (3.5.2.2 on page 92). Also there is no dedicated route in the DEIS, only a proposed route for construction transportation. Road improvements will need to be well beyond farm service roads within the project area to accommodate oversized loads. These roadway changes may affect unidentified archeological sites and perhaps some historic bridges and historic roads. Without additional survey work, it is impossible to assess the impacts to cultural and historic resources for the transportation route for the project and the collection system of the project. These components of the proposed wind power project should be included in this DEIS and not under separate cover, in order to address all cumulative visual impacts of the project.

To mitigate the effects of the night lighting and the large scale of the Jordanville Wind Power Project, The DEIS should consider mitigation by lowering the wind turbine height, under the 200-foot night lighting requirement. Towers at 199-feet are under the FAA night lighting requirements. Towers at this height are viewed from far less locations and would not require night lighting. This revision to the project would significantly reduce visual impacts to the surrounding cultural landscape. A mapping simulation conducted by Stone Environmental in the *Viewshed Analysis: Visibility to Maximum Height Where No Navigation Lights Required (199 Feet)* uses 199 foot towers and shows a large reduction in the amount of land visually impacted

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 20 of 21

by the turbines. A large percentage of the project area has greatly reduced visual impacts because of the decreased height. Historic districts to the south also have greatly reduced impacts. The majority of Otsego Lake falls within the blue and green zones with 1 to 30 wind turbines visible. A smaller portion of the lake is within the yellow visibility zone with 31 to 45 towers visible. Overall the amount of red zones with 61 to 75 wind turbines visible is greatly reduced to considerably less area. However, visual impacts from the Mohawk Valley to the north and east remain in the red visibility zone, with clearest visual impact.

It is also relevant to note a similar project that the Marcy South Transmission Line proposed in 1983. The transmission lines were to cross north of Otsego Lake and were defeated in part because of testimony regarding the visual impact of these lines at a height of the fifteen story towers (approximately 150 feet) to the historic scenic views from the lake as follows:

Many of the views from the lake, which is flanked for most of its length with steep sloped hills... over the bay the rolling hills and soft green meadows of Springfield and Cherry Valley are a constant foil for a succession of alternatively spectacular and subtle effects occasioned by changes in light, clouds, rising mists, from the hills in the foreground and of course the lake itself... this Eastern portion of Otsego County has been little changed and therefore now represents a real value as a cultural and historical resources as well as an extraordinary collection of scenic vistas.

## ***CONCLUSION***

The Jordanville Wind Power project will irreparably and irreversibly impact, alter and degrade the scenic qualities, views, cultural landscapes and broader cultural resources of the towns of Warren and Stark, the hamlets of Jordanville, Van Hornesville, the towns of Richfield, Glimmerglass, Cooperstown, Lindsay Patent, Waggoner Patent, and the Route 20 Scenic Byway areas as proposed. It is of a very large scale that is hard to visualize effectively because of this scale. The placement of the project on a high escarpment will afford views to it from great distances. The GIS studies developed by Stone Environmental and the photographic simulation by Xtra-Spatial Productions indicate a much more pervasive and distant viewshed of the project than demonstrated in the DEIS.

As noted previously decreasing the height of the wind towers to the 199-foot level without night lighting, and decreasing the overall density, scale, spread and spacing of the project for fewer towers, (perhaps twenty 199-foot towers carefully sited on less than 1000 acres) should be considered as potential mitigations.

In summary, all comments addressing the identification, assessment of impacts and mitigation of impacts with regard to listed, eligible and to be assessed historic districts and the scenic byway including the Glimmerglass Historic District, Lindsay Patent Rural Historic District, Waggoner

Review of Jordanville Wind Power Project DEIS  
Visual Impact Assessment & Cultural Resources Survey  
Page 21 of 21

Patent Historic District, potential Jordanville rural district, Route 20 Scenic Byway, Mohawk Valley Heritage Corridor, Erie Canal National Heritage Corridor and Adirondack Park require further consideration in the revised DEIS and the eventual FEIS to address the Jordanville Wind Power Project. In summary please address the following in a revised DEIS:

- Significant project visual impacts and cultural resources degradation within the towns of Warren & Stark – pervasive and out of scale for an area of 7 miles by 3.5 miles with no visual relief
- Large scale of the proposed project should be reduced through careful siting of fewer tower on less acreage, perhaps 35 to 50 towers on 1000 acres
- Large scale of the proposed project should be reduced through careful siting of lower towers, at 199 feet the towers would be large but not as overpowering as the 399-foot towers would be,
- The unacceptable night lighting pollution and reduction in star visibility should be mitigated through the use of 199-foot towers. Rural life is defined in part by access to night sky and mitigating that light impact light impact and loss of visual access to stars
- Careful siting of the wind turbines on considerably smaller acreage
- Consider Route 20 Scenic Byway holistically as multiple wind power projects are proposed along the corridor
- Study and is determine if the project area is eligible for designation as a rural historic district on the National Register, if a DOE proceeds then project location is inappropriate and consideration of this area for such a project should stop
- Revise the DEIS to add more photos and simulations beyond the 5 and 8-mile boundaries for clear evidence of impacts, using at least a 15-mile radius from the project site
- Recommend true mitigation of impacts by addressing the items listed above

Thank you for the opportunity to conduct this review. Please feel free to contact me with any questions or requests for clarification.

Sincerely,



Patricia M. O'Donnell, FASLA, AICP, Principal  
Heritage Landscapes