

7.0 CUMULATIVE IMPACTS & BENEFITS

In accordance with 6 NYCRR § 617.9(b)(5)(iii)(a), SEQRA requires a discussion of cumulative impacts where such impacts are “applicable and significant.” Cumulative impacts are two or more individual environmental effects which, when taken together, are significant or that compound or increase other environmental effects. The individual effects may result from a single project or from separate projects.

Where individual effects of the Project may interact with other effects of the Project, such potential cumulative impacts have been individually addressed in Section 2 of this SEIS.

This section addresses the potential cumulative impacts that may arise from interactions between the impacts of the Project and the impacts of other projects. In general, cumulative impact analysis of external projects is required where the external projects have been specifically identified and either are part of a single plan or program, or there is a sufficient nexus of common or interactive impacts to warrant assessing such impacts together. Some cumulative impacts are the simple additive effect of the projects (i.e., each will disturb a certain amount of ground surface, wetlands, or natural communities). These additive impacts can be quantified by simply tallying the total impacts resulting from each project, to the extent that such information is known and has been publicly presented. Certain other cumulative impacts may not simply be additive and therefore need a certain level of further analysis. The subsections below discuss whether there are identified projects for which a cumulative impact analysis is required, and assess the extent to which the impacts of such projects will be cumulative with the impacts of the Jericho Rise Wind Farm.

7.1 OTHER DEVELOPMENT PROJECTS

Across New York State, numerous wind-powered generating facilities have been constructed and are operational, while others are in the project planning and development phases. The review and approval status of projects that are still in the planning and development phase is highly variable, ranging from preliminary site investigations to those with completed system reliability impact studies (a requirement of the NYISO), detailed project plans, and landowner agreements. The NYISO oversees the New York Transmission System (the “Grid”) and has in place a process for permitting the interconnection of new electric generating facilities with the Grid. Consequently, consideration of a project’s status in the NYISO review process is a helpful measure for determining whether a proposed project may or may not be built. The NYISO reviews projects in three main phases: submittal of an interconnection request, preparation of a feasibility study, and completion of a system reliability impact study. This review process separates projects, initially by feasibility to connect to the Grid through a selected transmission facility. Proposed projects in any phase of project review by the NYISO are identified on a comprehensive queue listing maintained by NYISO on their website (<http://www.nyiso.com>). It is reasonable to assume that wind power projects with in-progress system reliability

impact studies and with upcoming proposed operation dates may be considered 'proposed' or 'future' projects for the purposes of cumulative impact analysis.

The DEIS selected six wind power projects within 30 miles² of Jericho Rise Wind Farm to be reviewed for potential cumulative impacts due to their proximity to the Project and similar potential socioeconomic and environmental impacts. At the time the DEIS was released, these six projects were all in various stages of the permitting or construction process. Five of these projects are now operational. Table 42 below summarizes the current status of each of the six projects addressed in the DEIS.

Table 42. Current Status of Wind Projects Considered for Possible Cumulative Impacts

Project Name	Status	MW	Approximate Distance from Project
Noble Chateaugay	Operational 2009	107	1.1 miles east
Noble Clinton	Operational 2008	102	4.3 miles east
Noble Ellenburg	Operational 2008	81	4.3 miles east
Marble River	Operational 2012	216	7.5 miles northeast
Noble Altona	Operational 2009	97.5	20.3 miles southeast
Wind Horse Beekmantown	Withdrawn 2013	19.5	22.5 miles southeast

Sources: NYISO, 2015; NYSDEC, 2015e.

As indicated above in Table 42, the DEIS identified the Wind Horse Beekmantown Wind Farm as possibly contributing cumulative impacts. However, that project was withdrawn from the NYISO queue in March 2013, and is no longer being proposed. The NYISO queue currently includes two additional potential projects in the region: EDPR's North Slope Wind Project in Franklin County and Invenenergy Wind Development's Bull Run Wind Project in Clinton County, which together represent approximately 400 MW of additional wind generation. However, neither of these projects have system reliability impact or feasibility studies, or upcoming proposed operation dates. There are currently no active projects listed in the NYISO queue that could be considered proposed or future projects for the purposes of cumulative impact analysis (NYSISO, 2015). Consequently, this evaluation is limited to the potential cumulative impacts of the Jericho Rise Wind Farm and the five operational projects identified above. Because each of the five operational projects was analyzed as part of the cumulative impacts analysis presented in the DEIS, the anticipated cumulative impacts remain quite similar.

² In the DEIS, distance from the Project was measured from a central point of the Jericho Rise Project Site to the closest boundary of each operational project.

7.2 WETLANDS

Direct impacts to wetlands will include excavating, placing fill in wetlands, and clearing wetland vegetation. Indirect impacts to wetlands can include increased erosion and sedimentation. The majority of direct wetland impacts associated with the construction of wind farms are typically temporary, with impacted wetlands restored following construction. Since the five projects considered in this cumulative impacts analysis are all currently operational, with construction variously completed between 2008 and 2012, cumulative temporary and indirect impacts to wetlands are not anticipated.

Project construction associated with the 37 proposed turbines and associated infrastructure will result in permanent wetland impacts (i.e., conversion to built facilities) of 0.13 acres, while the six alternate turbines would result in 0.05 acres of permanent wetland impact. When added to the permanent impacts incurred at the five operating wind energy facilities, these Project impacts contribute to minor cumulative wetland impacts. However, these impact numbers are very small in the context of the amount of wetlands present throughout the region. Furthermore, as discussed in Section 7.2 of the DEIS, permanent disturbance to wetlands is regulated, by both state and federal agencies. All the wind projects included in this cumulative impacts analysis went through an iterative siting process to avoid and minimize wetland impacts, and implemented compensatory wetland mitigation plans, as required, to prevent the net loss of wetlands. Therefore, construction and operation of the proposed Project and five operational wind projects in Clinton and Franklin Counties are not expected to result in significant cumulative adverse impacts to wetlands.

7.3 WILDLIFE

As discussed in Section 2.3 of the DEIS and SEIS, construction and operation of the Project is not expected to significantly affect most wildlife species. Limited mortality may occur to less mobile species such as reptiles, amphibians, and small mammals. However, most species are expected to avoid areas of active construction in favor of suitable adjacent habitat. Temporarily displaced wildlife are expected to return to the area after the completion of construction activities. Some wildlife habitats would be permanently converted to built facilities, causing a localized reduction in habitat. However, similar suitable habitats are widely available in areas immediately adjacent to the Project site, and significant adverse effects to the quality or quantity of wildlife habitats are not expected to occur as a result of the proposed Project.

Similar impacts to wildlife (i.e., limited mortality, temporary displacement, and localized reductions in habitat) likely also occurred at each of the other five projects considered in this cumulative impacts analysis. However, as indicated in Section 7.3 of the DEIS, the temporal differences in the project timelines ameliorate the cumulative effects of construction-related impacts. Permanent loss of wildlife habitat caused by development of the proposed Project and

five operational projects is minimal relative to the coverage of similar habitats throughout the region. None of the five projects that have already been constructed have individually caused significant impacts to wildlife or wildlife habitats, and the impacts don't collectively interact with or increase the extent of the impacts from other projects. Consequently, significant adverse cumulative effects are not anticipated from the addition of the Jericho Rise project.

Potential cumulative impacts to birds and bats are discussed below in Section 7.4, while potential cumulative impacts to threatened and endangered species are discussed in Section 7.5.

7.4 BIRDS AND BATS

Since the five projects considered in this cumulative impacts analysis are all currently operational, with construction variously completed between 2008 and 2012, no cumulative construction-related impacts to birds and bats are anticipated from the addition of the Jericho Rise project.

Collision with spinning turbine blades is known to cause bird and bat fatalities, and the operation of numerous wind energy facilities can cause cumulative impacts. These cumulative impacts resulting from operating facilities can be approximated by adding the estimated fatalities from each wind farm.

Cumulative Impacts to Birds

As discussed above in Section 2.3, results from post-construction monitoring studies at nearby wind projects are generally the best predictor of collision mortality at a proposed wind power site. Since release of the DEIS in 2008, there have been additional studies of operating wind projects in the immediate vicinity of the Jericho Rise Project site. Mortality at the five operational projects included in this cumulative impact assessment ranged from 0.83 to 2.66 birds/MW/year, for an average impact of 1.62 birds/MW/year (see Table 20 in Section 2.3.2.2 of this SEIS). Based on these fatality numbers, it is anticipated that the 77.7 MW Jericho Rise Wind Farm will cause the deaths of between 65 and 207 birds/year, with an average fatality rate of 126 birds/year.

According to the NYSDEC (2015e), the Noble Chateaugay facility is 107 MW, Noble Clinton is 102 MW, Noble Ellenburg is 81 MW, Noble Altona is 97.5 MW, and Marble River is 216 MW. When combined with the 77.7 MW Jericho Rise Wind Farm, the cumulative generating capacity totals 681.2 MW. It is anticipated that, collectively, the proposed Project and five operational projects in Clinton and Franklin Counties will cause the death of between 566 and 1,812 birds/year, with an average fatality rate of 1,104 birds/year.

Recent studies looking at the regional and national cumulative effects of passerine mortality caused by wind turbine operation shows that this level of mortality does not have a significant effect on songbird populations. Small passerines are the most abundant bird group in the United States and Canada, as well as the most common bird fatalities from turbine collisions at wind energy facilities. Erickson et al. (2014) developed bias-corrected standardized songbird fatality rates from over 110 studies across the continental United States and Canada. Using species composition information from those studies, and estimates of cumulative mortality from all wind energy projects in the United States and Canada, it was concluded that wind turbine-caused mortality had no measurable impact on any small passerine species populations.

A similar approach was also used to look at potential impacts of wind energy on a regional scale in the Northeast (Erickson et al., 2015). Using the fatality rates from wind energy reported in the region, the impacts to small passerine populations in Bird Conservation Region (BCR) 14 were evaluated. BCR 14 is the Atlantic Northern Forest region and covers all of Maine, New Brunswick, and Nova Scotia, contains parts of New Hampshire, Vermont, Quebec, and the Adirondack Mountains in New York. Using the estimator bias adjusted fatality rates, regional estimates of small bird fatalities were approximately 2,500 to 3,500 birds per year. The regional impact of mortality due to collisions with wind turbines on bird populations was extremely low relative to the size of the BCR 14 bird populations. Most of these species are migratory and may reside in areas outside BCR 14, so this analysis is likely an overestimate of the potential for population effects, because only the resident population within BCR 14 was included. The highest impact was an estimated 0.06% of the northern mockingbird (*Mimus polyglottos*) population (five fatalities in a population of 9,000). Prairie warblers (*Setophaga discolor*) and yellow-throated vireos (*Vireo flavifrons*) had an estimated impact to 0.03% of the population (five fatalities in populations estimated at 16,000), and pine warblers (*S. pinus*) had an estimated impact to 0.03% of the population (49 fatalities in a population estimate of 180,000). All other species impacted in the region were less than 0.01% of the population. Red-eyed vireos (*V. olivaceus*) had an estimated impact to 0.006% of the population (689 fatalities in a population of 12,000,000).

Fatality estimates for raptor species have been developed as well. Using similar methods to those used in Erickson et al. (2014), it was determined that sharp-shinned hawk (*Accipiter striatus*) and red-tailed hawk (*Buteo jamaicensis*) were the raptor species affected most: approximately 0.2 to 0.3% of their populations suffer annual mortality from collisions with wind turbines in the United States and Canada. Impact estimates for all other raptor species were less than 0.2%. While these ratios of fatality estimates to population sizes are higher than for the small passerines, they are still quite low relative to the overall population size and typical annual mortality for raptor populations (Erickson et al., 2015).

Impacts to Bats

As with birds, results from post-construction monitoring studies at nearby wind projects are generally the best predictor of bat mortality at a proposed wind power site. Since release of the DEIS in 2008, there have been additional studies of operating wind projects in the immediate vicinity of the Jericho Rise Project site. Mortality at the five operational projects included in this cumulative impact assessment ranged from 0.71 to 4.5 bats/MW/year, with an average impact of 3.21 bats/MW/year (see Table 19 in Section 2.3.2.2 of this SEIS). Based on these fatality numbers, it is anticipated that the 77.7 MW Jericho Rise Wind Farm will cause the deaths of between 56 and 350 bats/year, with an average fatality rate of 250 bats/year.

The cumulative generating capacity of the Jericho Rise Wind Farm and the five projects currently operating nearby totals 681.2 MW. Collectively, it is anticipated that the proposed Project and five operational projects in Clinton and Franklin Counties will cause the death of between 484 and 3,066 bats/year, with an average fatality rate of 2,187 bats/year. There is very little information related to the population sizes of common bats species. Information exists on population size for federally listed bats (e.g., Indiana bat, Virginia big eared bat) due to population monitoring efforts for these species. However, there are no comparable efforts for the more common bat species that are impacted by wind turbines. The most common bats found as fatalities at wind turbines (hoary bat, eastern red bat, and silver haired bat) have large ranges that cover a substantial portion of North America. Because these species are considered migratory, bats found at any given wind project may not be from the local populations near that wind project. The effect of the loss of the cumulative number of bats on the populations is unknown.

7.5 THREATENED AND ENDANGERED SPECIES

Construction of the proposed Project will not overlap with construction of any of the five operational projects considered in this cumulative impacts analysis. Construction on these projects was completed between 2008 and 2012. Therefore, no cumulative construction impacts to threatened, endangered, or sensitive species are anticipated.

Bald eagle use in the Project site is very low, and only transient individuals utilize the Project site. Golden eagles are also rare within the Project site, with only one migratory individual observed in 2007 surveys and none observed in 2015 surveys from January to June. Therefore, these two species are unlikely to be adversely affected from operation of the Project, and cumulative impacts are not anticipated.

An additional 13 bird species listed as threatened, endangered, or of special concern could occur in the vicinity of the Project site. Seven of these species were not observed during any of the many avian surveys conducted onsite, and are thought to only occur onsite as transient individuals, while six of these species were observed within the Project

site in 2007 and/or 2015. Four of the six sensitive bird species observed onsite were found in such low numbers within the Project site they are not anticipated to be adversely affected by Project operation. Since adverse Project impacts are not anticipated, cumulative impacts will also not occur to these species. Two of the 13 rare birds occur more frequently and appear to breed at the Project site: northern harrier and sharp-shinned hawk.

Northern harrier, a state-listed threatened species, exhibits moderate use of the Project site. However, harrier behavior makes it unlikely to experience collision mortality. The DEIS cited literature suggesting that breeding harriers are likely to stay close to the ground, out of the turbine collision zone, and that northern harrier mortality has consistently been documented as low at operating wind farms. As discussed in Section 2.3.2.2 of this SEIS, more recent studies confirm these findings. Therefore, although this species is present within the study area, Project operation is not expected to have adverse impacts. Northern harriers at the operating wind projects in the area also fly close to the ground and thereby avoid collision mortality. Consequently, no cumulative impacts to this species are anticipated.

The sharp-shinned hawk is listed as a species of special concern in New York State. It was observed in relatively low numbers during Project site surveys; however, breeding does occur within the Project site. The sharp-shinned hawk favors forested habitats, and typically hunts in dense vegetation. Therefore, although displacement from forested habitats is possible due to forest clearing, collision fatalities resulting from Project operation are unlikely for the sharp-shinned hawk. The same is true for any sharp-shinned hawks that may be present at other operational wind energy facilities in Franklin and Clinton Counties, and therefore, cumulative impacts to this species are not anticipated.

Two species of bat were identified by NYNHP as of concern for the Project site: the northern long-eared bat (threatened) and the eastern small-footed bat (special concern). Through acoustic and mist-netting surveys conducted in 2007 and 2015, three calls of northern long-eared bat identified within the Project site. Possible calls of eastern small-footed bat were identified by the acoustic analysis software; however, further review of the acoustic data could not confirm the presence of this species. The results of the surveys indicate that these species may be present but in very low numbers. Given that the density of these species in the Project is very low, no impacts to the species are anticipated as a result of Project operation. Therefore, cumulative impacts to northern long-eared bat and eastern small-footed bat are also not anticipated.

The blue-spotted salamander, a species of special concern, was identified by the New York Amphibian and Reptile Atlas as occurring in the vicinity of the Project site, and suitable upland and wetland habitat for this species occurs on-site. Impacts will be minimized by avoiding areas of mature forest and wetlands to the extent practicable. The Herp Atlas has no records of blue-spotted salamander occurring in the Chateaugay, Brainardsville, Churubusco, Ellenburg

Center, Ellenburg Depot, Ellenburg Mountain, or Jericho quads where the five operating wind project considered in this analysis are located (NYSDEC, 2007a). Therefore, no cumulative impacts to this species are anticipated.

As discussed in Section 2.3.1.2 of this SEIS, no RTE plant species were observed on the Project site during a comprehensive survey of suitable habitat within the disturbance footprint of the Project. Therefore, the Project is not expected to adversely impact RTE plant species, and no cumulative impacts to rare plants are expected.

7.6 AESTHETIC AND VISUAL RESOURCES

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 and discussed in Section 2.5 of the DEIS. 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 overall conclusions presented in the VIA and DEIS remain valid. 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.

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 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. 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. 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.

Because the overall Project visibility and visual impact will be so similar to that reported in the original VIA, the discussion of cumulative visual impacts presented in Section 7.6 of the DEIS remains largely valid. The updated visual simulations presented in Figure 12 illustrate the existing views in the vicinity of the Project, which include existing Noble Chateaugay turbines where visible, along with the views that will occur after the revised Project is built (also including the existing turbines). Some cumulative visual impacts may occur at certain viewpoints that will have visibility of both Project turbines and existing turbines, where views of a greater number of turbines will be available than if the project were considered alone. As shown in Table 42 above, the Noble Chateaugay project is located in close proximity to

the proposed Project site, so some viewpoints will have foreground views of both Projects. The four remaining operational project are located far enough away so as to contribute only negligibly to background or long distance views.

7.7 SOUND

Construction of the proposed Project will not overlap with construction of any of the five operational projects considered in this cumulative impacts analysis. Construction on these projects was completed between 2008 and 2012. Therefore, no cumulative impacts due to construction noise are anticipated from the addition of the Jericho Rise project.

As described in Section 7.7 of the DEIS, it was determined that most of the projects considered in this cumulative impacts analysis (see Table 42) are at a sufficient distance from the Project that they would not contribute to cumulative noise impacts on potentially sensitive receptors. Only the Noble Chateaugay project is close enough to potentially impact the same receptors.

Hessler Associates, Inc. conducted a new noise impact assessment for the revised Project (see Appendix R), which is summarized in Section 2.7 of this SEIS. The study consisted of two phases: a background sound level survey and a computer modeling analysis of future turbine sound levels. Because the background sound monitoring was conducted in May 2015, the measured ambient sound levels include any noise from the operating Noble Chateaugay turbines. In the second phase of the study, an analytical noise model was used to predict the sound levels associated with the Project. The modeling study, carried out per the NYSDEC guidelines, showed that the region where noise impacts might occur (i.e., where an increase of 6 dBA or more is predicted) does not encompass any homes based on the “typical” measured background levels (see Plot 2 in Appendix R). The modeling analysis also shows that full compliance is expected with the local laws in Chateaugay and Belmont relating to wind energy facilities (see Plot 3 in Appendix R). Although numerous conservative assumptions were built into the model and the actual Project sound levels are expected to be lower than the predicted levels most of the time, a mildly adverse reaction may be possible from some residents. However, significant adverse impacts are not expected as a result of the construction or operation of the proposed Project.

Cumulative noise impacts could occur if sound generated by the proposed Project turbines combines with sound generated by the Noble Chateaugay turbines to produce higher sound levels than either project would when operating alone. The closest Noble Chateaugay turbines are located east of the Project Site, in an active agricultural field between the Chateaugay River and State Route 374. There are a small number of receptors along River Road that could experience minor cumulative noise impacts, due to their location between the two projects. However, as

indicated in the DEIS, the cumulative sound levels from both Projects operating concurrently will not exceed the noise limits proscribed in the local laws relating to wind energy facilities.

7.8 TRAFFIC AND TRANSPORTATION

The Noble Ellenburg and Clinton wind projects became operational in 2008, while the Noble Altona and Chateaugay wind projects became operational in 2009, and the Marble River wind project became operational in 2012 (NYSDEC, 2015e). Since construction of these projects has been completed for several years, no cumulative impacts to traffic and transportation routes are expected as a result of Project construction.

During Project operation, a limited number of trucks will access the Project Site for service and maintenance. As indicated in DEIS Section 7.8, road traffic in the vicinity of the Project Site is below capacity and traffic conditions are light. No adverse cumulative impact is anticipated on local traffic and transportation due to operation of the Project.

7.9 LAND USE AND ZONING

Since the five projects considered in this cumulative impacts analysis are all currently operational, with construction variously completed between 2008 and 2012, no cumulative construction-related land use impacts are anticipated from the addition of the Jericho rise project.

Regional and Local Land Use and Community Character

The proposed Project is generally consistent with land use patterns in the Towns of Belmont and Chateaugay. Although the revised Project will alter the appearance of the landscape, this effect will be less than anticipated in the DEIS, as the area already hosts several working wind farms. The increase in the abundance of wind turbines in the region when considering the proposed Project and operational projects collectively represents a cumulative land use impact. However, the agricultural and rural nature of the landscape will not significantly change as a result of Project operation.

Zoning and Other Applicable Laws

As described above in Section 2.13, the Project complies with setbacks and other requirements of the local ordinances, with the exception of the 400-foot height limit. A waiver is being requested that would allow turbine blade tip to reach 492 feet. Fewer taller turbines can maintain Project benefits while reducing impacts associated with Project operation, including visual impacts, noise impacts, and long-term conversion of agricultural land and natural communities to developed facilities. The change in the height of the turbines approximately 92 feet from what is currently permitted under the local laws will not produce an undesirable change in the character of the neighborhood or a detriment to

nearby properties. Moreover, the potential visual impact associated with the increase in turbine height is unlikely to be perceptible from most public vantage points (see Section 2.5 and Appendix M). Finally, the proposed waiver will not have an adverse effect or impact on the physical or environmental conditions in the neighborhood or nearby community.

The five operational wind energy facilities in Franklin and Clinton Counties were also subject to compliance with various local laws and zoning ordinances. These laws effectively minimize land use and zoning impacts. As a result, no significant cumulative impacts to zoning and local laws are anticipated.

Agricultural Land Use

Permanent Project impacts to agricultural land have been minimized by siting facilities along the edges of agricultural fields when possible and adhering to the Agricultural Protection Guidelines set forth by NYS DAM (see Appendix B). Overall, it is anticipated that the Project will have a long-term positive impact on agricultural land use, since the presence of the wind turbines can help keep land in agricultural use. This benefit is also likely at the other operational wind energy facilities in the areas, so cumulative impacts to agricultural land use are generally beneficial.

Future Land Use

The proposed Project and operational wind energy projects in the region should not interfere with future development (i.e., residential, agricultural, or any other type of development), provided the proposed use complies with the appropriate setbacks established in local law. When taken collectively with the five operational projects in Clinton and Franklin County, the proposed Project contributes to the trend of increased development of wind energy in the region. This trend could continue with the potential future development of additional wind energy projects in the early planning stages, such as the North Slope Wind and Bull Run Wind projects discussed above in Section 7.1.

7.10 SOCIOECONOMICS

Since the five projects considered in this cumulative impacts analysis are all currently operational, with construction variously completed between 2008 and 2012, no cumulative construction-related socioeconomic impacts are anticipated from the construction of the Jericho Rise project.

Population and Housing

The long-term employment associated with Project operation is not large enough to have a significant impact on local population or housing characteristics. Consequently, no cumulative impacts to population and housing are anticipated.

Property Values

As described above in Section 2.9, evidence on the impact of wind farms on residential property values is conflicting. A few reports, including a study from the North Country and one from the United Kingdom, suggest that wind facilities have deleterious effects on property values of nearby residential homes (e.g., Heintzelman & Tuttle, 2012; Gibbons, 2014). However, the evidence is not conclusive. There is also a larger body of evidence demonstrating that operation of wind farms does not have an adverse impact on property values (e.g., Hoen et al., 2009; Hinman, 2010; Carter, 2011; Atkinson-Palombo & Hoen, 2014). Although there is some public perception that wind farms can reduce property values, statistical data do not show that this is the case. Given the numerous studies that show property values are not adversely impacted by wind farms, impacts to local property values are not anticipated due to operation of the Project. Therefore, no cumulative effects are anticipated.

Economy and Employment

As described in Section 2.9, it is anticipated that operation of the revised Project will generate five full-time, local jobs with wages totaling \$420,000 dollars annually. Local revenue and supply chain spending will create additional jobs, as will the induced impacts as a result of increased spending from the aforementioned jobs created. Similar economic benefits are associated with the other operational wind energy facilities in the area. Consequently, the regional economy will experience cumulative benefits from the proposed Project and other wind energy projects in the area.

Municipal Budgets and Taxes

The proposed Project and the five operational wind energy projects in Clinton and Franklin Counties will have a cumulative beneficial impact on municipal budgets and taxes since the taxing jurisdictions will receive additional revenues from the projects in the form of PILOT revenues.

7.11 CULTURAL RESOURCES

No impacts to archaeological resources are anticipated from the proposed Project. The revised Project layout has been sited to avoid all impacts to the archaeological sites documented in the 2008 Phase 1B survey. A supplemental Phase 1B archaeological survey for the SEIS Project layout was conducted, developed based on consultation with the SHPO. The methods and results of the supplemental Phase 1B archaeological survey are summarized in Section 2.6 of this SEIS. The Applicant is reviewing and revising the Project layout as necessary to avoid, to the greatest extent practicable, impacts to any archaeological sites that may be recommended as eligible for the NRHP. Based on the work performed to date, the Applicant expects that few such adjustments will be necessary and any such adjustments will be minor. Since no Project-specific impacts are expected, the Project is not anticipated to contribute to any cumulative impacts on archaeological resources.

Project construction is not anticipated to have any effect on historic-architectural resources. No direct physical impacts to historic-architectural resources will occur as a result of the Project. Furthermore, construction of the five operational wind projects considered in this cumulative impacts analysis was completed between 2008 and 2012. Therefore, no construction-related cumulative impacts to historic-architectural resources are anticipated.

With regard to operational impacts, the NYSOPRHP determined in 2008 that the Project will have an adverse impact on historic-architectural resources. The reduction of the number of proposed turbines in the current SEIS layout does serve to reduce the potential visual impact somewhat relative to the Project layout that was evaluated in the DEIS and presented in the 2008 report to NYSOPRHP. However, the overall visual effect of the Project is not anticipated to be significantly different than that described in the DEIS. Therefore, NYSOPRHP's determination of an adverse effect remains valid for the current configuration of the Project. The potential effect resulting from the introduction of wind turbines into the visual setting for any historic or architecturally significant property is dependent on a number of factors including distance, visual dominance, orientation of views, viewer context and activity, and the types and density of other modern features in the existing view. As described in Section 2.6, the Applicant is currently consulting with NYSORPHP staff to evaluate the SEIS Project Layout's potential effect on historic-architectural resources. EDR conducted a field review of historic properties within the 5-mile study area between August 12 and August 14, 2015. The historic resources review included site visits to 120 properties. As described in EDR's work plan (see Appendix O), photographs and notes were collected to allow for re-evaluation of each property's potential eligibility for the NRHP. This information is being provided directly to NYSOPRHP via their Cultural Resources Information System (CRIS) website. In correspondence dated September 15, 2015 (Bonafide, 2015), NYSOPRHP restated their determination of an adverse effect for the current configuration of the Project.

The visual simulations presented in Figure 12 illustrate the existing views in the vicinity of the Project, which include the Noble Chateaugay turbines where visible, along with the views that will occur after the revised Project is built (also including the Noble Chateaugay turbines). Some cumulative visual impacts may occur at certain viewpoints that will have visibility of both Project turbines and Noble Chateaugay turbines, where a greater number of turbines will be available than if either project were considered alone. Cumulative impacts may occur for those historic-architectural resources that are adversely impacted by the proposed Project, if they also have views of the Noble Chateaugay turbines. Where both projects are visible from a historic property, the increased number of turbines visible from such resources, relative to either project considered alone, could increase the visual dominance of modern features in that site's visual setting.

The Applicant will review potential cumulative impacts with the SHPO and Lead Agencies to develop a mitigation strategy that addresses impacts to historic-architectural resources, including cumulative impacts. To mitigate the Project's potential adverse effect on historic resources, the Applicant intends to enter into agreements with the Towns of Belmont and Chateaugay to fund historic preservation projects that will benefit historic resources within their communities. Preliminary suggestions for potential mitigation projects are provided in Section 2.6.3.2.2 of this SEIS. As noted above, the Applicant will continue to consult with NYSOPRHP and the Lead Agencies to define appropriate mitigation projects that will benefit the local community.

7.12 ENVIRONMENTAL BENEFITS

Positive cumulative impacts associated with the combined impacts of the Jericho Rise Wind Farm and other operational projects nearby are related to air quality improvements through the displacement of other polluting energy sources with wind power, and better meeting the state's RPS requirements and other related federal and state energy policy goals. Additional cumulative impacts include the economic benefits to the region that may be realized by the addition of income to participating landowners, the increased number of construction and operation employment opportunities, and the monies received by the host community in the form of the PILOT agreement.

7.13 TRANSMISSION CAPACITY

As indicated in the DEIS, the proposed Jericho Rise Wind Farm and the five operating wind energy facilities in Clinton and Franklin Counties will collectively absorb a substantial portion of the capacity on the 203 kV Willis Plattsburgh lines.